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বাংলাদেশ অর্থনীতি সমিতি
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Abul Barkat
Editor

Bangladesh Economic Association
4/C, Eskaton Garden Road, Dhaka-1000
Phone : 9345996, Fax : 880-2-9345996
Websid : www.bdeconassoc.org
E-mail : becoa@bangla.net

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Editor's Note

This volume (Vol.26, No.1) of Bangladesh Journal of Political Economy (BJPE) contains Memorial Lectures organized by the Bangladesh Economic Association (BEA) during 2010-2011 as well as select papers presented at the 17th BEA Biennial Conference held in 2010. All the conference papers appearing in this volume were reviewed by both internal and external reviewers.

The articles included in this volume cover a wide range of subjects in line with the conference themes. This volume should, therefore, be of high knowledge-utility to the relevant readers.

I thank the authors, the reviewers, and the members of the Editorial Board of the Journal. Special thanks are due to Prof. Ayubur Rahman Bhuyan and Prof. Toufic Ahmad Choudhury, who, as members of the Editorial Board of the Journal, shouldered much more responsibilities than are usual for a member.

(Abul Barkat)
President, Bangladesh Economic Association
Editor, Bangladesh Journal of Political Economy

বাংলাদেশ অর্থনীতি সমিতির ষান্মাসিক জার্নাল Bangladesh Journal of Political Economy *প্রকাশনার নীতিমালা*

১। অর্থনীতির বিভিন্ন শাখায় তাত্ত্বিক এবং প্রায়োগিক বিষয়ে প্রবন্ধ প্রণয়ন করার জন্য প্রবন্ধকারদেরকে অনুরোধ জানানো হবে। ইংরেজী এবং বাংলা উভয় ভাষায় রচিত প্রবন্ধ জার্নালের জন্য গ্রহণ করা হবে।

২। Initial screening নির্বাহী সম্পাদকের এখতিয়ারভুক্ত থাকবে, তবে প্রয়োজনবোধে সম্পাদনা পরিষদের অন্য সদস্যদের সহায়তা তিনি নেবেন। নির্ধারিত format মোতাবেক সংশোধনের জন্য এই পর্যায়ে প্রাথমিক ভাবে short-listed প্রবন্ধসমূহ প্রবন্ধকারের কাছে প্রেরণ করা হবে।

৩। অভ্যন্তরীণ reviewer সাধারণতঃ সম্পাদনা পরিষদের সদস্যদের মধ্য থেকেই মনোনীত হবেন। বহিঃস্থ reviewer সম্পাদনা পরিষদের সিদ্ধান্তক্রমে প্রবন্ধের বিষয়ের ভিত্তিতে সম্পাদনা পরিষদের বাইরে থেকে মনোনীত হবেন, তবে তিনি দেশের অভ্যন্তরে বা বিদেশে অবস্থান করতে পারেন। সম্পাদনা উপদেষ্টা কমিটির সকল সদস্য reviewer হতে পারবেন। তৃতীয় reviewer প্রয়োজন হলে সম্পাদনা পরিষদের বাইরে থেকে মনোনীত করা হবে।

৪। ক) সমিতির দ্বিবার্ষিক কনফারেন্সে উপস্থাপিত প্রবন্ধগুলো referral প্রক্রিয়ার মাধ্যমে জার্নালের জন্য বিবেচিত হবে।

খ) বিভিন্ন সময়ে সমিতি কর্তৃক আয়োজিত সেমিনারে পঠিত আমন্ত্রিত প্রবন্ধসমূহ জার্নালের সম্পাদনা পরিষদের অনুমোদনক্রমে জার্নালে প্রকাশ করা যেতে পারে।

৫। অর্থনীতি সমিতির সদস্য এবং সদস্য-বহির্ভূত যে কোন আগ্রহী প্রার্থী জার্নালের গ্রাহক হতে পারবেন। তবে সদস্যদের ক্ষেত্রে গ্রাহক ফি (subscription fee) পঞ্চাশ শতাংশ রেয়াত দেয়া হবে।

৬। জার্নালের footnoting এবং writing style এতদ্‌সঙ্গে সংযোজিত হলো (জার্নালের শেষাংশ)।

৭। দেশের অভ্যন্তরে অবস্থানকারী উপদেষ্টা কমিটির সদস্যদেরকে বছরে দু'বার সম্পাদনা পরিষদের সভায় আমন্ত্রণ জানানো হবে।

৮। ক) তিনটি কোটেশন সংগ্রহ করে সম্পাদনা পরিষদের সিদ্ধান্তক্রমে মুদ্রক প্রতিষ্ঠান নির্বাচন করা হবে।

খ) প্রথম proof প্রেস দেখবে, পরবর্তীতে floppy তে প্রবন্ধকার ফাইনাল proof দেখে দেবেন।

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The Political Economy of Development with Special Reference to Bangladesh

MD. ANISUR RAHMAN[1]

Introduction

Political economy belongs to different paradigms. In deference to the audience at this conference I shall discuss in this paper the political economy of development with special reference to Bangladesh from the point of view principally of ***development with equity***[2]**,** equity being operationally assessed by the distribution of income of a country[3].

The period of cold war

From after World War II until the fall of the Berlin Wall development efforts in the so-called 'less developed' countries (LDCs) were of two broad types: One followed the 'Truman Doctrine' of exporting resources, technology and advisory services to help LDCs develop under central planning in the models of the 'developed' countries. A philosophy of 'growth first and distribution later' was integral to this approach *à là* the 'Kuznets hypothesis'. This approach failed. Two

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1 Former Professor, Department of Economic, Dhaka University.

2 See, e.g., Greig 2007 as one of the recent text books on Development emphasising this objective. The desired level of equity has not been pinpointed in the development discourse, but concern is generally expressed if a country's gini coefficient is near 0.4 or higher. Consideration of human rights and human dignity is kept in view in discussing development in Bangladesh only, for lack of sufficient information in the author's hands for other countries. See also Rahman 2010a for more elaborate discussion of this question in the context of the concept of poverty in Bangladesh.

3 For the author's discussion of the question of development of Bangladesh with a more radical perspective see Rahman 2010b.

principal reasons that may be suggested are avoidance of fundamental socio-economic reforms and the fact that the political and technical elites through whom external assistance was channelled lacked the requisite commitment for genuine development of their broader societies as distinct from privileged benefits to themselves and their own 'class'. A dramatic example of failure of such attempted development in South Asia was the break-up of Pakistan as a nation at the very height of its 'Decade of Development' celebrations on the very question of equity (Rahman 1970; 1993). On a global scale, this era of misguided development kept the bulk of the world's population living subhuman lives deprived of the fruits of world 'civilisation' (technological advancement?).

The other approach to development in this period – in Japan, China, Korea and Taiwan, the 'North-east Asian tigers' - rested on agrarian reform as a foundation in different ideological contexts. This resulted in spectacular economic growth in these countries combined with significant promotion of equity belying the Kuznets hypothesis.

2. Fall of the Berlin Wall and the era of liberalization

> "*neoliberal globalization is among the main causes of a deepening of the crisis of development in many Southern countries.*" – Praful Bidwai (2009)

Then fell the Berlin Wall from internal contradictions within the communist countries themselves. The capitalist world thus freed from its major threat now let loose its market tentacles to engulf and exploit the world under the banner of 'liberalization' alias (neoliberal) 'globalization'. Transnational formations emerged as the major economic power of the era to exploit cheap labour of the south. The World Bank-IMF team, an alliance of international development financiers, became the virtual development advisor for most southern countries with their power of finance. Fundamental socio-economic reforms were 'banned' as a condition of financial assistance notwithstanding the *Peasants' Charter* of the United Nations (FAO 1981) calling for agrarian reform. Development was now supposed to take place principally through the influx of foreign private investment to exploit, singly or in collaboration with national capital, cheap labour of these countries for which the door must be kept open[4]. This released governments of these countries of serious responsibility for development of their economies, and

[4] Note that all the economically advanced countries of today had taken recourse to strategic protectionist measures in their days of advancement, reducing, but not eliminating, protectionism only after World War II.

chasing foreign finance, part of which could be hijacked for personal aggrandisement of political and administrative functioneries and their clients, became a major preoccupation of these governments. While economic growth as conventionally measured (see n 4) has continued at various rates in different countries, and 'absolute poverty' counts showed improvement in several countries, income inequality has increased in all countries during this period of liberalization. (Weller and Hersch 2002; Jomo 2006; Wei-chen 2008).

The 'absolute poverty' count most commonly used in this period is that introduced by the World Bank based on a notion of 'basic needs' purportedly to represent the minimum needs of subsistence. This has reduced the concept of poverty to a 'livestock' notion (Rahman 2004:11; Greig *et al* 2007:18), essentially representing a cheap-labour-exploitation view of development that dominated in this era. The 'basic needs' concept was first introduced in development discourse by the ILO, which had placed this notion within the context of "a nation's overall economic and social development" emphasising that "In no circumstances should it be taken to mean merely the minimum necessary for subsistence" thus viewing it as a relative notion, and also within the notion of "the dignity of individuals and peoples" (ILO 1976). This 'basic needs' concept had received wide support in the cold war era and was in line with the concern that the fruits of advancing world 'civilisation' ought to be shared and not be appropriated by a small section of elites. But this concern and the associated relative notion of basic needs (poverty) was disregarded since the fall of the Berlin Wall when the poverty calculus was taken over by the World Bank with its power of finance propagating a static notion of basic needs. The World Bank/IMF-led growth calculus also kept using a single-index measurement rejected by humanist development thinkers (Haque *et al* 1977; Max Neef *et al* 1989.)[5]

5 This growth count has gross technical flaws e.g. in not adjusting for serious depletion of environment and national capital stock affecting a country's future growth potential, and relative market prices being way off from representing relative social valuations of the goods and services being produced in countries with highly skewed income distribution and non-competitive markets. The index as measured also overlooks qualitative degeneration and hidden costs of goods and services produced. These include, for countries like Bangladesh, degeneration of the quality of teaching and health care, deadly criminalisation of student politics holding educational institutions in hostage, growing adulteration of food and medicines, increasing resources and labour spent on safety of elite residences and offices (e.g. fencing and security guards) that represent compensatory spending rather than value-added, corruption in vehicle fitness tests giving licences to kill to defective vehicles, traffic jams of colossal proportions raising several-fold the time-and-fuel cost of transport, organised crime reducing the judicial system to impotence, etc. all of which together call for serious questioning of the meaning of GDP growth measures uncorrected for such negative factors.

At the level of development philosophy, liberation of 'individualist' aspirations was espoused (Sen 1999) in line with the dominant ethos of Anglo-Saxon societies leading the capitalist world, ignoring significant collectivist values prevailing in the vernacular life of southern societies. Finally, an array of NGOs were fielded with foreign finance in many countries of the south, many of which served to create 'micro-colonies' that trapped the 'beneficiaries', disdainfully called 'target groups' (see n10) - an affront by itself to human dignity - into their folds to promote donor-led 'development'.

Overall, the bulk of the world's human population continued to be deprived of the fruits of the phenomenal growth of world technology, and this period of 'liberalization' generated a menacing rise of religious fundamentalism with its suicide squads sworn to destroy this unjust 'civilization' for salvation in the 'after-world'.

3. The global meltdown and the dawning new era

> *"Individualism is fulfilled by curtailing itself; else it degenerates into crookedness and hence into destruction."* – Rabindranath Tagore (translation).
>
> *"The fall of Wall Street is for market fundamentalism what the fall of Berlin Wall was for Communism."* – Joseph Stiglitz.

But this state of affairs could not continue, and we are now in the third phase of the world political economy of development – the global meltdown and thereafter. This meltdown has thrown the capitalist world into total disarray amidst human disaster of epic proportions. Capitalism of the most reckless kind is now being made to submit to state regulation to be rescued out from the man-hole in which it has fallen. The global leader of capitalism is also ceding a lot of political and economic autonomy to other countries and seeking dialogues with its arch enemies, and even evoking collectivist values (community service by the youth) albeit without significant response. Its problems are compounded by impasses on the Al-qaeda-Afghanistan question, the Israel-Palestinian crisis, the Iran neuclear technology question and growing tension with China. With China advancing in solid strides even through the global meltdown, and people voting left leaderships into power in Latin America and most recently the centre-left coalition in Japan with a leftist premier, it looks like the era of US ideological leadership in the world is setting. Whether capitalism of the US variety – as opposed to the emerging Chinese variety of capitalism under a ruthless 'Communist Party' (!) - will survive at all as an ideology of significance seems to be in deep question.

4. The Bangladesh scenario, imperatives and possibilities

> *"We are not being able to tackle the party's inner instability...Let us downplay our personal interests and work for the country."*
>
> - Jute & Textiles Minister Governmnent of Bangladesh (*The Daily Star* 20.12.09*)*

4a. The superstructure

What is the equation for Bangladesh in this new and fluid global political-economy framework?

Bangladesh is a formal democracy without its leaders adhering to democratic values. Its major political parties follow the feudal practice of choosing their leaders by family heritage, and such leaders enjoy absolute powers in the parties. A 'Caretaker Government' presides over national elections because fair election is not expected under a political government.

Notwithstanding socialism as one of the four state pillars in the first constitution of the country, proposal for land reform from the first Ministry of Planning after independence was binned by the then government dominated by landed interests ('*jotdar*'s). The nation quickly got divided into an 'elite' class and an 'underprivileged' class (see terminological dscussion in n13) with the former racing to embrace ostentatious consumption leaving the latter to struggle for survival. This served very well to provide on the one hand a market for conspicuous consumption goods of industrially advanced countries and on the other hand a supply of cheap labour for exploitation by global capital. Symbolically speaking, the country moved fast toward squandering scarce foreign exchange importing luxury cars, when China was riding the bicycle as its first step to becoming the economic giant that it is today, and India rode its own home-made modest car to develop its indigenous technological capability to produce its own 'green' cars today.

For international capital to come and exploit cheap labour of the country, however, Bangladesh had to offer 'good governance' by way of a stable political order and adequate law and order. This 'good governance' kept eluding the country. Its socio-political climate was fluid for the first few years after independence with intense passion of many quarters to move toward 'socialism' vis-a-vis *jotdars* controlling the government, and considerable underground activities of various radical groups to make the 'revolution' were known. The 'Father of the Nation' finally responded by dismissing democracy and announcing

one-party rule toward some kind of 'socialism' with forced cooperativisation of agriculture, only to be assassinated by the right.

The question of 'Bengali' versus 'Muslim' nationalism was now brought to the fore, spraying the Muslim nationalist sentiment over the society. The society started getting bitterly divided as between the two nationalisms, and cadres in the Muslim nationalist camp, many of them armed, kept growing in number helped by outside finance. The divide in the society on this question has by now reached deadly proportions with the major opposition party holding hands of the 1971 war criminals and ascendance of Muslim fundamentalism in the society training and sending suicide squads to blow up secular political leaders and also secular cultural gatherings. As I have discussed elsewhere (Rahman 1994), this rise and spread of Muslim fundamentalism have in a large measure been possible by the failure of securalists either to bring the fruits of independence to the country's masses or to mobilise them for constructive nation-building which could be a fulfilling task by itself (Rahman 2004; 2007) despite their poverty. Unless the country is rescued from this deadly tug-of-war on the nationalist question, good governance in the country is a far cry to offer a safe enough haven to foreign capital and for that matter for orderly path to any kind of development.

On the other hand, lured by liberalization-insisting international finance economic guardianship by the government toward any direction for the country's development totally disappeared. The country failed to develop a broad, diversified industrial as well as export base letting go its potential competitiveness in several sectors (Ranis 2007:30). Even garments exports have been sustained at high levels by quotas in the importing countries rather than by its inherent competitiveness. Notable progress in 'human development' is claimed, ignoring the alarming rise in corruption throughout the society and degeneration even of the teaching and medical professions (see n4). Overall the country attained global front-ranking in corruption accompanied by a high rate of out-flight of capital (Khan, Azizur 2007:51-53). Even the country's President as Head of the first Caretaker Government of 2007-2008 was visibly conspiring to rig the national elections and had to be stopped by the military with international backing and forced to instal a new Caretaker Government that took two years to give a new election after trying to clean up a lot of mess. The new election has brought back the pro-independence-struggle-secular party back into power without, however, appreciably reducing reckless corruption. The bureaucracy is sharply divided along political lines. Continuing barbaric actions of the student wings of the major political parties are holding the country's education system in hostage. Internal divisions within the ruling party as between supporters and opponents of the so-

called 'minus two' formula and on the question of control of resources for local development are also causing inner instability within the party. And a number of the party's members including the Prime Minister are under physical threat from fundamentalist quarters. The superstructure of the country today, thus, is rather weak without a firm command over and rapport with the society.

4b. The base

Devoid of state guardianship **f**or any path of development, the country has been experiencing non-spectacular (although accelerating) growth rates[6] with rapid rise in inequality of incomes (Haque 2004; Khan, Azizur 2006). Most among the masses in rural Bangladesh where close to 80 per cent of the country's people live are struggling with inadequate means of livelihood in a situation of surplus labour in relation to immediate employment opportunities. Concentration of ownership of land has increased sharply[7]. For sheer survival a large part of the population are locked in a patron-client relation with 'maliks' ('masters') who rule in the villages through control over either land or water or technology or market or *mahajani* credit or some combination of these (Rahman 2007; Saha 2008 & Barkat 2008). This patron-client relation constitutes the political power-base of the 'maliks', reducing the operational meaning of 'democracy' at the base to 'semi-feudal' rule whether transparent ballot-boxed or not.

Furthermore, the human rights question is acute for certain sections of the population – e.g. several million 'untouchables' who are not allowed a cup of tea in the wayside tea stall in the village (RIB 2009); special categories of women like widows, abandoned or divorced females thrown on the streets with their children in acute economic insecurity and vulnerability to male lusts (Hossain & Chowdhury 2007); and victims of rape in the countryside subjected to public whipping or stone-throwing *for their inability to protect their own honour* (!) - a savage interpretation of Islamic culture. For such acutely socially oppressed or vulnerable categories of people the question of *human dignity* as provided for in the ILO's 'basic needs' concept ought to come first in assessing their 'poverty',

6 See n4 for serious questions on the value of conventional growth accounting which apply strongly for Bangladesh.

7 6.2 % of the country's families own 40 % of the country's land, and the proportion of agricultural land owned by 1 per cent rich land owners rose from 4.7 % in 1960 to 8.2 % in 1996 (Barkat 2008:5).

and an income-index of such people's 'poverty' à là the World Bank is little more than cruel mockery.

However, with the 'malik's themselves in considerable disarray what with divisions among themselves as well as the threat from fundamentalist terror, a free-for-all environment exists in many parts of the country for almost any quarter to take some initiative of an economic development or human rights-promoting nature if it has the resources for this. Apart from individual government projects supported by foreign government and other agencies, and private entrepreneurship by moneyed classes, national and foreign, which have not been very widespread, 'development' of the country is left essentially to two forces: action by NGOs, and spontaneous initiatives of the underprivileged people themselves on their own or assisted by pro-people technical expertise.

A bewildering array of NGOs operate in the country providing various kinds of services, developmental as well as social, a number of them doing micro-credit business of questionable merit (Ahmed, Q. 2007) more hailed abroad than within the country. Work of most 'development NGOs' seeking to promote overall economic lives of the 'beneficiaries'/'target groups' are of the 'delivery of development' type. Moreover, NGOs in this country (unlike in some African countries) have no accountability to the 'beneficiaries' thus adding to the country's 'democratic deficit'. Only a handful of NGOs are working to promote people's own awareness and initiatives without any funding support to them - *Nijera Kori* with its 'conscientisation' work generating both pressure-group and self-chosen economic initiatives of the underprivileged (Barkat 2007); *The Hunger Project* training 'ujjibak's (development volunteers) and, more recently, Research Initiatives, Bangladesh (RIB) which has introduced participatory action research or 'gonogobeshona'- promoting animation work with underprivileged people resulting in the formation of self-organisations and collective self-development activities of such people in several areas and is especially working with 'untouchable' and other so-called 'missing poor' communities to promote their human dignity and collective self-assertion (RIB 2009; Islam 2009). Following RIB The Hunger Project has also initiated its own 'gonogobeshona' work resulting in grassroots formations in several areas engaged in pressure-group as well as collective socio-economic activities (Mahmood 2007).

As for spontaneous initiatives by the underprivileged people themselves, commendable efforts of farmers to raise food output are widely acknowleged. Information on an impressive array of collective initiatives by underprivileged people with their own resources have recently been available (Tahmina *et al*

2008): Standing out among them is a local level 'agrarian revolution' of people's own conception in Maheswarchanda village in Jhinaidaha district initiated in 1996. This involved voluntary land redistribution by farmers, with land leveling and removal of boundaries for collective farming resulting in dramatic rise in farm production and earnings. This 'revolution' has also generated numerous other collective initiatives in the village (Mukta 2007). In all, collective initiatives of the underprivileged in different parts of the country include collective farming, fishery and livestock rearing; collective marketing of various kinds of products like fish, corn, chilly; collectively managed rice banks; collective procurement and installation of shallow pumps and crasher machines; organic compost making of landless groups; collectively managed consumer stores; thousands of group saving and lending schemes; collective educational, library and health service initiatives etc. (Tahmina *et al op cit;* Barkat 2008: 362; Mahmood 2007).

Numerous instances also exist of pro-people agricultural expertise going to the people on their own initiatives or at the invitation of farmers to advise them on improving farm practices. An outstanding case of such technical service to the most underprivileged is one of an Agricultural Block Supervisor in *Chuhor* Block in Mithapukur Upazilla, Rangpur: on his own he visited the landless workers in his block door-to-door day and night to advise them on productive use of every inch of land in and around their homesteads by way of integrated vegetable, poultry and fish farming, and also on collective production and sale of organic compost fertilizers. This extraordinarily altruist expert service has generated a revolutionary upliftment of lives of landless families in the block and around it (Tahmina et al 2008:115).

The various instances of spontaneous as well as externally animated collective initiatives of the underprivileged "in the womb of the old order" that would perhaps have made Karl Marx very happy, and gonogobeshona-promotion work with underprivileged groups suggest a direction for the society to move toward equity and human dignity promoting development. They are showing, in particular, the possibilitites of gain by way of collective economic and social action of the underprivileged classes individually unable to go far enough, with advice/assistance from pro-people technical expertise where technical knowledge gap exists.

4c. The problematic of equity-promoting development in Bangladesh

In order for the country as a whole to move toward equity-promoting development major structural change with **agrarian-cum-aquarian reform** is

necessary (Barkat 2008; Saha 2008; Khan, Azizur 2009).[8] This should include recovery of all land/water rights fraudulently or forcefully appropriated by the powerful from powerless people and otherwise; distribution of all *khas* land and water rights to landless peasants and small fishermen including such rights fraudulently or forcefully appropriated by powerful people; appropriation of absentee-owned cultivable lands and their redistribution among landless peasants; deciding on a ceiling on land ownership and distribution of surplus land thus obtained among landless peasants[9]; recovery of land forcefully appropriated by the powerful for commercial shrimp cultivation ravaging the environment and habitats including livestock of the underprivileged; and reform of the system of sharecropping to give sharecroppers effective security of tenancy. This should be accompanied/followed, first, by a nationwide thrust toward spreading knowledge and experiences of improved farm and non-farm practices, including integrated homestead-farm-livestock-fisheries production where needed and, secondly, on the management of collective initiatives – in production and marketing - of the underprivileged. For the latter an experience base has already been created in the country in the very many popular initiatives referred to above, and 'people-to-people' demonstration and learning from each other of such initiatives and practices is the most effective way of such 'technology transfer'.

Secondly, a mass-entrepreneurship-based rural industrialization drive should be taken, accompanied by relevant technical extension work and training programmes as well as extension work to promote high rates of savings by the rural masses and investment thereof themselves with needed further credit assistance, to keep as much of the surplus rural man/woman power in the countryside for themselves to directy contribute to and share in the development process (a strategy particularly followed successfully in Taiwan - Jomo 2006:6; Khan, Azizur 2008:11-12). Encouraging manufacturing - cottage and small

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8 This paper does not specifically discuss the urban inequality question in Bangladesh. However, a rise in rural income as a proportion of national income as should be expected from the measures suggested in this paper should have an equalizing effect on the overall distribution of income for the whole country (cf. Khan 2006:15). Furthermore, a thoroughgoing agrarian-aquarian reform in rural Bangladesh and stimulating mass-based rural entrepreneurship as proposed herein would keep more people in the rural sector with a favourable effect on urban wages by reducing rural-urban migration. State guardianship to promote small entrepreneurship in the urban sector as discussed in section 4c for the rural sector should also be provided.

9 Saha has calculated that a ceiling of 7.5 acres would release 5.3 % of cultivated land for redistribution by figures of 1996 - small but not insignificant (Saha 2008:132).

industries - along with farming in which women may also participate significantly should feature as an important component of such strategy of rural industrialization.

Finally, cooperative/collective initiatives ought to be actively encouraged and assisted with technical managerial and credit assistance as necessary. One reason for this is that many of the underprivileged will not immediately after agrarian reform possess sufficient assets and knowledge and skills themselves to move decisively forward with individual initiatives, and many new land allottees may again end up in deficit situations compelled to sell or mortgage their land to money lenders generating a recycling of the process of land dispossession unless they form collectives offering alternatives to thus losing their land.[10] The other, and more fundamental case for moving toward collective initiatives of low-income people is that there will be many areas of entrepreneurship offering benefits of scale not capturable by individual initiatives of such people and, instead of working as wage labour in such enterprises owned by the rich, collective initiatives in production and marketing by themselves, both of land and water products, will give them the surplus also from such entrepreneurship thereby contributing directly and significantly to development with equity.

Equity-promoting development in Bangladesh will also require upgrading the 'capability' of the masses by way of literacy, technical education and trainings including use of IT.[11] The nation has now a literacy method in its hands successfully field-tested in many parts of the country by youth volunteers led by ujjibaks of the Youth-ending Hunger Project (Tutul 2009; Raquib 2010), with which it can catch up with the Asian tigers in adult literacy in one-to-two years if a national campaign were launched (as discussed in Rahman 2010 c). Nijera Kori

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10 While cooperatives may not be forced on the peasantry, thought may be given in allocating land to giving preferential treatment to those landless who form a group for working together on land, form their own group saving fund, and adopt a policy of its members in distress mortgaging their land to the group as a body for joint cultivation until the loan can be repaid, rather than mortgage/sell land outside the group.

11 The adult (15+ population) literacy rate in the country is variously estimated to be in the order of plus-minus 45%, one of the lowest in South and Southeast Asia comparable only with Nepal, even though the language movement was the main inspiration of the nation's liberation struggle. And there are assessments that functionally useful literacy rate is much lower - 20 % in 2002 (Ahmed, Manzur 2010 citing research by *Education Watch)*. See also Mahmood 2006: 31-34 for evidence of "entry barriers to productive employment" for the unlettered rural population in Bangladesh so that rural development in the country is favouring the rural literate contributing to rural inequity. And, aside from the question of equity, "the world map of illiteracy is also the map of poverty" (Arnove and Graff 2008: xii)

is launching its own mass literacy programme with this method in March 2010. The Prime Minister herself has declared on 26 March 2009 that the country would be made fully literate by 2014, but like on agrarian reform no serious step in this direction has yet been taken although the government has been approached for launching a national literacy campaign with the above method, calling into question the seriousness of such declarations. Action toward fast access of rural masses to IT is also needed for them to catch up and compete with the world and to move up faster. Groundwork in this direction has already been made by *Pallitathya Kendra* and *Community E-center works* of D-Net in collaboration with RIB (Hasan 2008) and UNDP (Mahmood 2008) respectively. With all these, we are at the door of fast capability rise of the masses awaiting only a drive by the society's guardians which does not seem likely to be forthcoming.

In this connection it may be noted that much of the modern 'capability' discourse in the country and outside is being carried out without reference to structural reform which is a prerequisite for capability-raising measures to decisively promote development with equity as this requires adequate assets in the hands of the masses upon raising their capability. As evidenced in the South-east Asian countries, which have not gone for structural reform, capability-raising measures without asset redistribution may not give decisive equity-promoting effects.

And alongwith such reform and measures to liberate and promote the creative energy of the masses toward equity-promoting development, the inhuman livestock-poverty-count, the dual of the ideology of 'liberalization' (of individualist greed), a historical scandal and sad reflection on the concern of economics for fellow human beings, should be dispensed with.[12] What is

[12] As I have referred to in my past writings (Rahman 2006;2008), great humanist philosophers like Marx, Mao and Tagore never talked about poverty alleviation at all but about human beings being enabled and assisted to show their creative best. In the process mass poverty starts getting reduced, but many, many still die in poverty in the earlier phases of such new era, and many will continue to die thus, but may be fulfilled to have played their role in the history of human advancement, passing on the 'baton' to next generations with satisfaction in having done their own part in their own lives. From this point of view terms like 'poor' or 'target group' may not be used in development discourse. Calling them 'target groups', in particular, shoots something vital in the persons concerned. Even terms like 'underprivileged', 'disadvantaged' or 'dukhi manush' that I have myself been using are negative/ paternalist and ought to be avoided in favour of positive terms like 'socially challenged' , to inspire one to show one's best creativity under any circumstances just as the term 'disabled' is being replaced by 'specially challenged'. I have not made this terminological switch in this paper as this may be too abrupt yet. But to ignore the contribution of every generation to human progress however materially resource-poor they are is akin to not remembering our scantily-clad freedom fighters who fought and died in the liberation war certainly not to be pitied as 'poor' but to be admired for what they have given to the nation.

important is to monitor progress in terms of ameliorating gross economic and social deprivations and obstacles to people's creative actions, and assessing ailments/negative forces in the social body for corrective action. For this, a 'vector'(panel) indicator of the medical check-up type rather than a single-index indicator should be used (Haque *et al* 1977) so that the nation may not be passed as experiencing good health 'in the aggregate' even if it has malignancy creeping up that may eventually 'kill the patient'. And such indicator ought also reflect the human dignity status of special social categories like present-day 'untouchables' and specially vulnerable women.

It goes without saying that the role of the state has to be decisive, as it has been so in the concerned North-east Asian countries, in steering any country toward equity-promoting development. Such development cannot be attained in a free-for-all state, for the simple reason that those who are already ahead of others in terms of income, assets, access to world knowledge and experience as well as have access to the powers that be, have the requisites to run faster than others in a free-for-all situation. In particular, Bangladesh started its nationhood with little experience in entrepreneurship, not to speak of entrepreneurship by low-income people, so that like nursing a child toward adulthood competent, if necessary even tough, guardianship is needed to make the country a nation of skilled entrepreneurs able to compete with the world. Such guardianship should include e.g. assessing areas of competitive advantage for the country, arranging for training of potential entrepreneurs and labour power in these areas[13] in particular training of small rural entrepreneurs in both the technical and marketing aspects of entrepreneurship; granting to nascent enterprises sensitive infant-industry protection as needed strictly geared, however, toward making them self-reliant in reasonable time, etc. The development-with-equity miracle in those North-east Asian countries where this has happened rested vitally on such resolute guardianship. Imports of luxuries ought also to be controlled strictly, and such policy in Bangladesh shall perhaps require a social movement against ostentatious consumption to strengthen the hands of the government. Note also that state guardianship in the concerned North-east Asian countries had the services of non colonial rule-oriented bureaucracies, a factor that for Bangladesh calls for some service reorientation as well in addition to the question of political partisanship of bureaucrats.[14]

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13 As was done by the 'Father of the Garments industry' Nurul Kader Khan by way of training several hundred garments industry hands in South Korea in the early 1980s.

14 Foreign remittances will remain an anti-equity force to which an immediate answer is not seen.

It should also be noted that, even putting aside Communist China, such guardianship in these North-east Asian countries has been ruthless (e.g. routinely suppressing labour protests) not consistent with democratic rule, whereas the equity record of the largest democracy of the world – i.e. India – is rather poor[15]. Whether and what kind of democracy can deliver equity-promoting development is a question to which there is no answer by empirical evidence nor by formal reasoning, and it remains the challenge of democracy to provide a reassuring answer.

The present ruling party in Bangladesh has promised agrarian reform in its election manifesto, obviously assessing that this promise would get votes. But no move toward its implementation is yet visible. It should be obvious, from the nature of forceful appropriation of *khas* land and water rights earmarked for the landless as well as such appropriation, often barbaric, of land of weaker communities, adivasis etc. by powerful quarters, that genuine agrarian-aquarian reform in the country will require a government truly commited to equity-promoting development not existing in the country at the moment. International funding for large-scale projects also remains a strong leverage against reforms unfavourable with donors, and the party in power seems to be very keen for such assistance. All this means that addressing rural vested interest dominated governments asking for the needed reform is by itself of little value except for promoting social awareness and possible social mobilisation toward pressuring for such reform, so that such addresses should be part of a broader campaign for raising social awareness and public pressure in this direction. It should be borne in mind that agrarian reforms in the concerned North-east Asian countries were politically easier because of the defeat in World War II of Japan with its landed interests in three of these countries and victory of the communist revolution in China, while Bangladesh 'democracy' continues to be rural 'malik' dominated, and the needed effective social awareness for structural change is still far off.

One might have expected that the space that is open in the countryside and is seemingly further opening, should invite leftist forces in the country to go to the masses for extending living solidarity with them, assisting their socio-economic

15 India's gini coefficient for incomes in 2004-2005 was 0.535 (Bardhan 2009). Note that lower gini coefficients for India – in the order of 0.4 (which still is high) - are generally cited on the basis of consumption rather than income data, explained by higher savings by higher income groups.

initiatives of a progressive nature and helping these spread further[16]. This could sharpen the social dialectics at the base and also raise the possibility of generating potential future political leadership related organically with the masses. However, the culture of left parties in Bangladesh as at present is oriented to giving protest leadership rather than living fellowship with the oppressed in their daily lives' struggles and initiatives, so that not much may be expected even on this front. One might also wish that a mass movement of scientific and technical personnel of the country to go to the people, say of the 'Kerala Science for Revolution' type (Rahman 1984), were initiated by such body as the Bangladesh Economic Association or the Bangladesh Institute for Development Studies – but this is also perhaps wishful thinking as such social activism is not in the genre of mainstream professionals of the country.

But social stability may continue to elude us otherwise. I have been talking repeatedly of 'the other half of the glass' (e.g. Rahman 2006 & 2008), meaning those who at any given time themselves feel deprived of an acceptable share of 'civilization', i.e. not only those who remain below the 'livestock poverty line' but many, many more above this line – a question of human perception and not of arbitrary yardstick from outside. Many of these people will take the challenge and are so taking, to seek to move through their odds with human values. Many others will not, and are not so taking, and are seeking and will be seeking anti-social avenues to catch up with those much ahead of them. Even more alarmingly, many such people are joining and will join the ranks of religious fundamentalism, and incremental progress in poverty alleviation is no solution to growth of this super terror. This terror is penetrating deep into the base at the same time having its tentacles within the main opposition in the superstructure while the ruling party does not have a firm hold either of the base or of the superstructure. A decisive answer to the menace of fundamentalist terror does not also rest with the law-and-order machinery but in pro-people development[17]. For this alone, agrarian-aquarian reform remains the top imperative for the nation.

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16 What left forces in the country could do for the country to move, toward 'locally inspired socialism', a term coined by Late Columbian activist-sociologist Orlando Fals Borda has been discussed in a separate paper (Rahman 2010b).

17 This is true also of the Pakistan crisis toady vis-a-vis Al-Qaeda and the Talibans – the answer to this crisis does not lie in sending more troops to the region but in land reform in feudal Pakistan to liberate the country's peasantry from extremely oppressive landord rule so that they would themselves want to fight, if necessary a people's war, to protect their new-found liberation.

A joint priority is a national literacy campaign to make the whole nation literate within a short span that is now possible, as a nation-galvanizing 'second liberation war' for which as said above the methodology now exists and the new generation of the country's youth which has voted for the pro-liberation-war party in the last election looks ready. Such a campaign could stir the nation once more toward inspired social thinking and further action at the base toward positive change, to generate a new social environment with promising potentials[18].

6. Conclusion

To recapitulate a few of the imperatives for equity-promoting development in Bangladesh:

a. state with a commitment to equity-promoting development;

b. agrarian-aquarian reform;

c. mass literacy campaign and drive to take IT to the countryside;

d. active state guardianship to promote competent and competitive entrepreneurship of low-income people. This should include animation of group-based saving of low-income people; motivational and technical assistance measures to promote rural mass-based entrepreneurship; stimulation of and assistance to collective enterprises of low-income people; judicious infant-industry protection where necessary; and promotion of people-to-people development cooperation.

As discussed, the very first imperative is not satisfied in Bangladesh at the moment. The disconnection between the country's leadership and the natural aspiration of the masses for an equitable share of the fruits of material progress of the country they see every day living very next door of the dazzling display of elite wealth because of the country's population density, and with religious fundamentalism seeking to exploit this disconnection, does not augur well for the nation. A feasible mass literacy campaign is awaiting at the door but is also likely to be ignored.

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18 The author's detailed thoughts on this question are given in Rahman 2010c). 21st February is remembered every year for the sacrifices of the language movement martyrs that marked the beginning of our independence struggle. And yet 38 years after independence more than half of the nation cannot read and write in their mother language. Wouldn't 21st February be much better remembered if on this day we could announce the launching of a national literacy campaign to make all citizens of the nation literate?

Finally, one wishes that governments as well as economists respected agreements reached in UN bodies on questions like ‘basic needs’ and agrarian reform rather than follow dictates of international ‘development’ financiers with no sense of (non calorie-based) human suffering and aspirations[19]. The power of finance, however, is strong and may not be easily defeated without considerable social awareness raising and social mobilizing work. This should include turning the awareness of the ‘civil society’ as well as the media in this direction, which should not be easy. World leaders in the economcs profession are also not emphasising the need for structural change. One would wish that at least the economics profession in Bangladesh would speak up clearly for equity rather than merely (livestock) ‘poverty alleviation’, recalling that the call for equity in development that gave us our nation was led by economists of this region, in a role that challenged received development thinking of the day and transcended professional economics embracing a deep social concern.

19 After this paper was written Irene Khan presented the author with her book brilliantly articulating her thesis (Irene Khan 2009) that poverty should be analysed and sought to be tackled as a human rights rather than an economic question.

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Promoting Financial Inclusion for Poverty Reduction with Inclusive Growth: Bazlur Rahman Memorial Lecture

ATIUR RAHMAN[1]

1.1 I am much gratified to be chosen by Bangladesh Economic Association to deliver the memorial lecture in honor of the very distinguished late journalist Bazlur Rahman renowned for his intrepid professionalism, integrity, dispassionate objectivity and progressive outlook on sociopolitical issues. A rich crop of eminent (and by now senior) journalists in Bangladesh acknowledge debt of gratitude for the guidance and grooming they received from him in their professional careers. His contemporaries and disciples active in fields outside journalism, including politics and academia, fondly remember him as a warm hearted erudite man, keenly observant, principled and fair-minded in analyzing current events and developments. His dispassionate objectivity didn't ever mean passivity or indifference in social issues; he was steadfast in progressive views and convictions about the urgency of righting socio economic wrongs, including deprivation and poverty; partnering in activism with another celebrated progressive, his spouse Ms. Matia Choudhury, now the honorable minister for agriculture.

1.2 The sorrow and sense of loss in the demise of Mr. Bazlur Rahman is still fresh and acute in us, and I believe it will be fitting and appropriate for this memorial lecture to be on an issue at the core of his progressive convictions. *Accordingly my memorial lecture will be on widening and deepening financial*

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[1] Governor, Bangladesh Bank.

inclusion, an important tool for combating poverty and social deprivation with broad based inclusive growth.

2. Financial Inclusion: definition

2.1 *Financial inclusion is a major dimension of the broader notion of social inclusion (the antithesis of social exclusion), or peoples' opportunity for contributing to and benefiting from social and economic progress*. Poverty related deprivations in health, education and asset ownership are major causes of financial and social exclusion, curtailing or altogether blocking opportunities of employment, income, borrowing and so forth. Physical and mental debilities; discrimination by race, religion, caste, cult or gender; social disruptions from prolonged conflicts and wars are among other main causes of financial and social exclusion. The broad range of causative factors means that financial and social exclusion is likely to be seen in varying degrees in almost all countries, developing or developed; and therefore social and financial inclusion figures prominently in policy agenda even of mature developed countries. *Poverty related deprivations and exclusions are starker and more entrenched in low income developing countries like Bangladesh, with attendant higher urgency of remedial actions*.

2.2 Related to financial and social inclusion is the notion of *inclusive growth*, a growth process participated by and benefiting all population segments. *Inclusive growth stresses on equality of advancement opportunities rather than on equality by redistribution of income*; and is tolerant of 'good inequalities' that are incentives for competitive efficiency, like income differences arising from rewards for innovation, and for superior skills, aptitudes and education. Inclusive growth utilizing the unleashed creative energies of hitherto excluded population segments in growth pursuits is likely to be more broad based and robust, in terms of income and other metrics of well-being including human development, food security, environmental sustainability.

2.3 In daily life we need basic transaction services like accepting our deposits, lending us money for current expenses or for investment, effecting money transfers and settlement of payments. Financial inclusion means access to these basic financial services. Affluent urban individuals and businesses have ready access to these and other more complex financial services from banks and financial institutions, including insurance companies and capital market institutions. Banks and other formal financial institutions do not have many

branches or service outlets in rural areas, small sized transactions with the poor being costly and un-remunerative for them. Illiteracy still prevalent among adults in rural areas is also a significant barrier to their accessing financial services from formal institutions. In cities and towns migrant day laborers from rural areas face yet another barrier to accessing institutional financial services in their lack of definitive present address.

Forming mutually owned co-operative societies was an officially supported early initiative in financial inclusion of rural and urban people of modest means in similar occupations. Once formed, these co-operatives focused on advancing interests of existing members, often falling prey to elite capture by more influential members, with little interest in risking dilution of control by expanding membership. In any case, the co-operative movement was not designed to target the poor owning little or nothing in assets.

Financial inclusion by way of the poor's access to small-sized loans for income generating self-employment activities (micro-credit) from microfinance institutions (MFIs) has been extensively employed in Bangladesh as a tool for combating poverty related deprivations, pioneered by Dr Yunus with the Grameen Bank in late nineteen seventies, and by now replicated worldwide. As elsewhere, ill informed, gullible people particularly in rural areas in Bangladesh have at times fallen prey to financial scams of pyramid /Ponzi schemes promising quick high profits, only to lose the investments in inevitable collapse of the schemes. To prevent such deception in MFI activities and to ensure that these are run with integrity and soundness, the Government of Bangladesh (GOB) has established the Micro-credit Regulatory Authority (MRA) chaired by Governor, Bangladesh Bank (BB) to license and supervize MFIs. The MRA being chaired by Governor of BB, the apex financial sector regulator has given a huge boost to credibility of MFIs licensed and supervised by MRA.

Typically, MFI membership commences with opening of deposit accounts with minuscule sums and short spells of group-based learning sessions for new members in basic minimum financial literacy, followed by loan disbursements for income generating self employment pursuits. The deposit, borrowing and repayment transactions with MFIs help micro-credit borrowers prepare themselves for eventually accessing larger loans and other financial services from formal institutions like banks.

2.4 Despite substantial expansion of bank branches and the roles of co-operatives and MFIs, financial inclusion in Bangladesh has much further to go in

adequately covering all population segments and all economic activity sectors. About one-fifth to one-fourth of the population still live in extreme poverty, many of them incapable of undertaking micro-credit supported self-employment initiatives due to old age or other debility. With few financial service outlets reaching out to this weakest population segment, accessing whatever modest social safety net payments they are entitled to require them to incur substantial cost in time and travel expenses. Again, not that it is only the poorest that suffer from financial exclusion. MFI borrowers successfully breaking out of extreme poverty and outgrowing eligibility for micro-credit often find themselves in a 'missing middle', still not deemed eligible for larger loans by banks or other formal institutions. Significant market gaps and market failures persist in financing of important growth oriented economic activities like agriculture and SMEs. *These exclusions and gaps are holding down economic growth and poverty reduction; and* **f***inancial inclusion is therefore a high policy priority in Bangladesh for faster, more inclusive growth and poverty reduction***.**

3. Measuring financial inclusion

3.1 As yet without a widely adopted uniform definition, financial inclusion is reckoned in Bangladesh as access to financial services *from entities supervised by official authorities, or from official institutions,* including:

a. Banks and financial institutions supervised by BB,
b. MFIs supervised by the MRA,
c. Credit co-operatives supervised by the Registrar of Co-operative Societies,
d. Insurance companies supervised by Insurance Regulatory Authority,
e. Capital market institutions like investment banks, merchant banks and stock exchanges supervised by the Securities and Exchange Commission (SEC),
f. Post offices of the government offering savings, money transfer and insurance services; National Savings Bureaus issuing government savings instruments.

The clientele of secondary and tertiary financial service providers (like insurance companies, capital market institutions) are also recipients of primary financial services of deposit taking, lending and money transfers. Their double counting needs to be avoided while measuring the extent of financial inclusion.

Deposit services for safekeeping of savings is the stepping stone in accessing credit and other financial services on a continuing basis from banks, financial institutions, MFIs and cooperatives; *the coverage of deposit services (number of deposit accounts /membership in deposit schemes in MFIs, cooperatives, post*

offices as percentage of total population) is therefore taken as a comprehensive primary measure of financial inclusion.

3.2 *The coverage of credit services across income/occupational/gender groups and across economic activity sectors is another yardstick of financial inclusion,* important from the viewpoint of growth and combating poverty. This measure is more qualitative, expressed in terms of gaps, exclusions and barriers to accessing financial services.

4. Approaches in widening financial inclusion- progress thus far

4.1 Early post-liberation financial inclusion initiatives in Bangladesh comprised:

i. Expansion of bank branches in rural areas (all domestic banks were nationalized in 1971 upon liberation of Bangladesh), and
ii. Promotion of mutually-owned co-operative credit societies offering deposit and credit services to members.

The better-off rural elite benefited from these initiatives, but financial inclusion of the broad masses of illiterate, innumerate rural poor remained limited. As mentioned earlier, the co-operatives tended to fall prey to 'elite capture' by powerful groups uninterested in diluting control by expanding membership; and the co-operative movement actually was not targeted to the poorest population segments owning little or nothing in assets. Rural branches of banks focused mainly on crop loans to farmers, there lending models not geared towards reaching out to the poorer landless illiterate unable to handle the paperwork involved in bank borrowing. The regulated low interest rates on bank lending prevalent up to late nineteen eighties, insufficient to cover the high costs of managing small loans to borrowers in dispersed rural locations, was also a deterrent.

4.2 Grameen Bank and the MFIs brought about a major breakthrough in reaching out to the rural poor. Their lending models specifically included imparting of necessary minimal literacy and numeracy to aspiring member borrowers; they have also been unrestricted in realizing interest and service charges at rates covering their higher costs. Their programs were designed with some degree of gender bias favoring women, in the presumption that women's enhanced financial standing and stature in the traditionally male dominated families will lead to better upbringing and education of their children.

Besides extending micro-credit, many MFIs in Bangladesh are collaborating with insurance companies in extending microinsurance to the poor, offering modest covers such as *credit life insurance* (‘debt dies with debtor’*), health and accident insurance (*for sicknesses and injuries requiring hospitalization etc*), and property insurance (*usually for livestock bought with MFI loans) at affordable rates of premium. Typically the MFIs act as partner agents of the insurance companies, collecting microinsurance premia on their behalf, most often by deduction at source while disbursing micro-credit loans. Regular published data on microinsurance in Bangladesh are as yet unavailable; a February 2007 survey posted in CGAP’s *microfinance gateway* (www.microfinancegateway.org) reported 10 insurance companies in partnership with 61 MFIs, offering differente microinsurance products in 81 schemes, with cumulative premium collection of over Taka 11.2 billion from about 4.5 million clients.

Some empirical studies, employing differing methodologies and covering differing time spans, dispute the poverty reduction impact of micro-credit claimed by its protagonists. Episodes of borrower distress from rigorous micro-credit repayment disciplines, in many cases compounded further by multiple MFIs lending to the same borrower, occasionally do appear in newspapers. It is easy to see that self-employment initiatives financed by micro-credit are far from being risk free for borrowers and lenders, ill-chosen initiatives and lax loan sanction and management disciplines can and do land lenders and borrowers occasionally in difficulties, requiring prompt but appropriately flexible corrective responses. Such difficulties do not negate the reality that financial inclusion by way of micro-credit indeed unlocks opportunities for the despondent poor to lift themselves out of poverty, unleashing in them the optimism and creative energies necessary to retry and get over occasional setbacks.

Another criticism that micro-credit does not help the poorest of the poor is not tenable because micro-credit is intended only for those who can use it in income generating activities. Those unable to do so because of old age or other infirmity need to be supported by outright transfers from the social safety net (the traditional safety net offered by extended families exists no longer, the extended families breaking up into smaller ones), and here financial inclusion helps recipients by eliminating or reducing costs they face in accessing the safety net payments.

Social innovations promoting financial inclusion like micro-credit and the programs designed to bridge market failures and gaps in agricultural and SME financing help spawn diverse cycles of other innovations by entrepreneurs in the

real sector, fostering broad-based inclusive growth in the true sense. For instance, SME financing has helped innovative entrepreneurs in small light engineering workshops in Bangladesh to develop and expand into a huge network producing plant/machinery spares (and sometimes plants/machines in entirety) of all descriptions for the manufacturing, transportation, construction and agricultural sectors, at fractions of import costs. In early nineteen eighties the emerging apparels export sector had scant access to foreign exchange for their import of inputs. The innovation of back-to-back usance LCs for input imports against export LCs from buyers got around the problem, unleashing decades of sustained growth.

Table 3.1 Status of Financial Inclusion in Bangladesh

Year	Adult Population* (millions)	Population per bank branch (millions)	Number of bank deposit A/Cs (millions)	Deposit A/Cs as % of adult population	Number of members in MFIs (millions)	MFI members as % of adult population	Number of members in cooperatives (millions)	Cooperative members as % of adult population	Financial Inclusion** as % of adult population
1999	73.16	18669	27.30	37.32					
2000	75.16	18347	28.40	37.79					
2001	77.18	19886	30.10	39.00			7.65	9.91	
2002	79.59	20753	30.90	38.82			7.67	9.64	
2003	80.80	21406	31.30	38.73	14.63	18.11	7.57	9.37	66.21
2004	82.25	21443	31.60	38.42	14.40	17.51	7.76	9.43	65.36
2005	83.80	21420	33.10	39.50	18.82	22.46	7.92	9.45	71.41
2006	84.60	21171	34.50	40.78	22.89	26.95	8.03	9.45	77.33
2007	84.95	20920	35.70	42.02	20.83	24.52	8.22	9.68	76.22
2008	85.78	20566	37.60	43.83	20.90	24.36	8.44	9.84	78.04

Source: Scheduled Bank Statistics, Bangladesh Bank and Statistical Year Book of Bangladesh, BBS

* Adult population is defined by BBS as population 15 years and above

** Financial Inclusion is measured here as

(No. of bank deposit A/Cs + No. of MFI members + No. of members in cooperatives)/Adult population*100.

Post offices and government savings bureaus not included as these offer no credit services

4.3 The number of deposit accounts in banks and the number of members in MFIs and co-operatives are growing steadily, but the rate of increase has slowed in recent years. About 25 percent of the adult population is still to be covered by deposit and other financial services from regulated institutions (table 3.1), quite probably the hardest to reach. In access to credit, a ‘missing middle’ persists between the poorest served by MFIs, and the relatively better off served by banks. Small businesses outgrowing eligibility for micro-credit from MFIs often find themselves considered still too small by banks for their lending; sharecroppers not so poor as to be eligible for micro-credit from MFIs are deemed ineligible for crop loans by banks, with little or no collateral to fall back upon in events of default. In terms of sectors of economic activity, important areas like agriculture, off-farm

rural output activities and environment friendly renewable energy remain under-served by banks and other institutional lenders.

4.4 BB and the GOB have adopted several remedial and promotional measures to bridge the gaps in, and to deepen financial inclusion. In SME financing, BB has made available refinance lines for banks against their agricultural and Small and Medium Enterprise (SME) lending; multilateral development partners such as the IDA and ADB are supplementing BB's refinance lines with their co-financing. Besides, BB is allowing banks to open SME service booth in areas with no branch banking coverage of their own.

The agricultural credit program announced by BB for FY 10 enjoins all banks to engage in lending for a comprehensive range of on- and off-farm rural economic activities, with refinance lines available to them from BB in case of need. A Taka 2.0 billion refinance line has been introduced in FY 10 against bank loans for environment friendly investments in solar energy, biogas plants and effluent treatment plants. In FY 10 BB has also introduced a first ever Taka 5.00 billion refinancing line against loans to sharecroppers in a group-based special program designed by a major MFI.

In issuing new branch licenses to banks, BB has been following a policy of requiring at least one in every five new branches to be in rural locations; with a view to pushing forward banking services physically closer to the rural population.

BB has also been exhorting banks and financial institutions to embrace fostering financial inclusion as a Corporate Social Responsibility (CSR) obligation. To mitigate risks in agricultural production (and hence also in agricultural financing), introduction of crop insurance has been included in GOB's Food Policy agenda. Introduction of a scheme of partial guarantee for mitigating SME lending risks likewise merits consideration.

A Challenge Fund in the ongoing DFID supported BB initiative for automation of the payments system in Bangladesh, the Remittance and Payments Partnership (RPP) project, is promoting innovations of faster and cheaper remittance and money transfer services; broadening and deepening financial inclusion particularly of rural recipients of remittances from family members working elsewhere within or outside the country. Partial grant support incentives from the Challenge Fund has already spawned a number of new IT based remittance delivery processes that are superior in speed and affordability for users. The soon to commence online automated clearing and settlement of cheques and electronic

fund transfers by the Bangladesh Automated Clearing House (BACH) will hopefully trigger innovation of yet other new service packages custom tailored to needs of specific client segments, further widening and deepening financial inclusion.

4.5 GOB has been providing lending resources from annual national budgets for micro-credit (through PKSF) and for SMEs (through the SME Foundation) with some gender bias towards empowerment of women. Financing lines from government budget have also been made available against loans to rural poor for their basic shelter housing in a number of schemes titled Grihayan, Ashrayan, Returning Home, and One home-One farm.

The Post Office Department of the government has been actively engaging with banks, mobile telephone companies, and other external and internal remittance intermediaries to offer faster remittance and money order delivery to recipients.

4.6 Lately the government has embarked on a program of delivery of fertilizer and irrigation fuel subsidies for agriculture directly to individual farmers. To make this a success, Bangladesh Bank has asked state owned agricultural and commercial banks to ensure that their rural branches open bank accounts with deposits as low as Taka 10 in the names of farmers against identity cards/papers issued by Agriculture Department. Over three million new bank accounts have already been opened; privately owned banks are also encouraged to open bank accounts of farmers in their branches in rural areas. Direct delivery of government subsidy into the bank accounts of individual farmers will be a huge leap forward in extending and deepening financial inclusion.

Very recently, Bangladesh Bank organized a cross country banking sector road show led by the Governor and other senior management members. In this road show commercial and specialized banks came forward to connect and interact with the general population, providing information and receiving user feedback about their lending, deposit, remittance and payments service packages, and building up in the general population literacy on financial services and awareness against money laundering and illegal hundi channels in remittance delivery. This major new campaign-mode drive in widening and deepening financial inclusion will be repeated, appropriately refined, in other regions of the country.

5. The way forward

5.1 We thus see that progress attained thus far in financial inclusion is quite fair, with deposit services from regulated entities available to more than three fourth

of the adult population (cf. table 3.1). However, as already mentioned, much still remains to be done in deepening access to credit and other financial services in several shallow patches, and in bridging the remaining more recalcitrant gap. High costs of managing portfolios of small-sized loans to borrowers in dispersed locations mean high interest rate/service charge burdens on the borrowers, rendering their use of micro-credit for low risk but low return output activities unviable. Advances in information technology offer windows of opportunity for breakthrough in reducing the costs of managing small loans to borrowers in remote locations, with smart card /mobile-phone based arrangements for disbursement and recovery of loans. Full advantage need to be reaped from these new windows of opportunity. The number of mobile phone subscribers is expanding fast in Bangladesh, already covering more than half the adult population (cf. tables 4.1, 3.1). Lower borrowing costs made possible by IT based remote delivery and recovery of loans will enable many currently excluded individuals and businesses to borrow for output activities that generate low returns but also involve low risks.

5.2 BB's policies are currently focusing on leveraging the potential synergies in innovative cost-saving partnerships between banks, MFIs, and telecom/mobile phone service providers in bridging the remaining gaps in financial inclusion,

Table 4.1 : Growth trends and teledensity of mobile and fixed phone

	2004	2005	2006	2007	2008	2009
Mobile phone subscribers (millions)	4.15	9.27	20.8	34.38	43.7	46.69
Fixed phone subscribers (millions)	0.83	0.87	1.02	1.19	1.28	1.44
Total subscribers (millions)	4.98	10.14	21.82	35.57	44.98	48.13
Growth rate of mobile phone subscribers	...	123.37	124.38	65.29	277.11	6.84
Growth rate of fixed phone subscribers	...	4.82	17.24	16.67	7.56	12.50
Total growth rate	...	103.61	115.19	63.02	26.45	7.00
Teledensity (in percent)	3.62	7.25	15.39	24.71	27.91	32.09

Commission (BTRC); Figures areend June

with due attention to the risk management, consumer protection and systemic stability issues likely to arise in the new arrangements. Some of such partnership proposals have already been approved and operational. A number of GOB owned public utilities are collecting utility bills from users through mobile phone based arrangements, saving the bill payers travel costs to and queuing up time in traditional crowded receipt booths. Similar cost saving IT based remote delivery

arrangements are possible for numerous government payments in small amounts like social safety net allowances for the eligible poor, pension payments for retirees, salary subvention payments for teachers in privately run schools, subsidies for farmers and so forth. Well-designed IT based arrangements of this kind for these payments will prevent leakage or wrongful delivery of benefits, besides deepening financial inclusion.

5.3 To conclude, financial inclusion combats poverty by unblocking advancement opportunities for the disadvantaged poor, thereby fostering social inclusion and inclusive socioeconomic growth. In Bangladesh, following bank branch based, co-operatives based and MFI based phases of major expansion, we are pinning hopes and efforts on IT based cost-saving innovations for another phase of major breakthrough in closing the remaining gaps and shallow patches in financial inclusion.

The tasks of promoting financial inclusion and poverty eradication may never be seen as completed once for all; natural or man made disasters quite often can and do push the affected population sections into hardship and exclusion. Also, poverty is a relative rather than absolute notion in perception. Regardless of however much affluent a society is, extremes of inequality will always be seen as constraining social and financial inclusion of the less advantaged population sections. This is why social and financial inclusion figures prominently in social charters/ social policy agenda even in mature developed economies.

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Education, Employment and Equity : The Bangladesh Context

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MOHAMMED FARASHUDDIN[1]

Growth and Distribution

Economic growth and its distribution are issues of debate for as long as the concept of growth started occupying large space in the development literature. One view has it that 'growth first and distribution next' because there is no good in distributing poverty in a developing country. At the other extreme is the view based on empirical evidence that in an unregulated market condition, economic growth takes place through accumulation and concessions to the savers, investors, capitalists and entrepreneurs at the expense of the disadvantaged i.e the relatively weak. This invariably leads to concentration of economic power in a few hands and any attempt by the government to apply fiscal instruments towards redistribution of assets to the disadvantaged may ignite the concentrated economic power to change the government trying to 'snatch' part of their wealth.

Another argument put forward by the proponents of 'growth first' is the alleged lower propensity to save for the relatively poor. Any accumulation for investment must, therefore, favour at least in 'the short run' the relatively wealthy whose propensity to save is claimed to be higher. In the fifties, one Finance Minister of Pakistan Syed Amjad Ali articulated the government policy by putting singular emphasis on the state policy for enabling the rich capitalist class to make more profit for them to save and invest more if economic growth had to be aimed at.

1. Former Governor, Bangladesh Bank

Adelman and Morris have collected evidence to nullify the claim that the propensity to save by the poor is low. One silver lining in the microcredit horizon of Bangladesh clearly shows that savings by the microcredit users (who are poor by definition) out of their incremental income is as high as 10 (ten) percent which is higher than the domestic household savings rate.

Kuznets Hypothesis

The Kuznets Hypothesis is a pioneering analysis of the historical growth patterns since Simon Kuznets invented the "inverted U Kuznets curve". Kuznets Curve plots the longitudinal (time – series) spread in the distribution of income measured, for example, by the gini-coefficient, in an enlarging per capita GNP; it shows an inverted U type distribution curve. The interpretation of the Kuznets Hypothesis as expressed (pages 154-155 of Michael P. Todaro's valuable contribution *Economic Development* Fifth Edition, Published by Longman, New York) by Todaro is that in the early stages of economic growth, the distribution of income will tend to worsen, while at later stages it will rectify and improve. This is claimed to be caused by the nature of the structural changes involved in the path of transformation of economic growth into sustainable development. Early growth taking place according to the theory of Professor Arthur Lewis 'Two Sector' transfer and employment of rural/agricultural low wage work force (unemployed/under employed) in the modern high wage manufacturing sector is bound to widen the gap between the modern and the traditional sectors. Inequality in the expanding modern sector may thus be higher than the inequality in the stagnating traditional rural sector.

Development economists – at least a vast majority of them - will find it very difficult to accept the second part of the Kuznets Hypothesis giving the good news that ultimately (in the long run, when we are all dead according to Keynes) income redistribution will favour the poor. Neither is there ample evidence to support the first part of the hypothesis that at the initial stages of economic growth, income distribution has to go worse. Case studies in Taiwan, Republic of Korea, Costa Rica, Srilanka, Hong Kong and China show that higher income levels may be accompanied by falling income inequality.

Economic Growth and Income Distribution in Bangladesh

What has been the growth and distribution scenario in Bangladesh in the last four decades of our independence? First it is worth noting that in the last half century or so, Bangladesh has managed to crawl into some kind of growth path compared

to the galloping growth in several East Asian and South East Asian countries, namely, Republic of Korea, Taiwan, Singapore, Hong Kong, Thailand and Malaysia. The economic growth path revolved around a rather slow 04 percent or so of annual GDP growth until the end of the 80s. During that period, annual population growth rate was quite high climbing down slowly from 3.2 percent or so. In the last two decades, i.e during the democratic dispensation in governance, the annual GDP growth rate has ranged from a 5.5 percent to 6.5 percent. Due to early and effective campaign in favour of population planning, annual population growth rate declined to below 1.5 percent along with an initially impressive reduction in infant mortality, maternal mortality and in total fertility rate. But in very recent times, annual population growth rate might have started rising which may now be as high as 2.5 percent except that the government does not seem to be cognizant of this. No one may contest the sad stagnation in the key indicators, TFR, Contraceptive Prevalence Rate, infant mortality and maternal mortality. Acceleration in the GDP growth rate since the restoration of democracy in 1991 and the continued decline in the annual population growth rate until the early twenty first century caused an increase in the per capita income. The revitalization of the rural economy with singular attention to the agriculture during the second half of the 90s along with the adoption of a “growth with equity” approach might have contained the Kuznetsian deterioration in the income distribution for some time. On a medium term basis, however, the income distribution in Bangladesh has suffered a secular adversity. The gini-coefficient in Bangladesh rose from 0.27 in 1974 to 0.34 in 1988 to 0.47 in 2008. The fact that the number of people under the poverty line, however, imperfect it may be, rose from 50 million in 1972 to 60 million in 2008 according to the world bank inspired estimates (40% of the population) and to nearly 75 million (the population of the country at its birth) as per the UN estimates (48%) may only partially demonstrate the burgeoning income disparity.

Solow Model : The Residual Growth

The remarkable proposition of the neo-classical economist Robert Solow is that an increase in the output resulting from an incremental increase in the availability of capital cannot be apportioned in its entirety to the capital because the cooperating labour has also added to it through its further and fuller utilization. The limitation of this phenomenon, amongst other things, lies in its ability to project an increase in the income to the underemployed labour without giving an idea about the relative movement of the income of the entrepreneur-capital owning people versus the labour service contributor. Incomplete as it is, the

Solow Model's residual growth phenomenon explaining the share in the output that cannot be apportioned to capital and labour in terms of technological progress may be interpreted as worsening the relative income distribution. Then there is the powerful 'surplus value' theory of Karl Marx which asserts that the capitalists cause technological advancement not only to increase the pace of growth with the given level of factor endowment but also to squeeze out the wage of the labour for creating surplus value for itself. But it has been observed in many countries that the successive stages of growth enunciated by Karl Marx may not occur after all.

Inappropriate Technology and Preference for A Relatively Capital Intensive Technique

In many developing countries, including Bangladesh, the explicit or implicit notion of a greater importance of material capital formation in enlarging the output may have influenced the mindset of the policy makers as well as the capital investors to opt for a relatively labour substituting technology even in a labour abundance situation. This wrong approach may also be imposed on the external assistance receiving countries of tied loans from the technology selling (very often obsolete in their countries) development partner countries. The material capital owning/investing class itself could have been lured into a relatively capital intensive production option for fear of labour unrest. Whatever the reasons, the consequence is an inevitable disaster- a consistent rise in the unemployment rate which in itself has to be a major cause of personal income disparity. The savings-investment gap limits the extent of economic growth due to a shortage of the required level of investment that could absorb the new entrants into the workforce. The situation is further aggravated by the preference for a technology that substitutes human service / labour by capital machineries.

Education and Human Capital

Many economists and social thinkers consider an expenditure in education to be an investment in human capital formation which provides services for years to come. A review of the factors that explain the relatively faster economic growth in the East Asian countries in the past and in Malaysia, China, Thailand and India at the present time, higher rate of literacy appears to be a leading cause of such acceleration in growth. Even within the general increase in the literacy rate, the pace and extent of technological content and growth in the curriculum seems to be directly related to the GDP growth rate in a number of countries. In very recent times, it has also surfaced that the higher the spread of tertiary education, the stronger is the wind in the sails of the growth ship. Very high GDP growth rate in

the Republic of Korea with very high enrollment rate in tertiary education compared to virtual stagnation in a relatively neglected higher education in Japan lends credence to the world bank advocacy for a knowledge based society.

Bangladesh has a literacy rate of 63 percent with many doubts hanging on the quality of education. The international community even expresses doubts if the literacy rate is as high as claimed. It is acknowledged all around that the technological content of the education in Bangladesh is quite modest if not low. The higher education is in a state of confusion and disarray if not on a dangerously low wave length. The recognition of the paramount need for vastly reforming the education system has prompted the current government to cause formulation of a new education policy that will (a) unify the extended primary education up to grade eight in mother tongue with a minimum core of subjects (b) vocationalize the secondary education, (c) vastly strengthen the tertiary education and (d) use education as an instrument for building a progressive, secular and prosperous digital Bangladesh. Significant emphasis has been laid on improving the textbooks making these much more attractive and making these available on time free of cost to all primary and secondary level students. Singular attention has been pledged in improving the quality of teaching by means of recruiting more and more qualified teachers and ensuring their training. An Accreditation Council has been planned for neutrally, independently, judiciously and effectively evaluating and ranking the universities and specific programmes under these. The need for restoration of the status and honour of the teachers by enabling an optimal environment as well as helping them regain their dignity through inculcation of higher morales and standards has also been felt more than ever before. No question the compensation package and other attendant material benefits are of great relevance in encouraging the teaching community to wholeheartedly concentrate on giving full time attention to teaching. It is, however, a poor commentary on the national priority in education as reflected in a relatively low allocation, only 2.4 percent of the Gross Domestic Product to this sector responsible for human capital formulation. Kabir Chowdhury Education Commission has thus made a strong plea in vastly and steadily increasing the share of education sector outlay to levels comparable in other fast growing developing countries i.e. to reach a level of 6.0 percent of GDP in the next few years.

Although there is some confusion regarding the actual extent of unemployment in Bangladesh, it will be fair to say that it is at least 30 percent. Moreover, there is a simultaneous existence of open unemployment along with importation of education service by hiring of external hands in very many skills and trades. This

can happen only in a situation of serious mismatch between the type and skills of education provided by the educational institutions of the country and the pattern of skill demands felt by the employers of business and industry. It is thus of great importance that while the new education policy is approved and implemented sooner than later, provisions are kept for conducting a manpower survey for (a) cataloguing the professional expertize and skills types and quantum that will be needed in efficiently manning the development plans, the perspective plan, the five year plans and the ADPs up to the year 2021 on the one hand and (b) the ability of the existing educational institutions of the country to produce the same quantity and quality of the required human services on the other. The resultant gap will have to be bridged by a thorough overhaul of the reformed education system.

Case for An Employment Based Development Planning

The proposed modernization and reorientation of the education system from a general liberal one to a more technical and vocational type at the primary level as well as redesigning the tertiary education towards meeting the applicable knowledge creating leaders in all sectors may help expansion of a more usable workforce in nation building. In addition to the implementation of the resolve of the present government to providing one job to each family, the government may consider a national service type obligatory deployment of the university and college goers. The scheme will require all students at the university and colleges to spend a full semester, preferably in the winter, in a nine credit supervised practical study at the rural areas. They will earn the nine credits equivalent to a normal semester through satisfactory performance of the following tasks:

a. birth registration;
b. motivation in support of small family norms;
c. resource mapping;
d. climate change mitigation;
e. dredging of rivers and canals under the proposed national programme;
f. campaign in support of universal enrollment at the primary level; and
g. any other task that may be assigned such as census, arsenic mitigation, vaccination etc.

This practical training will familiarize the future leaders in various sectors with the down to earth issues of nation building. The graduates thus trained and educated may be much more focused in their respective future career assignments. The cost of financing the temporary employment-cum-practically oriented education may have to be shared between the student and his/her respective education institutions. One formula may be for the respective university or college

to forego the tuition of the student for the semester and for the student beneficiary to pay for the accommodation and food. For those students under merit scholarship or need based financial assistance, an appropriate funding mechanism may have to be evolved.

Sustainable Human Development Through Employment Generation

The perpetuation and expansion of the curse of poverty as well as deterioration in income disparity at the interpersonal and interregional level within the country will have to be regarded as the number one challenge facing the country and its socio-economic development. The gini-coefficient is increasing, the number of people under the poverty line is swelling and the deprivation of the poorest of the poor, bottom 10 percent of the people (reported to be in possession of a little over 01 (one) percent of the national income and asset) is further aggravating. The much trumpeted “success” of the microcredit “magic” does seem to be yielding only limited success, if any. The sad conclusion has to thus be a failure of the traditional model of poverty eradication. In our view and by no means it is new, is that a strategy of “growth with in built equity mechanism” may be the only effective instrument of an all embracing sustainable human development (SHD) phenomenon. As envisaged by UNDP in evolving the concept of SHD, people are put at the centrepiece of the development process. They plan, implement, monitor and evaluate all the activities and are the real gainers in a Win Win situation as participants as well as beneficiaries in the new development paradigm. The alternative measure of welfare, Human Development Index, HD, under the SHD regime is defined as a weighted average of (a) life expectancy at birth, (b) literacy rate plus length of schooling and (c) per capita income as a proxy for purchasing power. HDI is thus a more realistic measure of welfare emanating from the fruits of a development process. The SHD scenario can be effectively put in place through the proposed upazila scheme for significant decentralization of the development finances at the local levels. The government would do well to remove the irritant caused by the superimposition of the Member of the Parliament as a watchdog advisor on the upazila parishad and draw up a medium to long term scheme for gradually increasing the share of the upazila in spending the ADP outlay.

In this connection, two issues of vital importance need to be addressed. Compared to the 85% of the national investment being channeled through the public sector in 1974, its share has come down to less than 20 percent now. With such preeminent emergence of the importance of the private sector in the expansion of GDP, does the government have much leeway in shaping an employment based

development scenario towards poverty eradication and sustainable human development? The point that is to be borne in mind is that the government (including the public sector) is to provide for the creation of the infrastructure for development – physical, social, policy, governance, regulation etc - for the private sector to perform at its utmost efficiency. Thus the market and the private sector through involvement in the large industrial projects and service activities will generate the lion's share in the annual GDP growth. The public sector as the complementary force (in addition to the parental role of creating the infrastructure) help creating the linkages, backward one in particular, for ensuring employment generation in the micro, small and medium enterprises (MSME) for poverty eradication as well as reversing the trend of income disparity at personal and regional levels.

The other point of crucial importance to take cognizance of is the drastic change in the structure of the GDP of the country. In 1972-73, GDP comprised of 60% contribution from the primary (agriculture) sector, 11% from the secondary sector (manufacturing and construction) and 29% from the tertiary sector (services). In recent times, the composition of GDP has changed to roughly 20% contribution from agriculture, 30% from manufacturing and 50% from the tertiary sectors. Remembering that the GDP of Bangladesh has increased 136 times between 1972-73 and 2008-09, the percentage reduction of the share of agriculture should not obscure the tremendous growth in the sector which also employs more than 50 percent of the total workforce in the country in addition to feeding the nation. What should be a matter of big concern is the prematurely large growth of the service sector in the pattern of a developed country. To the extent that the service sector growth is a result of the expansion of education and health services of the public goods type, it has to be a welcome development. However, in most cases, the expansion of the service sector relates to the profit seeking trade and commerce without much potential for employment generation. Such a service sector growth has to be and is a matter of grave concern in Bangladesh for a lucratively high profitability in the trade and commerce has been acting as a damper to the job creating and disparity reducing employment generation in the manufacturing sector. More appropriately for effective poverty reduction which will also simultaneously help reduction of disparity, a big push will be necessary in strategically placing the MSME strategy into the highest level of national priority.

Now here are some details on the proposed MSME strategy. To the extent that a micro or a small enterprise industry uses the agricultural output of the country as its inputs (e.g. agro based processing industry), its gestation period is small, there

is low capital investment requirement and practically no imports are involved in such simple technology based gender friendly industrial units. What are additionally required are a set of entrepreneurs all over the rural areas of Bangladesh and access to highly concessional credit at minimized harassment. Many private universities may be inspired to get into a MIDAS type scheme of training of the potential small and micro entrepreneurs who may be drawn from those who have graduated out of the poverty barrier using microfinance. It is worth recalling here that many universities in USA have set up Small Industry Incubators for creating entrepreneurs who will get out of the incubators with the knowledge (a) to formulate a small/ micro industry project (b) to operate and manage the production process (c) to access highly concessional windows of financing to be put in place by the government and (d) to market the processed output home and abroad. The incubators are also expected to undertake research on the potentially profitable MSME areas and to prepare case study booklets containing appraisal of such ventures. Needless to say, the chance of success of the scheme will be enhanced by the proposed one semester nine credit obligatory deployment of each student of all universities /colleges. Availability of credit at a rate just above the Bank Rate (5%) – 7% or so (and not 10%) without any other time or money cost is also of crucial importance. Bangladesh Bank has made a promising start in formulating a Small and Medium Enterprise Credit Programme with an articulation of ground rules as well as the identification of sectoral coverage district wise. What is particularly good about the Bangladesh Bank scheme is the explicit recognition of the urgency of lowering the size of the refinance window to taka 50,000 (fifty thousand) from the previous level of taka 2,00,000 (two hundred thousand). The government will have to redefine the “small industry” accordingly in its forthcoming New Industrial Policy, 2010. For Bangladesh Bank constant priority, surveillance and monitoring are in order to ensure the success of the scheme so vitally linked to the task of poverty eradication through employment and income generation.

Micro-Small –Medium Enterprise (MSME) Strategy

It is worth reiterating the resolve that by creating an MSME strategy, the country will not in any way minimize the paramount importance of making big strides in large scale industrialization for leap froging the GDP growth. MSME is a link effort in supplementing rather than supplanting the role of the large scale industries where newly emerged sectors (shipbuilding, watch making, leather, ceramics, sports goods etc), the regenerated jute goods sector and other potentially productive sectors will be developed and nursed for diversification of

the economy. Someone may legitimately question the future of the MSME venture in view of the critical energy and power shortage. For a very long time, people like us have been pleading for an expansion of the environment friendly renewable energy strategy. What are involved are (a) a resolute change in the mindset of the government towards a big push in generating solar and biogas energy of up to 1000 MW in the next four years and (b) furthering the good start at the Prime Minister's Office partially solarizing the energy use for its demonstrated patronization in the high and powerful centres of governance for making people believe that solar and biogas energy can be a helpful supplementary force to the electricity supply in the country. The country can take pride and envy about quality and reputation of Rahimafroz Battery now being exported to several countries including India, Nepal and Srilanka. Nature's bounty of having eight to ten hours of bright and strong sunshine eight to nine months a year is also a big positive factor in the spread of solar energy which can now be stored for use in the rainy dark days. The experts also tell that there is an over supply of solar panels in the world and large scale imports are not a problem. The clustering of village residences provide an ideal setting for a small to medium enterprise to use a bigger panel for receiving, storing and distributing solar energy to these houses. With the demand created for energy in the rural areas through the proposed net work of MSME, the stage is set for an expansion of renewable energy i.e solar and biogas energy for powering the agro processing micro and small enterprises acting as vehicles of employment and income generation for poverty eradication. The perspective plan projection of reducing the poverty incidence to 15 percent and the MDG goal of eradicating poverty to half by 2015 are achievable if and only if an employment generating plan is adopted and implemented. An MSME strategy will cause higher local value addtion and is not in conflict with any other stream of economic activities proposed or foreseen to be undertaken in Bangladesh.

Many schemes such as the Mithapukur Area Development Plan of H N Ashequr Rahman and the Four Cow Biogas Energy Project of Dr Mozammel Huq may be further scrutinized for replication throughout Bangladesh for a multi-prong versatility in further vitalizing the economic growth process that prevents rather than create income disparity. Growth with an in-built mechanism for equity as exists in the models cited and in many others in existence in Bangladesh may be holding the key to sustainable human development in the country.

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Importance of WTO System for Development

HARSHA V. SINGH[1]

I am very happy to be with you today, a few months before the LDC IV meeting in Istanbul, an immensely important meeting. In the WTO, Bangladesh is the co-ordinator of the LDC Group and thus, especially with respect to international trade, it has to play a major role for all least-developed countries, and through that, for the process of development itself.

The issues emphasised in the context of trade and development have kept evolving with experience. We have come a long way from the days of dependency theory when trade was seen as a binding rather than a liberating factor. Far from the days of intense focus on import substitution behind high protectionist walls. Also the days when developing country exports faced major tariff escalation in all product areas, and when industrialization was seen as the normal progression from an agrarian economy in the process of development thus under-estimating the value of services in economic growth. And, of course, the days when the entire focus for seeking export markets was on large developed country markets.

All this has changed in a fundamental way. The experience of developing countries with their development process has shown that international trade plays a major role in promoting development through access to larger markets, cheaper and better quality inputs and technologies, ideas, designs, emerging trends, incentives for greater efficiency, and multiple sources for product diversification and growth stimulus, they are all provided by international trade. The crucial significance of trade for a smaller country is even more evident.

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[1] DDG, WTO.

Thus, we can see the evident high value of any system, which maintains and augments stability and predictability in the international trade markets, avoids arbitrary policy changes and disruptions, and provides credible dispute settlement system to address differences. The WTO is such a system. In addition, the WTO is a system which has kept evolving to reflect the concerns of its Members. World leaders have called WTO an insurance mechanism, which also provides a stimulus to growth and peace.

Development has traditionally been addressed as an aggregative concept. However, for each country, development has implied specific and individual efforts and emphasis, while the underlying aspiration and supply side constraints have been broadly similar. Therefore, any desirable system to address the development aspirations of a large number of developing countries has to provide the flexibility and mechanism for dealing with the major diversity among developing countries, which may be agriculture exporters, net food importing countries, defensive in their agriculture trade policy, relying more on services to provide the economic stimulus, land-locked, facing different kinds of constraints, different population size and income levels, and so on. The WTO is such a system with flexibility and focus.

As we have evolved today into an era of communication age, a new sense of pride and potential among developing countries with a better informed population about international relations, fairness in trade has become a major emphasis. This implies a need for a system which is inclusive and responsive to different perspectives to sustain opportunities for development. The WTO is such as system.

The WTO, which is also referred to as the multilateral trade system, provides stability and predictability in international trade. In addition to its disciplines, this system provides a forum for:

- greater transparency and information on trade related policies;
- sharing concerns and perspectives on appropriate responses;
- working on reducing major distortions in global markets so that appropriate incentive mechanisms are in place;
- keeping markets open and thus enhancing opportunities, together with the possibility of flexible response in specified, justified situations; and,
- Aid for Trade, i.e. assistance to promote supply side capabilities of poorer countries to better integrate in the International Trading System and benefit from additional opportunities.

Before considering the importance of WTO in some detail, let us see some emerging insights into the evolution of international trade opportunities that have led to greater development of all.

Emerging insights

One of the strongly emerging insights is that trade involves multiple parts of a value chain, which means that the final product includes components from various countries. The value chain concept shows many countries are inter-linked in trade of any specific product and they benefit together through these linked international trade transactions. To preserve and promote such supply chains, it is crucial to have a system which preserves stability and predictability across all the countries concerned. This task can be performed only by the WTO or the multilateral trading system.

Another important recent experience is that economic development is no longer a sequential progression where industrial growth is absolutely necessary for development of the economy. Countries can have their main stimulus for development also from growth of agriculture or services. India is a good example of development led by services sector, an area which more and more developing countries now examine as a possible source for providing quick growth. Today we have the vision of Digital Bangladesh, an important initiative to strongly progress in the area of services, providing additional areas of services revenues in addition to the remittances that are received from Bangladeshi workers abroad. An important experience to bear in mind in this context is that trade in services is better promoted when a country develops regulatory capacity in the relevant sectors. The multilateral trading system can make a positive contribution for such efforts.

An unusual though positive recent experience has been the relatively quick turn-around of the global economy after being affected by the largest economic decline in the past seventy years. The special contribution of the WTO to the relative stability of the external markets was especially evident during this recent period of global economic downturn in 2009. The system of WTO rules and its monitoring of various actions by its members helped to keep markets open during the 2009 major economic decline. The monitoring Reports of the Director General which were discussed by all Members were an instrument of peer pressure to maintain open markets.

The WTO not only provides an impetus to keep markets open but during the 2009 crisis it also emphasised continued easy availability of trade finance. Concerted efforts were made to highlight the fact that trade finance is different from other types of finance, being more of short duration and with very high rates of recovery. Thus, the regulatory restraints on trade finance should be more liberal than for other types of finance. This emphasis of the WTO Director General was provided together with other international institutions, which provided impetus for the G20 Leaders to make special allocations for such funding. World leaders, including the G20 leaders, have recognized the high value of this insurance provided by the WTO to the recovery process.

This experience has also shown that the WTO is not just a fair weather friend; it is especially valuable when we face difficult times.

Regarding international trade and agriculture, an area of particular importance to large number of developing countries, I would like to quote Mr. Jaques Diouf, Director General of the FAO. He said regarding international trade, that we must "*devise agricultural development policies, rules and mechanisms that can forge an international trade system that is not only free but also equitable*". He elaborated further that, "*We must correct the present system that generates world food insecurity on account of international market distortions resulting from agricultural subsidies, customs tariffs and technical barriers to trade, but also from a skewed distribution of resources from official development assistance.*" His reference to customs tariffs here is as a barrier to trade, which needs to be reduced, not as a policy, which should raise further barriers. The efforts he is talking about improving the system are the focus of the Doha Round negotiations at the WTO.

Historically, the experience of LDCs shows that available opportunities can be adequately achieved only with capacity improvements. Such capacity augmentation is required also because now, more than ever before, changes in the economic environment take place due to developments far beyond the control of individual nations and countries need considerable ability to respond to the changing circumstances. Any co-operative international system such as the WTO, which helps to maintain greater stability and predictability in global markets, contributes in a major way to help make common positive response to reduce market risks. For this reason the multilateral trading system has been referred to as an international public good.

Addressing the supply side constraints of LDCs requires improving:

- infrastructure and skills;
- facilitating growth of the private sector;
- financial assistance from abroad; and
- promoting Foreign Direct Investment because this helps augment funds, skills, technologies and export market linkages.

The Members of WTO are importantly making major efforts through Aid for Trade, and within that framework through the Enhanced Integrated Framework, to focus on these objectives, to add to the several benefits provided by the multilateral trading system. I must congratulate Bangladesh for its recent membership of the EIF.

The WTO system and the Doha Round negotiations can contribute for Bangladesh potential gain in terms of all these trade-related aspirations, which in summary form can be seen in the points which LDCs have emphasised in the context of the forthcoming LDC IV meeting, namely to:

- diversify trade and production bases into dynamic new products and services;
- diversify export products and markets to non-traditional destinations;
- integrate trade and trade capacity building policies into national development strategies;
- maximise the benefits through development of effective labour market standards and institutions;
- strive to conclude the Doha Round of trade negotiations as soon as possible with an ambitious, comprehensive, balanced, equitable and development-oriented outcome.

The WTO or the Multilateral Trading System

The WTO system, also called the multilateral trading system, has 153 members. Of these, 32 Members are LDCs. Presently 30 countries are in the process of accession to the WTO of which 12 are LDCS. Thus, the system has a strong place and attraction for the least-developed countries, as it enhances the available economic opportunities.

The WTO is based on the principles of non-discrimination and agreement by Members to abide by disciplines, which give stability and predictability to the international trade regime. Let me recall quickly that the system includes:

- disciplines which prevent arbitrary or discriminatory behaviour,
- notifications by Members to provide transparency to their actions,
- exceptions to the rules for justified reasons, subject to specified procedures being followed by the Member,
- credible dispute settlement process,
- Committees or Councils through which implementation of the Agreement is overseen by all Members.

Among international organizations, the WTO has the most democratic system. Each Member, big or small, has one vote. Decisions, however, are usually taken by consensus, and like-minded members join together and form groups to express their concerns or aspirations. This process gives greater strength to smaller countries.

The value of the multilateral trading system is high for all countries, small and big, but it is far greater for the smaller nations. It provides a powerful platform to small countries so as to ensure relatively more fair and objective treatment, greater market opportunities, and assistance with capacity augmentation.

The fundamental contribution of the WTO system is the **stability and predictability** provided by it to the global markets. This positive feature cannot be over-emphasised, especially for a small economy. In present circumstances when the Bangladesh economy is making a strong successful transition from aid dependence to reliance on trade, this is a very important component of its growth and development initiatives. However, capacity augmentation remains necessary for achieving higher and better development results, and the WTO process focuses importantly on this aspect.

a) Capacity Augmentation

Developing countries have benefited from a large number of national activities organised by the WTO. For example, between 2008 and 2010, Bangladesh benefited from several workshops on a variety of topics covering the Enhanced Integrated Framework ; Non Agricultural Market Access Issues and Negotiating Matters; WTO Agreement on Sanitary and Phytosanitary Measures; WTO and the GATS; WTO Trade Remedies and Subsidy Disciplines; Trade-related Intellectual Property Rights; Upgrading of the WTO Reference Centre, in partnership with the International Trade Centre.

Officials were invited to participate in over 30 Regional Seminars and training events as well as Geneva based activities. Subjects covered included: Trade and

Environment, TBT, SPS, Agriculture, Dispute Settlement, Government Procurement, NAMA, Regional Trade Agreements, Services, Trade and Development, TRIPs, DDA, Trade Negotiation Skills, the WTO outreach workshop for Parliamentarians, the Workshop on Market Access Issues; Introduction courses for Least-Developed countries; Advanced Thematic Course on WTO Dispute Settlement, Joint WTO/WIPO Advanced Thematic Course on TRIPs, Specialized Course on Trade and Environment, Specialized Courses on TBT and SPS, WTO/WIPO Workshop on Priority needs for technical and financial cooperation, Workshop on Environmental Goods and Services, Workshop on Private Standards, workshop on the role of international standards in economic development, TBT workshop on Good Regulatory Practices, the Geneva TBT Sixth Special Meeting on Procedures for Information Exchange for Officials Responsible for Notifications and Enquiry Points and Trade Facilitation workshop.

35 officials completed several eTraining modules. Bangladesh operates a WTO Reference Centre. Bangladesh participated in the Singapore Regional Trade Policy Course for Asia and Pacific economies in 2008-10. The importance of higher capacity for development policy process is evident.

For 2011 the priority areas of Bangladesh for trade-related assistance are network infrastructure; increasing competitiveness; trade facilitation; adjustment costs; and export diversification. Specific sectors include improvement and modernization of telecommunications; capacity enhancement for power and water sectors; development of non-traditional exports; further infrastructural sectors improvements and modernization of ports and customs facilities.

All these activities illustrate the extensive support Bangladesh has got in the WTO, which will help it provide several opportunities through trade to progress in its objectives for development. Capacity augmentation programmes will continue taking account of the areas that have been emphasized by Bangladesh itself. International trade is a very important part of the new Poverty Reduction Strategy Paper of Bangladesh.

Aid For Trade

Regarding capacity augmentation, the Aid for Trade initiative of the WTO has provided a platform for developing countries with trade related projects to approach development funding agencies for assistance, and for donors and beneficiaries to exchange experiences, address concerns and move forward with positive efforts to make trade more of an integral part of both development

planning as well as the funding mechanisms. Through this initiative, the WTO brings together various development project funding agencies such as the World Bank, Regional Development Banks, and bilateral donors to consistently and positively focus on the trade-related capacity improvement projects identified by developing countries. The very high political profile given to these activities by the Aid for Trade initiative has helped achieve efficiency through co-ordinated response on development funding. This has also helped countries to mainstream international trade in policy making and facilitated a comprehensive focus on the trade-related activities and funding required for both software and hardware that remove supply constraints.

Under the Aid for Trade programme, the WTO collects periodic information from stakeholders through questionnaires to understand the priorities of specific countries and the areas where greater focus should be given. In terms of the self-assessment questionnaires, 111 have been received, including 70 from partner countries and 26 from LDCs.

This information will be relevant in the context of the third Global Review for Aid for Trade in July 2011, which is a major event to examine the effectiveness of Aid for Trade projects, and to learn and interact with each other to develop further projects and funding opportunities. The agenda of the July Review are still under preparation, but we know that the main themes will include trade facilitation, the role of the private sector, South-South co-operation, and regional integration, with a specific focus on Africa. Individual case stories will be discussed to examine the effectiveness of the Aid for Trade initiatives as implemented on the ground.

As of 10th February last week, almost 175 case stories had been received for the Aid for Trade Review in July. These include contributions from donors (including MDBs), partner countries, international organisations and the private sector. 27 case stories have been submitted by LDCs, including 3 from Bangladesh.

b) Examples of Best Practice and Better Information on Requirements to Access Markets

The WTO provides an excellent opportunity to learn through interacting with other nations about their practices and success cases or even difficulties. The WTO's notification process and the possibility of seeking more information from countries concerned provide a one-stop base to learn about market conditions and policies in other markets. The discussions in WTO's Committees cover various issues and even developments in other related areas which may overlap with international trade issues. As a result, the likely market trends and concerns are

known quickly, including the specific conditions that exporters may need to fulfil in other markets. WTO members have access to enquiry points in markets of interest, and individual concerns can be discussed with all countries which may be of interest either for exports, imports or investment. Meetings, conferences, seminars, and information sessions are organized to discuss emerging issues, and mechanisms are provided to facilitate interaction between exporters and importers. Of particular interest may be information about emerging product markets, which could provide useful ideas to policy makers at home.

The Secretariat of the WTO is always available to assist the Members in all these and other initiatives.

c) Be an active partner in shaping both the global developments in multilateral fora and those pertaining specifically for Least-developed countries

In addition to information, best practices, and emerging products of interest, Membership of the multilateral trading system provides a basis to be actively involved in shaping the conditions of international trade that would affect one's interests. Without being a member of the WTO system, such an opportunity is not available.

An important concern faced by LDCs is that their export markets may be suddenly lost if a large importing country imposes some standards relating to technical barriers or health and safety concerns. The WTO system provides it with Committees to discuss such concerns, to get others who may be similarly affected to raise such issues, and use the meetings of the relevant Committees of the WTO to get more information from the importing country experts on the basis for the actions being taken. Once again, technical advice or assistance in clarifying certain issues can be provided by the WTO Secretariat.

In addition to specific, market related concerns, WTO also periodically provides possibilities of raising systemic priorities for getting high level attention at the WTO Ministerial Conferences. This year, the Ministerial Conference is scheduled to be held from 15th to 17th December. Bangladesh should prepare well for its participation, especially after having a prominent role in the group of LDCs.

d) Use the disciplined approach to policy-making as reflected in the WTO tool-kit

The WTO framework of disciplines is about good governance. Good governance both at the level of the individual country as well as at the collective level of all

153 WTO Members. The WTO allows temporarily resorting to market restrictions when justified for specified transparent policy objectives. Even then, certain specific procedures should be followed if implementing market restrictions. This framework allows greater certainty and progressive opening of markets by various WTO Members in line with their capacities. Since this discipline is followed by 153 Members, the global markets are kept open and progressively can be opened further for the benefit of all.

This discipline of a stable policy framework under the WTO system is an insurance against arbitrary behaviour, and in this manner it provides a positive brand image which is a major assurance to investors and traders because it allows economic agents at home and abroad to perceive the conditions in Member countries with greater degree of certainty. This encourages higher interest in promoting economic activity through investment and private sector growth in the economy.

e) Get access to new markets and develop new product areas; be in touch with possibilities of growth and diversification

The work within the WTO Committees and negotiations provide a possibility to address market restrictions, seek new markets and develop new product areas. Let us see some examples of the various possible benefits.

The predecessor of the WTO, the GATT, which was the multilateral trading system till it evolved into WTO, was the place where developed countries started to decrease their tariffs in a major way for a large variety of products. Since the WTO system provides most favoured nation treatment, such benefits of increased market access are available to all Members. For certain products, however, tariffs have remained high, and presently through the Doha Round negotiations the focus is to reduce these tariffs in a major way.

Likewise, countries have better market access opportunities when WTO related training improves capacities to address sanitary and phyto-sanitary measures for agriculture products. This makes the relevant products more easy to sell abroad and also raises the domestic standards. Likewise, the Committees and Councils provide a forum to address standards-related concerns through its mechanisms. In the case of standards, several instances have shown that the process of discussions amongst the exporters and importers which results in better information can itself help address more than half of the perceived problems with respect to standards-related market barriers.

Similarly, countries can better prepare for approaching export markets through the WTO database on standards, for both Technical Barriers to Trade and for Sanitary and Phytosanitary Measures.

Knowledge of the IPR related provisions can help develop geographical indications for goods and services, thus opening up new market opportunities.

A potential benefit arises also because of the credible dispute settlement process of WTO. In this process too, it is worth noting that more than half the disputes are addressed through the process of discussion and consultations amongst the parties concerned. It is therefore a very efficient process of dispute settlement.

Another possibility of gain could be from the WTO discussions of trade policy reviews of different countries. These also show experiences of other LDCs and provide a basis for seeking additional markets for newer products.

Another important aspect is that Members of WTO raise and discuss emerging problems. For example, when there are problems arising due to certain policy measures, which limit markets or exacerbate an existing situation (such as food price rise), the WTO provides a forum to bring attention to these issues.

f) Extending the reach of small Members

In the WTO, smaller countries with broadly similar interests, such as the LDCs, function as a group in several meetings. Their representative may attend the relevant meetings and provide a feedback to the whole group. This extends the scope and reach of small countries in effectively participating in the system.

Such co-ordination is also important because now trade issues are no longer based majorly on north / south or developed / developing countries. Market access is sought by certain developing countries from other developing country markets. Even the developed countries are now focusing on market access from certain developing countries. The economic powerhouse in the world is no longer the G8 countries. It has now extended itself to the G20 group of countries. New concerns and possibilities have arisen as a result, emphasising the need for co-ordinated and consensual action, a hallmark of the WTO system. Several of these aspects are also being addressed in the Doha Development Agenda under the Doha Round Negotiations.

g) Doha Development Agenda

I have noted earlier that one of the important objectives emphasised by the LDCs in the context of the LDC IV meeting is to "*strive to conclude the Doha Round*

negotiations as soon as possible with an ambitious, comprehensive, balanced, equitable and development-oriented outcomes."

I wish also to recall Target 2 of Goal 8 of the Millennium Development Goals or MDGs, which states as follows: "*Develop further an open, rule-based, predictable, non-discriminatory trading and financial system*". These are the same conditions as used to describe the WTO system. We can thus see the relevance of the WTO system for development. The focus here is not to devise a new System but to improve the existing one for better achieving the relevant objectives. Negotiations in the Doha Round are precisely an effort to do this.

Just as each of us tries to balance achieving greater opportunities and concerns, the Doha negotiations combine a balance between greater disciplines and providing flexibilities to developing countries. Flexibilities are an integral part of the final deal, reflecting various types of equity concerns. Thus, in Doha negotiations, developed countries take greater obligations than developing countries, and within developing countries too there are different levels of obligations. For example, the levels of obligations differ between more advanced developing countries, small and vulnerable economies, least-developed countries, and recently acceded Members of the WTO.

Most of the issues in the Doha Round negotiations have been completed and some which are left are now being addressed in an intensive manner treating this year as a crucial window of opportunity to complete the negotiations.

The structure of the Doha Round results include three major aspects for LDCs:

- defensive negotiating interest of LDCs, which implies lower levels of obligations;
- other negotiating interests, which aim at getting others to open their markets for LDCs; and,
- steps to be taken for help with enhancing capacity.

All the defensive interests of Bangladesh have been protected in the results that we have in the Round. Bangladesh does not have to undertake any additional obligation. It will be able to resort to the special provisions contained in agriculture special safeguard mechanism and the special products. Bangladesh 's concerns in each area of agriculture disciplines have also been covered by the results that are already on the table. It is noteworthy for example, that as LDC/NFIDC Bangladesh is entitled to additional flexibility with respect to export credits and food aid.

Bangladesh's interests are thus to work on opening the markets of others for its exports. Through Duty Free Quota Free or DFQF, LDCs will have zero duty for at least 97% of their products exported to developed countries. In effect, DFQF has been implemented in virtually all developed countries and the product coverage ranges from 97% to 100%. Certain developing countries have also provided DFQF covering large extent of the product coverage. Bangladesh together with several other countries is asking for higher coverage than 97% as a beginning point from a major developed country market. In this process of discussion, agreement has been reached to provide meaningfully enhanced market access for all LDCs. Bangladesh still has an issue regarding getting easier market access for some of its major export items under the faster tariff reduction provided to disproportionately affected countries. Work on this is continuing.

In addition, the Members are also addressing the issue of simplifying the rules of origin for preferential trade.

In the case of agriculture, development opportunities are provided in the Doha Round results in the text available till now, through greater tariff reduction for tropical products, from low tariff rate quotas provided in developed country markets for certain specified products, the decrease in tariff escalation, which helps with greater value addition of exports, and a more level playing field vis a vis the rich countries because their export subsidies will be phased out, and other subsidies will be curtailed.

The results from the negotiations on non-agriculture market access will address tariff reduction through DFQF which I just mentioned, as well as the overall reduction formula. It will also address to some extent the important concern relating to non-tariff barriers. Negotiations are going on to develop disciplines on non-tariff barriers, and some of these results will have direct relevance for addressing Bangladesh's concerns on standards used as trade barriers to their exports.

Similarly, in the area of services, an area with significant potential for Bangladesh and several other developing countries, the WTO Members are very close to developing the text of a Services modalities for LDCs under which preferential access will be provided to LDCs services exports. The benefits are obvious from this. Take for example the positive opportunities it will add to the major initiative of Digital Bangladesh launched by Bangladesh. The overall results in the services negotiations under Mode 1 will also mean a substantial increase in income generating opportunities.

I also want to emphasise the importance of Trade Facilitation and the results in this area under the Doha Round negotiations. Negotiations in this area provide a win-win opportunity, because better trade facilitation by all will make it easier for developing countries to access other markets and it will improve efficiency and reduce costs of own exports. It will also help Bangladesh rise up from its present 107th position in the list of countries covered by the World Bank to show the relative ease of doing business in the country. Trade Facilitation is an area where some studies have shown that the benefits of a successful conclusion of the Doha Round negotiations will be particularly high.

There will be other positive results in different areas of the negotiations with positive implications for growth and development, including a greater focus on helping with capacity augmentation.

Since we are dealing with changes that are system oriented, these benefits will be available to all Members, leading to a rise in economic activity and development prospects for all.

With the help of all these benefits, present and potential, from the multilateral trading system, Bangladesh will be in a better position to address the supply side constraints, achieve more market access, and help raise its domestic growth with greater equity. This will help increase the average growth rate in Bangladesh above the 6.4 per cent annual growth rate, which according to the Economist Intelligence Unit, it is expected to achieve during the next four years.

As structural changes take place in the world, the emerging tectonic shifts will increase the pressures for taking protectionist steps. For world growth, and particularly for maintaining and augmenting developing country opportunities, these pressures will create adverse conditions. The WTO is a major forum for addressing these systematically, and providing the insurance of a stable and valued system for all while doing so. We need to preserve and use this system, and also focus on a successful conclusion of the Doha Round in the very near future. The momentum of the energy, which we can see in the context of the World Cup, should continue this year to enhance the development opportunities that are inherent in this global public good, the WTO system.

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Dynamism and Sclerosis in Bangladesh Labour Market

ASHRAF UDDIN CHOWDHURY[1]

Abstract

There is lack of serious studies on employment situation of Bangladesh at the aggregate level. This study partially fulfills this gap. Some sclerotic aspects of the labor market – high level of unemployment, underemployment and low level of industrial employment etc. are well known. But some emerging dynamic characteristics of the labor market – not known or poorly understood – are brought to light in this study besides setting the records of unemployment and underemployment etc. straight.

1. Introduction

Development implies improvement of the quality of people's lives and expansion of their ability in shaping their futures. In common parlance the route to development is referred to raising per capita income but opportunities to equitable education and jobs and better health and nutrition etc. also play important role. Since income from work offers the main ingredients and respectable means of living condition and wellbeing of the people, it is the expansion of employment, particularly regular wage employment, for women and men in conditions of freedom, equality, security and human dignity that break the cycle of poverty. It can be mentioned that although economic growth has been a vehicle for poverty reduction in many countries, it has not been instrumental to lift many others to break their cycles of poverty.

1. Professor of Economics, University of Dhaka

The labour market of Bangladesh at the aggregate level has been a surprisingly less researched area. Due to the lack of serious studies, some dynamic changes that have been taking place are either not known or pooly understood. As such much of our perceptions about the labour market are based on micro level studies and sketchy information that often stand at odds with the overall economic development obtaining in the country. Although labour market conditions are not monitored continuously, Labour Force Survey (LFS) and Household Income and Expenditure Survey (HIES) are conducted intermittently, albeit not at regular intervals. It is possible to bring to light some important characteristics of the labour market and their trends from these surveys which the present study aims at.

2. The Issues

2.1 Unemployment

A central issue of the labour market is the unemployment rate about which misgivings abound. The ludicrous rate of about 4.0 percent unemployment estimated by the Bangladesh Bureau of Statistics (BBS) following the ILO-method does not convey the labour market slack in Bangladesh. In the absence of serious macro level studies of the issue people make various conjectures. At one end, applying the text book notion of frictional unemployment on BBS's 4 percent unemployment estimate a former finance minister remarked that Bangladesh was experiencing more than full employment. At the other end, fantastically high unemployment rates are imagined on the basis of extreme cases of some micro level condition. Against this backdrop the study aims at setting the much needed record straight.

2.2 Underemployment

As much as open unemployment, underemployment is an issue needing correction of record. The labour force surveys of the Bangladesh Bureau of Statistics estimate underemployment rate by considering all people who work less than 35 hours per week including people working less than 15 hours per week. It will be argued later that people working less than 15 hours per week are virtually unemployed. This means that the study also needs to set this record straight.

2.3 Fulltime Employment

Labour force net of open unemployment and underemployment is but fulltime employment. Although this is the predominant category of the labour force, we

are not much aware of what is happening to this important source of livelihood. In fact, most of our talking about changes of economic landscape ignores the changes taking place in this aspect of the labor market.

2.4. Transformative growth and employment

Another important issue is transformative growth of the economy and the associated employment scenario. Much dynamism has been experienced by the manufacturing sector in recent years with its increased contribution to incremental GDP. Understanding of associated growth of employment is of critical importance from long run consideration of employment potentiality of industrialization. The services sector which has emerged as the largest contributor to GDP should also be watched out to see its employment generating role. And agriculture–once the largest provider of GDP and employment is of much interest to see its transformative stage from the point of view of the Lewis model of unlimited supply of labour.

2. The Record

3.1 Employment–Underemployment situation

Table-1 provide facts for the review of the issues raised above for the 10 years from 1995-96 to 2005-06 sub-divided by a half decade. First of all, we consider unemployment in view of the prominence it gets in discussions at all levels. We take the extended definition of ILO for consideration of unemployment.

According to this definition unemployed people are those who had no work at all during the reference period plus the people who worked less than 15 hours per week. In a country like Bangladesh with more available hands for work than the requirements, people who work less than 15 hours per week get payments, if paid at all, which is of little or no consequences. But these are most likely to be unpaid casual family helping hands and can be deemed unemployed.

Over the whole 10 year period, unemployment–people with absolutely no work and people working less than 15 hours per week - has risen from 3.08 millions to 6.90 millions representing annual growth of 8.40%. Against the labour force growth rate of 3.21% per annum, the unemployment growth rate is a matter of great concern. It is instructive to mention that unemployment declined in absolute number in the sub-divided period i.e from 1995–96 to 1999–00.

In defining underemployment we have considered people who worked 15–35 hours per week during the reference period. People working less than 15 hours per

Table 1: Bangladesh Labor Market Profile

(figures in millions)

Item	1995-96	1999-00	2005-06	1996 -06
Labor force (m)	36.0	40.7	49.4	
		(2.49)	*(3.93)*	(3.21)
Total employment (m)	33.01	38.2	42.5	
(full time + underemployment)		*(2.96)*	*(2.16)*	(2.56)
% of labor force	91.69	93.85	86.00	
Full time employment	22.01	30.61	36.03	(5.05)
		(6.82)	*(3.31)*	
% total employment	66.67	80.13	84.77	
Underemployment (m)	11.00	7.59	6.47	(-5.44)
		(-7.70)	*(-3.23)*	
underemployment rate	31.7	18.6	13.1	
Unemployment (m)	3.08	2.51	6.90	(8.40)
		(-4.16)	*4.83*	
Unemployment rate (%)	9.13	6.16	14.00	
Regular wage employment	3.9	6.48	6.6	(5.41)
		(10.69)	*(1.91)*	
% of total employment	12.07	10.68	15.29	
Day labour (including others)	5.80	9.04	10.00	(5.60)
		(5.89)	*(2.04)*	
	17.9	24.36	23.53	
Self-employment	10.43	18.2	19.9	(6.67)
		(11.78)	*(1.80)*	
Unpaid family worker	12.21	4.70	10.3	-
	2.502	*1.547*	*2.332*	
	32.20	12.05	24.23	
Sectoral employment	**33.01**	**38.20**	**42.5**	(2.56)
All sectors		*(2.96)*	*(2.16)*	
Agriculture	16.38		18.36	(1.15)
Share in total	49.6		43.2	
Industry	3.51		5.3	(4.20)
Share in total	10.63		12.47	
Services	13.14		18.84	(3.66)
Share in total	39.80		44.33	

Note: All employment is defined as full time plus under-employment, full time employment as number of people working over 35 hours per week, underemployment as number of people working from 15 to 35 hours per week; unemployment as number of people working less than 15 hours per week including those who had no work but looking for job. The blanks in the column indicate non-availability of data. Figures in parentheses in the last column indicate annual compound growth rate for the 10- year period.

week are excluded from underemployment category because they are already included in the unemployed category. Underemployment – once a high scale group of labour market has gone down from about 11 million in 1995-96 to about 6.5 million in 2005-06 representing an annual negative a growth of a little over

5.0 percent. In the same vein, the share of underemployment to total employment has fallen from about 32 percent to about 13 percent during the period. Noteworthy is the fact that the fall of underemployment was dramatic in the first half of the decade. Needless to mention that this is a healthy trend of the labor market.

As regards the location of underemployment, it is highly concentrated in the agricultural sector. About 25 percent of employed people in agriculture were of underemployed category in 2005–06. Industry and services sectors' underemployment are at low levels–about 7 percent of the respective employed people.

Fulltime employment consisting of people who work more than 35 hours per week is the most important means of livelihood for most of the people. It, therefore, constitutes an issue of heightened importance in the discourse relating to labor market. A very dynamic aspect of labour market is that fulltime employment is emerging to take up a very important place in the employment scenario. Over the decade it has grown from 22.01 million to 36.03 million implying an average annual growth of 5.05% which is 53% higher than the growth rate of the labour force. In respect of share to total employment it grew from about 67% in 1995–96 to about 85% in 2005–06. Despite the robust growth of fulltime employment, total employment (fulltime + underemployment) grew at 2.56 percent rate – lower than the growth rate of labour force, the main reason being the persistent decline in the rate of underemployment.

3.2 Wage and non-wage employment

For a better understanding of the state of employment, it is important to qualify fulltime and underemployment conditions in terms of system of payment, and most importantly the type of activities the people are engaged in.

On system of payment, generally the following types are discernible

- regular wage employee in formal and informal sectors
- day laborers
- self-employed persons and
- unpaid family workers

Regular wage employment, a very preferred type of employment, shows up a robust annual growth of 5.41 percent over the decade – a much higher growth rate than that of the labour force. Day labors on daily wage basis also grew at similar robust growth. It is of interest to note that yearly average wage employment growth was very high–over 9 percent – during 1995–96 to 1999–2000.

Self-employment – now the most important component accounting for about 47 percent of total employment – has demonstrated robust annual growth of 6.6 percent during the decade. In the first half of the decade the annual growth of self-employment was spectacular being nearly 12 percent. Unpaid family workers exhibit a dwindling trend. The number of working people of this category has declined from 12.21 millions in 1995–96 to 10.3 million in 1999-2000 amounting a negative annual growth of 1.71 percent. The decline of this category of employment, needless to mention, is a happy augury.

As regards underemployment relating to wage and non-wage labour, it can be said that underemployment is mostly concentrated in self-employment and unpaid family workers categories. It is unlikely that wage earning people would be underemployed.

3.3 Sectoral Employment

It was argued above that for a better understanding of employment situation knowledge of people working in various activities is important. To this effect, employment in the three broad sectors–agriculture, service and industry – is examined. At the beginning of the decade, agriculture accounted for about 50 percent of total employment. The services and industry sectors' shares were, respectively, about 40 and 10 percent. During the decade the industrial sector grew at an annual rate of about 7.00 percent and the services sector at about 6 percent. Commensurate with this growth performances, employment of industry and services sectors grew, respectively, at 4.2 and 3.6 percent raising their shares in total employment to 12.5 percent for industry sector and 44.3 percent for services sector in 2005-06. Agricultural output grew at an annual rate of about 4.00 percent but its employment grew at a slower rate of 1.15 percent per annum and its share of employment declined to about 43 percent.

4. Strength and Weakness of Employment Scenario

4.1 Weakness

- Bangladesh's labor market is not an active one to have a low rate of unemployment and people do not wait for long time to get a job. Instead there is large pool of unemployed people with not much hope to get employed soon.
- A huge pool of underemployed has long been an unhealthy feature of the labor market. Underemployment exists in all the three broad sectors with heavy concentration in agriculture. It is an important reason of low

labor productivity in agriculture.

- Industrial sector accounts for a very low share of employment. Industrialization needs to gather pace for employment generation.
- Day labor growth has been robust which does not augur well from the point of view of job security.

4.2 Strengths

Fulltime employment has gone up at a robust rate than the rate of growth of the labor force - raising the share of this much-needed employment to about 85 percent of total employment in 2005-06. Concurrently and logically underemployment has declined significantly.

Regular wage employment also demonstrates robust growth; so also is the self-employment growth.

Agriculture continues to expand employment. But the services sector appears to be most promising with as much employment as in agriculture but with low level of underemployment than in agriculture and nearly 4.0 annual growth of employment. The industrial sector is also absorbing labor with an annual growth rate of about 4.0 percent, albeit, the level of employment is very low.

5. Conclusion

Bangladesh labor market is characterized by dynamism as well as sclerosis. On the sclerotic aspect, underemployment is high, industrial employment is low, underemployment is still significant and the proportion of day labor is quite high. On the dynamic side, fulltime employment is increasing at a robust pace and self-employment is also expanding at a high rate. Employment is expanding in all broad sectors with the services sector demonstrating much hope and promise.

Between the formal and informal sectors, the latter provides nearly 80 percent of total employment. This points to the fact that potential drivers of employment growth are the off-farm activities in small and medium sized firms. That is, rural entrepreneurship appears to play a key role in generating employment and overcoming poverty.

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The Determinants of Livelihood Graduation of Rural Poor Women in Bangladesh: Experiences from RMP

ABDULLAH-AL-MAMUN[1]
FARZANA BILKES[2]

Abstract

Rural Maintenance Programme (RMP), operating in rural Bangladesh since 1983, has been proved effective in poverty alleviation of destitute women. Economic emancipation of the women and having sustainable livelihood is one of the two mandates of RMP. The project employs the women in maintaining rural earthen roads for a four-year cycle and provides training on different life skill issues. Research interest of this study is to identify the significant inputs of RMP as well as the contextual community and household determinants, and investigate the extent of influence of these inputs on the livelihood of the women applying multinomial logit model. The results show that regular wage received from employment is the most significant input of RMP. Among different issues of training that RMP provides to the women, nutrition training is found significant. Other than RMP inputs, electricity, skill based technical training, organizational affiliation, lower household size and dependency ratio are observed significant in overcoming poverty burden.

1. Ex-Assistant Project Coordinator, M&E unit, Research, Evaluation & Development, RMP, CARE.
2. Ex-Project Coordinator, Research, Evaluation & Development, RMP, CARE. The authors convey their heartiest thanks to Mr. Nick Southern, current Country Director, CARE B for allowing them to publish the article. They also gratefully acknowledge the immense support of Dr. Philip Tanner, former-Programme Coordinator, RMP, colleagues from Operation, PSU and RED Unit, RMP, and the contribution of Mr. Mozammel Haque, former Assistant Project Coordinator, Research & Partnering (R&P), RMP. Mr. Mozammel was involved in initial works of the study. At field level, Mr. Mustafizur Rahman, PDO, R&P, and his team members were involved in the study.

Introduction

Rural Maintenance Programme (RMP) is a large poverty alleviation programme that covers 93% of the rural areas of Bangladesh. The programme began in 1983 with CIDA and Government of Bangladesh funding. CARE Bangladesh implemented the programme across Bangladesh from 1983 to 2006. RMP was implemented in three phases – all funded by the GoB and CIDA through the proceeds of food aid donated by Canada. In 1983, Phase I was initiated as a food-for –work road maintenance project within a food security framework. In 1992, RMP was redesigned as a food security cum sustainable development project by adding an income diversification component (IDC). The redesigned RMP continued as a phase II until 1994. RMP was further expanded through the addition of a capacity strengthening component (CSC) targeting local government institutions. CIDA and GoB continued as sole funders of RMP of phase III. Starting in 2001, the European Commission (EC) contributed to funding as well until mid-2006. GoB took over sole responsibility from CARE Bangladesh for the programme's total funding and operation as of mid-2006.

Rural Maintenance Programme (RMP) works with the poorest and the most socially disadvantaged women, the majority of whom are divorced, separated, widowed, outcast or otherwise destitute; and who are typically heads of single parent families. The Programme provides employment for them in rural earthen road maintenance activities. In doing this, the Programme maintains two mandates: long term socio-economic development of the disadvantaged women, and rural road maintenance. Recruited women are often landless, have no house or shelter of their own, possess very limited assets, have very few employment opportunities apart from irregular labor, and so are only able to feed their children 1-2 meals daily. RMP operates under two components, namely Income Diversification Component (IDC) and Road Maintenance Component (RMC). IDC provides various training in different issues, counseling and follow-up to the women. RMC deals with road maintenance activities.

Twenty-two years have been passed since RMP started maintaining rural earthen roads by the women. In the process of large scale implementation the project has taken a unique shape to cater to the needs of the destitute women. Various studies and assessments reveal that the women are have higher income level from their own income generating activities (IGAs) than the level once they had before joining RMP. Consequently the enhanced income affects their consumption practices. They may invest on schooling of the children, health and nutrition, clothing, housing and other areas for future and long-term human development,

the project expects. On the other hand, some women are seen going back to the destitution level, and there might be various reasons or hindering factors functional behind the failures. Analyzing livelihood status of the beneficiaries and the associated inputs in any development project always draws the attention of the policy makers and the practitioners. From this point of view this study focuses on identifying the significant inputs of RMP as well as the external causes for the changes in livelihood of the women. Perspective is to revisit the programme design, policies and strategies.

Answering the question "what are the inputs that influence the livelihood sustainability of graduated RMA women?" involves answering two questions. Firstly, "to what extent the RMA[3] women have been successful in sustaining their livelihoods?" And "what are the sources of variation in achieving success and what is the power of each of the inputs in explaining this variation?" The interest centres on knowing which components or inputs of the project are adding significant value to achieve the desired goals and objectives. Also the presence or absence of specific community or any other contextual determinants behind the success or failures need to be explained. Research interest of the study is to identify the significant aspects of RMP and the extent of influence of these inputs on the livelihood of the women applying logit model. Based on the findings recommendation will be made to look for further options for better livelihood of the women considering the existing socioeconomic, cultural and geographic settings of the respective areas.

Methods and Materials

It is a cross sectional study where the information about income of a household and the other factors related to the household is considered simultaneously. Both intervention and control women were interviewed to assess their livelihood status. Quantitative technique is used in the existence of the causes and their degree of accountability in bringing about the sustainability of the graduated RMA women's and non-RMA women's livelihood. The advanced econometric models such as multinomial logistic regression model are used and fit them to identify the inputs significant for livelihood changes. Some association tests were also performed to understand the association between different socio-economic inputs and income classes. The sampling design that is used in the study is appropriately performed

3 Women are organized into 10-person work crews, named "Road Maintenance Associations" (RMAs), with one RMA per Union. Each RMA is then assigned responsibility for maintaining approximately 20 km of earthen rural roads.

based on the geographical location and also determined the size of the sample by using the appropriate formula. A stratified random sample was drawn for quantitative data gathering. The survey was conducted over 276 women, 146 women from RMP and 130 from control group.

Economic classification of any household seems apparently easy task, but it involves a bit complex process. Based on the available data from Household Income and Expenditure (HIES) Survey periodically conducted by Bangladesh Bureau of Statistics (BBS) in this study income classes are defined based on consumption expenditure. The non-poor households are those who have crossed the boundary of upper poverty line, and the moderate poor are those who lie between upper and lower poverty line. The households facing extreme level of poverty lie below the lower poverty line. The extreme poor are those individuals who cannot meet the minimum needs of livelihood, and in terms of calorie intake, they are not able to afford to consume more than 1805 k. cal per day. The moderate poor are those who lie in between the upper and lower poverty lines and cannot maintain a minimum living standard. The upper poverty line is the poverty line calculated from the HIES data of the BBS[4] and the lower poverty line is approximately 60% of the upper poverty line as used in different articles on poverty measurement by BIDS[5]. On the basis of HIES data in 2000 the national upper poverty line at the rural level was interpolated as Tk. 830 per capita per month and hence Tk. 494 is considered as the lower poverty line. The individual having consumption expenditure between Tk. 830 and Tk. 494 fall in the moderate poor category, and those having consumption less than Tk. 494 per month are extreme poor. The non-poor has consumption above than Tk. 830 per month.

Results and Discussion

Social and Economic Profile of Graduated RMP Women

Poverty reduction programs as documented in the theories are essentially linked to both income and non-income dimension of livelihood. Attacking poverty means not only creating employment opportunities and hence enhanced income, but also development in other areas of life, e.g. housing, education, health and nutrition, clothing etc. Social and economic development of the women encompasses many areas starting from household structure, economic activities, income, expenditure, savings, assets, social positioning, access to services,

4 Household Income and Expenditure Survey (HIES) of Bangladesh Bureau of Statistics, 2000.

5 Bangladesh Institute of Development Studies (BIDS)

empowerment etc. Success or failures of the graduated RMP women can be counted on many fronts. Before going for full discussion on the main findings of logit model fitted in the study, it would be better if there is analysis on relative social and economic development of three broad income classes, extreme, moderate and non-poor, through having a detailed socio-economic profile (Table 1).

Table 1: Profile of graduated RMA

Components	Extreme Poor	Moderate Poor	Non Poor
Household expenditure (Tk. average)	1834	2425	4256
Expenditure (Tk. average monthly per capita)	371	635	1264
Land ownership (average per household, decimals)	4.5	2.2	6.0
School Enrollment Rate	69	64	66
Women have savings (%)	71	66	88
Average amount of savings (Tk.)	2711	7908	7839
Male- Female Ratio	105	74	90
Dependency Ratio	49	44	30
Average household size	5.0	3.8	3.4
Average Number of Income Earner	1.6	1.9	1.9
Women have IGA (%)	72	43	59
Women have organizational affiliation (%)	47	49	76
Have electricity in the house (%)	3.9	18	38
Distance of hat/bazaar from home (km)	1.74	1.01	1.61
Have access to credit (%)	65	54	65

It is evident from the above table that average household expenditure per month will differ from extreme to moderate and then to non-poor. But the difference between extreme and moderate poor in consumption expenditure is not as striking as it is between moderate and non poor (Table 1). The households in non poor group spend Tk. 4256, which is 1.75 times of that of the moderate poor. This is reflected in per capita expenditure. In case of landownership, non-poor group have higher amount of land ownership, 6 decimals on an average per household. Extreme poor class is relatively land rich compare to moderate poor, have 4.5 decimals of land. The percent of women in the extreme poor group having savings is 71, higher than moderate poor group (66%), but lower than non-poor group (88%). But the amount of savings is showing much higher figure both in case of moderate and non-poor group, nearly Tk. 8000, which has dipped significantly in

the case of extreme poor group. More investment in IGAs and involvement by the household members has much influence on income. Findings show that extreme poor households have less number of income earners, only 1.6 on an average per household, which is 1.9 in both moderate and non poor group. But it is interesting to observe that the women belonging to extreme poor group are involved more in numbers in IGAs (72% have IGAs) than the other groups of women. The women in the extreme poor group also have more access to credit for running businesses and meeting other needs, though the higher income group (non poor) of women has stronger association with organizations or service providing agencies (72% have affiliation, compare to 49 and 47% in case of moderate and extreme poor respectively). In the education sector, extreme poor households have higher school enrollment rate compare to other groups.

Association between income class of women and intervention of RMP, and the other socio economic indicators

Analysis of livelihood of rural households is a complex one and involves various cross cutting issues. These are mainly household, social and economic phenomena and many factors or indicators determine or influence the way of living. Some of these are positively associated with the improvement in living standard and absence of some factors adversely affect. The RMP women comes from most disadvantaged section of the community and their graduation in economic terms and progress towards social development may take longer period of time as their human, social, natural and financial capital are based in weak state. Due to the intervention of RMP and subsequent involvement with other organizations after graduation some of these women have been able to overcome the ugly faces of poverty crossing the boundary of poverty line and lead a secured livelihood. Their successes might be associated with intervention of RMP and might be with other social and economic contexts. The graduated women may have land and other properties to influence income and have access to support networks. The support networks may come from within the household structures and also from the contexts surrounding the households, e.g., electricity, growth centre, roads and communication, service providing agencies etc. Presence or absence of these factors may or may not direct the households to have higher living standard and well-being.

Is RMP Intervention Positively Associated with Graduation of The Women?

It is seen (Table-2) that the percentages of both moderate and non-poor are higher among graduated RMP (41.8% compare to 32.3% and 23.3% compared to 20.0%

respectively) than compare to non-RMP women who didn't receive intervention from RMP but have had similar economic well-being. On the other hand, extreme poverty situation is more prevalent in case of non-RMP, i.e. they couldn't succeed in overcoming the poorest level of economic well-being and could hardly bare the minimum needs of life. It can be inferred from this picture that RMP's intervention is significant in becoming moderate poor, and even in some cases (not significantly) non-poor from extreme poor. Both Chi-square and Likelihood ratio test tells about that significance. At 10% level of significance it is revealed that there is association between income class and intervention of RMP. RMP's success is targeting lowest income and most disadvantaged group in the rural Bangladesh, and the important thing is that they are women.

Table 2: Association between income class and intervention of RMP

Income class	**Type of Respondent**		**Total**	**Chi-square and Likelihood ratio test**
	RMP Graduate n(%*)	Non-RMP n(%)		
Extreme poor	51(34.9)	62(47.7)	113	Chi-square=4.73
Moderate poor	61(41.8)	42(32.3)	103	Sig=.094**
Non-poor	34(23.3)	26(20.0)	60	Likelihood ratio=4.739
Total	146 (100)	130(100)	276	Sig=.094**

Note: *Percentage shown is the column percentage, ** significant at 10% level of significance

Table 3: Association between income earners, IGAs, land, organizational affiliation, electricity and income class

	Income class of women
Number of income earners (1, 2, 3)	*p*=0.046
Number of IGAs (0, 1, 2, 3, 4)	*p*=0.031
Have electricity in the house (yes/no)	*p*=0.000
Land (landless, functionally landless, small owner)	*p*=0.110
Number of organizations (0, 1, 2, 3)	*p*=0.041

Land ownership occupies much of the literature on development. The destitute women in RMP are severely deprived of land properties and can't purchase even a small piece of land (1 to 10 decimals). These situations push them to more destitute condition. It is observed from the table 3 that there is no significant association between land ownership and income class as indicated by p value, even at 10% level. The women belonging to moderate and extreme poor might not been able to capitalize land for their economic gain.

Household economy can be fostered by intensive involvement of the family members in economic activities. The more number of income earners can be seen as the driving force for social and economic scale up of the households. The unskilled labor forces can be self-employed through developing basic human capital. The motivated women graduated from RMP may have the lead role in moving for more income. Chi-square test ($p<.05$) signifies the importance of more income earners in a household, as the association between number of income earner and income class is found significant. It might be said that the more the number of income earner in a household the higher the probability of escaping poverty.

The rural destitute women have less scope of doing income-earning activities. To encourage them in self-employment activities, many development agencies are increasing their emphasis on assisting women to secure income through their own efforts. Scale up of IGAs both in size of capital and number might have impact on generating more income. But investigation is needed whether the empirical findings support this view. In an internal study it is observed that the women are able to manage up to three IGAs at a time. Up to the three IGAs, income and savings from surplus income remain upward sloping and afterwards the trend is downward sloping. It is found that there is significant relationship between number of IGAs and income class indicated by p-value of chi-square test. The women's capabilities to run the IGAs efficiently averting risk and linking with markets have strong influence on profit. Even the small investment but potential to earn profit and optimization behavior can contribute largely to gain big margin from IGAs.

Access to power can be instrumental to accelerated economic growth, poverty reduction and social development. Only one-third of the population in Bangladesh has access to electricity; and access in the rural areas is lower (22 percent)[6]. In this study interest was put forward to know what percentage of women have access to electricity and is there any correlation between infrastructure development (electricity) and poverty reduction. From above observations it is evident that there is strong association between access to electricity and livelihood graduation. That is, infrastructure development coupled with RMP intervention can boost household economic growth and thus contribute to poverty reduction of RMP women. Empirical findings show that the extreme poor women have limited affiliation with organizations. Nearly half of them have no affiliation, and among

6 Unlocking the Potential: National Strategy for Accelerated Poverty Reduction, Government of Bangladesh, December 2004

the rest involvement with one organization is the highest. In case of moderate poor women the scenario is similar. But most of the non-poor has been found affiliated with organization indicating capitalizing the benefits of the services by them. Significant test at 5% level reveals that there is association between the involvement with multiple organizations and income level of the women, and it has positive impact.

The extent of contribution of RMP in reducing poverty of destitute women

From the strategic point of policy discussion within RMP, it is important to know about the influence of specific development inputs (training, regular wage, savings, etc.) of the programme on the livelihood of women. As well as, focus also goes on some other inputs outside RMP, such as skill training that the programme doesn't provide, organizational affiliation and institutional network, access to credit, household size, dependency ratio, number of income earner, electricity, landholding, etc. All these variables together have been fitted into logit model, which are presented in the following table with description of values. Some of these variables are qualitative in nature and some are interval scaled but converted into nominal scale. Logit model tells about probability or likelihood of happening one event (dependent variable) over other event for the occurrence of the point (independent variable) in reference to other point of the independent variable. For instance, logit model reveals likelihood of becoming moderate poor from extreme poor if any individual received development intervention (e.g RMP) against the individual who didn't receive intervention.

Argument can be made in the way that whether numeracy training have any impact on raising account keeping capabilities of women who have no formal basic education or health and nutrition training is creating awareness against health and hygiene practices and develop idea about quick and easily available measures against primary diseases. Have the training on rights and social justice impact on creating bargaining power among the women about their rights and getting access to different services? Probably the most critical discussion in RMP can be tabled is that whether business management training is sufficient in initiating and having profit from IGAs and finally sustain their increased income? Some of the answers of these issues have been addressed in these logit models.

Two different tests, both chi-square test for model fitting (table 5) and Pearson Chi-square for goodness of fit (Table 6) tell us that the logit model very well and is significant in explaining variation in dependent variable. That is, the models fits are significant to explain the influence in income class of women and their

Table 4: Description of variables of logit model

Dependent variable	
Income class (pov_con)	pon_con=1 (Non-poor), 2 (Moderate poor), 3 (Extreme poor as reference point)
Independent variables	
Household size (hsize_ca)	hsize_ca=1 (Small size family having 1 to 4 members), 2 (Medium size family havi ng 5 to 7 members)), 3(Large family having more than 7 members as reference point)
Dependency ratio (dependnt)	dependnt=1 (No dependent member), 2 (30% dependent), 3 (30-50% dependent), 4 (50-70% dependent), 5 (70%+ dependent as reference point)
Sex of the household (sex_head)	sex_head=1 (Male), 2(Female as reference point)
Number of disable family members (disab_no)	disab_no=0 (no disable family member), 1, 2
Number of Income earner (income_e)	income_e=1 (3 income earners), 2 (2 income earners), 3 (1 income earners), 4 (No income earner as ref. point)
Land ownership (land_cat)	land_cat=1 (Marginal owner: 50-149 decimals land), 2 (Functionally landless: 5-49 decimals), 3 (Landless: 0-4 decimals as ref. point)
Practice inheritance right? (inh_yn)	in_yn=1 (yes), 2(no as ref. point))
Have electricity in the house? (elec_hyn)	elec_hyn=1 (yes), 2(no as reference point)
Gave dowry? (dow_in)	dow_in=1 (yes as reference point), 0 (no)
Faced crisis in the last two year? (crisis_yn)	crisis_yn=1 (yes as reference point), 0 (no)
Have organizational affiliation? (org_aff)	org_aff=1 (yes) 2 (no as reference point)
Have IGA? (iga_yn)	iga_yn=1 (yes), 2 (no as reference point)
Access to credit? (cred_yn)	cred_yn=1 (yes), 2 (no as reference point)
Have institutional network? (inst_yn)	inst_yn=1 (yes), 2 (no as reference point)
Have regular employment? (remp_yn)	remp_yn=1 (yes), 2 (no as reference point)
Have savings practice? (fdr_yn)	fdr_yn=1 (yes), 2 (no as reference point)
Have numeracy training? (num_ yn)	num_yn=1 (yes), 2 (no as reference point)
Received training on nutrition? (nut_yn)	nut_yn=1 (yes), 2 (no as reference point)
Training on human rights & social justice? (hum_yn)	hum_yn=1 (yes), 2 (no as reference point)
Training on business manageme nt? (bum_yn)	bum_yn=1 (yes), 2 (no as reference point)
Received business counseling? (buc_yn)	buc_yn=1 (yes), 2 (no as reference point)
Received business follow-up? (buf_yn)	buf_yn=1 (yes), 2 (no as reference point)
Have skill training? (strg_yn)	strg_yn=1 (yes), 2 (no as reference point)

households. Before explaining the full model it is important to look at the significance of individual variables keeping the influence of other variables constant. Here it is clear from the Table 5 that presence of electricity in house, regular employment of women, and organizational affiliation are highly significant. Skill training, household size (small, medium versus large) and dependency ratio (lower dependency versus higher) are found significant at 10% level. It should be mentioned here that the logit model is the regression of outcome variable on presence or absence of event or factor (independent variable). The point is that how the presence of positive event (getting regular employment or having electricity) or absence of negative aspect of household (higher number of dependent family members or higher family size) make impact on economic well-being (overcoming poverty burden) of household.

The results show (Table 6) that within the RMP the most determinant and significant factor is regular employment (significant at 5% level) that can be thought of as regular feeding of the household as well safety net of the family members, in terms of road maintenance works. Beside this, training on health and nutrition is significant. So the message is that we should think about other training, particularly business management training (modification or reinforcement). In addition to the business management training, skill training on different trades can be introduced in the programme that has much potential in running IGAs and sustaining income over the years, as this is found significant. It is observed that the graduated RMP women who received any type of skill training are sustaining their economic activities and optimizing profit. Logit model reveals that picture.

Beyond the RMP inputs, organizational affiliation is the important factor for the women getting access to different services (credit, savings, skill training, seeds and tree etc) and having momentum in economic activities. Demographic and household structures also have importance in social and economic condition. It can be presumably argued that lower the household size higher the probability of being well-off. At the same time, lower the dependency ratio (in turn higher the eligible number of income earning person) it is more likelihood that the household would be in less pressure of consumption expenditure and thus of poverty burden.

It can be assumed that some of the factors might be significant in becoming non-poor from extreme poor, which might not be found in case of moderate poor. The table of parameter estimates (Table 6) presents that scenario, where it is found that electricity, regular employment, numeracy and nutrition training, and dependency ratio are found significant in both the models. But organization affiliation, and

Table 5: Likelihood Ratio Tests

Independent variables	Chi-Square	Sig.
Inheritance right (inh_yn)	2.68	.26
Have electricity (elec_hyn)	23.38	.00*
Regular employment (remp_yn)	7.42	.03*
Savings practice (fdr_yn)	.80	.67
Numeracy training (num_yn)	4.22	.12
Nutrition training (nu t_yn)	5.80	.05**
Rights and justice (hum_yn)	2.33	.31
Business management (bum_yn)	1.53	.47
Have skill training (strg_yn)	4.87	.09**
Business counseling (buc_yn)	1.89	.39
Business follow -up (buf_yn)	.03	.99
Have access to credit (cred_yn)	1.29	.53
Have IGA (iga_yn)	.08	.96
Organizational affliatn. (org_aff)	11.17	.00*
Household size (hsize_ca)	21.51	.00*
Dependency ratio (dependnt)	26.58	.00*
Land holding (land_cat)	3.53	.47
No. of income earnr. (income_e)	10.04	.12

* At 5% level of significance
** At 10% level of significance

Table 6: Parameter Estimates (odds

Model fitting information: Chi -square=148.4, Sig=. 000

Goodness of fit: Chi -square=557.58, Sig=. 000

Income class (Dependent variable)	Independent variables	Wald statistics	Sig.	Odds ratio
Non-poor	Intercept	.00	1.00	
	elec_hyn	18.72	.00	.04
	remp_yn	3.45	.06	5.62
	num_yn	3.31	.07	.10
	nut_yn	5.28	.02	14.65
	org_aff	9.93	.00	.17
	[dependnt=1]	3.72	.05	10.05
Moderate	Intercept	.00	1.00	
poor	elec_hyn	6.47	.01	.19
	remp_yn	6.00	.01	5.73
	num_yn	2.97	.08	.14
	nut_yn	3.10	.08	5.81
	strg_yn	4.67	.03	2.99
	[hsize_ca=1]	3.44	.06	5.93
	[dependnt=2]	2.67	.10	5.63
	[dependnt=4]	4.28	.04	6.63
	[income_e=1]	843.34	.00	.00
	[income_e=2]	1634.16	.00	.00

dependency ratio at 1 (having non dependent member) are significant only in the model of non-poor referenced to extreme poor. On the other hand, skill training is significant only in the model of moderate poor in reference to extreme poor. This has much implication. For instance, it might be the case that the women who received skill training on certain trade might be able to utilize much of their skills in IGAs and having maximum profit to become non-poor. At the same time, organizational affiliation is another factor to enjoy non-poor status overcoming

extreme level of poverty. These women might have strong institutional network and access to different government and NGO supported programs and services.

The most interest findings from these logit models (that odds ratio measures indicate) is that the likelihood of becoming non-poor from extreme poor for having had regular employment is nearly 6 times (odds ratio is 5.62) in reference to who hadn't. Thus, employment opportunities, particularly regular one for the destitute women, have much implication for economic well-being of the households and changing their livelihood, and RMP provides that opportunity. Skill training is found to increase the likelihood of becoming moderate poor from extreme by 3 times (odds ratio is 2.99) than who didn't have any. Dependency ratio is found to be more significant in crossing the upper poverty line and becoming non-poor and the odds ratio in this case is 10.05. That is, the likelihood of household who has no dependent member is 10 times than the household, which has 70% above dependent family member. The ultimate significance of the result is that the more the economic activities and thus income earning people in a household the higher the probability of getting well-off, as easily can be assumed. Household size (at 1) is also found significant and have odds ratio as 5.93, i.e. small size family (having 1 to 4 family members) is more likely to become moderate poor (6 times) than the household, which are large in size (8 above family members).

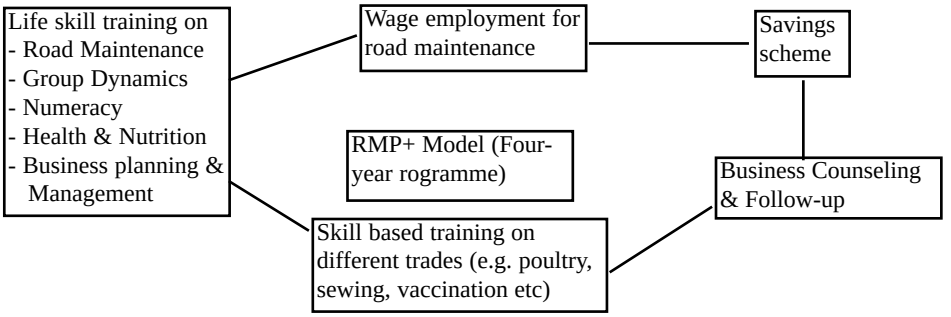
Conclusion and Policy Implication

While preparing the profile of the women in respect of different social and economic indicators it is observed that the non-poor women (23%) have done well in most of the areas of livelihood and, so the probability of remaining or sustaining the improvement by these non-poor households is bit higher than other groups. On the other hand, it is seen that the extreme poor has good status in terms of school enrollment rate of the children, land ownership, operation of IGAs, access to credit. While the moderate poor has shown higher performance in economic activities of family members, organizational affiliation, access to electricity. While the measure of association has shown that there exists significant association between intervention of RMP and income class of the beneficiaries comparing with non-RMP women. The results of this test reveals that the RMP women have been able to graduate to moderate poverty from extreme level in significant numbers than the non-RMP women. It is found that higher level of land ownership has limited impact on the households unless there are intensive economic activities, such as cultivation of crops, livestock and poultry rearing, fishing etc. Number of IGAs, organizational affiliation, number

of income earner, electricity in house are found positively associated with the livelihood graduation of the women as indicated by the significance test. Communication and electricity are considered the most important areas from where the households can gain substantially. Social capital, particularly institutional network and the access to services can be a driving force for the poor.

The most compelling picture of these results is that regular wage received from employment in road maintenance works is the significant input of RMP. As the women get employment for a four-year cycle, it gives a sense of relief in the way that they don't need to think too much about income and maintaining livelihood during this period. Beside this, among life skill training on different issues that RMP provides in different years, nutrition training is found significant. Other than RMP inputs, electricity, skill training, organizational affiliation, lower household size and dependency ratio are observed significant in overcoming poverty burden. The influences of these inputs are stronger in some cases. For instance organizational affiliation and lower dependency ratio has impacted significantly for the households to become non-poor. Electricity in the house and skill training are found instrumental to graduate.

In light of the above findings various policy arguments can be made to formulate appropriate model that would be strongly pro-poor, and also pro-extreme poor. It is obvious that the changes would have some implications in resources and mode of operation of the activities. The challenge would be to work for the maximum benefit of the destitute women. If skill based training on various trades is offered, in addition to the business management, counseling and follow-ups, the project can reach its full potential in poverty reduction. Business management training and counseling would need to be intensified and strengthened. Focus of future RMP should be limited on specific training that has strong in inputs. The women, the poorest of the poor and also those who are chronically poor, can overcome both income and human poverty and will have prosperous futures. The future model of RMP based on this study can be represented by the following diagram.



Over the last twenty-two years since inception in 1983 RMP has been proved an effective development model instituted throughout the country. Having the largest coverage in the country and impacting on poverty alleviation efforts, RMP now is considered for replication in other countries in the world. In the Poverty Reduction Strategy Paper for Bangladesh there is mention about contribution of RMP in livelihood improvement of the destitute women. Review of the evolution of RMP, particularly the introduction of IDC, has marked important changes in policies and strategies of implementation. Different studies on RMP also suggested some changes, and tried to focus on how in a more effective way the women can overcome persistent poverty burden and have improved livelihood status in the long run. As some of the women are chronically poor and thus need a big push to remove the burden of persistent poverty, so more strong inputs of RMP are to be generated and delivered. This study has tried to review the existing inputs of RMP and the significances and explore the new ideas. Expectation can be placed in the way that if the model proposed above for future programming is implemented it will have significant positive impact on the livelihood of some of the most disadvantaged women living in rural Bangladesh.

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Causality between Education and Economic Growth in Bangladesh - An Error Correction Modeling Approach

MD. ZAHIRUL ISLAM SIKDER[1]
MD. ABDUL WADUD[2]

Abstract

The paper examines the causality between revenue expenditure on education and economic growth, development expenditure on education and economic growth, and total expenditure on education and economic growth in Bangladesh during the period 1974 to 2008. We apply cointegration and error correction modeling approach. Results show that there is bi-directional causality between educational expenditure and economic growth in Bangladesh. This means that revenue, development and total expenditures on education cause economic growth and economic growth causes them.

Keywords: *Education, Economic Growth and ECM.*

1. Introduction

Since the era of Plato, the role of education and education-economic growth relationship are the focus of public debate. A considerable portion of the country's wealth is invested in education. This investment in education leads to human capital formation, comparable to physical capital and social capital, that contribute to economic growth significantly (Dickens, 2006; Loening, 2004; Gylfason and Zoega, 2003; Barro, 2001). Further, investment in education

1 Principal, Dhaka City International College, Dhaka, Bangladesh and Vice President, BEA
2 Professor, Department of Economics, University of Rajshahi, Rajshahi, Bangladesh.

contributes to the formation of skilled manpower that geared to the needs of growth, both for accelerating economic growth and for increasing the quality of the society (Yogish, 2006).

Improving health, reducing fertility and bringing political and social stability can be ensured through education that can contribute to economic growth. The significance of an educational system to any labor market lies in its ability to produce a literate, disciplined, flexible labor force via high quality education. Consequently, with economic growth the application of new technology in production results in an increase in the demand for workers and better education (Pradhan, 2009). The pioneer work of Lucas (1988) reveal that the growth rate of human capital is dependent on the amount of time allocated by individuals to acquire skills.

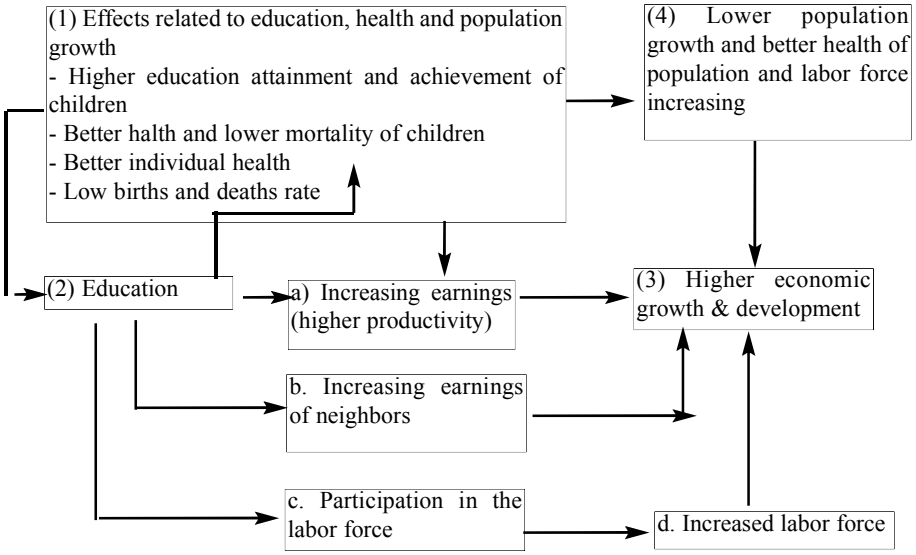
In literature on education and economic growth relationship, the first contribution was made by Adam Smith, followed by Marshall, Schultz, Bowman and others (Tilak, 2005). Overtime, various theories and models relating education and economic growth emerged (Lucas, 1988; Romer, 1990; Rebelo, 1991, Grossman-Helpman, 1991; Francis and Iyare, 2006). These studies mostly deal with the role of human capital accumulation in economic growth and endogenously generated economic growth (Chakraborty, 2005). Most of these researches observed that an alternative engine of economic growth to technological change is human capital; however, the country needs to invest more on education to get quality human capital. Both at the micro and macro levels, an investment in education is very beneficial in the society (Figure 1) and this investment affects the system directly and indirectly (Dahlin, 2005). While the increase in wage is a direct effect, the increasing externalities associated to education is an indirect effect (Heckman and Klenow, 1997).

Educational expenditure in Bangladesh has been increasing since the independence. In 1973, total educational expenditure was Tk. 73 core, which rose to tk. 1330 core, Tk. 4273 core and Tk. 20470 core in 1990, 2000 and 2008, respectively. Gross domestic product (GDP) has also been rising since independence. In 1974, GDP was Tk. 7575 core, which rose to Tk. 73757 core, Tk. 237086 core and Tk. 541919 core in 1990, 2000 and 2008, respectively. It is evident that both GDP and educational expenditure have been rising over the years. Therefore, it is worthwhile to assess whether educational expenditure causes GDP to grow or GDP causes educational expenditure to grow or they cause each other to grow. This paper aims to assess the long-run causal relationship between revenue expenditure on education and economic growth, development

expenditure on education and economic growth, and total education expenditure and economic growth of Bangladesh and provide some policy suggestions.

The rest of the paper is organized as follows. Section 2 describes data and methodology, Section 3 provides empirical methodology, Section 4 details empirical result and Section 5 concludes the paper.

Figure 1: Economic Effect of Education on Economic Growth



Source: Michaelowa (2000)

2. Data Description

We use secondary data for the period from 1974 to 2008. We use revenue expenditure on education, development expenditure on education and total expenditure on education as proxy of education and GDP as proxy of economic growth. These data are collected from various issues of Bangladesh Economic Review, Bangladesh Statistical Year Book and publications of Ministry of Education. Figures 2 and 3 provide graphical representations of GDP and revenue, growth and total expenditures on education. These show that both GDP, components of expenditures on education have upward trends with some fluctuations. This indicates that the series suffer from non-stationarity problem. In other words, the series suffer from short-run instability.

Figure 2 : Gross Domestic Product

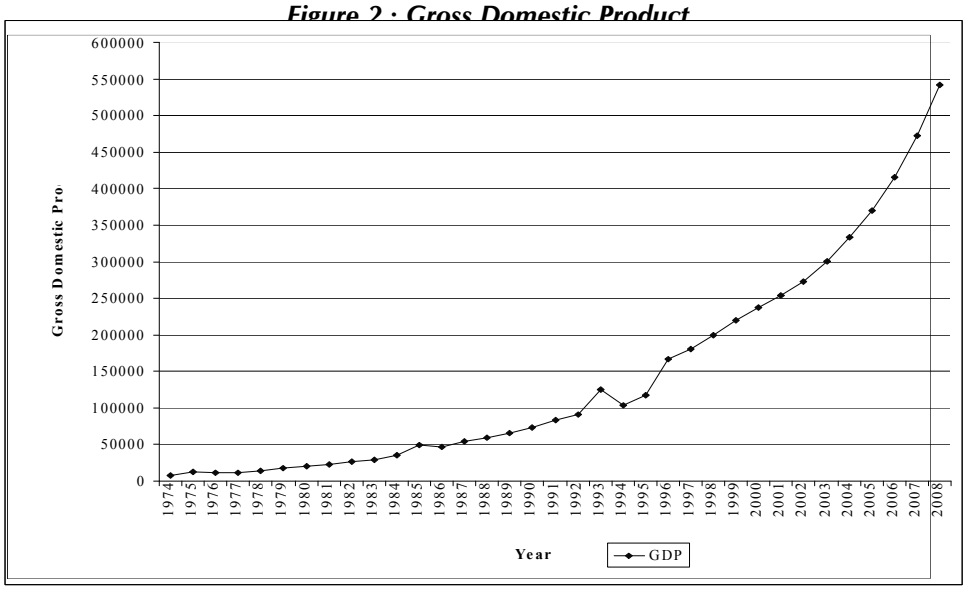
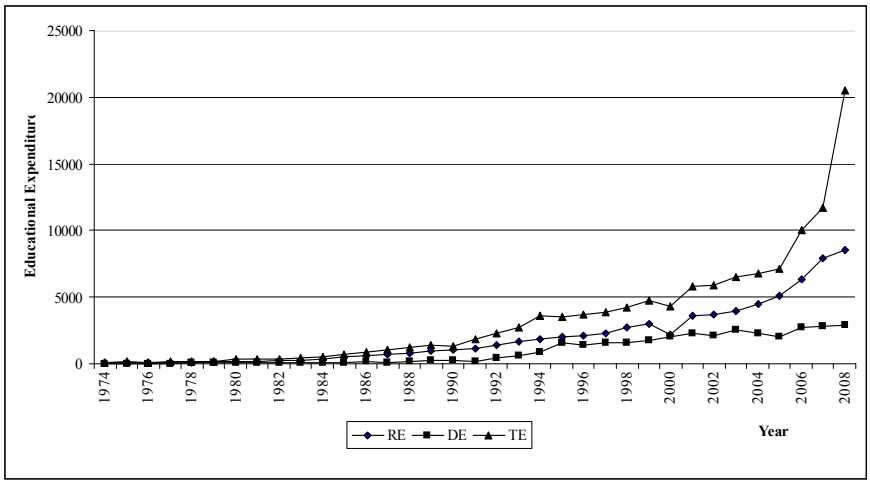


Figure 3: Revenue, Development and Total Educational Expenditures



3. Empirical Econometric Methodology

Empirical methodology of this study consists of unit root tests, cointegration technique and error correction modeling approach. These are discussed below.

3.1. Unit Root Test

The unit root test checks the non-stationarity of the variables. We apply augmented Dickey Fuller (ADF) test (Dickey and Fuller, 1979 and 1981; Dickey et al, 1986; and Enders, 1995) to check non-stationarity of the variables.

The **augmented Dickey–Fuller test (ADF)** is a test for a unit root in a time series. It is an augmented version of the Dickey–Fuller test for a larger and more complicated set of time series models. The augmented Dickey–Fuller (ADF) statistic is a negative number. The more negative it is, the stronger the rejection of the hypothesis that there is a unit root at some level of confidence. The testing procedure for the ADF test involves the regression of the following model:

$$\Delta y_t = \alpha + \beta t + \gamma y_{t-1} + \delta_1 \Delta y_{t-1} + \cdots + \delta_p \Delta y_{t-p} + \varepsilon_t, \tag{1}$$

where y_t is a variable of interest and ε_t is white noise error term, α is a constant, β the coefficient on a time trend and p the lag order of the autoregressive process. Imposing the contraints $\alpha = 0$ and $\beta = 0$ corresponds to modelling a random walk and using the constraint $\beta = 0$ corresponds to modelling a random walk with a drift. By including lags of the order p the ADF formulation allows for higher-order autoregressive processes. This means that the lag length p has to be determined when applying the test. One possible approach is to test down from high orders and examine the t-values on coefficients. An alternative approach is to examine information criteria such as the Akaike information criterion, Bayesian information criterion or the Hannan-Quinn information criterion.

The unit root test is then carried out under the null hypothesis $\gamma = 0$ against the alternative hypothesis of $\gamma < 0$. Once a value for the test statistic

$$DF_\tau = \frac{\hat{\gamma}}{SE(\hat{\gamma})} \tag{2}$$

is computed it can be compared to the relevant critical value for the Dickey–Fuller, Test. If the test statistic is less (this test is non symmetrical so we do not consider an absolute value) than (a larger negative) the critical value, then the null hypothesis of $\gamma = 0$ is rejected and no unit root is present. Otherwise , the alternative hypothesis is accepted, that is unit root is present. If the variable is differenced once and the differenced series is stationary, then it is integrated of order one [i.e., I(1)]. Similarly, if it is differenced twice and the differenced series is stationary, then it is integrated of order two [i.e., I(2)] and so on.

3.2. Cointegration

Cointegration means that despite being individually non-stationary a linear combination of two or more time series can be stationary; When a linear combination of non-stationary variables is stationary, the variables are said to be cointegrated and the vector that defines the stationary linear combination is called a cointegrating vector. The cointegration test was first introduced by Engel and Granger (1987) and then developed and modified by Stock and Watson (1988), Johansen (1988) and Johansen and Juselius (1990). The test is very useful in examining the long run equilibrium relationships between the variables. In this study, we use Johansen maximum likelihood (ML) approach to test for cointegration.

Let Z_t be a (n X 1) vector of variables with a sample of t. Assuming Z_t follows I (1) process, identifying the number of cointegrating vector involves estimation of the vector error correction representation:

$$\Delta Z_t = AO + \Pi Z X_{t-p} + \sum_{i=1}^{m} Ai\ ZX_{t-1} + \varepsilon t \qquad (3)$$

In the above equation, the vector ΔZ_t and ΔZ_{t-1} are I (1) variables. Hence, the long run equilibrium relationship among Z_t is determined by the rank of Π, say r, is zero, then equation reduces to a VAR model of p_{th} order and the variables in level do not have any cointegrating relationship. Instead, if $0 < r < n$ then there are *n x r* matrices of α and β such that

$$\Pi = \alpha\ \beta \qquad (4)$$

where the strength of cointegration relationship is measured by α, β is cointegrating vector and $\beta' Z_t$ is I(0), although Z_t are I(I). In this framework, we have to estimate (A_0, A_1, A_2 .., A_{p-1}, Π) through maximum likelihood procedures, such that 'Π' can be written as in (6.3). To estimate all these parameters, we have to follow a two-step procedure. In the first step, regress ΔX_t on ΔX_{t-1}, ΔX_{t-2}, …., ΔX_{t-p+1} and obtain the residuals $\hat{u}_t$. In the second step, regress X_{t-1} on ΔX_{t-1}, ΔX_{t-2}, …., ΔX_{t-p+1} and obtain the residuals $\hat{e}_t$. The null hypothesis of no cointegration is tested against the alternative hypothesis of cointegration using the maximum eigenvalue and trace tests.

3.3. Causality

A cointegration vector between two variables leads to the possibility of causality between the two at least in one direction (Granger, 1988). Thus Granger causality

test is used to examine the nature of the relationship (Granger, 1986; Engle and Granger, 1987). Granger Representation Theorem states that if variables are cointegrated then an error correction model (ECM) exists that combines the long run relationships with the short run dynamics of the model. Since our objective is to examine the causal relationship between education (edu) and economic growth (GDP), we specify the error correction model as follows:

$$\Delta GDP_t = \varphi_1 + \sum_{i=1}^{r} \gamma_i \Delta GDP_{t-i} + \sum_{i=1}^{s} \lambda_j \Delta EDU_{t-j} + \rho_1 ECT_{t-1} + \xi_t \tag{5}$$

$$\Delta EDU_t = \alpha_2 + \sum_{i=1}^{p} \alpha_i \Delta EDU_{t-i} + \sum_{i=1}^{q} \beta_i \Delta GDP_{t-j} + \rho_2 ECT_{t-1} + \zeta_t \tag{6}$$

where ECT_{t-1} is the lagged stationary residuals from the cointegration equation. Ordinary Least Squares (OLS) method are applied for the estimation and the standard t-statistics for testing the significance of each term since all the variables are stationary *[I (0)]*. We estimate the pair of equations for revenue expenditure on education and GDP, development expenditure on education and GDP, and total expenditure on education and GDP separately, if at least one of these coefficients must be significant in order that ECM holds. In order to determine the causality we use F-statistic. This F-statistic depends upon the restricted residual sum squares (RSS_1) and unrestricted residual sum squares (RSS_2).

$$F = \frac{(RSS_1 - RSS_2)/m}{(RSS_2)/(n-k)} \qquad \text{and} \qquad F \sim (m, n-k) \tag{7}$$

where, m denotes number of lags; k number of parameters involved in the model; and n is the sample size. If the estimated F-statistic is significant, the null hypothesis of the non-causality is rejected leaving the alternative hypothesis of causality accepted and hence we conclude that EDU causes GDP and vice versa. The non-causality hypothesis is accepted if the statistic is not significant leaving that EDU does not cause GDP and vice versa.

4. Econometric Results

Economic growth (GDP) and components of expenditure on education (EDU) during the period 1974 to 2008 are shown in Figures 2-3. These show that there exists the volatility in GDP as well as educational expenditures. It indicates that they have inherent tendency to move together towards equilibrium, although they drift apart from each other in the short run. This has been empirically established by using cointegration test and error correction modeling (ECM) technique. The

first step of this process is to establish the order of integration and for this, we used Augmented Dickey Fuller (ADF) test. In the second step, Johansen cointegration technique is applied. Finally we apply error correction modeling (ECM) approach to assess the causality between the variables. Estimated results are discussed below.

4.1. Results of Unit Root Test

Augmented Dicky Fuller (ADF) test is used to test for the existence of unit roots and determine the order of integration of the variables. Test is done both with an intercept but not a trend and with an intercept and a linear trend and results are given in Tables 1 and 2. Results show that the variables, GDP, RE, DE and TEE, are non-stationary in levels. This means that they all have unit root problem and hence they suffer from instability problem in the short-run.

Table 1: Results of Unit Root Tests

	With an intercept but not a trend	With an intercept and a linear trend
GDP	5.0197	3.3197
RE	4.0667	3.2538
DE	1.0115	-1.6762
TEE	4.7155	4.9058

Note: 95% critical value for the Augmented Dickey-Fuller statistic = -2.9665; GDP = Gross Domestic Product, RE = Revenue Expenditure, DE = Development Expenditure, TEE = Total Educational Expenditure.

Results also show that the variables are stationary in first differences. This means that they are integrated of order one.

Table 2 : Results of Unit Root Tests: 1st difference of GDP, RE, DE, TEE

	With an intercept but not a trend	With an intercept and a linear trend
GDP	1.8517	0.15599
RE	2.4418	1.1571
DE	-2.2664	-2.8548
TEE	2.5416	3.4559

Note: 95% critical value for the Augmented Dickey-Fuller statistic = -2.9665. GDP = Gross Domestic Product, RE = Revenue Expenditure, DE = Growth Expenditure, TEE = Total Educational Expenditure.

4.2. Cointegration Results

The results of the cointegration tests are reported in Tables 3-5. Since the variables – GDP, revenue, development and total educational expenditure – are integrated of order one, it confirms the possibility of cointegration between the two. In other words, the long run equilibrium relationship between educational expenditure and GDP can be examined. We apply Johnasen's Maximum Likelihood (LM) cointegration technique to explore the possibility of long run equilibrium. The estimated results, particularly maximum eigenvalue and trace statistics, are presented in Tables 3-5.

Table 3: Cointegration between Revenue Expenditure on Education and Economic Growth

Null	Alternative	Test Statistic	95% Critical value	90% Critica Value
Maximum Eigenvalue test				
r = 0	r = 1	29.6913	14.8800	12.9800
r<= 1	r = 2	5.8870	8.0700	6.5000
Trace test				
r = 0	r>= 1	35.5783	17.8600	15.7500
r<= 1	r = 2	5.8870	8.0700	6.5000

Table 4: Cointegration between Development Expenditure on Education and Economic Growth

Null	Alternative	Test Statistic	95% Critical Value	90% Critical Value
Maximum Eigenvalue test				
r = 0	r = 1	27.3633	14.8800	12.9800
r<= 1	r = 2	6.3185	8.0700	6.5000
Trace test				
r = 0	r>= 1	28.2951	17.8600	15.7500
r<= 1	r = 2	6.3185	8.0700	6.5000

Table 5 : Cointegration between Total Educational expenditures and Economic Growth

Null	Alternative	Statistic	95% Critical Value	90% Critical Value
Maximum Eigen value test				
r = 0	r = 1	27.7559	14.8800	12.9800
r<= 1	r = 2	1.1212	8.0700	6.5000
Trace test				
r = 0	R>= 1	28.877	17.8600	15.7500
r<= 1	r = 2	1.1212	8.0700	6.5000

Tables 3-5 indicate that both the maximum eignvalue test and trace tests give test statistics which are greater than the critical value for *r=0*. This means that the hypotheses of no cointegration are rejected and hence they are cointegrated. Tables also indicate that for r<= 1, the estimated test statistics are less than the critical value. Therefore we can say that GDP and educational expenditures are cointegrated with one cointegration vector. This means that GDP and components of educational expenditures have long-run relationships.

4.3. Results of Granger Causality

Since cointegration relationship is found between educational expenditure and GDP, an error correction model (ECM) could be constructed to determine the direction of causality. Granger causality theorem (1988) mentions that there should be at least one direction of causality between the two variables, if they are cointegrated. Accordingly, the causality model has been estimated and that has been tested by F-statistics. The estimated results are reported in Table 6. Results reveal that there is the presence of bi-directional causality between economic growth and education. Furthermore, results show the bi-directional causality between revenue expenditure on education and economic growth, and development expenditure on education and economic growth in Bangladesh.

Table 6: Status of Granger Causality

Direction	ECT	t-statistics	F-statistics
Gross Domestic Product and Total Expenditure on Education			
GDP ? TE	60315.4	5.9458	28.2118
TE ? GDP	2804.5	2.3691	9.6652
Gross Domestic Product and Development Expenditure on Education			
GDP ? DE	52309.9	4.7424	22.3711
DE? GDP	473.5277	2.3134	2.1567
Gross Domestic Product and Revenue Expenditure on Education			
GDP ? RE	61154.7	6.3682	32.6015
RE ? GDP	915.1793	2.5724	6.348

5. Summary and Conclusions

The research attempts to trace the causal relationship between GDP and revenue expenditure on education, GDP and development expenditure on education, and GDP and total expenditure on education separately in Bangladesh during the

period 1974 to 2008. The relationship between GDP and education can take three forms. GDP can cause education to grow, these can help each other to grow and education can cause GDP to grow.

We apply augmented Dickey-Fuller test, cointegration and error correction modeling (ECM) technique to assess the causality relationship.

Results from augmented Dickey-Fuller test show that both economic growth and components of educational expenditure are non-stationary at the level but found stationary at the first differences, indicating that they are integrated of order one.

Johansen cointegration results reveal that economic development and revenue, growth and total expenditure on education are cointegrated. This indicates existence of long run equilibrium relationships between GDP and components of educational expenditures.

The Granger causality test finally confirms the presence of bi-directional causality between education and economic growth. This means that economic growth and education causes each other to grow. In Bangladesh, economic growth and educational expenditure are working in tandem.

Therefore, we would like to conclude that since education is causing economic growth to improve, the government should continue to spread education, specially quality and technical education in order to keep up with and boost this long-run cointegration and causal relationship between education and economic growth.

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Dynamics and Changes of International Production Network in the Export-Oriented Apparels Industry of Bangladesh

KHONDAKER GOLAM MOAZZEM[1]
MD. TARIQUR RAHMAN

Abstract

Although the export oriented RMG sector of Bangladesh has experienced considerable changes in terms of size, structure and nature of linkages, it has not been researched adequately. The current study focuses on analyzing the recent dynamics and development of this sector's linkages with International Production Network (IPN). Based on trend analysis the study finds that over time, the sector has been moving upward in IPN. At its' earlier stage the sector was primarily involved in outward processing traffic (OPT) which has now enlarged up to Cut, Make and Trim (CMT) stage. However, the sector is yet to participate actively in Original Brand Manufacturing (OBM) stage by developing its' original designs rather than imitating world trends. It has been also found that the nature of production network is largely unidirectional, that is Bangladesh exports her RMG items mostly to the economically developed countries either from North America or Europe, where as imports from her closer geographical partners who are developing countries predominantly. Again, applying an augmented gravity model to find out the determinants and factors responsible for Intra Industry Trade (IIT), a proxy for IPN, the study finds that sourcing of raw materials depends upon issues like geographical proximity, adequate amount of supply, long term relationship, price and quality of products, and buyers' specification, although the destination of final products does not depend on these to that extent. The role of RTAs or PTAs has been found insignificant in promoting IIT for the sector. Finally, based on sample survey and consultations with the stakeholders, the paper has argued for integrated initiative e.g. industry

1 Authors are respectively Senior Research Fellow and Research Associate, Centre for Policy Dialogue (CPD), Dhaka. E-mail: tariq@cpd.org.bd.

specific trade agreement, simplification of customs procedures, etc to strengthen the production network among the countries.

1. Introduction and Objective

International Production Network (IPN) has shaped the pattern and trend of international trade of all major commodities over the last few decades. The cross-border trade in unfinished products that has flourished due to the comparative advantage that lies in the different stages of production process for any particular country has led to the emergence of international production network (IPN) (Hummels, Ishii & Yi, 2001).[1] Its development strengthens the links between different domestic and international enterprises which operate in different territories in order to produce or deliver a single final product or service (Umemoto, 2005). These networks ensure involvement of most efficient countries in the production process, through which an optimum level of return for enterprises, quality and prices for consumers, efficient allocation of resources etc. could be attained.

The substantial rise of global trade of textiles and apparels after the end of multifibre arrangement (MFA) has strengthened the international production network by further consolidating the sourcing of apparels from a limited number of countries.[2] Global import of apparels has increased from US$193.56 billion during 2000 to US$316.1 billion in 2007 mainly by USA, EU and Canada with a combined share of 73 per cent of total import (Table 1). Although United States is the single largest importer of apparels, its share in global import has been decelerating overtime. On the other hand, EU has maintained a share of 44.6 per cent of global import of knitwear and 46.2 per cent of wovenwear products during

1 IPN or GPN can take place in two different forms, namely in the form of agglomeration or fragmentation of production where, agglomeration concept originates from the firms' decision regarding space or location of their establishment, which in effect forms cluster of firms to reap the benefit of economies of scale and fragmentation is the idea of division of production process in different locations to take the locational advantage. However, very often these two forms can take place at the same time in case of locational decision for the MNEs.

2 According to NCTO (2004), since accession of China into the WTO in 2001 and upto March, 2004, 31 countries have lost 75-100 percent of their global market share of apparels, 40 countries have lost 50-75 per cent and another 17 countries have lost about 25-49 per cent of their market share in the US. It was projected that Central America and the Caribbean, despite their proximity to the US market, would be affected more compared to other countries (Rahman, Bhattacharya and Moazzem, 2008).

Table 1: Trend in Global Import of Textiles and Clothing Products

Country	HS-61 (Art of Apparel & Clothing accessories, Knitted or crocheted)			HS-62 (Art of Apparel & Clothing accessories, not Knitted/Crocheted)		
	2000	2004	2007	2000	2004	2007
World Import (in billion USD)	87.16	116.03	150.58	106.40	134.89	165.48
Importing countries						
Canada (%)	1.67	1.86	2.22	1.69	1.87	2.15
EU-25 (%)	36.73	42.48	44.60	37.43	43.73	46.15
USA (%)	31.56	28.47	26.33	32.17	27.38	23.73

Source: Computed based on data from WITS.

Table 2: Trend in Global Export of Textiles and Clothing Products

Country	HS-61 (Art of Apparel & Clothing accessories, Knitted or crocheted)			HS-62 (Art of Apparel & Clothing accessories, not Knitted/Crocheted)		
	2000	2004	2007	2000	2004	2007
World (in billion USD)	77.26	112.55	155.66	96.29	131.15	155.54
Sources						
Bangladesh (%)	1.55	2.67	3.00	3.03	2.46	2.87
China (%)	17.38	22.93	39.40	19.59	22.10	30.42
India (%)	2.35	2.20	2.65	4.00	2.80	3.37
Turkey (%)	4.78	5.56	5.15	2.58	3.46	3.50

Source: Computed based on data from WITS and for Bangladesh data of 2007 from NBR

2007; Canada's import of textiles and apparels, though not a large amount, is increasing over time at a slow pace (2.22 per cent in knitwear and 2.15 per cent in wovenwear products in 2007).

In this consolidated and expanded market for apparels, only a limited number of countries have competitively performed as sources of apparels. China alone has maintained a share of 39 per cent in the case of export of knitwear products and a share of 30 per cent in the case of woven-wear products in 2007, although its shares in 2000 were 17 per cent and 19 per cent, respectively (Table 2). China's huge manufacturing base of textiles and clothing has been effectively used to expand the export at a substantially higher level after the end of quota regime in January, 2005. A number of other countries were able to perform well in this competitive situation, and Bangladesh is considered one of them. Bangladesh has able to enhance its export over time; in year 2007, it has supplied 3 per cent of global import of knitwear and 2.87 per cent of wovenwear products.

The development of the production network in export-oriented textiles and apparels can be attributed to a number of domestic and external factors. At the domestic level, factors that contribute to the development of production network include low wage, government's liberal policies, Back-to-Back L/C facility, establishment of SEZs, along with other fiscal incentives. These factors, which play a vital role in influencing the decision of MNEs to fragment their production decision, are also applicable for Bangladesh in the way of this sector's development. At the external level, tariff concession received as LDC member in the markets of developed countries such as USA, EU and Canada has contributed the most. At the early stage in the 1980s, easy to supplement production nature of apparel products and wide gap in wage level have motivated many foreign firms to shift their production plants to Bangladesh (BIDS, 1984).[3] Besides, low transportation costs, easy bank loan, availability of ready factory houses on rent, effective technology at low cost, Back-to-Back L/C facility have contributed significantly. Hoque, Murayam & Mahfuzur (1995) mentioned the role of foreign firms in filling up the gap in marketing and management skills, along with technological base. In their survey-based analysis, they conclude that EPZs play an important role in attracting investment in the apparel sector from Korea, Hong Kong and Taiwan.[4] BIDS (1989) found that a number of incentives provided by the government e.g. bonded ware-house, availability of capital, played a critical role to develop the industry. During the early stage, development of the production network was facilitated by the quota restrictions under the MFA, which restrained export of apparels of highly competitive countries at a certain level (BIDS, 1984; Rahman, 2004).

It can be inferred from the above discussion that global sourcing of apparels has been carried out within a limited number of competent and efficient supplying countries. Buyers of developed countries are always looking for sources advantageous in terms of service link facilities, government's pro-active policy initiatives to liberalize their trade and investment, availability of supporting

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3 Siddiqi (2004), identifies that the low wage is the major influencing factor for the outsourcing of apparel manufacturing in Bangladesh by the major suppliers in the world market, like South Korea, Hong Kong. He argues that, the abnormally low wage prevailing in the country gives competitive advantage (even with comparatively low productivity) to the foreign companies who outsource some part of their production process. Nath (nd) also supports the positive role of lower wage in the way of development of the apparel industry in Bangladesh.

4 According to Rahman (2004), under the centre-periphery structure of production process, firms from developed countries shift their production plants into developing countries. In focusing on the case of apparel industry of Bangladesh, he mentions that the lower production cost due to much lower wage cost has motivated the foreign firms to shift the relatively labour intensive part of the production process into Bangladesh, where the development of communication has also played a crucial role.

infrastructure and firms (role of SEZs), along with different regional and bilateral trading agreements, which reduces the tariff structure within the member countries to a large extent. Also, the closer geographical proximity among the trading nations plays as an important determinant in the way of fragmenting the production process, as it reduces the time-to-market of their products both raw materials and finished goods.

There is a growing indication that international production network in apparels can be further consolidated within a few large supplying countries. Bangladesh is considered one of the most potential sources of apparels to meet the growing demand for apparels. At present Bangladesh is ranked 5th in USA, 6th in EU and 2nd in Canada in terms of supplier of apparels. More importantly, during FY-2008-09 when the global financial crisis hit Bangladesh, it has maintained a strong positive export growth (over 15 per cent) owing to robust growth performance of export of apparels, although overall export growth, particularly export growth of apparels during July-December, 2009, was negative. From a long term perspective, it is argued that Bangladesh bears good potential to enhance its market penetration in global apparels market.

The present study focuses on the dynamics of development of apparels industry in Bangladesh with a view to analysing the structure and trend of growth of different parts of the production network in the country as well as to identify major factors responsible for the development of production network in recent years. This will provide an insight about the inherent strength and potentials of development of production network in the country.

After discussing the background, objectives and methodology of the study in section one, section two discusses the structure of and changes in IPN for the RMG sector of Bangladesh, while section three tries to identify the determinants of IPN for this industry using econometric analysis. And, finally, section four concludes the study with a summary of findings and some policy options to make the network much stronger in the coming days.

Methodology of the Study

To understand the development of international production network in the textile and clothing (T&C) industry of Bangladesh, a trend analysis has been carried out in the case of selected raw materials and components traded with major trading partners by using data available in the WITS. This analysis puts forward a comparison in historical pattern of trade of major T&C related products in different years, viz., 1995, 2000, 2002, 2004 and 2006.

A separate exercise has been carried out considering all components under a single segment at a time instead of simply carrying out analysis on differentiated products (Austria, 2004). For this purpose, expert opinion was sought from different trade bodies (e.g. Bangladesh Textiles Mills Association), which helped to identify the products at HS 6 digit level that are used in any stage of the production process in the production network of textiles and apparels. It is found that about 80 to 90 per cent of the total import or export has been covered under these categories. For the sake of data availability and also for comparability among countries over the years, the analysis was carried out for the years 2002 to 2007.

To find out the determinants of intra-industry trade (IIT) for RMG industry, which is a proxy for international production network in the sector, a panel gravity regression analysis has been estimated; augmented traditional gravity models are used in analyzing the pattern of international trade. This exercise has enabled to identify factors responsible for the overtime development of IPN in the textile and apparels industry in Bangladesh.

2. Structure of and Changes in International Production Network in the Textiles and Apparels Industry of Bangladesh

Bangladesh's involvement in the international production network of textiles and apparels industry is presented in Figure 1. Bangladesh has so far specialized in component network by manufacturing yarn, textiles and accessories and in production network by manufacturing garments. It has no specialization on raw material network and therefore completely depends on imported materials. Similarly, Bangladesh is completely dependent on buyers and their buying agents for exporting and marketing its manufactured products.

Raw Material Network

The major raw materials used for preparing fabrics, i.e. natural fibers and cotton fibers are either imported or manufactured at the apparel and textile producing countries. These raw materials are cotton, wool and silk (in the case of natural fibers) and natural gas, oil (in the case of synthetic fibers). In view of the quota phase-out, apparel manufacturing countries have changed sources of raw materials. According to Gherzi (2002), Bangladesh is highly dependent on raw materials supplying countries for manufacturing apparel (80 per cent).

Bangladesh's major source of import of cotton is Uzbekistan- about 50 per cent of total import of cotton originates from this single source (Table 3)[5]. India is the next important source for cotton; these two countries comprise more than 70 per cent of total cotton demand. It is interesting to note that during the 1990s and even in the early 2000s Uzbekistan was not the major source of cotton for Bangladesh; instead India, Pakistan and China were the main sources. The causes behind the major shift in the sourcing of cotton are firstly, the price and quality of cotton (Uzbekistan's cotton is considered to be better compared to that of other countries, according to the entrepreneurs who were interviewed); and secondly, the availability of the desired standard of cotton at a large scale. During the early 1990s when the backward linkage textile sector in Bangladesh was in a rudimentary stage, a small amount of the required level of cotton was procured from neighboring countries such as India, Pakistan and China. After about two decades when the demand for cotton has substantially increased for the large domestic base of backward-linkage textile sector, these countries could not remain the major source to meet the requirement of Bangladesh after meeting their domestic requirements. However, it is important to examine whether geographical proximity is still a major determinant of import of cotton from India. Table 4 shows that the countries of South Asia are still important sources of raw materials compared to extra-regional countries. Bangladesh imports the required raw materials for textiles and clothing items, such as HS 39 (Plastics and articles thereof), mainly from Thailand, China, India and Korea, which together comprised about 46.9 per cent of total import of these items. However, some of these sources are increasingly becoming more important, such as India and China. In 1995 the shares of these countries were only 2 per cent and 4 per cent, which increased to 11.7 per cent and 10.9 per cent, respectively, in 2008. Similar is the case with imports of inorganic chemicals and tanning (HS 28) and dyeing materials (HS 32).

Component Network

Local textile mills are able to supply only 20 per cent of fabrics required for woven factories, while local spinning and knitting mills could supply about 70 per cent yarn for spinning and 95 per cent for weaving textiles (Gherzi 2002). In

5 Four major raw materials (at HS 2 digit level) have been taken into consideration for analysing import pattern based on their importance in the backward linkage textile industry. These items include inorganic chemical compound of precious material (HS:28); tanning/dyeing extract, tannins & derives (HS:32); cotton (HS:52); plastics and articles thereof (HS:39). A group of countries have been identified based on their relative share in overall import.

Figure 1: Value Chain of the Textile and Clothing Sector of Bangladesh

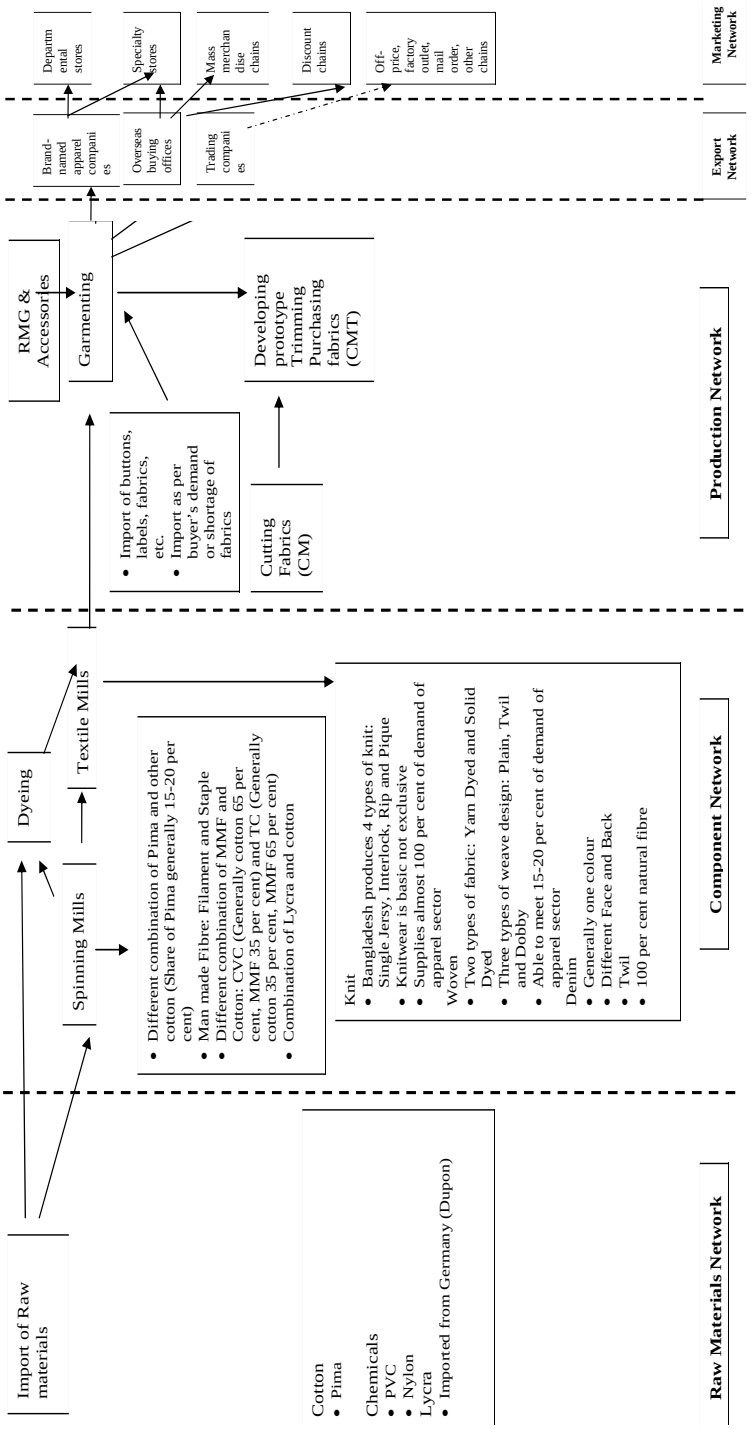

Table 3 : Trend of Imports of Cotton (HS 52) in Bangladesh from Selected Countries (as percentage of total import)

Country	1995	2000	2002	2004	2006	2008
Uzbekistan	0.00	2.19	6.71	21.00	36.10	48.60
India	13.20	9.80	24.45	14.36	20.80	23.81
Pakistan	13.60	6.77	4.06	5.04	8.67	2.79
China	13.10	20.84	13.89	20.76	8.58	0.20
United States	3.74	5.65	8.18	4.97	3.42	6.68
Korea, Rep.	5.18	1.86	2.66	1.86	0.96	0.20
United Kingdom	0.20	0.53	0.60	0.07	0.04	0.13

Source: Computed based on data from WITS and for year 2008 data from NBR.

Table 4: Pattern of Raw Material Imports for RMG Industry (top 10 countries according to year 2006)

Partner country	**Share of Total-**				
	2002	**2003**	**2004**	**2005**	**2006**
Singapore	18.19	24.21	21.12	24.26	29.99
China	14.88	13.58	12.70	17.57	14.95
India	22.01	20.64	18.52	15.65	13.95
Thailand	4.29	3.78	4.74	5.43	5.91
Germany	5.77	6.59	6.39	5.31	5.55
Taiwan, China	4.80	4.98	5.48	5.28	4.75
Korea, Rep.	6.59	4.88	6.01	3.96	4.18
Malaysia	1.16	0.34	0.30	0.44	3.31
Indonesia	2.81	2.40	2.77	2.52	2.51
Iran, Islamic Rep.	0.57	0.53	2.07	0.86	1.00
All countries (Million USD)	185.81	256.79	251.65	376.31	546.08

Source: Authors' calculation based on WITS data.

contrast, India and China are reaching self-sufficiency level in manufacturing these components, which clearly place them favorably in terms of dealing with leading apparel importers with full package.[6] Countries that have low level of self-sufficiency such as Indonesia, Sri Lanka, and Bangladesh, are compelled to depend on imported fabrics.

6 China and India import about 40 per cent of their fabrics demand, but with time it is coming down. Under China's immediate past 5 years plan, the intention was for the industry to be 80 per cent self-sufficient in woven finished fabrics by 2005 with a very large modernisation and expansion programme. (Gherzi 2002)

Intermediate Product Network

The majority of the import for RMG industry of Bangladesh falls under this category e.g. more than 70 per cent of total import in the year 2006 was for this stage of the production process, where only three countries namely Uzbekistan, China and India were responsible for more than 60 per cent of total import (Table 5). During this period a major change in the inner dynamics for sourcing of intermediate products for RMG industry occurred, when Uzbekistan became the most important country.

Compared to her export of RMG, export of both raw materials and intermediate products are very negligible and also concentrated in a number of countries. However, the export destination of intermediate products was less concentrated than its other parts, even if compared to the whole industry. The distinguishing feature of the export of intermediate products from other components of RMG industry is that it varied some how in between intra and extra-regional level.

Regarding import of manmade filaments (HS54), China is the single largest source of import, which accounted for about 50 per cent of total requirement of the country (Table 6). The other important sources are: Thailand and India. However, Korea was the single largest source of import of manmade filament during 1990s, which lost its importance overtime. The reasons for focusing on China in recent times are not only related with price and availability of the

Table 5: Pattern of Intermediate Products Imports for RMG Industry
(Top 10 countries according to year 2006)

Partner country	**Share of Total**				
	2002	**2003**	**2004**	**2005**	**2006**
Uzbekistan	4.67	13.53	16.74	18.23	25.45
China	16.24	20.15	23.00	24.38	17.71
India	20.25	11.18	12.75	10.19	17.55
Pakistan	3.34	4.60	4.97	5.99	6.71
Hong Kong, China	15.12	14.12	8.50	8.61	3.78
United States	6.15	4.37	4.30	3.14	2.98
Thailand	1.78	2.63	2.26	2.28	2.89
Korea, Rep.	4.42	3.91	3.71	3.74	2.66
Indonesia	3.50	3.58	2.17	2.79	2.51
Taiwan, China	5.24	4.87	4.93	4.45	2.23
All countries (In Million USD)	1376.74	1759.09	1908.09	1856.60	1727.63

Source: Authors' calculation based on WITS data.

Table 6: Trend of Imports of Man-made Filament (HS54) in Bangladesh from
Selected Countries (as percentage of total import)

Country	1995	2000	2002	2004	2006	2008
China	7.29	14.24	15.82	25.79	29.41	49.34
Korea, Rep.	41.38	22.37	19.32	15.08	12.09	6.90
Thailand	1.54	2.72	2.79	6.82	9.39	12.65
India	2.61	3.06	3.43	3.20	5.48	14.36
Japan	0.30	0.57	3.50	3.12	5.38	0.43
United Kingdom	0.01	0.10	0.45	0.91	0.46	0.00
United States	0.20	0.26	0.82	0.61	0.29	0.20

required type of filaments, but also because of buyers' instruction as regards use of specific type of filament for particular types of fabric.

In case of manmade staple fibers, major amount of import originated from China 70.1 per cent of total import), followed by the distant second source, India (23.1 per cent) (Table 7). Other small supplying countries are Korea, Thailand and Indonesia. There is a structural shift in the case of importing sources - Korea which was earlier considered as a major source of manmade staple fibres in 1990s

Table 7: Trend of Imports of Man-made Staple Fibres (HS55) in Bangladesh from
Selected Countries (as percentage of total import)

Country	1995	2000	2002	2004	2006
China	11.97	23.31	24.33	32.23	70.09
India	2.80	3.02	8.17	5.84	5.56
Korea, Rep.	36.04	10.42	11.12	9.85	3.82
Thailand	3.33	4.70	6.61	9.48	3.79
Indonesia	7.33	6.14	8.23	5.19	3.03
United States	1.34	0.74	1.17	0.98	0.64
United Kingdom	0.07	0.07	0.82	0.33	0.53

has lost its importance overtime. Similarly, in the case of knitted and crocheted fabrics, Korea, China and Hong Kong China are the major sources of import for Bangladesh, whereas Thailand and India are used at a limited scale.

Analysis of raw material and component network of textile and clothing industry reveals that the sources of import have overtime changed. The countries which were considered major sources in 1990s and early 2000s have gradually lost their

importance as major suppliers. In the case of raw material network, supply of cotton mainly originates in Uzbekistan, while a major share is also held by India. On the other hand, in the case of import of various components of textile and clothing, though China is a major source, a number of other countries are also considered important. Although in most instances these are Asian countries, the set of countries have changed over time. A number of reasons are found to be important behind this shifting of sources, such as price and quality of products, availability of adequate supply of large volume of products, buyers' specification in case of sourcing of raw materials and components, geographical proximity etc. However, regional trading arrangement is not considered as major determinants in case of changes in sourcing pattern over time; lack of effective operation of these RTAs because of various reasons is a related issue in this case.

Production Network

There are four stages in the production process, and manufacturers' involvement in a particular stage depends on the level of development of their enterprises in terms of technology, skill profile, expertise on fashion and design of global level etc.[7] Bangladesh has over time improved its production techniques and this has allowed it to fully shift from the early stage of production (assembly) to OEM. Under the stage of OEM, it has gradually improved its position from CM to CMT. After the phasing out of quota, because of the pressure of competition, Bangladesh has increasingly been moving towards FOB form of production, where buyers and retailers directly place their orders by contacting with manufacturers. With the development of network between retailers and manufacturers, especially after the phasing out of quota, manufacturers can work as major contractors or sub-contractors of major overseas contractors. Bangladesh is lagging behind Indian and Chinese firms in terms of performance in designing, developing new fashion products or developing their own trends.

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7 At the earliest stage of the production process, which is called assembly or outward processing traffic (OPT), buyer supplies cut fabrics, threads, buttons, zips and trims, with everything to be assembled according to the design prepared by the buyer to be re-imported. In the second stage of production (Original Equipment Manufacturing (OEM), manufacturers undertake more tasks within the production process, like cutting according to the patters supplied by the buyer, or preparing and grading the patterns according to the prototype supplied by the buyer, or even purchasing the inputs for OEM production. This stage involves different types of steps: Cut and make (CM), and Cut, Make and Trim (CMT). In more advanced stage, manufacturers develop their own brand (Original Brand Manufacturing (OBM)) and sell it in domestic, regional and international markets. And at the final stage of achievement, manufacturers influence the global fashion (Original Design Manufacturing (ODM)) by developing their original designs rather than imitating world trends and become known and recognizable brand-manufacturer world wide.

Export Network

In the buyer-driven value-chain, manufacturers have less scope of involvement in the export network. Manufacturers are more and more dependent on a group of large buyers because of the latter's increasing dominance in the retail market. Bangladeshi entrepreneurs are getting orders more and more through direct contact with buyers and retailers, although they have started businesses through contact with buying houses. Buyers and retailers prefer to place large volume of orders to selected manufacturers in order to reduce transaction costs and ensure quality of products.

As regards the export of finished products of textiles and clothing, the major market for Bangladeshi products are United States and some big economies from Europe (Tables 8, 9 and 10). Here, a remarkable feature of market dynamism for export items is that Germany as a single country is getting more importance over time, whereas the share of United States is falling gradually although it still imports the highest amount from Bangladesh.

Table 8: Pattern of Finished Products Exports for RMG Industry
(top 10 countries according to year 2006)

Partner country	**Share of Total**				
	2002	**2003**	**2004**	**2005**	**2006**
United States	43.71	33.17	28.96	33.68	33.17
Germany	13.50	19.30	20.64	19.84	19.75
United Kingdom	10.27	11.31	12.24	10.74	10.18
France	7.87	8.05	9.13	8.24	7.88
Spain	2.69	3.79	4.41	4.58	4.98
Canada	2.06	4.19	4.90	4.72	4.69
Italy	4.11	4.24	4.60	4.24	4.48
Netherlands	5.03	4.97	4.38	3.66	3.91
Belgium	3.05	3.43	3.16	2.89	2.79
Turkey	0.01	0.00	0.17	0.35	0.61
All countries (In Million USD)	3910.03	4866.93	6123.86	6721.94	8130.39

Source: Authors' calculation based on WITS data.

Final/ Finished Products

Compared to the import of raw materials or intermediate products for RMG industry, the import of finished products is very low and also very much concentrated in a few sources of their import. For import of finished products this concentration is also increasing over time. Only three countries accounted for almost 80 per cent of total import of finished products in 2006 whereas these countries supplied about 68 per cent of total imports in 2002.

Table 9: Trend of Exports of Articles of Apparel & Clothing Accessories, Knitted or crocheted (HS61) from Bangladesh to Selected Countries (as percentage of total export)

Country	**1995**	**2000**	**2002**	**2004**	**2006**	**2008**
Germany	17.42	17.57	17.57	24.40	24.69	20.94
United States	30.24	26.38	27.28	15.46	16.70	15.16
France	13.54	12.41	11.94	13.00	11.34	10.81
United Kingdom	12.43	9.32	11.01	11.93	10.20	11.00
Spain	0.49	1.84	4.04	6.35	7.23	6.72
China	0.00	0.02	0.00	0.01	0.02	0.05
India	0.00	0.00	0.00	0.00	0.01	0.02

Source: Computed based on data from WITS and for year 2008 data from NBR.

Table 10: Trend of Exports of Articles of Apparel & Clothing Accessories, Not Knitted/Crocheted (HS62) from Bangladesh to Selected Countries (per cent of total export)

Country	**1995**	**2000**	**2002**	**2004**	**2006**	**2008**
United States	52.30	53.51	52.82	41.66	49.58	47.36
Germany	9.41	11.40	11.75	18.51	16.23	14.05
United Kingdom	9.66	7.78	9.25	10.50	8.25	8.58
France	7.09	5.60	5.68	5.93	4.84	4.42
Canada	2.70	2.30	1.91	5.41	4.47	4.75
China	0.01	0.01	0.01	0.05	0.10	0.07
India	0.00	0.06	0.01	0.06	0.04	0.15

Source: Computed based on data from WITS and for year 2008 data from NBR.

The major portion of exports of RMG was in the form of finished items. For example, in 2006 this category accounted for more than 85 per cent of total export under RMG industry. Again, the export of finished items is also targeted to a limited number of countries. Only ten countries accounted for more than 90 per cent of total export of finished products and the share of top three countries in total export was about two-third of total export. Although, no major change has occurred during this period, some changes have emerged within the countries for the share dynamics, where the share of USA has declined and the share of Germany and Canada increased considerably.

For trading relations of Bangladesh, in terms of sourcing and destination of RMG related items, there is a clear division based on the geographical or economic condition of the trading partners. In the case of export of RMG products, the major countries are the economically developed countries either from North America or Europe, whereas for import of RMG products Bangladesh's

concentration lies mainly with her closer geographical partners who are at the same time predominantly developing countries. One of the reasons for this distinctive division in sourcing and exporting of RMG items might lie in the nature of the whole process of RMG production to consumption. The pressure of reduced "lead time" might be one which has induced entrepreneurs to procure their necessary raw materials and intermediate items from near-by sources. On the other hand, for export of RMG items, as the most developed countries of the world who are the major consumers of these items are mainly in North America and Europe, and the developing countries in this region are also the large producers of RMG items, Bangladesh has limited options to sell her products at regional level. These two unique economic characteristics along with some favorable tariff treatment for RMG imports provided by the developed countries (e.g. Zero tariff access in EU and Canadian Market) have influenced the production network for RMG industry of Bangladesh to emerge primarily as a one-way trading relationship, rather than a two-way relation.

3. Factors Responsible for the Development of International Production Network in Bangladesh: Findings from Gravity Analysis

The changing dynamics in the production network in textiles and apparels industry has been analysed on the basis of identifying the determinants of intra-industry trade (IIT) index.

Regarding the country specific determinants of IIT, Veeramani (2001) highlights certain country specific factors, such as per capita income difference, technology gap and human capital endowment difference which are found to be crucial in theory and are also relevant in determining the pattern of India's IIT. In their paper to measure and examine vertical intra-industry trade patterns in the East Asian region and using the data from the electrical machinery industry based on the supposition that VIIT is closely related to offshore production by multinational enterprises, Fukao, Ishido, & Ito, (2003) conclude that FDI plays a significant role in the rapid increase in VIIT in East Asia in recent years.

The determinants of IIT can be divided into two characteristics; product specific and country specific. A country characteristic such as closeness to the trading partner increases the IIT. The negative relationship between geographical distance and IIT can be reflected in transportation costs. In the view of Lorena (2005) economic theory predicts that the volume of IIT depends on two groups of determinants; the first group is related to country and the second one to industry. The determinants related to country are: the level of economic development, size

of market, distance between countries, trade orientation, economic integration and trade barriers. And, the industry-specific determinants are connected with the characteristic of an industry. These include product differentiation, economies of scale, market structure, product life cycle and foreign direct investment.

In an attempt to identify the country level determinants of IIT for motor cars between Eastern and Western Europe, Wieslander (2006) points out the role played by geographical proximity and economic size as well as the per capita GDP as a determinant of the nature of IIT, vertical or horizontal. In order to measure product differentiation, Lorena mentions that economic literature uses R&D, advertising, marketing and sales costs relative to total sales. These variables are all assumed to vary positively with IIT. According to Yeung (2008), in theoretical terms, there is indeed a complex link between global production networks and industrial clusters. For industrial clusters to emerge and sustain, both local and non-local links are highly important. Local links refer to localized assets in specific territories such as institutions, labour, and capital formation. Non-local links point to flows of knowledge, people, and capital exogenous to these industrial clusters. They are critical to the formation of industrial clusters insofar as they bring in new markets and technologies.

For present regression model, a panel gravity model has been considered (Ekanayake, 2001).

The model:

$$liit_{ijt} = \alpha + \beta_1 lpcy_{it} + \beta_2 lpcy_{jt} + \beta_3 tgdp_{it} + \beta_4 tgdp_{jt} + \beta_5 ldist_{ij} + \beta_6 lwrimi_{it} + \gamma_1 rtad_i + \eta$$

Where,

- *liit* = Intra-industry trade index between country I and j at time t in the defined RMG sector.
- α = Constant
- *lpcy* = Log of per capita GDP of Country i at time t.
- *lpcy* = Log of per capita GDP of Country j at time t.
- *tgdp* = Log of trade to GDP ratio of country i at time t.
- *ldist* = Log of trade to GDP ratio of country j at time t.
- *ldist* = Log of distance between countries i and j in nautical miles.
- *lwrimi* = Log of manufacturing wage rate index in country I at time t.
- *rtad* = RTA dummy where 1= if there is any trade agreement between country i and j or i gets any kind of export facility like GSP and 0= otherwise.
- μ = Write noise error term.

The regression has been carried out for two different time periods: one regression considered the time period for which data is available from two sources such as UNOMTRADE and National Board of Revenue (NBR) and another regression considers the time period for which data is available only from UNCOMTRADE. The first exercise has been carried out mainly to increase the number of observations of the regression analyses. However, we have not found any major difference in the significance levels of the models, except some minor variation in the coefficient values for these two regressions.

From the estimated regression results (Table 11), it is found that most of the explanatory variables are not statistically significant although they have the expected signs. The traditional gravity variables, like per capita GDP of the trading partners, have their positive but insignificant influence on establishing the intra-industry trading relations. The most influencing factor in determining the

Table 11: Regression Results: Determinants of IIT in the Export-Oriented RMG Industry of Bangladesh Dependent variable:

Variable	For period 2002-2008		For period 2002-2006	
	Year specific	Country specific	Year specific	Country specific
α	381.20	440.62***	443.79	413.58**
lpcy	2.57	1.89	50.11	35.89
lpcy	1.85	6.28	5.23	6.13
tgdp	.91	.86	1.13	.99
tgdp	-.06**	-.06	-.13*	-0.92
lwrimi	-32.78	-36.85	-74.28	-61.05
ldist	-19.86*	-27.08**	-24.07*	-24.05***
rtad	6.18	.38	3.35	1.66
Number of observations	182	182	130	130
Number of groups	7	26	5	26
R-sq: within	0.17	0.02	0.17	0.03
between	0.89	0.21	0.98	0.17
overall	0.17	0.15	0.18	0.16

*Note: *, **, *** denote significance level at 1%, 5% and 10% respectively.*

intra-industry trade in the RMG industry of Bangladesh is geographical distance, which on the other hand works as a proxy for transportation cost. We have constructed the dummy variable in a special manner to see the impact of any kind of trade preference to Bangladesh, whether that is bilateral or unilateral, on the intra-industry trade relations which has been found as insignificant for all the regressions. The regression shows that manufacturing wage rate index is not a

significant determinant for the development of IIT, and same is true for level of intra-industry trade.

4. Concluding Remarks

The development of production network in the textiles and apparels industry of Bangladesh is largely unidirectional. Although backward linkage textile sector has developed overtime in the country, this is not sufficient to provide 'full packaged' supply to the buyers. The industry is largely dependent upon imported raw materials particularly in the case of wovenwear products. In the case of import of raw materials and intermediate products from different sources some product-specific trends are observed and this has changed over time. Some of the countries which were earlier considered as major sources have become less important later on, while others are considered to be important at later stage. Changes in the sources are attributable to geographical proximity, adequate amount of supply, long term relationship, price and quality of products, and buyers' specification. Sources of import of raw materials of Bangladesh are, however, not the destination of final products.

Since different sources have been chosen by entrepreneurs for the procurement of raw materials and intermediate products, a network between major sourcing countries can be strengthened through an integrated initiative between these countries where industry specific issues should be kept in mind. An industry specific trade agreement can be signed where countries under the network will take initiative to reduce the cost of import by reducing duties, development of trade facilitation measures with a view to reducing transport cost, transaction cost and time required for procurement of raw materials and time required for shipment of products.

A number of other issues need to be taken into consideration in order to strengthen the production network between countries. Firstly, member countries should take measures for simplification of customs procedures between countries in order to speed up the process of trade. Secondly, in order to enhance the cross-border trade, the trade infrastructure at border points needs to be improved. Particularly countries having joint borders with Bangladesh should take adequate trade facilitation measures (such as speeding up the process of customs clearing, modernization of customs clearing system, adequate place to transfer products, ensuring availability of officers at border points). Thirdly, often non-tariff barriers (NTBs) hinder trade between two countries. Hence, countries working under the value chain should jointly work for identification of NTBs and thereby take necessary measures to eliminate those barriers.

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Export Diversification of Bangladesh's Apparels Products : An Analysis of Identification of New Markets and New Products

KHONDAKER GOLAM MOAZZEM[1]
SHARMIN CHOWDHURY

Abstract

Attaining a considerable level of export diversification remains a far-fetched goal for Bangladesh to achieve despite its mention in major policies. The objective of this study is to identify new markets and new products for Bangladesh's export-oriented apparels industry. Using WITS data set, the study attempts to identify potential markets and products for enhancing export of apparels; as part of this analysis, the study compares import tariffs of potentials products applicable for Bangladesh and its competing countries in the major potential markets with a view to examine the competitiveness of Bangladeshi products. The study found that Bangladesh's exports are highly concentrated to the top 5 exporting countries and the level of concentration has not changed substantially even in the case of the top 10 and top 20 products. Over time, the export of knitwear has experienced diversification in terms of export destinations, while the export of woven wear has experienced further concentration. The nature of concentration is most importantly explained by the type of market access facility enjoyed by Bangladesh particularly as an LDC in major markets. The study found that more than 50 per cent of global share of apparels trade belong to markets outside EU and USA and there are as many as thirteen countries which import more than US$$1.5 billion worth of apparels every year. This includes Japan, China, South Africa, Russia, Hong Kong, Taiwan, Brazil, Korea,

[1] Authors are respectively Senior Research Fellow and Research Associate of the Centre for Policy Dialogue (CPD). Authors would like to register their deep appreciation to Afrin Islam, Programme Associate, CPD for her contribution in preparing the paper. For any queries, please contact: moazzem@cpd.org.bd

Mexico and UAE. Bangladesh's top ten woven wear and knitwear products could be exported to these markets. Analysis of tariff structure of these markets reveal that Bangladeshi apparel products enjoys duty-free access to Japan and Hong Kong; relatively low tariff in UAE (5 per cent), some items of knitwear products in China (0 to 6 per cent) and South Africa (0.02 pt 5.5 per cent) and some wovenwear items in the markets such as Korea (0 per cent) and China (0 per cent). Tariff rates for wovenwear products were rather high in most of the potential markets such as China (6.4 per cent to 17.5 per cent), South Africa (40 per cent), Russia (30 per cent), Taiwan (11 to 12 per cent), Brazil (20 per cent) and Korea (6.5 per cent to 13.0 per cent). Although a large number of Bangladesh's major apparel products are within the list of major importable products in all potential importing countries, it does not necessarily ensure market access, since this is related to a number of other factors. It is understood from the above analysis that a substantial growth of export in potential sources will largely depend upon undertaking favourable market access policies in support of LDCs. Additionally, competitiveness in potential markets is related to relative advantages in terms of unit price of products, low level of lead time, better quality of products and less support to domestic industries. However, the issue of RoO is not explained here because of unavailability of data. Enhancing exports to these countries needs renewed effort from all stakeholders including the Ministry of Foreign Affairs, the Ministry of Commerce, the Export Promotion Bureau (EPB), the Bangladesh missions to these countries and, most importantly, trade bodies (particularly BGMEA and BKMEA). It seems 'economic diplomacy' pursued by the government should become more target-oriented 'trade diplomacy'. Export diversification of LDC products is usually constrained by their limited capacity of product development. The Government, as well as private sector trade bodies, should emphasize product development as per the requirement of the buyers.

Introduction

Despite various initiatives, LDCs' exports are still confined to a limited number of countries and products. Bangladesh is one of the few LDCs, which has effectively pursued export-led industrialization since the early 1980s, and has been able to increase her exports from less than a billion US dollars in 1981 to more than US$15 billion in 2009. This has been achieved through a spectacular growth in the export of readymade garments (RMG). From an almost unknown entity in the early eighties, the RMG sector became a major share of exports in the mid-1980s and has strengthened its base in the export structure over time. There is no denying the fact that preferential market access to major markets of developed countries, particularly the USA and EU is one of the major factors which contributed to such an achievement. However, despite this progress, the

export structure of Bangladesh has tended to remain narrow and undiversified both in terms of products and markets. Overcoming these twin constraints has emerged as a major challenge as Bangladesh continues to pursue export-led industrialization in the new millennium.

The export diversification of Bangladesh has not received adequate focus in policy related actions. Bangladesh's successive development policies, particularly industrial policy, SME policy and export policy order (e.g. *Industrial Policy 2005, SME Policy 2005* and *Export Policy Order 2009-2012* (draft)) have focused on export–diversification with specific strategies and targets. However, government initiatives encouraging country-specific export targets have hardly contributed towards enhancing export diversification of the country. The *New Export Policy Order 2009-2012* reemphasized the need for increasing the diversification of markets and products. A number of strategies have been articulated, including searching new export products and markets in South Asia, East Asia and the Middle East, applying new techniques and strategies, strengthening market intelligence, and ensuring easy access to real time information on export in different markets. Relevant government agencies and the private sectors need to support this policy and encourage export diversification by setting actionable and target-based strategies (Ministry of Commerce, GoB, 2009)

The objective of this study is to identify new markets and new products for Bangladesh's export-oriented apparels industry. This analysis extends to estimating import tariffs on Bangladesh's major apparels products under wovenwear and knitwear categories, and comparing import tariff on major importable items in new major global supplier markets, which include Bangladesh, China, India and Vietnam.[2]

The paper comprises of six sections. Section three thoroughly discusses export concentration of Bangladesh's products in terms of markets and products. Section four has thoroughly analysed Bangladesh's potentiality in a number of markets of developed and developing countries other than the markets of USA, EU and Canada. Market access in these potential markets has been assessed from two perspectives, one, market access of Bangladesh's major export items under the categories of 61 and 62 (at 6-digit level) and second, market access of Bangladesh and its major competing countries in case of major imported apparel items of each

2 One of the limitations of this study is to confine the analysis of market access to only import tariffs on major apparel products in potential markets, though a number of other indicators are also of equal importance (including rules of origin (RoO), non-tariff barriers and other technical requirements).

market. Section five briefly focuses on recent initiatives on market access in th USA, EU and WTO and their possible implications for Bangladesh. Finally section six puts forward a number of policy suggestions for enhancing LDCs exports to new markets and products; these suggestions have targeted two majo stakeholders – domestic and international.

2. Methodology of the Study

This study is based on secondary information available on websites. The mos important data set that is used for the analysis is the World Integrated Trade Solution (WITS) database. WITS is a software developed by the World Bank in collaboration with the United Nations Conference on Trade and Development (UNCTAD), which provides information on trade and tariffs for all categories of products in most countries. The identification of potential markets for the export of Bangladesh's apparels, the existing level of export to these countries and import tariffs for Bangladesh's major exportable items as well as import tariffs for major importable items applicable for Bangladesh and its competing countries are the issues analysed using WITS data set. In most of the cases, global and country-specific import and export and import tariffs data are used for the calendar year (January-December, 2008). Part of this analysis has benefited from WTO documents related to market access of LDC products.

3. Bangladesh's Export of Apparels: Product and Market Concentration

3.1 Export Concentration and Export Diversification (Markets and Products)

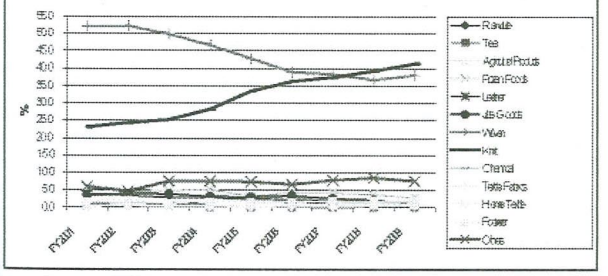
Bangladesh's export structure is overwhelmingly dominated by readymade garments. During 2009, total export was US$15.5 billion, out of which more than 79 per cent entailed export of knitwear and wovenwear products. More importantly, export structure is characterized by growing concentration towards RMG products over time (from 75.1 per cent in FY2001 to 79.3 per cent in FY2009). As a result, non-RMG products are being marginalized in the export basket. In the process of concentration of exports, an intra-RMG diversification has taken place under which knitwear products have gradually taken a larger share in overall RMG export - the ratio of export of wovenwear to knitwear was 69:31 in 2001 and 48:52 in 2009 (Rahman, Bhattacharya and Moazzem, 2008) (Figure 1). The export of non-RMG products has experienced marginal changes where the share of non-traditional products (under the category 'others') has registered

noticeable changes (24 per cent of non-RMG export in 2001 to 36 per cent in 2009).[3]

Market Concentration

Bangladesh's export of apparels is overwhelmingly targeted to two markets, the USA and EU. Together these account for more than 80 per cent of the country's total export. Imports of these two markets from Bangladesh have registered considerable growth over time, and Bangladesh's share in these markets has increased. The sustained growth of apparel export in these two markets is

Figure 1 : Share of Export of Different Products



Source: Moazzem (2009)

attributed primarily to the preferential market access under the multifibre arrangement (MFA) during the 1980s, 1990s and 2000s (till 2004) along with GSP facilities to major markets (including European and Canadian markets), which are still in operation (Rahman and Anwar, 2006). Taking advantage of the preferential market access, Bangladeshi entrepreneurs have strengthened their export competitiveness during the last three decades by developing a backward linkage textiles sector, upgrading technological bases and improving workers' skills (Bhattacharya, 1996; Bhattacharya and Rahman, 1999; Rahman, Bhattacharya and Moazzem, 2008; Mottaleb and Sonobe, 2009).

It is also important to note that Bangladesh's export destinations have increased over time, from 117 countries in FY2008 to 135 countries for wovenwear

[3] 'Others' includes products such as engineering products, home textiles, terry towel, computer software, textile fabrics, and dry food etc.

products and from 125 to 141 for knitwear products during FY2009. In view of export diversification, a number of these markets could be a potential source for enhancing Bangladesh's export. Table 1 shows Bangladesh's export market concentration for different years. Bangladesh's exports are highly concentrated in the top 5 exporting countries and the level of concentration has not changed substantially in the case of the top 10 and top 20 products. Over time, the export of knitwear has experienced diversification in terms of export destinations, while the export of wovenwear has experienced further concentration.

Product Concentration

Bangladesh's export of apparels is largely confined to a limited number of products, and over time export concentration has intensified. The top 5 products (shirts, trousers, jackets, T-shirts and sweaters) accounted for 62.7 per cent of total export in 2008, compared to a lower share in 2001 (52.2 per cent) (Table 2).

Table 1: Export Market Concentration of Bangladesh's Apparels

Year	Knit			Woven		
	Top5	Top10	Top 20	Top5	Top10	Top 20
2004	0.119	0.129	0.13	0.225	0.229	0.229
2005	0.122	0.132	0.132	0.284	0.287	0.287
2006	0.117	0.128	0.128	0.283	0.286	0.287
2007	0.114	0.123	0.124	0.271	0.273	0.274

Source: Moazzem (2009)

However, there is an intra-apparels diversification that has taken place over time, where shirts exportation has lost its dominance (from 16.6 per cent of total apparels export in 2001 to 6.5 per cent in 2008), and has been outperformed by trousers (17.8 per cent), jackets (8.38 per cent) and T-shirts (19.6 per cent). These changes in the export structure are attributed to the development of a backward linkage textiles sector, especially in knitwear products (such as T-shirts and sweaters), and partly in wovenwear products (such as trousers) which enabled Bangladeshi products to become competitive.

Based on the WITS database, an analysis of export diversity has been carried out using the export-diversity index.[4] The estimated diversity-index of Bangladesh is

[4] Herfindahl-Hirschman Index is a commonly accepted measure of market concentration. It is used here to measure export diversity of a country, i.e. whether it is dependent on a few

Table 2: Main Apparel Items Exported from Bangladesh (million US$)

Year	Shirts	Trousers	Jackets	T-Shirt	Sweater
1999-2000	1021.17	484.06	439.77	563.58	325.07
2000-2001	1073.59	656.33	573.74	597.42	476.87
2001-2002	871.21	636.61	412.34	546.28	517.83
2002-2003	1019.87	643.66	464.51	642.62	578.37
2003-2004	1116.57	1334.85	364.77	1062.1	616.31
2004-2005	1053.34	1667.72	430.28	1349.71	893.12
2005-2006	1056.69	2165.25	389.52	1781.51	1044.01
2006-2007	943.44	2201.32	1005.06	2208.9	1248.09
2007-2008	915.6	2512.74	1181.52	2765.56	1474.09

Source: BGMEA

compared with its major competitors such as China, India and Vietnam, in two major markets, the USA and EU (Table 3). Bangladesh's export diversity is relatively low compared to China and Vietnam in both categories of products and in both markets. Additionally, Bangladesh's export diversity in the USA has shown a deceleration between 2005 and 2007 in both the case of knitwear and wovenwear products, while its exports to the EU have shown an upward trend in the case of knitwear products (and to some extent in wovenwear products). Export concentration in the USA is a major concern when attempting to increase exports. Findings from the exercise indicate that the concentration of exports to the USA needs to be examined more thoroughly to determine whether the absence of market access would have any adversarial impact regarding export diversification.

The concentration of exports to certain markets depends on various internal and external factors. The most important factor contributing to the development of Bangladesh's RMG sector is the unilateral/preferential market access in major markets such as the USA and EU, under the multifibre arrangement (MFA) till 2005 and various GSP facilities in major markets (such as EU-EBA since 2001) and Canadian GSP facilities for duty-free import of LDC products since 2001

products, or has a variety of products. Herfindahl-Hirschman Index is calculated using the formula: $H = \sum_{i=1}^{n} s_i^2$

Where, s_i = share of product i in the export basket of the country concerned. $\sum_{i=1}^{n} s_i^2$ thus becomes a measure of export concentration with value ranging from 0 to 1 where 0 means the basket is perfectly diversified and 1 means total concentration, i.e. only one product contributes to all the exports.

We have used $D = 1 - H$ to measure export diversity. So, the way diversity index is calculated, the value of zero means total concentration and 1 means perfect diversification.

Table 3: Export Diversity Index of Bangladesh's Apparels

Markets	Types of products	Bangladesh			China			India			Vietnam		
		2005	2006	2007	2005	2006	2007	2005	2006	2007	2005	2006	2007
USA	Knit	0.941	0.902	0.902	0.942	0.951	0.958	0.832	0.827	0.84	0.951	0.951	0.932
	Woven	0.908	0.878	0.859	0.971	0.971	0.972	0.91	0.915	0.918	0.961	0.956	0.963
EU	Knit	0.713	0.705	0.76	0.958	0.964	0.96	0.838	0.809	0.823	0.963	0.957	0.945
	Woven	0.84	0.829	0.882	0.964	0.967	0.968	0.915	0.916	0.919	0.96	0.955	0.962

Source: Based on WITS database

(Rahman and Anwar, 2006; Rahman, 2001; Bhattachrya and Rahman, 2000). After the MFA phase-out, Bangladesh was indirectly benefited by the safeguard imposed over selected categories of Chinese apparels exports to US and EU markets till 2008 and 2009. The phase-out resulted in complete withdrawal of the quota facility in the US market; however, a bill was placed in the US congress called *'New Partnership for Development Act 2007 (NPDA)'* to provide duty-free market access to LDCs and some poor countries. Unfortunately, it was repealed with the dissolution of the last US Congress in 2008. Currently, a similar type of bill ('Trade Preference Bill') is in the formulation stage, which may provide duty-free market access to LDC products (Rahman and Anwar, 2009). On the other hand, there was little momentum in Bangladesh's export to Japan during the 1980s and 1990s possibly due to the absence of any preferential market access initiative by the Japanese government. However, there was not much change in terms of enhancing the export of apparels even after the introduction of duty-free market access in 2001.

4. Export Diversification of Bangladesh: Searching Potential Markets and Potential Products

4.1 Identification of Potential Markets and Potential Products

Bangladesh has yet to reach new large markets in developed and developing countries at a substantial level. The global import of apparels is led by a number of developed and developing countries, where the EU and USA have major shares (43 per cent of total global import) and the rest are widely distributed among other countries. A number of developed countries hold a sizable share of the import of apparels, including Japan (US$23 billion), Hong Kong (US$17.7 billion), Korea (US$4.1 billion), Russia (US$3.7 billion), and Australia (US$3.5 billion) (Table 4). Besides a large number of developing countries having a large import of apparels, such as Hong Kong (US$17 billion), Russia (US$3.7 billion), UAE (US$2.3 billion), Singapore (US$2.3 billion), Mexico (US$2.4 billion), Turkey

(US$1.6 billion) and China (US$1.5 billion), there have been attempts to expand Bangladesh's export to a number of other locations.

In order to enhance export diversification, Bangladesh's apparel products need to explore various potential markets other than the USA and EU. A list of 'potential' countries has been identified, which are the world's leading importers of apparels

Table 4: Major Global Importers of Apparels, 2008

Reporting Country/Region	Total trade value ('000 US$)	% of Global import in 2008
European Union	$80,923,421	25.95%
United States	$53,338,015	17.10%
Japan	$23,011,112	7.38%
Hong Kong, China	$17,662,105	5.66%
Canada	$5,964,893	1.91%
Korea (2007)	$4,081,542	1.31%
Russian Federation	$3,707,043	1.19%
Australia	$3,512,082	1.13%
UAE	$2,265,125	0.73%
Mexico	$2,405,598	0.77%
Singapore	$2,310,603	0.74%
Portugal	$1,838,377	0.59%
Turkey	$1,551,134	0.50%
Czech Republic	$1,523,638	0.49%
China	$1,540,315	0.49%

Source: Moazzem (2009)

after the two giant economies; these potential countries are: Japan, China, South Africa, Russia, Hong Kong, Taiwan, Brazil, Korea, Mexico and UAE. These markets could be explored for major apparels products of Bangladesh under categories 61 and 62 (at 6-digit level). Bangladesh's top ten knitwear products include: 610462, 610510, 610610, 610621, 610910, 611020, 611030, 610342, 610711 and 610831; the other top ten wovenwear products include: 620193, 620342, 620343, 620462, 620463, 620520, 620530, 620630, 620920 and 621210.[5] Each market has its own dynamics which have been reflected in the category of products; therefore, important market-specific products (top-ten) have

[5] Major Bangladesh's knitwear products include:
610462 = - Womens/girls trousers and shorts, of cotton, knitted; 610510 = Mens/boys shirts, of cotton, knitted; 610610 =Womens/girls blouses and shirts, of cotton, knitted; 610821 = Womens/girls briefs and panties, of cotton, knitted; 610910 = T-shirts, singlets and other vests, of cotton, knitted; 611020 = Pullovers, cardigans and similar articles of cotton, knitted; 611030 = Sweaters, pullovers etc, knit etc, manmade fibres; 610342 =Mens/boys trousers and shorts,

been identified both under the category of knitwear and wovenwear products (at 6-digit level). Since most of the potential countries are developing countries, the import of apparel in these countries is largely taking place under MFN rates or non-WTO rates (in the case of non-WTO member Russia). Analysis of market access is therefore largely concentrated on competitiveness in terms of average weighted tariffs of selected knitwear and wovenwear products.

4.2 Analysis of Average Weighted Tariffs of Bangladesh's Major Apparels Products in Potential Markets

Analysis of average weighted tariffs for Bangladesh's major export items in the potential markets reveals that there are two countries, namely Japan and Hong Kong, which provide duty free access to all major products of Bangladesh. Relatively low import tariff for both categories of products prevailed in several markets, such as UAE (5 per cent), some items of knitwear products in China (0 to 6 per cent) and South Africa (0.02 pt 5.5 per cent), and some wovenwear items in such markets as Korea (0 per cent) and China (0 per cent). Tariff rates for wovenwear products were rather high in most of the potential markets such as China (6.4 per cent to 17.5 per cent), South Africa (40 per cent), Russia (30 per cent), Taiwan (11 to 12 per cent), Brazil (20 per cent), and Korea (6.5 per cent to 13.0 per cent). The structure of import of major items reveals that Japan, UAE and Taiwan have imported a substantial amount of some of Bangladesh's major wovenwear and knitwear items in view of having no import tariff for Bangladesh's products. This has happened particularly to those products which are considered major importable items in those countries. Similarly, the UAE has relatively low tariffs and has attracted some of Bangladesh's leading products which are major importable of UAE. Relatively high tariff markets such as South Africa (40 per cent) and Russia (30 per cent) have imported some of the major export items of Bangladesh.

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of cotton, knitted; 610711 =Mens/boys underpants and briefs, of cotton, knitted; 610831 =Womens/girls nightdresses and pyjamas, of cotton, knitted

Major wovenwear products include:

620193 = Mens/boys anoraks and similar articles,of man-made fibres,not knitted; 620342 = Mens/boys trousers and shorts, of cotton, not knitted; 620343 = Mens/boys trousers and shorts, of synthetic fibres, not knitted; 620462 = Womens/girls trousers and shorts, of cotton, not knitted; 620463 = Womens/girls trousers and shorts, of synthetic fibres, not knitted; 620520 = Mens/boys shirts, of cotton, not knitted; 620530 = Mens/boys shirts, of man-made fibres, not knitted; 620630 = Womens/girls blouses and shirts, of cotton, not knitted; 620920 = Babies garments and clothing accessories of cotton, not knitted; 621210 = Brassieres and parts thereof, of textile materials

4.3 Analysis of Average Weighted Tariffs of Major Importable Items of Potential Markets: A Comparison between Bangladesh, China, India and Vietnam

A market specific analysis has been carried out for major importable items under the category of knitwear and wovenwear products. The major focus of this analysis is to compare relative differences in the average tariff structure of Bangladesh and its major competitors, including China, India and Vietnam, for the top ten knitwear and wovenwear products in all potential markets. This would enable us to appreciate the relative competitiveness of Bangladesh in terms of average weighted tariffs.

Japan

Japan at present is the third largest importer of apparels, after the USA and EU. It imported about US$23 billion of apparels in 2008, which accounted for 7.8 per cent of total global import of apparels. China is the leading source of apparels for the Japanese market supplying more than 83 per cent of Japan's total import of apparels. Chinese imports are followed by imports from Korea and Vietnam. Japan's top eight knitwear imports include eight leading products exported from Bangladesh, while its top nine products include seven products. A comparison of Bangladesh's tariff structure with its competing countries in major imported products reveals that Bangladesh is in a relatively advantageous position in terms of average weighted tariffs since imports of almost all products from competing countries face a relatively high tariff while imports from Bangladesh do not have any tariff. It is important to note that Vietnam is currently enjoying a duty-free market access facility on apparels product as part of the duty-free market access facility provided under the economic partnership agreement signed by ASEAN member countries with Japan. Vietnam's duty-free market access to apparels would possibly erode the preferences of Bangladeshi apparels in the Japanese market.

However, it is important to understand that most of the top imported products are made of synthetic yarn and fabric. Bangladesh is in a relatively backward position because of its major specialization in manufacturing cotton-based products. More importantly, Japan is regarded as a relatively high-end market, where quality, fashion and design are very important factors. Bangladesh's volume-led low-end cotton-based products would have relatively low comparative advantage in the Japanese market. With a view to entering the Japanese market in a big way, a substantial restructuring and focused initiatives will need to be put in place related to technological, operational, management and marketing issues.

Hong Kong

Hong Kong is currently the 4th largest importer of apparels, importing over US$17 billion with a market share of 5.7 per cent. At present Bangladesh's export to Hong Kong accounts for US$18.9 million, which is only 0.11 per cent of Hong Kong's total import of apparels. Out of the ten leading knitwear products, Bangladesh has exported eight products while the comparable number for wovenwear is six. In all major importable items, Bangladesh and its competing countries have enjoyed duty-free import facility. As a result, there is no relative advantage for Bangladesh at least from the import tariff point of view. Competitiveness of major apparel suppliers in the Hong Kong market, therefore, is likely to be determined by advantages in terms of the price of products, capacity to manufacture differentiated products, lead time and product quality.

Korea

Korea is another major importer of apparels. During 2007, Korea imported about US$ 4 billion worth of apparels, which was 1.31 per cent of global import of apparels in 2007. Bangladesh's export to Korea during 2008 was only US$9.17 million. Bangladesh is currently facing a similar tariff structure to China, India and Vietnam in almost all products. However, it has a limited level of duty-free import facility for some items of knitwear and wovenwear products. Overall, there is no relative advantage of Bangladesh as an LDC over competing countries such as China, India and Vietnam. In this case competitiveness on these products will be determined through relative advantage in terms of price, lower lead time and quality of products. It is important to note that Korea, being an advanced developing country, may consider providing the same duty-free market access facility to all Bangladeshi products as some other developing countries are currently providing to LDC products.

Russia

Russia imported about US$3.7 billion worth of apparels in 2008, which was equivalent to 1.19 per cent of global import during 2008. Russia's major imports include six knitwear and six wovenwear items. Bangladesh and its competing countries have faced a similar tariff schedule in Russia. The tariff rate is the same (20 per cent) for Bangladesh, India, China and Vietnam. It is important to note that Russia, not being a WTO member, is still practicing a tariff rate which is substantially higher than MFN rates. Russia's accession to WTO, currently in the process of negotiation, would substantially reduce the import tariff and would contribute to increased export of major apparels exporters, including Bangladesh.

Mexico

Mexico imported more than US$2 billion worth of apparels in 2008, which was 0.77 per cent of total global import. Mexico's leading imports include five knitwear and seven wovenwear products, which are major export items of Bangladesh. However, Mexico followed a high import tariff (30 per cent) for all major products and for all competing countries. This is perhaps related to its policy to support domestic textiles and industries in view of their substantial contribution to domestic and export markets. Market access to Mexico seems to be challenging, as a reduction of import tariffs in support of LDCs would not be taken into account. However, competitiveness in Mexico's apparels market is likely to be related to relative advantages in terms of price and other related factors.

United Arab Emirates

The United Arab Emirates imported of US$2.3 billion worth of apparels in 2008, which accounted for 0.73 per cent of global import. UAE's major import items include five knitwear and five wovenwear products, which are Bangladesh's major exportables products. The UAE has a uniform tariff schedule for all its leading products; there is no relative advantage for Bangladesh over its competing countries. Since tariff rates for major products are relatively low, there is not much space for tariff reduction. UAE possesses a market for consumers with mixed cultures; it is therefore important to understand the demand for various kinds of products in this market, particularly in relation to ethnicity, taste and fashion.

Taiwan

Taiwan's billion dollar market is almost untouched by Bangladeshi apparels. Taiwan's leading apparel imports include six knitwear and eight wovenwear items. Taiwan follows a tariff schedule for Bangladesh which is similar to those of major apparel manufacturing countries. There are a number of items where Bangladesh's apparels have to face relatively higher tariff compared to other competing countries. However, in some products Bangladesh has a marginal advantage over its competing countries. It seems that tariff differentials with major competing countries (especially China) would not have a significant impact; rather, major advantages of importers (other than China) will depend upon lead time and relative price advantages.

South Africa

South Africa imports less than a billion dollars worth of apparels. A number of Bangladesh's major exportable items are within the list of top ten importable apparels items for South Africa. It is interesting to note that South Africa applied a very high tariff rate (40 per cent) for all major imported apparels items for Bangladesh, China, India and Vietnam. In order to be able to expand exports the South African market, a reduction of tariffs will be highly important. It seems that South Africa allows import of apparels from African countries at a relatively low import duty (e.g. Congo, Angola and Uganda have average weighted tariff rate of 15-25 per cent).

Brazil

Bangladesh has the potential to enter Brazil's US$700 million worth of apparels import market. Brazil's major importables include Bangladesh's major five knitwear and eight wovenwear products. Although Brazil's apparels import from Bangladesh faces relatively low tariff compared to the import from China, Bangladesh faces the same level of tariff as the two other competing countries, Vietnam and India. Competitiveness in Brazil is likely to depend upon unit price advantage and lead time compared to the major apparels exporters of South America (Columbia, Peru, Spain, Panama, Italy and China).

Although a large number of Bangladesh's major apparel products are within the list of major importable products in all potential importing countries, it does not necessarily ensure market access, since this is related to a number of other factors. It is understood from the above analysis that a substantial growth of exports to potential markets will largely depend upon their undertaking favorable market access policies in support of LDCs. Additionally, competitiveness in potential markets is related to relative advantages in terms of unit price of products, low level of lead time, better quality of products and less support to domestic industries. However, the issue of RoO is not explained here because of unavailability of data.

5. Recent Initiatives towards Market Access in Traditional Markets (USA and EU) and in the Multilateral Organisation (WTO)

Although Bangladesh should take initiative to explore new markets for apparels industry, the importance of traditional markets will remain critical for the sustainable development of this sector. Therefore preferential market access to

traditional markets needs to put on focus in the future export strategies of apparels of Bangladesh.

5.1 Market Access Initiative in the USA

After the phased-out of quota in 2005, Bangladesh's export of apparels in US market has taken place under the MFN rate. Various studies showed that Bangladesh's export of apparels would substantially increase if USA agreed to provide duty-free market access facility to Bangladesh. Most of the apparels items of Bangladesh are currently facing tariff peaks in the USA (15 per cent) and total import duty paid on Bangladesh products during 2008 was more than US$500 million (Rahman and Anwar, 2009). Under this backdrop, Congressman McDermott placed a bill in the US congress in 2007, which is called *'New Partnership for Development Act 2007 (NPDA),'* in order to provide duty-free market access to LDCs and some poor countries. Unfortunately, it was repealed with the dissolution of the last US Congress in 2008. The bill was of crucial importance for Bangladesh's duty-free access (although there were several provisions in the bill, which were of concern for Bangladesh) (e.g. labour policy, trade union rights, economic reforms and good governance). Recently, Congressman McDermott's office has prepared a new draft after reviewing the earlier bill; the proposed bill is named 'Trade Preference Bill'.

Rahman and Anwar (2009) have thoroughly reviewed the proposed 'Trade Preference Bill' and appreciated its salient features and possible outcomes particularly for Bangladesh. According to Rahman and Anwar (2009) Bangladesh would enjoy the same duty-free status in the US-GSP schemes as African LDCs do, if a necessary amendment were made in a specific Act (i.e., title V of the Trade Act 1974). The proposed Bill has mentioned flexible rules of origin (RoO) with a simple 'cut and sew rule'; this would facilitate Bangladesh's export of wovenwear apparels, which is largely dependent on imported fabrics. According to Rahman and Anwar (2009), the RoO stipulates that the local value addition will need to be at least 35 per cent with derogation, when the material is sourced from the US, and 15 per cent of the appraised value of the article will be applied towards determining percentage, in the context of fulfilling the RoO requirement. It is further understood from the bill that under the tariff preference limit (TPL) nine categories of apparels will face a quota for duty-free imports at a certain limit. This limit will incrementally increase with the beginning from 2011 (and will be ended in 2019). However, the proposed TPL needs to be examined along with the interest of Africa (under the AGOA agreement).

5.2 Market Access to EU under the Proposed Revision of the RoO

The EU has recently taken an initiative to revise the RoO of the EUEBA initiative. It is important to note that Bangladesh's exports to EU markets have substantially increased under the existing initiative; export of knitwear products in particular has made tremendous progress under this rule. The proposed revision of the RoO attempts to create a simpler way of calculating the RoO, instead of the existing two-stage RoO. There is a strong possibility to apply a simple value addition method to estimate the RoO. However, the extent of local value addition is a debatable issue considering the diverse interest of textile manufacturers and textile importers. Anecdotal information indicates that the value addition requirement would be set somewhere between 25 to 35 per cent. Such revision in the RoO would have some degree of discomfort for textiles manufacturers, including manufacturers of knitwear products.

5.3 WTO Initiatives on Market Access of LDC Products

In the WTO, all developed countries and advanced developing countries, which are in a position to do so, have agreed to provide duty-free market access to 97 per cent of LDC products. However, such an access would hardly meet the requirement of LDCs since major exportable items of LDCs could easily be left out from the 97 per cent preference list of developed countries. Since African LDCs are enjoying duty free market access for almost all important products in all major markets including USA, the interest of Asian LDCs has been seriously undermined due to not having any specific provisions targeting duty-free export of their major products to developed country markets, particularly to USA. It is unclear whether the USA will express its interest in favour of LDCs' duty-free export facility to the US market or whether it would use the 'Trade Preference Bill' as a mechanism to provide duty-free market access to LDC products on a unilateral basis.

In the negotiation of NAMA, the reduction of tariffs of developed countries under the proposed Swiss Formula, particularly for the EU, would erode Bangladesh's preferences against developing countries, since any proposed changes under the formula would narrow the tariff differentials between the two groups of countries. However, the latest text of the NAMA chairman has postulated separate annexes listing all major products of interest of different affected countries for differential treatments. The WTO Ministerial in Geneva held on 30 November-2 December, 2009 could not cement these issues; further discussion would be required for reaching a deal.

6. Conclusion

LDCs' efforts towards export-led industrialisation have been confronted with various challenges because of their structural weaknesses, capacity constraints and overall weak competitiveness in the global market. Market access to developed countries, and to some extent, developing countries provides LDCs huge opportunities to be competitive despite their constraints and weaknesses. However, access to major markets would only open up opportunities and its effective utilisation would help to meet LDCs' envisaged targets. Bangladesh's export-led industrialisation endeavour has lasted approximately three decades; however, the export base is narrow and undiversified both in terms of products and countries. Successive development policies have put focus on export diversification, but there have been no noticeable changes in the overall export structure, though some intra-category diversification has taken place in the case of apparels. A renewed effort has been put in place in the *Industrial Policy 2009* and the *Export Policy Order 2009* towards export diversification, which reiterates the importance of strengthening economic diplomacy.

Search for new markets and new products for the export-oriented apparels sector should be intensified with a view to strengthening the export-base of RMG products. Keeping the emphasis on the export of apparels to major markets, i.e. USA and EU, export-oriented apparels sector has the scope to diversify its exports to a number of developed and developing countries having billion dollars of imports every year. These potential markets include: Japan, China, South Africa, Russia, Hong Kong, Taiwan, Brazil, Korea, Mexico and UAE. Enhancing exports to these countries needs renewed effort from all stakeholders, including the Ministry of Foreign Affairs, the Ministry of Commerce, the Export Promotion Bureau (EPB), the Bangladesh missions to these countries and, most importantly, trade bodies (particularly BGMEA and BKMEA). It seems 'economic diplomacy' pursued by the government should become more target-oriented 'trade diplomacy'.

Setting export targets for all major exportable products for all major strategically important countries is one of the specified objectives of government's export policy. Instead of setting quantitative targets as done by the Export Promotion Bureau, the government should focus on product-specific opportunities and challenges in potential markets. There are a number of product-specific attributes in each market, which influence Bangladesh's exports in a particular market. ***Firstly,*** Bangladesh's major exportable apparels items of wovenwear and knitwear possess very limited market share in these potential markets; export of

some of these items is relatively high possibly because of lower tariff on these items. Identification of such categories of products (low tariff and local manufacturing base) is very important. ***Secondly,*** a number of Bangladesh's major products are under the list of top importable products in the potential markets which portrays a scope for expansion of export of those items. Identification of such products in each market is also important. The present paper has taken an initiative towards identifying such products for major markets. ***Thirdly,*** most of the potential markets are developing countries with an import tariff on apparels products from as low as 0 per cent to as high as 40 per cent. Also, the import of wovenwear products in potential markets largely faces higher level of tariff. Interestingly, Bangladesh's apparels exports to some markets face higher import duty compared to developing countries such as India and Vietnam. Individual missions in collaboration with trade bodies need to identify product-specific tariff-related issues and the government should discuss those issues with its counterpart. ***Fourthly,*** a number of markets need to be looked at with special interest, particularly because of relative advantages over competing countries in terms of tariffs. For example, Japan and Hong Kong provide duty free access to Bangladesh's major products, while China and India (but not Vietnam) currently need to pay relatively high tariffs. Bangladesh's apparels producers (both knitwear and wovenwear products) must take necessary measures to enhance export to these markets. It seems RoO would be a deterrent to enhancing export; however, a flexible RoO for wovenwear products in the Japanese market is an advantage for wovenwear products. These markets are usually considered to be high-end markets with consumers' preferences on quality, fashion and design instead of on price. Bangladeshi suppliers need to take these issues in consideration if they want to enter those markets. ***Fifth,*** there are a number of other potential countries, which would provide attractive opportunities for Bangladesh, such as Russia, Brazil and UAE. Russia's accession to the WTO would significantly reduce the import duty from the existing high level (40 per cent) and would be an opportunity for enhancing export. ***Sixth***, markets for South Africa and Mexico seem to operate under different dynamics, where domestic and regional suppliers get more importance in terms of supply of apparels. Bangladesh should focus on reducing tariffs in those markets which are currently at a very high level.

Export diversification of LDC products is usually constrained by their limited capacity of product development. The Government, as well as private sector trade bodies, should emphasize product development as per the requirement of the buyers. Bangladesh should develop its manufacturing base of textiles on synthetic

yarn and fabrics, as top products of major developed and developing countries consist of a large share of synthetic and other man-made cotton based apparels. It seems a greater effort is needed to focus on potential markets. Market intelligence needs to be enhanced by all stakeholders in major markets. Developed countries may take proactive policies towards product development, quality improvement, strengthening compliances and maintaining health and safety standards as per the requirement of buyers. Developed countries have specific programmes for capacity building for enhancing LDCs, trade such as OECD's export diversification programme in Africa, trade support services to African countries and trade capacity building to African courtiers etc (Bonaglia and Fukasaku, 2003). A number of initiatives are currently taking place in Bangladesh under the support of different development partners; such efforts should be extended further towards enhancing export to potential markets and potentials products.

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The Potential of Withholding Taxes in Bangladesh in the Collection of Income Taxes

NASIRUDDIN AHMED[1]
AMINUR RAHMAN

Abstract

Bangladesh's tax-GDP ratio of Bangladesh is low when compared with neighboring South Asian Countries. One of the major reasons for low tax-GDP ratio is the existence underground economy. Factors contributing underground economy are (a) maintenance of no formal accounts or no accounts, (b) huge non-banking transaction, (c) under-reporting of asset value, (d) illegal income, (e) tax incentives and exemptions, (f) weak enforcement, and (g) agriculture sector remaining outside tax net. To bring the underground economy to surface and under tax net, the National Board of Revenue (NBR) has taken up three prong strategy. They are (a) bring more people under tax net (b) investigate tax evasion (c) expand tax withholding. Imposition of withholding tax (TDS) plays an effective role in combating underground economy. The reasons are (a) income earned is likely to be invested, (b) invested assets generate income, (c) some assets need registration and tax can be effectively levied in return on such investment or its registration. Different government departments, local authorities, local government, banks, Universities, Companies are responsible to collect TDS. To ensure compliance of TDS tax, law made expenses inadmissible if not deducted. TDS with penalty may be collected from deductors. Tax authority may audit TDS. Quarterly return from deductors has been introduced. Collection from TDS has shown steady growth, In FY 2004-5 it was taka 33.50 billion. In FY 2009-10 it raised to taka 88.12 billion. TDS has contributed in the significant growth of revenue.

[1] The authors are, respectively, Chairman and Member (Income Tax Policy), National Board of Revenue.

It also supplemented growth of revenue from non-TDS tax. Automation of tax processes and capacity building of tax officials undertaken up by NBR is likely to enhance tax revenue as well as tax-GDP ratio.

1. Introduction

Bangladesh is a low-income economy of South Asia. With a territory of 147570 square kilometres, it is inhabited by about 150 million people. In FY 2008-09, Bangladesh had a GDP of US$ 89.55 billion. The real GDP growth rate is 5.9 percent and per capita gross national income (GNI) is US$ 690. In recent years, Bangladesh has achieved significant gain in human development. Bangladesh aspires to become a middle income economy by 2021.

Raising the tax-GDP ratio is a major fiscal challenge for the economy of Bangladesh. Bangladesh's tax-GDP ratio (9% of GDP in FY2008-09) is 3.5 percentage points lower than the average (12.5%) in developing Asian countries, and the lowest among its South Asian neighbours. This may largely be attributed to the existence of a pervasive underground economy in Bangladesh. However, the purpose of the paper is not to explore ways of raising taxes from the hidden economy but it explores the potential and also identifies the limits of withholding income tax as means of raising taxes from the income tax payers of the country.

The remainder of the paper is organized as follows. Section 2 highlights the dimensions of an underground economy and the salient features of some studies relating to the underground economy of Bangladesh. Information on the tax structure of Bangladesh is presented in Section 3. Section 4 deals with the different aspects of withholding income tax under the Income Tax Ordinance, 1984. Concluding remarks are given in Section 5.

2. The Underground Economy

2.1 Dimensions of an underground economy

An underground economy is the product of illegal economic activities, which are not reported in national accounts (Table 1). Even legally earned incomes become part of the underground economy if the income earner fraudulently evades the payment of taxes.

2.2 Studies on the underground economy of Bangladesh

The findings of available studies show the existence of significant underground economy in Bangladesh (Table 2).

Table 1: Dimensions of an underground economy

Illegal economic activities	Activities not reported in national accounts
Bribery, gambling, smuggling, drug dealing, extortion, work done by illegal immigrants, etc.	Tax evasion etc.

2.3 Factors contributing to the underground economy

Following are the major factors contributing to the tax-related underground economy in Bangladesh:

Table 2: Studies on the Underground Economy of Bangladesh

Name of author	Year	Estimates of the underground economy
Reza	1989	Exceeded one-third of the country's formal GDP in FY 1985-86
Bartlett	1990	Informal sector constituted 65 % of labour force in Dhaka in late 1980s
Hassan	1997	The underground economy averaged about 23.5% of the formal GDP during 1972 -1995
Asaduzzaman	1998	The average size of the underground economy was 21.4% of GDP in FY 1989 -90
Hossain	2003	The underground economy averaged 16.03% of GDP during 1974-75 to 1999-2000 and 25% of GDP in FY 1999-2000
Austrian University	2003	The informal sector reached 34.9% of the official GDP in FY 2000 -01
Park	2005	The average size of the underground economy was 37.7% of the official GDP in FY 2001-02.

Source: Authors' compilation

- Large number of taxpayers maintain no accounts or non-formal accounts
- Large number of non-banking transactions (cash transaction or barter)
- Under reporting of asset values
- Illegal income remains unreported for obvious reason
- Tax incentives and exemptions leading to tax evasion
- Weak enforcement of laws
- Agriculture sector basically remains outside the purview of the tax net

2.4 Dealing with the underground economy

- National Board of Revenue (NBR) has taken measures to
- Bring more persons under tax net
- Investigate tax evasion cases
- Collect tax from the underground economy through withholding taxes.

3. Tax Structure in Bangladesh

Tax-GDP ratio in Bangladesh is the lowest in South Asia. Tax-GDP ratio in Bangladesh is given in Table 3.

The tax structure in Bangladesh shows the preponderance of indirect taxes over direct taxes (Table 4).

4. Withholding Income Tax

4.1 Potentials of withholding income Tax

The withholding of income tax (WIT) or tax deducted at source (TDS) scheme is the most pervasive measure realizing income taxes on a huge number of items.

Table 3: Tax-GDP Ratio in Bangladesh

Financial Year	Tax-GDP ratio
2004-05	8.60
2005-06	8.70
2006-07	8.30
2007-08	8.89
2008-09	9.0

Source: Government of Bangladesh (2009), Bangladesh Economic Review 009

Table 4: Tax Structure in Bangladesh (in billion Taka)

Financial Year	Direct Taxes	Indirect Taxes	Total
2004-05	58.27	240.77	299.04
	(19.49%)	(80.51%)	(100%)
2005-06	74.23	265.80	340.03
	(21.83%)	(78.17%)	(100%)
2006-07	90.50	281.69	372.19
	(24.32%)	(75.68%)	(100%)
2007-08	121.80	352.47	474.27
	(25.68%)	(74.32%)	(100%)
2008-09	142.73	382.53	525.26
	(27.17%)	(72.83%)	(100%)

Note: Figures in parentheses indicate share.
Source: National Board of Revenue, Annual Reports (various issues)

The revenue potential of the WIT scheme is very high due to the following reasons:

- any income earned is likely to be invested or saved in some form;
- in many cases invested amount generates interest or return from assets;
- most assets need registration for ownership; and
- tax can be effectively levied on return of assets or at the time of registration.
- The underlying reasons for preferring WIT or TDS are:

(a) From tax administration perspective

- It is an in-built machinery to collect tax where non-compliance is very high;
- Through WIT, taxes are being collected from organized small number of tax-points rather than from many informal taxpayers from diverse locations;
- Information regarding parameters of income is also collected in the process for using in future assessment or audit; and
- Government exchequer gets year-round revenue rather than seasonal revenue.

(b) From taxpayers' perspective

- Easy to pay as taxpayers earn and avoid time-consuming tax deposit to selected banks or treasury;
- Less pressure on cash flow at the end of the year for reduced tax liability at the time of filing return; and
- Avoiding arbitrary estimate of income by tax administration.

4.2 Authorities responsible for tax withholding program

Following government or semi-government or autonomous bodies and corporate entities, non-government organizations (NGOs), institutions and in some cases individuals paying the money are working as the withholding agents:

1. Government
2. Director General, Bureau of Manpower, Employment and Training
3. Permitting authority (issuing any permission or renewal of permission for manufacture of bricks)
4. 5.Registration authority (registering any document for transfer or any land or building or apartment)
5. City Corporation or Paurashava
6. Commissioner of Customs

7. Authorized authority (authority duly authorised for a particular purpose, say, for shipping business of a resident under section 53AA)
8. Chief Executive Officer of stock exchanges
9. Company or its principal officer
10. Bank or insurance company or cooperative bank
11. Issuers of securities (Government or companies)
12. Sellers of banderols to any manufacturer of cigarettes
13. Employer (in case of foreign technician serving in diamond cutting industries)
14. Non-government organization (NGO)
15. Film producer
16. Chief executive of any trust
17. University or medical college or dental college or engineering college
18. Auction seller

4.3 Transactions subject to tax withholding

Under the Income Tax Ordinance, 1984, 8 items were subject to withholding income tax (WIT) under 7 sections. From 1998-99, a new provision was introduced with respect to the withholding income tax, which was the 'final discharge of tax liability' (FDTL) under section 82C. From 2001-02, every person required to deduct or collect tax at source (WIT) has been given a tax collection account number under section 184BB and the WIT is the 'final discharge of tax liability' (FDTL). As on July 1, 2009, there are 43 items under 40 sections [2 items u/s 52 and 3 items u/s 52A] subject to withholding income tax (WIT). Besides, 3 more items have been included in the list of withholding income tax by issuing SROs.

4.4 Ensuring tax withholding

- To ensure functioning of tax withholding, the following provisions have been incorporated in income tax code:-
- The related expenditure is not admissible while determining its income if the deduction is not made or the deducted amount is not deposited [section 30];
- The amount deductible plus interest @ 2% per month can be recovered from the paying/ registering authority [section 57];
- Tax authority is empowered to audit tax deduction [section 117A].

4.5 Revenue performance of the withholding income tax scheme

Withholding income tax contributes substantially to total income tax revenue of the government (Table 5):

Table 6 has enumerated 17 individual WIT items from which 95 percent of total WIT was collected in 2007-08. Of these 17 items, first 5 WIT items yielded 75 percent of total WIT and first 10 items yielded around 90 percent of total WIT.

4.6 Limits of withholding income tax

- Income of illegal economy remains outside the mainstream
- Presence of informal accounting records
- Presence of cash basis of transaction
- Inadequate capacity building in tax department
- Lack of incentive of tax deducting authorities

Table 5: Contribution of withholding income tax in income tax revenue:

Financial Year	Withholding income tax	Total tax collected	%
2004-05	33.5	55.8	60.04
2005-06	40.1	71.6	56.01
2006-07	51.6	87.2	59.17
2007-08	61.8	117.4	52.64
2008-09	86.7	138.6	62.55

Source: National Board of Revenue, Annual Reports (various issues)

5. Concluding Remarks

The withholding income tax (WIT) has helped significantly in raising the income tax but the problem is to bring the indirect taxpayers through this scheme into formal legal channel through submission of income tax return. Still the scheme has been working with high revenue success due to the counter provision of 'final discharge of tax liability' (FDTL).

Along with withholding taxes, the following policy recommendations are made to tax the activities of the underground economy:

- Implementing the reform agenda initiated at the NBR;
- Simplification and fully automating tax collection system under a central database;

Table 6: Item-wise Revenue Performance of WIT

(Figures in million Taka)

Sl.	*Head of withholding*	2003-04	2004-05	2005-06	2006-07	2007-08	
						Amount	%
1	Contractors/Suppliers	9,257.2	11,088.0	13,354.8	12,906.7	16,317.6	26.4
2	Interest on Saving Deposits and Fixed Deposits	5,122.8	6,228.8	7,070.8	9,183.0	11,129.5	18.0
3	Import of Goods	6,047.6	6,097.3	6,720.0	7,911.7	10,442.1	16.9
4	Interest on Securities/Treasury Bond	3,113.1	1,709.9	3,172.5	9,103.2	4,371.9	7.1
5	Transfer of Property	1,071.1	2,119.4	2,387.3	1,714.7	4,230.9	6.9
6	Salaries	745.6	1,580.9	1,329.3	2,485.6	2,804.2	4.5
7	Dividends	163.2	252.4	31.3	2,969.6	2,379.9	3.9
8	Exporters	0.0	3.6	640.4	951.7	1,522.6	2.5
9	Distributors' Commission or Fees	229.3	254.1	472.0	420.4	1,311.9	2.1
10	Export of Manpower	155.4	131.1	191.6	91.7	768.1	1.2
11	Interest on Bank Deposit	0.0	1.6	63.0	172.4	730.3	1.2
12	Indenting Commission or Shipping Agency Commission	169.5	362.6	272.9	427.8	596.8	1.0
13	Professional Fees or Technical Services Fees	42.6	0.0	128.2	130.0	560.1	0.9
14	Insurance Commission	37.4	100.2	72.3	167.0	558.7	0.9
15	House Rent	104.6	246.3	245.6	462.1	391.2	0.6
16	Commission of Letter of Credit	0.0	0.0	172.7	335.8	337.6	0.5
17	Remuneration of Film Actors and Actress	1.3	2.6	98.8	0.0	240.1	0.4
18	Others	2,672.5	3,321.2	3,695.9	2,116.3	3,062.4	5.0
	TOTAL SOURCE TAX	**28,933.2**	**33,500.0**	**40,119.4**	**51,549.7**	**61,755.9**	**100.0**

- Launching continuous taxpayers' awareness programs for broadening tax-net;
- Enhancing the capability of the NBR officials for combating tax evasion;

- Rewarding the taxpayers who pay considerable amount of taxes so that other people feel encouraged to pay taxes; and
- Establishing tax information management and research centre to collect income related information of taxpayers from both primary and secondary sources.

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Urban Health Strategy: Needs and Priorities

DHIRAJ KUMAR NATH[1]

The global population growth in the next three decades will occur in urban areas in a massive way with the huge migration of rural middle and lower –income societies to nearby cities. Most of these migrants, generally of low human and financial capital on arrival in the city, will settle in slums, in areas of concentrated poverty and environmental vulnerability that are already a dominant feature of much of the urban landscape of the developing world.

For the first time in history, more than half of the world human population, around 330 crore, started to live in urban areas since January 2009. This is expected to swell up to 500 crore by 2030 AD. The growth in urban population is set to outstrip by a wide margin those in rural areas. Many of the new urbanites will be dominated by poor and distressed population demanding health services free of cost.

Urban Population growth in Bangladesh

Bangladesh is no exception to the trend of urban population growth. Even at present, near about 30 percent of the population, about 45 million, live in urban cities. With this trend of urban growth, the country will be half urban within next 20 years.

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[1] Ex-Sectory, Government of Bangladesh, Former Advisor, Caretaker Government of Bangladesh.

This strategy is prepared to ensure equitable, accessible and sustainable health services in urban areas to address the overarching objectives of poverty reduction through providing basic health services to the poor more exclusively on primary health care, reproductive health services, and nutrition to improve living conditions of the urban poor under challenging environment and also to increase capacity to respond to opportunities resulting from economic growth.

Among the 19 mega-cities of the world, Dhaka stands now in 9th position with about 13.0 million inhabitants, of which 36% live in slums. According to UN Department of Economics and Social Affairs /Population Divisions, Dhaka's position in terms of population shall be 4th in 2025 with 22.0 million ranking after Tokyo (36.4) Mumbai (26.4) and Delhi (22.5) and followed by Sao Paolo, Mexico city, New York etc.

Urban Health related challenges

Health and health-related behavior in urban areas of Bangladesh with possible vulnerabilities and environmental risks in the urban setting has emerged as prime concerns for adopting a national strategy. Some major health related challenges of urbanization are:

a) Disease profile increases very fast in urban areas. With the growth of urban population, spread of slums and squatters, and the rate of maternal mortality and infant mortality have increased disproportionately. Similarly HIV/AIDS, TB/Leprosy Syplhiis/ Gonorrhea, Dengue / Malaria, RTI/STI, along with other cardiovascular diseases are increasing very fast.
b) **Solid waste generated by urban areas**. The challenges will be enormous by 2020 when the demand for removal of solid waste will rise to about 50,000 tons/day from the present figure of about 15000 tons /day.
c) About 36,000 tons of **medical waste** is generated every year in Bangladesh, out of which about 7,200 tons is hazardous.
d) **Food contamination and adulteration** with dangerous substances, colors, and chemicals are widespread in the country. There are limited sophisticated analytical laboratories with proper equipment and chemical supported by well trained analysts and technicians.
e) **Animals are slaughtered in open places** adjacent to the wet markets or on the roadside areas without proper facilities, sanitation and drainage. There is no modern slaughtering house in 6 city corporations and 310 municipalities.

Urbanization is inescapable

The urbanization is an inescapable trend of modernization and should, therefore, be taken as inevitable. Many policy makers suggest preventing urban growth by discouraging rural urban migration, with tactics of evicting squatters and denying health services and other facilities. These attempts to prevent

migration from rural areas proved futile, counter–productive and, above all, violation of fundamental human rights.

Needs of Urban Strategy

This scenario suggests drawing an urban health strategy urgently. The Health, Nutrition and Population Sector Program provides opportunity for the same but no initiative is visible.

Considering its importance, modern city fathers and governments, as such, are very inclined to frame an **urban health strategy for better and healthy living in urban areas.** Improvement in the health status is the indication of poverty reduction. Therefore, investment in the health sector in future must be significant to reduce the health poverty.

Strategy to address impending issues and ensure effective coordination

Formulation of urban health strategy is very urgent and any delay might cause disaster in urban public health scenario with multiple problems, recovery from which could be difficult and too late.

The urban health strategy can make provision for effective mobilization of community outreach workers and voluntary health workers. There could be Family Health Card and Red Card at least for 30% for the poor. Ward Committees should take the responsibilities of monitoring the urban health service.

In consideration of the above, the **draft of the Urban Health Strategy is prepared for eliciting public opinion and possible improvement with the consultation with experts, opinion leaders, stakeholders, development partners and all segments of the society as far as possible.**

To maximize the health outcomes in urban areas, a comprehensive and concerted effort is required with the formulation of Urban Health Strategy. **This draft strategy paper outlines certain basic principles and a few key strategic interventions.** Besides, municipal public health governance to ensure food and water safety, improve solid waste, and expand access to urban population with environmental and primary health care services is highlighted. An important cross-cutting theme would be to mainstream private sector participation to improve effectiveness and efficiencies and value for money of public health interventions. The strengthening of service delivery through uniform service model, involvement of community with outreach workers, empowering institutional arrangement and inter departmental convergence are elaborated.]

Background, Vision, Objective

Achievements of Bangladesh in health and population Sector

Over the last 37 years since independence, Bangladesh has made gained substantial improvements in the health status and acceptance level in family planning. Life expectancy at birth increased from 54.8 (1981) to 65.4 (2006), crude death rate declined from 11.5 (1981) to 5.6 per 1000 population (2006), and Total Fertility Rate dropped from 6.3 (1975) to 2.7 per woman (2007). Furthermore, Infant Mortality Rate has decreased from 87 (1993) to 52 per 1000 live birth (2007) with more rapid gains among girls. The contraceptive prevalence rate has increased to 55.8 in 2007 although there must be enough investment to attain the Replacement Level of Fertility (Mitra and Associates, ORC Macro 2008).

The remarkable success is that population growth rate declined to 1.39 percent from the level of 3.3 in 1975.

Major challenges in Health, Nutrition and Population sector are as follows

i) Urbanization is a major challenge in view of the rapid growth of urban population at the rate of 6% or more and around 30 % of the population live in urban cities at present. Within next 20 years, it is expected that the urban: rural population will be 50:50 creating major challenges for the health services delivery system.

ii) Climate change is a threat in view of the fact that one meter rise in water in the coastal belt shall make around 50 million people climatic refugees. Besides, environment pollution, growth of slums and squatters are responsible for increased disease profile like hypertension, STI/ RTI, malaria, kalazar, dengue, syphilis / gonorrhea, TB /Leprosy etc. Solid waste management, medical waste disposal, food adulteration etc shall emerge as threat to the normal life of the city dwellers.

iii) Population Growth: Although population growth at present is 1.39% and the TFR is 2.7 per women, Bangladesh is a low fertility country, but the growth of population is a threat to social and economic fabric of the country in general and health service delivery system in particular. This country with a small geographical boundary cannot contain such a large size of the population with one of the highest densities per square kilometer.

iv) Ageing population: As at present, the life expectancy at birth is 65 years and the percentage of ageing population is around 6 per cent. This size is going to

increase rapidly with the change of medication and maximum people rushing to urban areas for health care services.

v) Communicable and Non- communicable diseases: The danger of communicable diseases to spread and contaminate others is much wider in urban cities.

vi) Health Financing: Health financing in the urban areas from the government in comparison to rural areas is insufficient in relation to its demand. Ministry of Health and Family Welfare has no adequate infrastructure facilities in urban areas although Local Government Division is providing health care delivery system with the support of City corporations and Municipalities. Urban Primary health Care Project of LGD with the support of ADB, DFID, SIDA, UNFPA and ORBIS is providing commendable services under the Public–Private Partnership model. Besides, private sector hospitals and clinics are providing health services with the little opportunity of access and affordability of the poor.

vii) Human Resources Development: There is an acute shortage of trained manpower to provide health services in the urban areas. The shortage of nurses, paramedics, medical technicians is so acute that even some private clinics fail to provide quality services in spite of their good intention. The turn-over of the service providers is very frequent in UPHCP11.

viii) Good Governance: The total health and family welfare services need to improve good governance in service delivery as well as administration of the sector wide management. This area needs more attention while urban services are required to be more transparent and accessible to the poor and vulnerable communities.

ix) Inequities in health services delivery and gender violence: The inequity is a critical problem in the health care delivery system with preference to rich and capable persons. Besides, gender violence is also more distinct and visible in urban localities due to many social and economic factors related with urban living.

x) Supervision and monitoring: Supervision and monitoring is weaker in urban areas in relation to rural areas.

xi) The stewardship role of the government. The stewardship role of the government, especially city corporations and municipalities and health department, is not as strong and prominent as expected. Administrations of City Corporations and Municipalities are dominated by political wisdom rather than service providing discipline.

Of all the challenges, the dominant one is to provide health services and overcome issues relating to health and family welfare, specially to achieve the millennium development goals. The fast growing population in urban localities is in fact demanding highest consideration of the government to mobilize resources and formulate a new strategy to address the issues relating to urban health and reproductive services.

In consideration of the above, it was felt necessary to prepare Urban Health Strategy paper indicating the areas of major interventions to be taken in near future.

Vision of the Strategy

The vision of the Urban Health strategy is to ensure the improvement in the health and reproductive health status of the urban population, especially the poor, marginal population, mother and child, aging population, slum dwellers distressed and deprived people.

Besides, the vision is to ensure environmental health through improvement of waste management, food safety and safeguards from diseases. This is also to ensure food safety, safe drinking water, controlling air and sound pollution, and above all, maintaining the urban areas clean and green.

The Purpose of the Strategy

This strategy is prepared to ensure equitable, accessible and sustainable health services in urban areas to address the overarching objectives of poverty reduction through providing basic health services to the poor, more exclusively on primary health care, reproductive health services, and nutrition to improve living conditions of the urban poor under challenging environment and also to increase capacity to respond to opportunities resulting from economic growth.

Guiding principles of the Urban Health Strategy are as follows

1. UHS is viewed as an overall development issue.
2. Embedded in all national planning frameworks related to population welfare and urban inhabitants in particular.
3. Special focus on marginalized population and the extreme poor dwelling in urban slums in distressed living conditions.
4. Emphasized on gender sensitivity and maternal and child health issues.
5. Stressed on PPP and GO-NGO collaboration.

6. Attached importance on the sustainability of interventions.
7. Stressed on good governance issues and excellence of management.

Goals

By 2020, urban health situation shall improve significantly with access to health, nutrition and family planning services required to achieve the targets of millennium development goals and an enabling environment, socially secure and demographically desirable..

Time Frame

- UHS to span over a period of 10 years from 2010 to 2020.
- UHS strongly encapsulates long term perspectives while goals articulate some urgent interventions and objectives.
- Scope for periodical review and adjustment with impending situation and rapid responses.

Needs of the Urban Strategy

- The global population growth in next three decades will occur in urban areas.
- Half the world population, 3300 million, started living in urban areas, January 2009.
- In Bangladesh 30 % now live in urban areas and shall be 50:50 by 2040.
- Dhaka will be 4th Mega city in 2025 with 22 million people.
- Challenges of urbanization enormous with spread of slums and many diseases.
- Environmental health, occupational hazards, increased trauma.
- Urban health strategy to provide better health services for persons living in urban areas.
- Urban health strategy envisages certain principles and key strategic interventions.
- Suggest key strategic actions to implement policy reforms.

Urban Poverty

- Poverty has long been associated with the rural masses in developing countries. With the growth of cities, poverty is increasingly becoming urbanized. Many of these urban poor live in absolute poverty.
- UN Habitat 2003 estimates that there are currently more than 1000 million

slum dwellers in the world, making up one-third of the global urban population. This number could grow to 1.5 billion by 2020 unless significant health and infrastructure interventions and pro-poor housing and land tenure policies are undertaken. Asian cities are already facing significant challenges in targeting these populations with health services and will face greater burden in the future**.**

- Urban health conditions of the poor are characterized by poor housing, living under flimsy structures, poor sewerage and drainage, and inadequate water supply, and irregular disposal of solid waste, which are are responsible for contamination of different diseases.

Objectives of the Strategy

Millions of people living in urban areas demand better living conditions, and 6 city corporations and 309 municipalities need strengthening of their capabilities to provide health nutrition and family planning services in urban localities.

About 30 % or about 45 million of the country's population live in urban localities. The cities are comprised with rich, middle class, slum dwellers and extreme poor population. The nature of the population is diverse, education level different, needs and priorities of health services are also diversified.

Considering the paucity of information, accurate statistics and adequate knowledge about the number and nature of urban population and also the service providing facilities now available in urban localities, it was felt very urgently to formulate urban health strategy for Bangladesh. Besides, Mid Term Review Mission in 2009 for the Urban Primary Health Care Project recommended formulating a strategy paper in consultation with all relevant ministries and divisions and concerned stakeholders.

In consideration of the above, the UHS is prepared with the following objectives:

1. To improve the health status of the urban population
2. To strengthen the capacity of the local level institutions, city corporations and municipalities
3. To create positive change in the health care delivery system in the urban areas
4. To institutionalize the Referral system
5. To strengthen pro-poor targeting interventions and provide services to underserved and marginalized population

6. To provide services through infrastructure development and ensure private-public partnership
7. To ensure solid waste management and hospital waste disposal and reduce food adulteration and other environmental health hazards
8. To reduce communicable diseases, risk of epidemic out-breaks in urban areas
9. To generate awareness and enhance community participation
10. To ensure safe drinking water, proper sanitation and general awareness about the health and hygiene
11. Generate awareness and enhance community mobilization through IEC/ BCC to supplement and make the above interventions effective.

Urban Health Scenario: an Overview

Urbanization: engine of growth and incubator of civilization

"We have entered the urban millennium. At their best, cities are engines of growth and incubators of civilization. They are crossroads of ideas, places of great intellectual ferment and innovations—cities can also be places of exploitation, disease, violence, crime, unemployment, and extreme poverty…..we must do more to make our cities safe and livable places for all." Kofi Annan (2000)

Over 90 percent of the world's population growth in the coming two decades will occur in developing cities – most of it in urban slums. If developing cities are well managed, they will be engines of economic growth, national prosperity, civil harmony and global peace. If not, rapid urbanization will poison the air we breathe, create life threatening water shortage, deplete valuable natural resources, strangle economic growth, widen income disparities and increase the spread of disease. Failure to manage the growth of developing cities will lead to increased political, military and civil conflict, which is likely to have profound effects on global security.

Urbanization is the physical growth of urban areas as a result of global change. Urbanization is defined by the United Nations as movement of people from rural to urban areas with population growth equating to urban migration. **Urbanization is closely linked to modernization, industrialization and the sociogical process of rationalization.**

As more and more people leave villages and farms to live in cities, urban growth results to develop as conglomeration of human habitation.

The rapid growth of cities like Chicago in the late 19th century and Shanghai in 20th century can be attributed largely as symbol of urbanization.

Growth of Urban Population

A city is defined as a community with a large enough population and resource base to allow specialization in arts, crafts, services, and professions. An incorporated community is defined as a city when it has more than 2500 residents as urban regardless of size. Beyond about 10 million inhabitants, an urban area is considered a super city or a mega city. At the beginning of the Industrial Revolution, only 3 % of the world population was living in cities and it is about 50 percent now. In USA, about 79% of the population is urban.

The world cities are growing at unprecedented rates. This growth in developing regions of the world is posing a serious challenge to the development efforts and health services delivery system across the world. From the late 1970s to 2000, the world's urban population doubled, and soon more the than half the world's population will be urban rather than rural.

The global proportion of urban population rose dramatically from 13% (220 million) in 1900 to 29% (732 million) in 1950 to 49% (3.2 billion) in 2005. The UN World Urbanization Prospects Reports projected that the figure is likely to rise to 60% (4.9 billion) by 2030 AD.

The global population growth in the next three decades will occur in urban areas in a massive way with the huge migration of rural middle and lower income societies to nearby cities. Most of these migrants, generally of low human and financial capital on arrival in the city, will settle in slums, in areas of concentrated poverty and environmental vulnerability that are already a dominant feature of much of the urban landscape of the developing world.

For the first time in the history, more than half of the world human population, around 330 crore, started to live in urban areas since January 2009. This is expected to swell up to 500 crore by 2030. The growth in urban population is set to outstrip by a wide margin those in rural areas. Many of the new urbanites will be dominated by poor and distressed population demanding health services free of cost.

Bangladesh is no exception to this trend of urban population growth. Even at present, near about 30 percent of the population, about 45 millions, are living in urban cities. With this trend of urban growth, the country will be half urban within

next 20 years. So migrated population, mostly poor, shall demand employment, education, water, sanitation, electricity and health care services placing enormous strain on urban institutions and the nation as whole.

Among the 19 mega cities of the world, Dhaka stands now in 9th position with about 13.0 million inhabitants of which 36% lives in slums. It indicates that every third person is a slum dweller in Dhaka city as at present. According to UN Department of Economics and Social Affairs /Population Divisions, Dhaka's position in terms of population shall be 4th in 2025 with 22.0 million, ranking after Tokyo (36.4), Mumbai (26.4), and Delhi (22.5), and followed by Sao Paolo, Mexico city, New York etc.

Urbanization is a trend and an inevitable phenomenon

The urbanization is an inescapable trend of modernization and should therefore, be taken as an inevitable phenomenon. Program of Action of ICPD 1994 called upon governments to "respond to the need of all citizens, including urban squatters, for personal safety, basic infrastructure and services, to eliminate health and social problems".

Key Strategic Actions

Key Strategy 1. Universal Coverage

The Urban Health Strategy proposes to target the entire urban population of Bangladesh covering 6 city corporations and 309 municipalities existing at present and the number that might increase in future.

The Strategy should maintain the focus on the poor, the marginalized population and the underserved populations with special emphasis on the MCH-FP services in the slum areas.

Key Strategy 2. Strengthening service delivery through a uniform service delivery model

The strategy envisages implementation of a multi-level service delivery model supporting the strong Community outreach intervention. The service package will include, apart from emphasis on preventive and promotional health care, massive BCC campaign with a mix of public health and primary level curative care.

This multi- pronged approach will be taken to intensify the service delivery through a plethora of measures:

Key Strategy 3. Institutionalizing the existing 3 tiers primary health care model

IST tier: Community Outreach Workers: One health worker per 1000 population.

The objective of this intervention of community outreach is to move the health care from institutions to the doorsteps with access of all health and family planning services. The community level operational strategy will include both urban poor and the urban inhabitant in general depending on the demand for getting the services. The red card system as introduced in the UPHCP should be continued for the urban poor, minimum 30 %, as at present. City Corporations and municipalities will mobilize number of workers according to the agglomeration of low socio-economic population residing in a particular award.

2nd tier: Primary Health Care Center: per 5000 population or more poor

Comprehensive Health Care Centre per 10,000 populations

These centers will cater services to a population of 5000 urban poor from a cluster of wards that provides a much better and quality primary health care and special care to mother and child.. These centers will be closer to the community aided by the GIS maps for optimum location. These centers should be maintained by the doctors and nurses etc full time and round the clock to attend the mother and the child.

3rd tier: Referral to tertiary level hospitals like district hospital or specialized hospitals available in the city or municipalities.

The referral facility, the third tier of support will be a system of accepting emergency and refereed client from second tier or other health care centers managed by private or corporate sector. These facilities will serve as a daily OPD besides providing preventive interventions, not available at the secondary level service delivery centers.

Key Strategy 4. Community empowerment and involvement

1. Recruitment of Volunteers, Generation of awareness on health, family planning and nutrition issues through existing community groups and formation of groups in ward communities.
2. Supporting and strengthening existing facilities of ward commissioners and councilors.
3. Preparation of specific action plans at ward level to reflect the operational

strategies and address the specific determinants of health.

4. Introducing new model of service delivery where necessary like PPP with NGOs / Private sector for service delivery, data management etc.
5. Adopting and implementing appropriate BCC strategies to improve health communications. This will combine interactive group and interpersonal methods on the ground, mass media initiatives and advocacy with various stakeholders.

Key Strategy 5. Strengthening institutional Arrangements and inter-departmental convergence

a. To strengthen the stewardship role of the government, the Local Government Division should establish an Urban Public and Environment Health Unit in the Ministry to oversee their activities and provide guidelines and assist the city corporations and municipalities in their normal functions.
b. There should be an Inter-ministerial Central Coordination Committee under the Chairmanship of the Minister in charge of Local Govt., Rural Development and Cooperatives where the Ministers for Health and Family Welfare, Food, Industry, Environment and Forests etc will be members to formulate high level strategy and review the program performance from time to time.
c. There should be Inter –Departmental Coordination Committees in all City Corporations and Municipalities to monitor and assist the health and Family Welfare services, environmental health issues , sanitation etc pertaining in Urban areas. .
d. Ward level committees should also be constituted to coordinate multi-departmental responses including Pure Water Supply, Solid waste management, sanitation and hygiene, hospital waste disposal, tracking of seasonal diseases, emerging and re- emerging diseases, arsenic, avian flu, Dengue Homorganic Fever, HIV/AID, water borne aliments and vector borne diseases.
e. City corporations and Municipalities should be more sustainable with their own resources and there should be more power decentralized for their management and operations. In precise, the City Corporations and Municipalities should be given more autonomy to operate free hand.
f. Capacity building of human resources should be considered a priority issue.
g. Referral linkage with Ward health level establishment and specialized level hospitals at the tertiary level should be established.
h. Regular monitoring and period survey and inter-actions with partner NGOs and Private sector operators will be conducted under this unit.

Key Strategy 6: Strengthening Leadership and coordination: LGD, Mohfw, Mowca, moe, mofdm
Key Strategy 7. Stewardship role of Government and key agencies
Key strategy 8. Introducing and expanding women friendly health services
Key strategy 9. Ensuring quality health care friendly services for ageing population, adolescent and youth
Key Strategy 10. Sustainability of interventions
Key Strategy 11. **Good Governance**

Governance is the manner in which power is exercised in the management of the country's economic and social resources for development. Basic elements of good governance are accountability, predictability, participation, and transparency. In urban health management, the need for good governance is very urgent to satisfy diversified demand for health services by different segments of population with uneven income status.

Key strategy 12. Budgetary support

The annual budget support to HNPSP as at present is hardly 5% of the total budget outlay of which less than 1% is mobilized for urban health care although more than 30 % of the population lives in urban localities. It demands more resources to address multi-ferrous health hazards of urban citizens.

Key Strategy 13. Manpower mobilization

Ministry of Health and Family Welfare has insufficient number of static and outreach manpower to provide services to urban population, urban slums in particular. NGOs, privates sector provide **services which needs support from GOB with technical know how.**

Key Strategy 14. Program support

LGD, MOHFW and other agencies of the GOB might extend support to strengthen the urban health care activities

Key Strategy 15. Implementation Strategy

Urban population shall grow rapidly and 50% of the total population might start living in Cities and Municipalities with in next 20 years. Thus, it demands a separate Ministry to address urban issues. GOB might consider **establishing a new Ministry of Urban Development**

- **A National Institution of Urban Affairs** might start functioning to look into the affairs of cities and municipalities, conduct survey and research, environmental health and sanitations and above all Town Planning
- **National Committee** headed by the Minister LGRD&C to be constituted to provide guidelines and monitor the service delivery system.
- **Concerned Ministries / Departments** might constitute committees headed by Joint Secretary for implementation of UHS in the **Ministries.**
- **Task Force** consisting of all service providers, community leaders and peer groups is to be constituted to ensure the coordination, mobilization of resources and ensure campaign for quality services.
- Periodical survey and Research be conducted to ascertain and assess the needs and demands of the urban health care interventions.

Conclusions

1. During the coming two decades, one of the most important development trends in the world will be the rapid growth in the number of people living in cities, especially in the developing countries. The growth rate of urban population is far higher than population outside the cities. This increase will further aggravate major health issues in urban and semi-urban settings, particularly where low-income groups of population live. The root cause of urban crisis is poverty. Poverty and unemployment in rural areas drive away people to the cities; urban poverty compels them to take shelter in slums and squatter settlements with all associated high risks of health.

2. Urban health problems are complex and linked with socio-economic and developmental issues. Levels of income, water supply, food and nutrition, housing, sanitation, environmental pollution and safety, education facilities all have obvious impact on health. To improve the health of the unnerved and underserved people in urban areas, the health sector needs intensive and coordinated support and increased developmental action from the health–related sectors. To ensure dynamic approach for coordinated action, a strong political will and commitment is a must.

3. The Urban Health Strategy so formulated shall help improve the health care services in urban localities. With the improvement of health care services in urban areas, total health services shall improve significantly. A responsible and accessible health services in urban localities shall in fact help rural population also to get better services**.**

4. To be very precise, as observed in Bangladesh, rural population come to cities and municipal areas for the health care services since they get access to different services, doctor, medicine, pathological examinations etc at a time.

Thus the improvement of health care in the capital shall help to promote the health care services in the country as a whole**.**

- This strategy to be followed by all departments agencies, NGOs, service providers
- Urban health services to be improved as thrust sector mobilizing resources and manpower.
- Health services in urban areas to be made accessible, affordable and sustainable
- Cafeteria approach to be followed in health services delivery
- Pro-poor health interventions to be followed
- Referral system to be institutionalized.
- Hospitals and clinics in urban areas to provide services 24 hours

Health for all depends not only on professional skills, but on personal ability, a healthy environment and sensible choices in the use of scarce resources. The poor urban communities are showing us the road to proceed and achieve our goal to ensure a healthy nation and an excellent generation.

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Housing Loan : A New Approach for Expansion

J.C SAHA[1]
R.A. YUSUF ALI[2]
A.K.M. MANNAN BHUYIAN[3]

Abstract

This paper investigates various operational and financial aspects of Bangladesh House Building Finance Corporation, dealing mostly with the upper income group of people. The overall performance of BHBFC is now more or less stagnant, which is expected to be worse in the years to come if the existing policy instruments continue. The process of restructuring of the BHBFC based on sound economic principles is moving very slowly, for which reason it is failing to cope with the huge demand for credit in the housing sector. The economy is growing, and with that the households' income and expectations to get better housing facilities and taste better life and livelihood are also rising. Besides, constitutional provisions and the presence of a Government-owned institution are fueling the housing demand of the households. This paper sums up the problems and disabilities of the

1. A member of the Executive Committee, Bangladesh Economic Association. Now he is the Managing Director of BUP Consult Limited. He was the Executive Director, Bangladesh Unnayan Parishad. He was the former Managing Director, Bangladesh House Building Finance Corporation (BHBFC) and Bangladesh Krishi Bank (BKB). He held important positions in Bangladesh Institute of Bank Management (BIBM), Bangladesh Krishi Bank and Rupali Bank Limited, Bangladesh Institute of Development Studies (BIDS) and Pakistan Institute of Development Economics (PIDE).
2. Managing Director, BHBFC. She held various important positions in Sonali Bank Ltd., Agrani Bank Ltd., and Bangladesh Krishi Bank (BKB).
3. Deputy General Manager, BHBFC. He held various important positions in BKB.

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BHBFC in meeting the large and growing demand for housing in the country and puts forth some recommendations for overcoing the disabilities through reforms of its loan accounting system and revamping its capital base.

1. Introduction

Housing or shelter is a basic human need like food and clothing. Housing or shelter provides inhabitants privacy, health and comfort. It promotes opportunities for employment. However, despite the GDP growth of about 6 percent in recent years the housing problem of the country remains as acute as ever.

Income inequality exists both in rural and urban areas, which is reflected in the standard of living of the people, including the type of their houses/residence in which they reside. The major types of structure of main houses numbering about 24.85 millions in 2001 were as follows- Jhupri (8.80%), Kutcha houses (74.38%), Semi-pucka houses (10.10%), and Pucka houses (6.72%) (Annex 1). Most of the houses were inherited from ancestors, but with population increasing at a rapid pace, the households' demand for more houses kept on increasing, too. Some of the households seek credit when the income of all members of the household is not sufficient to build a new house.

Since the scope of horizontal expansion has narrowed down to a great extent due to population pressure, migration, etc, the alternative is vertical expansion of the building structure in the form of flats/apartments, so that many households can be accommodated in a small building but with provisions of public utility services and neighborhood facilities. In most cases, individual households cannot arrord to construct such a costly building with provisions for utility services. Therefore, they take recourse to real estate firms (owned as a private or public limited company) for building flats and apartment houses on a cost share basis. The builders provide all facilities and bear construction cost while the land owner provides only the land. The share of the land owners in flats and apartments varies between 30 and 70 percent, depending on the location of the building.

Some commercial banks together with some private sector housing institutions have started providing housing finance in recent times, but BHBFC is still the major source of housing credit for the middle and lower middle income group people. In fact, the BHBFC is the only specialized state-owned financial institution of its kind, which has been providing finance in the housing sector since 1952. The Corporation provides financial facilities for construction, repair/remodelling and extension of residential houses to help reduce the acute housing problem. At present the Corporation provides housing credit through its

22 field offices (13 regional Offices and 9 Zonal Offices). The Corporation's loan portfolios comprise of 6 categories of credit facilities, namely—

(i) **General Loan:** This type of loan is given for the construction of a single/ multistoried residential house on a land/plot owned by a single person or jointly by husand and wife.

(ii) **Group Loan:** This type of loan is given for the construction of flats by a group of borrowers on a plot owned jointly by the group.

(iii) **Apartment/Flat Loan:** The apartment/flat loan is given for purchasing apartments/ flats under construction or newly constructed residential houses.

(iv) **Extension Loan:** The loan is given for purpose of construction of the unconstructed portion of an approved plan of a residential house already built.

(v) **Special Loan for Middle and Lower-Middle Income Group of People**: This loan is given for the construction of smaller size housing units. The repayment period of this loan is 20 years.

(vi) **Five Years Special Term Loan**: Repayment period is a medium term one for 5 (five) years. If the potential loanees have the land/plot in the posh area or at the market centres or the members of the households have other attractive sources of income to repay the loan in due course, then they fall in this category. Household income however, must be enough to repay the loan installment timely.

This paper reviews and analyses some of the operational and financial aspects of the BHBFC. Section 2 discusses the position of BHBFC in loan disbursement, composition of outstanding loanes, loal recovering status and classified loans, its profitability, cost of funds, debt equity ratio, capital structure, market share, and so on. Section 3 highlights the corporation's potentials as a lender in the housing market, while section 4 summarises the main findings and conclusions of the paper.

2. Overall Status of BHBFC's Operations

With the entry of commercial banks and financial institutions, the mortgage finance market in Bangladesh is rapidly growing in size and getting much more competitive in nature. The commercial banks, both in the public and private

sector, have either established or are in the process of setting up in-house mortgage finance departments. Due to the recent entry of banks and financial institutions in the housing finance market, BHBFC's position in the market has changed from a monopoly to a competitor. This section presents an overview of the present status of the Corporation's operational activities and financial position.

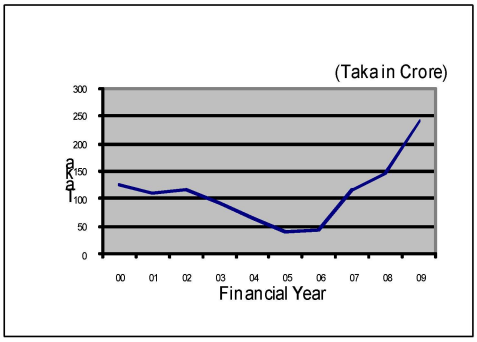
2.1 Loan Disbursement

The Corporation has sanctioned Tk. 3,819.41 crore and disbursed Tk. 3,350.11 crore as loan upto 30 June 2009 since inception. About 161,648 housing units have been constructed till now through housing loan of the Corporation. Notwithstanding the ups and downs of the Corporation's loan volume due to liquidity problem, it has been striving hard to maintain loan disbursement activities.

The loan disbursement profile of the corporation of the previous 10 years are presented in Table 1.

Table 1 : Loan Disbursement. (Taka in crore)

Financial Year	Amount Disbursed
2008-2009*	242.61
2007-2008	146.92
2006-2007	115.78
2005-2006	43.23
2004-2005	40.69
2003-2004	65.27
2002-2003	93.26
2001-2002	116.14
2000-2001	110.51
1999-2000	127.52



* *Provisional data*

It is seen from the data that the Corporation has experienced a frequent rise and fall in loan disbursement throughout the present decade. Though the loan disbursement amounts have increased at an accelerated rate since 2006-2007, the corporation finds it difficult to maintain this disbursement trend because of fund constraints. During the years of the nineties of the last century the Corporation experienced similar ups and downs in loan disbursement.

Area-wise Sanctioning of Loan: An analysis of the area-wise loan sanctioning reveals that the most of the loan cases were sanctioned in Dhaka and Chittagong

Table 2 : Geographical Focus on Loan Distribution (Tk. in crore)

Financial year	Loan Sanctioned Amount: Metropolitan Areas			Total	% of Total Sanctioned Amount
	Dhaka	Chittagong	Sub-Total		
1	2	3	4=2+3	5	6 = 4/5
2008-2009	160.24	21.36	181.60	236.58	76.76
2007-2008	156.10	26.90	183.00	226.06	80.96
2006-2007	96.65	18.57	115.22	150.09	76.77

Metropolitan areas. The loan sanctioning data of previous three years are shown in Table 2.

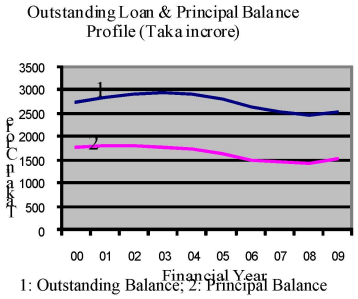
It is observed that more than three-fourth of the sanctioned amount is concentrated in the two city areas only. This indicates that BHBFC extends loans to the rest of the country at a very limited scale.

2.2 Outstanding Loan and its Composition

The outstanding loan of the Corporation stood at Tk.2509.41 crore as at 30 June,

Table 3 : Composiion of Outstanding Loan. (Tk. in crore)

Financial Year	Outstanding Balance	Principal Balance	Ratio (%) (Col.3 to Col. 2)
1	2	3	4
2008-2009*	2509.41	1517.45	60.47
2007-2008	2439.65	1414.27	58.35
2006-2007	2516.44	1433.65	56.97
2005-2006	2626.86	1497.73	57.02
2004-2005	2784.61	1625.37	58.37
2003-2004	2894.48	1732.82	59.87
2002-2003	2921.08	1795.95	61.48
2001-2002	2885.46	1815.72	62.93
2000-2001	2808.17	1800.67	64.12
1999-2000	2723.70	1780.15	65.36



** Provisional data*

2009. The amount was Tk. 2439.65 crore in 2007-2008. The movement pattern of the outstanding loan balance and principal balance in the outstanding loan during the past 10 years is presented in Table 3.

The data presented in Table 3 reveals that the outstanding loan balance started decreasing since 2003-2004 and continued upto 2007-2008. The trend took a

reverse turn in 2008-2009 due to a major increase in loan disbursement since 2006-2007.

The amount of principal loan balance in outstanding loan also had decreased persistently throughout the decade till 2007-2008. The decline in the ratio of principal balance to the outstanding loan indicates that the Corporation's performing loan asset has decreased and non-performing loan (NPL) asset increasd till 2007-2008.

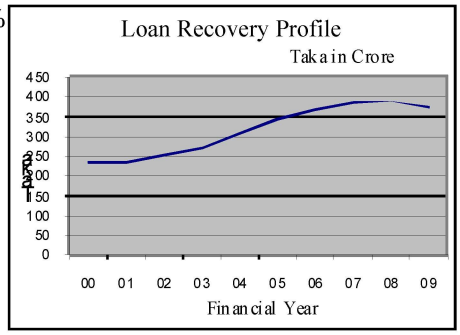
2.3 Loan Recovery

The very long term loan repayment period (15 and 20 years) unveils a unique type of experience to the Corporation in its loan recovery activities. In many cases repayment of a loan involves two generations. Although this problem could be resolved by reducing repayment period and/or by imposing some policy restrictions on the aged loan applicants, but in view of the increase demand and to mitigate the housing problems and to the social perspectives the Corporation is pursuing it's traditional loaning system.

Despite very long term repayment period (sometimes which has been increased upto 32 years through rescheduling) and multiplicity of problems associated with the recovery activities the Corporation has been consistently improving its recovery performance both in terms of quantity and quality. The continuous improvement of loan recovery performance becomes evident from the data presented in Table 4.

Table 4 : Year-wise Loan Recovery (Taka in crore).

Financial Year	Amount of Recovery	Recovery %
2008-2009*	372.97	74.94
2007-2008	388.95	72.18
2006-2007	387.16	67.90
2005-2006	368.96	58.48
2004-2005	341.83	53.99
2003-2004	304.76	49.55
2002-2003	272.02	44.82
2001-2002	250.23	41.32
2000-2001	233.71	40.11
1999-2000	232.97	46.34



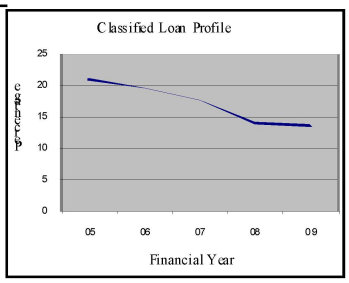
* *Provisional data.*

2.4 Loan Classification Status

The Loan Classification system was introduced for the first time in the Corporation in 1999-2000. The Classification policy of the Corporation was developed by the Ministry of Finance unlike other Banks and Development Financial Institutions for which policy was given by the Bangladesh Bank. During the year 1999-2000 the percentage and amount of classified loan were 31% and Tk. 844.34 crore, respectively, but in subsequent years the classification scenario improved persistently and the percentage of classified loan decreased to 13.51 pecent in 2008-2009 from 21.02 percent in 2004-05 (Table 5).

Table 5 : Loan Classification Status (Taka in crore)

Financial Year	Un- classified Loan Amount	%	Classified Loan Amount	%
2008-2009*	2134.93	86.49	333.57	13.51
2007-2008	2099.32	86.05	340.33	13.95
2006-2007	2073.01	82.38	443.43	17.62
2005-2004	2111.57	80.38	515.29	19.62
2004-2005	2199.16	78.98	585.45	21.02

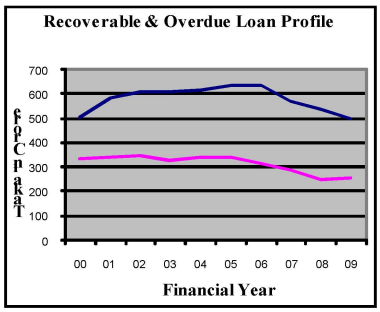


**Provisional data.*

The extent of achievement of the Corporation in reducing its loan classification rate in recent years is praise-worthy relative to the success levels of other state-owned Banks and Financial Institutions.

Table 6 : Composition of Recoverable Loan (Tk. in crore)

Financial Year	Amount Loan Recoverable	Loan Overdue	Overdue as % of Loan Recoverable
1	2	3	4
2008-2009*	497.69	257.24	51.68
2007-2008	538.87	250.43	46.47
2006-2007	570.23	289.45	50.76
2005-2006	630.89	316.05	50.10
2004-2005	633.18	341.36	53.91
2003-2004	615.05	342.41	55.67
2002-2003	606.85	330.20	54.41
2001-2002	605.55	347.00	57.30
2000-2001	582.69	341.57	58.62
1999-2000	502.78	334.90	66.61



** Provisional data*

2.5 Recoverable and Overdue Loan

The total recoverable amount of loan decreased since 2004-05 and stood at Tk. 497.69 crore at the end of the year 2008-2009. The overdue amount, too, declined and stood at Tk. 257.24 crore as at 30 June, 2009, although between 2007-08 and 2008-09 the overdue amount recorded a slight increase of Tk. 6.81 crore (Table 6).

It is observed from Table 6 that if the present declining trend of recoverable loan continues, the overdue of loan will also increase. The decrease of recoverable amount on the one side and the increase of overdue amount on the other indicate that the cash-flow vis-à-vis the liquidity situation of the Corporation may deteriorate. The trend may be reversed by increasing loan disbursement and regularizing the overdue loan accounts.

2.6 Profitability

The Corporation has been earning profit consistently over the years. Due to the introduction of loan classification system in the financial year 1999-2000 its net profit during the years 1999-2000 to 2001-2002 was lower than before, since it had to meet provision for classified loans. However, the Corporation never failed to earn operating profit in any of the years though loan classification system was introduced. It had been able to meet the provision in a shorter period, compared to other state-owned banks and financial institutions.

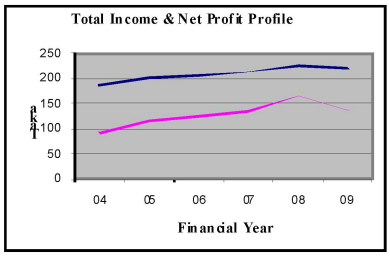
The amounts of incomes, expenditures and net profits of the Corporation for the last 5 years are shown in Table 7.

It is seen from the Table 7 that the net profit has increased at a higher pace than total income till 2007-2008. But both the total income and the net profit declined during the year 2008-2009. The reduction in interest income from fixed deposits

Table 7 : Income and Expenditure Scenario (Taka in crore)

Financial Year	Total Income	Total Expenditure	Net profit
1	2	3	4
2008-2009 *	219.37	91.95	137.00
2007-2008	225.64	95.24	165.03
2006-2007	213.07	94.14	135.36
2005-2006	205.43	95.22	124.10
2004-2005	200.69	97.59	113.55
2003-2004	186.46	100.16	92.33

** Provisional data. Net Profit : Before Tax*



kept with other banks and financial institutions, lowering of interest ratests on classified loans, and an increase in the interest amount against debenture were the major reasons behind such declines. Moreover, because of the simple interest calculation system, thr collection of Interest During Construction Period (IDCP) throughout the loan repayment period without charging interest on it, and other benefits given to the borrowers, the effective interest rate becomes lower than the declared or nominal interest rate, which adversely affects the profitability and the long term capital base of the corporation.

2.7 Cost of Borrowing and Cost of Fund

The cost of borrowing and the cost of fund of the corporation have been increasing continuously over the years. The increases in the costs are shown in Table 8.

Table 8 : Cost of Borrowing and Cost of Fund: Scenario of the Last Decade

Financial year	1999-2000	2000 2001	2001-2002	2002-2003	2003-2004	2004 2005	200-2006	2006 2007	2007-2008	2008-2009*
Cost of Borrowing (%)	4.96	4.94	5.96	6.05	6.12	6.30	6.41	6.49	6.55	6.62
Cost of Fund (%)	5.31	5.28	6.22	6.32	6.41	6.64	6.83	7.07	7.48	7.80

** Provisional data.*

The costs are increasing mainly due to the increase in the proportion of high interest bearing debentures in the total debenture balance.

The continuous increase in these costs has been reducing the interest margin of the Corporation. The interest margin in 2008-2009 in respect of nominal interest rates stood at 5.10%. In respect of effective interest rate the margin was only 2.92% in 2008-2009. The continuous decline in the interest margin indicates that the Corporation has to readdress its financing and funding policy to reverse the present trend.

2.8 Reserve Fund, Debt-Equity Ratio and Working Fund

Reserve Fund

The Corporation maintains five types of reserves, namely—-general reserve, building reserve, tax-free reserve or special reserve, reserve for bad and doubtful debts, and reserve for redeemable debenture. The total amount of reserves was

Tk.1381.37 crore (provisional) in the year 2008-2009 as compared to Tk. 1208.12 crore in 2007-2008. The total reserve has been increasing over the years.

Debt-Equity Ratio

The amounts of debt and equity were Tk. 1769.07 crore and Tk. 1305.41 crore respectively in the year 2007-2008. The respective amounts reached Tk. 1683.49 crore and Tk. 1381.37 crore in 2008-2009. The debt-equity ratio of the Corporation was 2.83: 1 in 1999-2000 which has gradually declined to 1.22: 1 at the end of the year 2008-2009. The equity share in the capital of the Corporation has been increasing steadily over the years (Table 9).

Table 9 : Movement of Debt-Equity Ratio.

Financial year	1999-2000	2000-2001	2001-2002	2002-2003	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009*
Debt-Equity Ratio	2.83:1	2.73:1	2.50:1	2.11:1	1.93:1	1.79:1	1.62:1	1.48:1	1.36:1	1.22:1

** Provisional data*

The amounts of authorized and paid-up capital of the Corporation are only Tk. 110.00 crore and Tk. 97.29 crore, respectively. The amounts of authorized capital and paid-up capital are very much insufficient to continue the Corporation's normal business activities. On the other hand, the debt-equity ratio 1.22:1 i.e, only 45.04% equity in the total capital also shows the vulnerability of the Corporation's capital structure. Although the ratio of equity has been improving as the debt-equity ratio has decreased from 2.83:1 (26.11% equity) in 1999-2000 to 1.22:1 (45.04% equity) in 2007-2008, yet the equity remains at a very low level, considering the Corporation's very long term financing.

Working Fund

The working fund of the Corporation were Tk. 2432.00 crore in 2008-2009, Tk. 2370.80 crore in 2007-2008 and Tk. 2437.09 crore in 2006-2007. The yearly average working fund was Tk. 2423.24 crore during the past 10 years. The equity support of the working fund is only approximately 50%, which indicates that hindrances in long term financing in the absence of new fund will continue to restrict the Corporation's operational ability in future also.

2.9 Sources of Fund and Cost of Fund

Sources of Fund

The primary sources of the Corporation's fund is the paid-up capital contributed by the Government. Other than paid-up capital the major source of fund of the Corporation is collected by selling Government guaranteed debentures to the Bangladesh Bank and to other scheduled Commercial Banks and Financial Institutions.

Since inception, the Corporation sold debentures amounting to Tk. 1872.00 crore. The total balance of the debenture liabilities stood at Tk.1102.24 crore (Principal: Tk.1049.09 crore and Interest: Tk. 53.15 crore) at the end of the year 2008-2009. The Corporation has to pay a huge amount of taka as installments of debenture liabilities and government liabilities in each financial year. During the year 2008-2009 the Corporation paid a total of Tk. 225.51 crore as installments against the debenture liabilities (Principal: Tk. 114.58 crore and Interest Tk. 110.93).

The Corporation has sold its debentures to some 17 Organizations since its inception. The major buyers of the debentures are the Bangladesh Bank (Tk. 1210.25 crore), Agrani Bank Ltd.(Tk.242.15 crore), Sonali Bank Ltd.(Tk. 139.75 crore) and Janata Bank Ltd.(TK.70.00 crore). The debentures were sold at bank rates and were subsidized compared to the market rates prevailing at the time of selling. Only a small amount (Tk. 50.00 crores) of debentures was sold at 8.00 percent i.e. 2.0% above the bank rate in 1998. The interests rate of the debentures are 2.75%, 3.50%, 4.50%, 5.50%, 6.00% and 8.00% p.a.

The terms and conditions of repayment of the debentures are different as compared to the Corporation's credit norms. In case of the debenture installment repayment there is no in-built scope for deferring payment of charged interest unlike loan repayment norms of the Corporation. This difference in repayment conditionalities gives rise to a mis-matching situation of the Corporation's cash in-flow and cash out-flow.

The BHBFC could not sell any new debenture since 1998-1999. Although the Ministry of Finance has given a guarantee to the Corporation for selling debentures of Tk. 100.00 crore in April/2004, the debentures could not be sold.

The reasons for which the debentures could not be sold are low interest rate of the debenture and shorter repayment period as demanded by the buyer Banks. Besides, comparatively higher interest rates and variable repayment periods of Treasury Bonds of the Bangladesh Bank discourage the prospective buyers of the debentures of the Corporation.

Uses of Fund

The funds thus available to the Corporation are mainly used for the purpose of catering credit to the public; to meet the liability obligations; and to meet the operational and establishment expenses. In spite of its profit generation each year, the capital base of the Corporation is not strong and there is a mis-match between its cash in-flow and cash out-flow. The Corporation is not empowered to collect any type of deposits. It lends money in a very limited scale from its recovered amount of loan after meeting all types of liability obligations and expenses.

Although recovery amount has been increasing each year, ups and downs in year-wise liability obligations compelled the Corporation to keep some of its fund aside as fixed deposits to different scheduled banks and financial institutions so that it can repay debenture installments on schedule as per contract. The fixed deposit amount has been shrinking rapidly in the recent years. The amount has decreased from Tk. 363.87 crore in 2007-2008 to Tk. 230.21 crore during the year 2008-2009.

2.10 Income-Tax Payment

The Corporation determines its profit/loss both on cash and accrual basis. The loan accounting system of the Corporation is unlike other Banks and Financial Institutions. The Corporation charges simple interest on its loan accounts and doesn't charge any interest on uncollected interest balance of the loan accounts. Besides, it follows an installment collection system whereby only a part of the total interest of a loan account that is charged during the first-half of the total repayment period is collected in the second-half of the repayment period. This type of average collection system gives rise to a 'deferred interest' amount which can not be collected on due time although it is accrued. The presence of deferred interest erodes the value of nominal interest rate and ultimately yields a lower effective interest rate.

In view of the 'Deferred Interest System' the Corporation has been allowed by the honourable High Court to pay its income-tax on net profit earned on cash basis. On average, the Corporation pays about Tk. 30 crore a year as income tax to the public exchequer.

2.11 Market Demand and Market Share

***Market Demand*:** According to the 1991 census total shortage of housing units of the country was 31 lakhs units, of which 21.5 lakhs units were in the rural areas

and the rest 9.5 lakhs units were in urban areas. It is estimated that by the year 2010 the total shortage may be around 60-70 lakhs units.

Market Share: The market share of BHBFC in terms of outstanding loan balance in the housing sector loan is shown in Table 10.

Table 10 : BHBFC's Market Share (Tk. in crore)

Organizations	Total Outstanding Loan Balance		
	2003-2004	2004-2005	2005-2006
1	2	3	4
A. Specialized Housing Finance Institutions			
1. BHBFC	2890.00	2780.00	2680.00
2. DELTA-BRAC	340.00	440.00	550.00
3. National Housing Finance.	130.00	180.00	190.00
B. Bank			
1. Nationalized Commercial Banks	2360.00	2410.00	2570.00
2. Other Banks	2290.00	2620.00	3290.00
C. Other Financial Institutions	100.00	160.00	290.00
D. Micro-Credit Finance Organization:			
Grameen Bank	130.00	90.00	40.00
Total	8240.00	8680.00	9610.00

Source : *Annual Report, Bangladesh Bank, 2006.*

It is observed in Table 10 that the market share of the Corporation has been diminishing over the years (so in the Grameen Bank also). The market share of BHBFC in total outstanding loan stood at only 27.89% at the end of the year 2005-2006. However, its share amongst the state-owned Banks and Financial Institutions is still 51.05%.

Although the Corporation is maintaining its pivotal role and leadership in the market, private banks and financial institutions are steadily increasing their market share. As a result, BHBFC's position in the market has changed from a monopoly to a competitor.

2.12 Manpower

The total approved man-power of the Corporation was 725 persons as per the Organogram of 1994, but the total man-power has been decreasing continuously over the years. The number of employees was 616 in 1999-2000, which came down to only 450 personnels as of 30th June 2009. Out of these personnels only 272 were Officers.

The large decline in working man-power poses a serious threat in maintaining the Corporation's normal activities. Recently in May, 2009 the Ministry of Finance has approved a new Organogram comprising of 825 personnel. However, phase-wise new recruitment will take time and the present man-power crisis is likely to continue for several years in future.

3. BHBFC's Potentials

The total amount of outstanding loans and advances of the Corporation is decreasing each year. The amount of outstanding loan was Tk. 2624.34 crore in 1998-1999. It has gradually declined to Tk 2509.41 crore in 2008-2009. This declining trend of outstanding loans clearly indicates that the operational ability of the Corporation is eroding gradually and its future as a credit giving organization is under serious threat. Though the Corporation is continuing its credit activities, it is not being able to meet the huge demand for housing credit by the middle and lower-middle group of people, specially in rural areas. An analysis of the area-wise credit distribution pattern of the Corporation reveals that about 85%-90% of its yearly loan disbursement is concentrated in the Dhaka and Chittagong metropolitan areas and only a small part of total loan disbursement is made in the rest of the urban areas and in a few upazila sadar areas.

A look at the composition of outstanding loans and advances of the BHBFC shows that nearly 50% of the total outstanding amount belongs to the interest balance side of the loan accounts. The principal balance amount of the total outstanding loan has been gradually decreasing as yearly loan disbursement amount is not increasing sufficiently, compared to the pace of increase in yearly recovery amount. As a result, the Corporation's entity and status in future as a credit institution is at stake. Raising long term capital fund has remained an outstanding issue for the Corporation over the years. The fact remains that BHBFC is entirely dependent upon government support in terms of funding its lending operations through selling of subsidized debentures. The last issued debenture by BHBFC in 1998 at 2% above the market rate i.e at 8% was an indication that the market is not willing to support BHBFC paper at a subsidized rate. It is therefore strongly suggested that BHBFC should prepare itself for raising market based long term funds through securitization and issuing shares to the capital market and for collecting deposit. Besides, it should also pursue government for allocation of fund for BHBFC from national budget. Side by side, the terms and conditions related to conventional debentures/bonds having 15-20 years payback period needs to be modified. Long term debentures/bonds with 5-7 years repayment period and to be reissued after 5-7 years can also be introduced.

The BHBFC has a very strong mortgaged backed loan assets which can enable BHBFC to enter the capital market through issuing shares to the public. This will enable BHBFC gradually to obtain market based funding in long term. At present the Corporation has outstanding assets in regard to loans and advances amounting Tk 3064.86 crore. Lands related to loans and advances are mortgaged to BHBFC as an additional security. The average market value of total additional security is manifold higher than that of the amount of outstanding loans and advances related to loan accounts. So, it is possible for the Corporation to issue ordinary shares to the capital market.

At the initial stage of securitization BHBFC can raise fund through issuing shares to the tune of Tk. 200 crore to Tk.300 crore from the capital market. In view of the present level of profitability the Corporation can offer a dividend at a rate equivalent to the weighted average interest rate of lending. To make the shares more attractive the Corporation can ask Government for tax exemption/holiday or tax at a reduced rate to enable it to offer higher dividend to the buyers of shares.

4. Summary of Major Findings and Concluding Remarks

- The BHBFC has been contributing to the housing finance sector for nearly six decades. The major findings on the status of the Coporation's activities, as discussed in this paper, are presented below.
- The loan amount has been increasing in recent years, but the volume of loan disbursed is not sufficient to meet the country-wide demand.
- The average loan size has been increasing but the number of clientele per unit of loan amount is decreasing. The decrease in the number of clientele indicates that BHBFC's service has been shrinking in real terms over the periods.
- The BHBFC's loan disbursement is concentrated mainly in Dhaka and Chittagong Metropolitan areas and only partly in the city/town areas of old and new districts. Very little amount of loan is disbursed in Upazilla or rural areas. To serve the middle and lower-middle income group of people BHBFC should give more attention to increase it's loan activities to non-metropolitan and rural areas.
- The amount of principal balance is now around 60 percent of the BHBFC's outstanding loans. The participation rate of principal balance in outstanding loan should be increased steadily to maintain the Corporation's financial viability and sustainability.

- The percentage of loan recovery has been increasing consistently over the last 10 years. The recovery rate was 74.94% in 2008-2009, as compared to 46.34% in 1999-2000.
- The classified loan amount has been decreasing continuously over the years, and the provision requirement against classified loans has always been regularly met. The classified loan percentage is to be reduced further to improve the quality of outstanding loans.
- The recoverable amount has been decreasing over the last four years till 2008-09, while the overdue loan in recoverable amount, after decreasing till 2007-2008, increased in 2008-2009. The decreasing trend of recoverable amount should be arrested by increasing loan disbursement. Otherwise the liquidity problem of the Corporation will be intensified further. The increasing trend of overdue loans also must be reversed to improve the quality of recoverable loans.
- The net profit of the Corporation increased persistently till 2007-2008 but fell in 2008-2009.
- The provisional weighted average interest rate and effective interest rate of the Corporation during the year 2008-2009 were 11.70% and 9.56% respectively. The effective interest rate decreases due to the unique loan accounting system involving deferred interest payment and the simple interest method that is being followed by the Corporation. To stop its capital errosion BHBFC should do away with the policy of deferment of interest collection and the simple interest method.
- Both the cost of borrowing and the cost of fund have been increasing over the years. The cost of borrowing increased from 4.96% in 1999-2000 to 6.62% in 2008-09, while the cost of fund increased from 5.31% to 7.80% during the same period. Due to the increase in the costs the interest margin is getting lower. In 2008-09, the nominal interest rate margin stood at 5.10% and the effective interest rate margin was 2.92%. This suggests that the Corporation should change its loan accounting system and diversify funding sources urgently.
- The total reserve fund of the Corporation has increased over the years, but considering that its business stretched over nearly six decades, the pace of growth of reserve fund has been very slow – insufficient to support long term financing. The loan accounting system of BHBFC involving deferred interest reduces the effective interest rate, weakening the pace of reserve accumulation, and ultimately eroding the capital base of the Corporation.

- The debt and equity ratio of the Corporation has declined significantly over the years – from 2.83: 1 in 1999-2000 to 1.22 : 1 at the end of the year 2008-2009. Yet, the equity remains at a very low level i.e. only 45.04% of total capital. The inadequate capital base of the Corporation needs to be strengthened as soon as possible
- The authorized and paid-up capital of the Corporation are very low, which makes it solely dependent on the selling of government guaranteed debentures to Bangladesh Bank and to other scheduled Banks and Financial Institutions. Since, however, the Banks and Financial Institutions are not willing to buy debentures bearing an interest rate below market rate or that of Bangladesh Bank's Treasury Bonds, the Corporation failed to sell any new debentures since 1998. In fact, the long maturity of the debentures, as high as 15-20 years, discourages the prospective buyers to purchase its debentures. As a result, the Corporation has been suffering from liquidity problem for many years. The prevailing situation suggests that the Corporation should diversity its sources of funding at earliest.
- The demand for housing credit is increasing each year. BHBFC together with other private and public sector Banks and Financial Institutions can meet only a very small part of the total demand that exists in the housing sector. The Corporation can expand its business enormously if it can arrange capital for long term financing.
- The corporation's recovery performance and classified loan status have improved greatly over the years, but its loan disbursement capability has not improved because it has failed to build a strong capital base of its own. In fact, the Corporation may be compelled to decrease its disbursement soon if it fails to generate new funds.
- As a net profit earning organization the Corporation is contributing a significant amount of income tax to the national exchequer.
- Although there exists a huge market demand for credit in the housing sector the liquidity crisis of the Corporation poses a serious and continuous threat to its ability to continue as a credit giving organization in the long run. To overcome this threat BHBFC should pursue all out efforts to diversify its sources of funding. Dependence on the conventional source alone may ultimately compel it to wind up its business.
- In the prevailing situation of capital shortage, the Corporation can go for issuing public share as it has a very strong mortgaged backed security or loan assets. Probably it is high time for offloading government shares of BHBFC

in the capital market like DESCO or issuance of public offerings of primary shares like Delta-Brack Housing Limited and National Housing Limited etc.

- It can also pursue other options like collecting deposits from the public by opening a window for deposit banking, and ask government to allocate funds from the national budget. Besides, it should modify its offer regarding selling debentures to suit the present trend of the market demand.
- Above all, BHBFC should change its loan accounting system to stop erosion of its capital base as soon as possible, give attention to diversify its loan operation in non-metropolitan and rural areas, and increase the number of beneficiary loanees.

Annex-1: Main House of Dwelling Households By Type of Structure -2001

(In Thousand)

Structure	Total		Urban		Rural	
	Number	%	Number	%	Number	%
Jhupri	2187	8.80	420	7.58	1767	9.15
Kutcha	18484	74.38	2611	47.15	15873	82.19
Semi-Pucka	2510	10.10	1288	23.26	1222	6.33
Pucka	1669	6.72	1219	22.01	450	2.33
Total	24850	100.00	5538	100.00	19312	100.00

Source : Population Census, 2001, BBS

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Macro Economy of a Least Developed Country: The Case of Bangladesh

MUHAMMAD MAHBOOB ALI[1]
ANITA MEDHEKAR[2]

Abstract

Bangladesh is one of the least developed countries. The economy of Bangladesh suffers from both supply side and demand side problems. This study investigates the country's macro economic conditions over the two sub periods (a) Sub period-1: Macroeconomic policy under administrative control i.e. 1976-77 to 1989-90; (b) Sub period-2: Macroeconomic policy under reform measures i.e. 1990-91 to 2005-06. The study doesn't find full applicability of either Keynesian or Monetarist view of the macro model for this country. Authors suggest that the performance of the Bangladesh economy is a mixture of accomplishment and failure, not significantly different from that of the majority of poor less developed countries and thus a coordinated approach to fiscal, monetary and exchange rate and debt management policy is required to achieve the long-term goal and sustainable economic growth with inflation within control.

Keywords: *Bangladesh, Macro economy, Less Developed Countries*

1. Introduction

Bangladesh remains a poor, overpopulated, and inefficiently-governed nation. Although more than half of Gross Domestic Product (GDP) is generated through

1. Professor, School of Business and Economics, Atish Dipankar University of Science and Technology, Bangladesh. e-mail:pipulbd@gmail.com

2. Senior Lecturer, School of Commerce and Marketing, Central Queensland University, Australia, e-mail: A.Medhekar@cqu.edu.au

the services sector, nearly two-thirds of Bangladeshis are employed in the agriculture sector, with rice as the single-most-important farm produce. The economy has grown at the rate of 5-6% per year since 1996 despite inefficient state-owned enterprises, delays in exploiting natural resources, insufficient power supplies, and slow implementation of economic reforms (ADB 2003). Economic growth is supported by garment exports and remittances from Bangladeshis working overseas. In 2008, Bangladesh pursued a monetary policy aimed at maintaining high employment, but it also resulted in higher inflation rate in the process. In 2008, the country grew at the rate of 4.9% with per capita income of $ 1500 in PPP terms (World Bank 2009).

Bangladesh economy suffers from problems on both supply and demand sides. It is one of the least developed countries and suffers from poverty, imperfection in factor and product markets, continuous disequilibria in the economy, defective administrative structure, inappropriate tax policy, heavy dependence on external sector, lack of capital stock, infrastructure bottlenecks, high unemployment, low standard of living, low level of savings and investment, unskilled labour, acute balance of trade deficit, and low GDP growth rate. The country is not only technologically backward but is also underdeveloped in the key areas of infrastructure such as transport, telecommunication, and energy (World Bank 2009; ADB 2003; SPBB 2002).

There are numerous social problems that pose as threats to the nation but yet remain unsolved. These problems include overpopulation and inadequate nutrition, health, illiteracy, a low standard of living, scarcity of land, vulnerability to natural disaster-floods, virtual absence of valuable metals, and inadequate government and bureaucratic structures. The agricultural and the industrial sectors are still underdeveloped. Public and private sector investment is inefficient due to the presence of bureaucratic delay and corruption. Government policies have been somewhat effective in stimulating the economy, but instances of government as well as market failure abound (Wolf 2003).

The private sector has benefited from an environment of greater economic freedom, and has improved performance in banking, production of jute, fertilizer, ready-made garments, and frozen seafood. Over the period of 2001-2005, growth averaged 5.4% per year which is the highest 5-year average since the country's independence. This growth was mainly underpinned by private investment, which grew at an annual average rate of 10% with an increase in its share in GDP from 16% in 2001 to 18.5% in 2005. The share of public investment fell from 7% to 6% during the same period. This period witnessed strong growth of exports,

particularly garments, and large inflows of remittance fueled growth in construction and services sectors. The agriculture sector growth was, however, low, averaging just 2% during the period (World Bank 2009).

Monetary and fiscal policy of the country is yet to be properly coordinated and macro management of the country faces problems. Real, monetary and external indicators show a wide variation in the rate of economic growth during the past four decades. This research examines the multi-flow impact on the macroeconomic variables of the country in the selected time periods. The paper is structured as follows. The first section of the paper provides a review of the available literature. Section two outlines the objective of the paper and explains the research methodology. Section three analyses the results, and section four provides policy implications and makes some concluding remarks.

2. Literature Review

Mundell (1962) argues that when internal and external balance are not simultaneously achieved, the Government can adjust monetary policy to the requirements of internal stability and fiscal policy to the needs of external balance, or it can use fiscal policy for purposes of internal stability and monetary policy for purposes of external balance. As suggested by Friedman and Schwartz (1963), the proximate determinants of the money supply are essentially the three factors: a) the stock of high-powered money, b) the ratio of deposit to reserve, and c) the ratio of deposit to currency. Kaldor (1970) criticises the Monetarist view that the quantity of money is determined by the demand from the public and that the central bank will control the quantity of money supply. Villanueva (1980) describes a semi-annual macro econometric model of the Philippines. Five basic sectors of the economy and their linkages were identified –namely, income-expenditure, monetary, output, credit, and balance of payments. Rashid (1981) observes the relatively poor simulation performance for Bangladesh. Wijesinghe (1982-1983) suggests that in developing countries like Sri Lanka, more emphasis should be placed upon the expansionary effect of output as the substitution effect is conditional upon the assumption of a well-behaved production function of neo-classical type.

According to Chowdhury (1983), foreign investment is likely to favor imported processes based on large-scale production, which involves huge capital and may disfavor the use of locally available skill since in the plan there is no clear-cut provision for preventing the foreigners from using imported processes. Ahmed (1986) concluded that the government of Bangladesh did not relax its saving

efforts and that domestic saving was not substituted by foreign capital inflow. He did not preclude the possibility of a complementary relationship between domestic saving and foreign capital inflow. Chowdhury (1986) observes that the growth in government expenditure in Bangladesh has a greater impact on changes in nominal income than growth in narrow money (M_1). Osmani, Bakht and Anwaruzzaman (1986) have analysed that fiscal policy affects the monetary sector in a variety of ways. Deficit financing can contribute significantly to the expansion of money supply. Jones and Sattar (1988) observe that inflation in Bangladesh is not purely a monetary phenomenon.

Parikh and Starmer (1988) results are consistent with a "structuralist" view of the Bangladesh economy. In their study, a framework is presented for investigating bivariate causal relationship using Granger's notion of causality, which is employed to test the relationship between the money supply and prices in Bangladesh, using monthly data for the period 1973 to 1986. The result indicates evidence of significant unidirectional feedback running from prices to money. The analysis is extended to investigate the relationship between rates of change in money and prices and once again there is evidence of feedback from prices to money. The main conclusion is that strict exogeneity of the money supply is rejected. These results are consistent with a "structuralist" view of the Bangladesh economy.

Lewis (1990) developed a general equilibrium model of the Bangladesh economy in order to examine the macroeconomic and inter-sectoral consequences of proposed trade and industrial policy reforms in Bangladesh. Crow, Murshid and Shahidur (1991) observed that financial brokers lending working capital to the small paddy collecting traders were rewarded with cheaper supplies of paddy. Momen (1992) depicts that money supply is endogenous in less-developed nations while it is exogenous in the industrial economies.

Bhuyan and Rashid (1993) suggest that the array of incentives now available for particular export should be extended fully to other non-traditional exports and backward and forward linkages to the extent that are economically viable, be encouraged and the existing system of export incentives should be streamlined to minimize administrative bottlenecks and to facilitate smooth and quick implementation of policy. Dhanasekaran (1995-96) supports the monetarist claim that it is the change in money stock that primarily determines changes in nominal GNP. Harrigan (1996) argues that national saving rates have been boosted by prudent government budgetary policy, that statutory saving and financial sector liberalisation have also played a significant role in boosting saving, and that these

effects would appear to have come both through higher real interest rates, and financial deepening.

Kenen (1996) was concerned with the implications of openness of the economy and the exchange-rate arrangements for the functioning of monetary and fiscal policies. Roy (1996) opines that fiscal instruments seem to be important for engineering products, paper, newsprint, and paper products to influence exports. Rahman and Shilpi (1996) suggest that in a country where the interest rates and exchange rates are pegged or managed or are subject to non-competitive market influences will have little effect on investment and capital accumulation. Further, traditional aggregated demand management policies could have favorable short run effects with regard to two gaps and inflation, without having any significant impact on growth, unless the policies directly encourage investment.

Rashid and Kemal (1997) comment that in Pakistan the policies pursued under the structural adjustment program have tended to increase the poverty levels mainly because of decline in growth rates, withdrawal of subsidies on agricultural inputs and consumption, decline in employment, increase in indirect taxes, and decline in public expenditure on social services. Donghyun (1997) argues in favor of liberalisation saying that it would provide Korean manufacturing firms with access to the less costly funds available in international financial markets and that these funds will facilitate their restructuring away from labor-intensive production techniques toward more capital intensive techniques.

Kannan (1997-98) describes the linkage between monetary and fiscal policy of Mauritius, a small country. An increase in Government capital expenditure improves output, but its impact on output and prices depends upon how the increase in its capital expenditure is financed. Ali (2001) doesn't find full applicability of Keynesian or Monetarist view of supply of and demand for money in Bangladesh. Arndt, Dorosh, Fontana, Zohir, El-said, and Lungren (2002) observes that the Bangladesh economy and household incomes are clearly linked with the global economy, particularly through food grain trade and the Readymade Garments sector. Maroney, Hassan, Basher, and Ihsan (2004) find that in the context of Bangladesh, monetary policy is more important than fiscal policy.

3. Objectives and Research Methodology

On the basis of the aforesaid literature review, the article has been undertaken with the following objectives:

1. To determine the factors which simultaneously explain the variations in macro economic factors due to multi-flow influence among the variables;
2. To investigate the effectiveness of the macro-economic indicators in the process of sustainable economic development; and
3. To find out whether any structural change has taken place in the macro economy of Bangladesh due to continuous financial reform programs especially implemented from the 1990s.
4. To draw some policy implications for betterment of macro economic conditions of the country.

The study has reviewed the theoretical and empirical literature on macro economy with special reference to Bangladesh. After independence on 16 December, 1971, the economy suffered due to the legacy of the war. The three years immediately after independence is considered a transitional abnormal period (1972-73 to 1975-76) for the purpose of this research and, therefore, the data for this period is not taken into consideration. Although macro-economic stability programme and structural adjustment process started in the middle of the 1980s, due to repression that prevailed in the economy, financial liberalization actually started in 1990. To make the study more up-to-date, we have extended the study period up to 2006 (June), a total of thirty years. The time period of the study has been divided into two sub-periods, viz., a) Sub period-1: Macroeconomic policy under administrative control, i.e. 1976-77 to 1989-90; and b) Sub period-2: Macroeconomic policy under reform measures, i.e., 1990-91 to 2005-06.

Data in the study has been used extensively from secondary sources, i.e. published data in various issues of Economic trends, Bangladesh Bank Bulletin, Bangladesh Arthanaitic Jarip, Bangladesh Arthanaitic Samikhaya, Statistical Year book of Bangladesh, Annual Report of Bangladesh Bank, Statistical Pocket Book of Bangladesh, Bangladesh Bank Quarterly and Twenty one years of national accounting of Bangladesh (1972-73 to 1991-92) etc. We have also consulted published books, journals and unpublished Ph.D. dissertations and research works that are relevant to the study.

This research has attempted to determine multi-flow effect between variables of real monetary and external sectors by estimating the reduced form of equations as an example of showing the multi-flow effect in the overall economy of the country. We use alternative definitions of the money supply i.e. Narrow money (M_1) or Broad money (M_2) where money supply is considered as either dependent variable or independent variable in various equations.

To test the structural change for the period from 1976-77 to 1989-90, we consider dummy variable (DM) as 'O'. When we consider the period from 1990-91 to 2005-06, then the dummy variable (DM) is '1'. Usual t-value, F value, Adjusted R-squared are estimated. Besides the statistical test, we also test whether serially correlated errors are present or not. As such the study has computed Durbin Watson statistics. Wherever serially correlated errors are present, we have used first order autoregressive transformation, i.e. AR (1) to remove auto correlation error term.

3.1 Specification of the Model

One can build a simultaneous equation model to show the multi-flow effects of the determinants of the real-monetary-external sector model. Instead of undertaking such modelling exercise, we have estimated the following reduced from equations of a real-monetary-external type model to test the multi-flow effect. From the literature review Model-A and Model-B are developed. Gross domestic product (GDP) is the most important variable, which depends on consumption, investment, domestic savings, money supply, bank rate and foreign exchange reserve. Instrumental variables are investment, high-powered money and interest rate, total number of bank branches, domestic saving and consumption.

When specifying the model for money supply, we have taken alternatively narrow money and broad money as dependent variable. Independent variables are GDP, bank rate, consumption, domestic savings, and foreign exchange reserve. In this case instrumental variables are foreign aid and loan, high-powered money, investment, consumption, total number of bank branches, and net foreign asset. Foreign exchange reserve depends on GDP, bank rate, consumption, domestic savings, and money supply. In this equation instrumental variables are bank rate, GDP, capital outflow, foreign remittance, investment, consumption, and domestic savings.

Similarly, the study also built Model-B where GDP depends on consumption, investment, money supply, rate of interest on deposit, and exchange rate. Instrumental variables are high-powered money, foreign remittance, exchange rate, domestic savings, rate of interest on deposit, net foreign asset, and deposits with bank. When we are specifying the model for money supply, it is the same as Model-A.

The study considers gross domestic product, high-powered money, rates of interest on deposit, national savings and exchange rate as independent variables. In this case instrumental variables are foreign aid and loan, investment, consumption, total number of bank branches, high-powered money, balance of trade and bank rate. Exchange rate depends on gross domestic product, rate of interest on deposit, consumption, national savings, money supply, and foreign exchange reserve. In this equation instrumental variables are the same as in model-A, including net foreign assets.

Model: A

GDP = f (CONS, DS, Ms, BR, FER) (1)

Where instrument list: INVT, H, R, TNBB, DS, CONS

Ms = f (GDP, BR, CONS, DS, FER) (2)

Where instrument list: FAL, H, INVT, CONS, TNBB, NFA

FER = f (GDP, BR, CONS, DS, Ms) (3)

Where instrument list: BR, GDP, CO, FR, INVT, CONS, DS

Model: B

GDP = f (CONS, INVT, Ms, R, ER) (4)

Where instrument list: H, FR, ER, DS, R, NFA, DMB

Ms = f (GDP, H, R, NS, ER) (5)

Where instrument list: FAL, INVT, CONS, TNBB, H, BT, BR

ER = f (GDP, R, CONS, NS, Ms, FER) (6)

Where instrument list: BR, GDP, CO, FR, INVT, CONS, DS, NFA

Where:

GDP=Gross Domestic Product, CONS=Consumption, DS=Domestic Savings, Ms=Money Supply, BR= Bank rate, FER= Foreign Exchange Reserve, INVT= Investment, H= High-Powered Money, R= Rate of interest on deposit, TNBB= Total Number of Bank Branches, FAL= Foreign Aid and Loan, NFA= Net foreign assets, ER= Exchange Rate, CO= Capital Outflow, FR= Foreign Remittance, DMB= Deposit money banks (govt. net), NS = National Savings, BT = Balance of Trade.

Here we use alternative definitions of money, i.e. M_1 and M_2, and assume following *a priori* relationships:

- GDP is positively related to consumption, investment, domestic saving, national saving, money supply and foreign exchange reserve. Rate of interest on deposit is negatively related to GDP. GDP is also positively related to investment. Exchange rate is negatively related to GDP.
- Money supply (both narrow money and broad money) is positively related to GDP, consumption, rate of interest on deposit, high–powered money and foreign exchange reserve.
- Money supply is negatively related to domestic saving and national saving. High-powered money is positively related to money supply. Bank rate is negatively related to money supply.
- Foreign exchange reserve is positively related to gross domestic product. Rate of interest, consumption, domestic saving and money supply are positively related to foreign exchange reserve.
- Exchange rate is negatively related to gross domestic product. It has also negative impact on consumption, domestic savings, money supply and foreign exchange reserve. Rate of interest on deposit has negative impact due to exchange rate depreciation.

4. Analysis of Results

On the basis of the Models explained in the foregoing, we have estimated 12 Equations, which contain the overall results of the study. The estimated Equations – viz, Equations 1A, 1B, 2A, 2B, 3A, 3B, 4A, 4B, 5A, 5B, 6A and 6B – are shown in the Appendix and the main results as reflected in the Equations are discussed below.

In Equation 1A, we see that while considering gross domestic product as the dependent variable, consumption and narrow money are significant at 1% level of significance and they depict expected sign. Here we also find that dummy variable is significant at 1% level of significance. Adjusted R-squared is 0.974 which indicates that good fit of the equation. Durbin-Watson statistic is 1.625414, which indicates that no autocorrelation prevails at 1% level of significance. F-statistic is significant at 1% level of significance.

In Equation 1B, we find that domestic saving and broad money are significant at 5% and 1% level of significance, respectively. The Equation provides a good fit at 99% of the observed variation in the gross domestic product. Durbin-Watson

statistics is 1.6185, which indicates that no autocorrelation prevails at 1% level of significance. F-statistic is significant at 1% level of significance.

In equation 2A, we observe that GDP and consumption are significant at 1% and 5% level of significance respectively. The equation provides a good fit at 96% of the observed variation in narrow money. Durbin- Watson statistic is 1.603477, which indicates that no autocorrelation prevails at 1% level of significance. F-statistic is significant at 1% level of significance.

In equation 2B, we found that GDP is significant at 1% level of significance. The equation provides a good fit at 94% of the observed variation in broad money. Durbin-Watson statistic is 1.592620, which indicates that no autocorrelation prevails at 1% level of significance. F-statistic is significant at 1% level of significance.

Equation 3A depicts that GDP is significant at 5% level of significance. The equation provides a good fit at 87% of the observed variation in foreign exchange reserve. We observe that if the GDP rises by 1%, then the foreign exchange reserve will rise by 1.06%. Durbin- Watson statistic is 1.605101, which indicates that no autocorrelation prevails at 1% level of significance. F value is significant at 1% level.

Equation 3B shows that GDP is significant at 5% level of significance. Here the equation provides a good fit at the 87% of the observed variation in the foreign exchange reserve. Durbin- Watson statistic is 1.582105, which indicates that no autocorrelation prevails at 1% level of significance. Dummy variable is significant at 5% level of significance, which implies that structural change has occurred. F-statistic is significant at 1% level of significance.

Equation 4A shows that consumption and investment is significant at 5% and 1% level of significance. Here the equation provides a good fit at 97% of the observed variation in the GDP. We use AR (1) to remove autocorrelation problem. F-statistics is significant at 1% level of significance.

In equation 4B, we find that investment and rate of interest on deposit is significant at 5% level of significance. The equation provides a good fit at the 99% of the observed variation in the gross domestic product. Here we use AR (1) to remove autocorrelation problem. F-statistic is significant at 1% level of significance.

In equation 5A, we observe that GDP and high-powered money is significant at 1% and 5% level of significance. The equation provides a good fit at the 93% of

the observed variation in the narrow money. To remove autocorrelation problem, we use AR (1). F-statistic is significant at 1% level of significance.

Equation 5B indicates that GDP is significant at 1% level of significance and high powered money at 10% level of significance. The equation provides a good fit at the 94% of the observed variation in the broad money. To remove autocorrelation problem, we use AR (1). F-statistic is significant at 1% level of significance.

Equation 6A indicates that GDP is significant at 5% level of significance. It is negatively related. Dummy variable is significant at 5% level, which implies that structural change has occurred. The equation provides a good fit at the 87% of the observed variation in the exchange rate. We use AR (1) to remove autocorrelation problem. F-statistic is significant at 1% level of significance.

Equation 6B depicts that GDP is significant at 1% level of significance and negatively related. Here we also find that dummy variable is significant at 1% level of significance. The equation provides a good fit at the 88% of the observed variation. Here AR (1) is used to remove autocorrelation problem. F-statistic is significant at 1% level of significance.

To sum up, the study observes that GDP is the key factor of the measurement of macro economy. Consumption and narrow money have a significant relationship with GDP. Broad money and domestic saving also have an impact on the economy. Narrow money has a relationship with GDP and consumption. Broad money has a significant relationship with GDP. Foreign exchange reserve has an impact on GDP. GDP is also related to investment and rate of interest on deposit. Narrow money and broad money both have significant relationship to GDP and high powered money. Exchange rate is related to GDP. The study observes that Rahman and Shilpi's (1996) findings are not fully applicable.

We obtained mixed results of the structural changes. This implies that financial reform measures have some positive impact on the domestic economy. However, the economy still needs more changes. Momen (1992) observed that IMF policy prescriptions for less-developed economies (LDEs) are not likely to be effective or relevant until financial structures and levels of industrialization of LDEs have improved. This is supported by our results. The study doesn't fully support Parikh and Starmer's (1988) view. One of the reasons may be that over the time period Bangladesh faced three distinct stages, i.e. from 1972 to 1975 –socialistic attitude; 1976 to 1989 –mixed economy; and from 1990 to till now –moving towards free market economy. The study has found that real sector is largely dependent on GDP.

Other factors such as the rate of interest on deposit, investment, consumption also have an impact on the real sector of the country. We observe that money supply depends directly on high-powered money and GDP, whereas the external sector depends on exchange rate and foreign exchange reserve. When we test multi-flow effect through simultaneous equations using instrumental variables, we observe that GDP is the key factor in the economy and is directly related to the consumption and investment process. Monetary management of the economy should be designed with proper assessment, planning, implementation, market condition of the people's desire or intention, timely decisions, positive real rate of return, and adjustment of price change for accelerating the growth of GDP. External and internal factors have impacts on the supply of money process.

Foreign exchange reserve is directly related to GDP, and depends on export-import of the country, foreign aid and loan, foreign remittances etc. International commitment, commercial transaction, and transfer payment of the country affect the reserve position and it cannot be fully predetermined. The study reveals that some of the determinants of export sector of the country have multi-flow effect on other sectors of the economy.

The study has also investigated the overall impact of financial reform measures on the real, monetary and external variable. Results of the study indicate the need for coordination of fiscal policy with monetary policy, exchange rate and debt management policies along with appropriate measures to reduce the dependence on the external sector in order to accelerate economic growth, ensure social justice and bring stability in the financial sector (Bahar 2009). Structural changes have occurred only partially and the economy did not benefit from these reform measures.

5. Policy Implications

Globalisation challenges had a negative impact on the domestic economy and aggregate output, therefore dependence on external sector should be minimised. The findings of this study supports Lewis's (1990) results that for the Bangladesh economy to replace the current off-budget export subsidy, based on retention of foreign exchange earnings, by export subsidies financed out of the government budget would promote exports. These measures may be applied for the economic development of the country.

From the study it is also evident that for the development of the country, fiscal policy will have to be coordinated with monetary policy and other policies along

with appropriate measures to minimize the dependence on the external sector. The deregulation of Bangladesh economy and structural adjustment began since the mid-eighties along with the financial reforms in 1990. Although Bangladesh is still an undeveloped country, the primitive characteristics of LDCs do not exist here. This indicates that the country is able to bring stability in the financial sector, which will facilitate the process of development, though it is not sufficient.

One of the objectives of the study is to test whether structural change has occurred or not. Although Bangladesh economy was deregulated from the mid-1980s when macroeconomic stabilisation measures were taken, lack of planning and political will hindered the growth process. To expedite the process, financial sector reform program were launched in 1990. Though economic development of the country needed to be given a big push, only a partial financial sector reforms took place in the country. Economic development of the country calls for higher saving and investment, a favorable balance of payments position, and productive utilization of foreign remittances. As such financial sector reforms should be designed with more positive attitude. For example, these reforms should include independence of Bangladesh Bank, growth oriented resource mobilization, and a reduction in government borrowing from the banking sector. When the rate of interest on deposit is high, the Bangladeshi expatriates from abroad become motivated to send their earnings. This also helps to narrow the balance of payments deficit, and the exchange rate, too, remains in a favorable position. The study observes that government expenditure has a positive impact on GDP, which supports Kannan's (1997-98) findings for Mauritius.

Monetarists argue that money supply has a dominant influence on the price level, spending, production, and employment. On the other hand, neo-Keynesians believe that a wide range of factors, both monetary and non-monetary, influence employment, growth and prices (Keynes 1936). The present study neither supports the monetarist view fully not the Keynesian view fully. The economic condition cannot be fully improved by depending on fiscal policy alone. The study concludes that Bangladesh needs a mix of fiscal and monetary policy. A combination of demand management and supply side policies will be needed to improve the economy.

While the study doesn't find full applicability of either Keynesian or Monetarist view to the Bangladesh economy, it supports the conclusion of Osmani *et.al* (1986) who argue that fiscal policy affects the monetary sector in a variety of ways. Results of the findings of Maroney et.al (2004) in their macro-econometric model for the Bangladesh vary with the findings of the present study. Maroney *et.*

al find that in the context of Bangladesh, monetary policy is more important than fiscal policy since monetary stability is essential for economic growth.

Fiscal policy of the country has not been designed well enough to stimulate growth through taxation, public expenditure, domestic resource mobilization, and institutional framework. Despite reform measures, real variables indicate that government has failed to raise taxes, properly mobilize domestic resources and effectively allocate these resources as per the requirement of the economy.

To conclude, the performance of the Bangladesh economy is a mixture of accomplishment and failure, not significantly different from that of the majority of poor Third World countries. The country has achieved a degree of success since independence. The international donors led by the World Bank, similarly can be proud of the role it has played in assisting in the development process. On the policy side, a good record on GDP growth seems to have benefited from impressive macro stability. Inflation hasn't touched double digits for almost two decades, while public and external debt situation is tolerable with growth in saving and investment rates, currently at about 24%, are relatively high compared with other countries at similar income levels.

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Appendices

Equation No: 1A

Dependent Variable: GDP

Method: Two Stage Least Squares

Instrument list: INVT H R TNBB DS CONS

Variable	Coefficient	Std. Error	T-statistic
C	-10670.32	14624.85	-0.7296
CONS	0.0636	0.0242	2.6249
DS	0.0523	0.0448	1.1686
M_1	9.9187	3.4536	2.8719
BR	-1539.381	7962.501	-0.1933
FER	16.8847	3068.847	0.0055
DM	0.8207	0.0658	12.4716
Adjusted R-squared	0.9746	F-statistic	
Durbin-Watson stat.	1.6254	Prob (F-statistic)	

Equation No: 1B

Dependent Variable: GDP

Method: Two Stage Least Squares

Instrument list: INVT H R TNBB DS CONS

Variable	Coefficient	Std. Error	T-statistic
C	2718.208	9627.628	0.2823
CONS	0.0208	0.0138	1.5013
DS	0.0512	0.0239	2.1444
M_2	2.7521	0.5098	5.3980
BR	6513.053	5547.370	1.1740
FER	-1901.254	1972.294	-0.9639
DM	0.4025	0.2830	1.4221
Adjusted R-squared	0.9928	F-statistic	
Durbin-Watson stat.	1.6185	Prob (F-statistic)	

Equation No: 2A

Dependent Variable: M_1

Method: Two Stage Least Squares

Instrument list: FAL H INVT CONS TNBB NFA

Variable	Coefficient	Std. Error	T-statistc
C	-890.6034	5204.635	-0.1711
GDP	0.0959	0.0270	3.5396
BR	272.9141	665.2476	0.4102
CONS	0.0045	0.0019	2.3554
DS	-0.0070	0.0140	-0.5044
FER	-0.0008	0.0382	-0.0234
DM	5143.081	9983.554	0.5151
Adjusted R-squared	0.9632	F-statistic	
Durbin-Watson stat.	1.6034	Prob (F-statistic)	

Equation No: 2B
Dependent Variable: M_2
Method: Two Stage Least Squares
Instrument list: FAL H INVT CONS TNBB NFA

Variable	Coefficient	Std.error	T-statistic	Prob.
C	-7037.314	24182.34	-0.291010	0.7739
GDP	0.355765	0.125908	2.825592	0.0101
BR	9502743	3090.945	0.307438	0.7615
CONS	0.007358	0.009059	0.812318	0.4257
DS	-0.063532	0.065107	-0.975803	0.3403
FER	0.087439	0.177601	0.492334	0.6276
DM	22864.50	46386.66	0.492911	0.6272
Adjusted R-squared	0.948522	F-statistic		87.03205
Durbin-Watson stat.	1.592620	Prob(F-statistic)		0.000000

Equation No: 3A
Dependent Variable: FER
Method: Two Stage Least Squares
Instrument list: BR GDP CO FR INVT CONS DS

Variable	Coefficient	Std.error	T-statistic	Prob.
C	-34730.27	27606.24	-1.2580	0.2254
GDP	1.0618	0.4149	2.5589	0.0203
BR	8871.135	16556.63	0.5358	0.5990
CONS	0.0133	0.0301	0.4407	0.6649
DS	0.0254	0.0551	0.4616	0.6599
M_1	5700.087	6268.753	0.9092	0.3759
DM	56464.36	92246.73	0.6121	0.5486
Adjusted R-squared	0.8730	F-statistic		25.4052
Durbin-Watson stat.	1.605101	Prob(F-statistic)		0.0000

Equation No: 3B
Dependent Variable: FER
Method: Two Stage Least Squares
Instrument list: BR GDP CO FR INVT CONS DS

Variable	Coefficient	Std.error	T-statistic	Prob.
C	42081.81	119691.3	0.3515	0.7295
GDP	1.0749	0.4150	2.5897	0.0191
BR	-10325.82	18755.65	-0.5505	0.5891
CONS	0.0141	0.0305	0.4617	0.6501
DS	0.0224	0.0498	0.4515	0.6573
M_2	2.2333	7.3315	0.3046	0.7644
DM	0.1682	0.0673	2.4981	0.0197
Adjusted R-squared	0.8797	F-statistic		26.8220
Durbin-Watson stat.	1.5821	Prob(F-statistic)		0.0000

Equation No: 4A
Dependent Variable: GDP
Method: Two Stage Least Squares
Instrument list: H FR ER DS R NFA DMB

Variable	Coefficient	Std.error	T-statistic	Prob.
C	-11629.70	15525.80	-0.7490	0.4630
CONS	0.0620	0.0258	2.4044	0.0266
INVT	0.0493	0.0479	1.0300	0.3159
M_1	10.0804	3.6596	2.7544	0.0126
R	-770.9253	8802.406	-0.0875	0.9311
ER	-169.9178	3276.799	-0.0518	0.9592
DM	47003.22	54216.55	-0.8669	0.3968
AR(1)	0.0025	0.2486	0.0100	0.9921
Adjusted R-squared		0.973303	F-statistic	138.0736
Durbin-Watson stat.		1.7842	Prob(F statistic)	0.0000

Equation No: 4B
Dependent Variable: GDP
Method: Two Stage Least Squares
Instrument list: H FR ER DS FAL NFA

Variable	Coefficient	Std.error	T-statistic	Prob.
C	-79863.98	36537.66	-2.1857	0.0416
CONS	-0.0480	0.0423	-1.1354	0.2703
INVT	0.5179	0.2523	2.0526	0.0541
M2	0.0011	1.0441	0.0011	0.9991
R	7972.294	3634.989	2.1932	0.0409
ER	-5.5839	5.6203	-0.9935	0.3329
DM	-9253.656	34243.25	-0.2702	0.7899
AR(1)	-0.1696	0.2426	-0.6992	0.4928
Adjusted R-squared	0.9900		F-statistic	369.8355
Durbin-Watson stat	1.9648		Prob(F-statistic)	0.0000

Equation No: 5A
Dependent Variable: M_1
Method: Two Stage Least Squares
Instrument list: FAL INVT CONS TNBB NFA BT

Variable	Coefficient	Std.error	T-statistic	Prob.
C	-138.6187	4848.517	-0.028590	0.9775
GDP	0.0976	0.026264	3.717900	0.0015
BR	-187.3764	614.2428	-0.305053	0.7636
H	0.0045	0.001945	2.361074	0.0291
DS	-0.0063	0.013734	-0.459201	0.6513
ER	0.0008	0.036667	0.022812	0.9820
DM	4310.607	9383.615	0.459376	0.6512
AR(1)	0.0025	0.239532	0.01437	0.9918
Adjusted R-squared	0.96360	F-statistic	100.7955	
Durbin-Watson stat	1.7469	Prob(F-statistic)	0.0000	

Equation No: 5B
Dependent Variable: M_2
Method: Two Stage Least Squares
Instrument list: FAL INVT CONS TNBB NFA BT

Variable	Coefficient	Std. error	T-statistic	Prob.
C	-4715.367	23761.96	-0.1984	0.8448
GDP	0.3611	0.13059	2.7650	0.0123
BR	-686.1547	3040.732	-0.2256	0.8239
H	0.0189	1.5081	1.8036	0.0616
DS	-0.0611	0.0700	-0.8733	0.3934
ER	-0.0820	0.1745	-0.4703	0.6434
DM	20294.03	46851.69	0.4331	0.6698
AR(1)	0.0025	0.2601	0.0096	0.9924
Adjusted R-squared	0.9492		F-statistic	72.8897
Durbin-Watson stat	1.6282		Prob(F-statistic)	0.0000

Equation No: 6A
Dependent Variable: ER
Method: Two Stage Least Squares
Instrument list: BR GDP CO FR INVT CONS DS NFA

Variable	Coefficient	Std.error	T-statistic	Prob.
C	-36979.33	35818.43	-1.0324	0.3172
GDP	-1.0437	0.4087	-2.5538	0.0212
R	10357.00	23727.27	0.4365	0.6683
CONS	-0.0161	0.0438	-0.3690	0.7170
NS	0.0274	0.0654	0.4190	0.6807
M_1	2025527	10.4451	0.1939	0.8487
FER	-6240.654	8761.889	-0.7122	0.4866
DM	0.8451	0.2431	3.4766	0.0021
AR(1)	-0.0587	0.4243	-0.1385	0.8915
Adjusted R-squared	0.8701		F-statistic	21.7739
Durbin-Watson stat.	1.6169		Prob(F-statistic)	0.0000

Equation No: 6B
Dependent Variable: ER
Method: Two Stage Least Squares
Instrument list: BR GDP CO FR INVT CONS DS NFA

Variable	Coefficient	Std. error	T-statistic	Prob.
C	59484.26	148633.3	0.4002	0.6943
GDP	-1.0450	0.3794	-2.7536	0.0141
R	-13120.66	23256.87	-0.5641	0.5805
CONS	-0.0187	0.0378	-0.4961	0.6265
NS	0.0241	0.0513	0.4698	0.6448
M_2	0.5917	10.1838	0.0581	0.9544
FER	-6563.060	7343.351	-0.8937	0.3847
DM	0.7692	0.1262	6.0944	0.0000
AR(1)	-0.1110	0.3718	-0.2987	0.7690
Adjusted R-squared	0.8838		F-statistic	24.3635
Durbin-Watson stat.	1.6848		Prob(F-statistic)	0.0000

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An Empirical Exercise of Money-Output Relationship of Bangladesh Economy

SAKIB-BIN-AMIN[1]
A. F. M. ATAUR RAHMAN[2]

Abstract

The relationship between money and output is one of the important topics in macroeconomic research. There are so many variables that affect this relationship that neither theory nor econometric analysis gives any conclusive result. The current study investigates this relationship for Bangladesh. Using cointegration method and Granger causality we have found that for Bangladesh money causes output. This result is valid for different definitions of money like M1, M2, Cash outside bank and total bank credit. We also found that total bank deposit does not have any relationship with real GDP. This however portrays an economy that is predominantly cash based with financial system suffering from inefficiency.

1. Introduction

The relationship between Money circulated and Gross Domestic Product (GDP) of a country is one of the most important topics of Macroeconomic research. Researchers take different positions on this issue according to their empirical findings and motivations. In one side, there are neoclassical economists who do not give much importance to the presence of money in the economy and in the other side there are monetarists who strongly argue that the money is one of the most important instruments to control macroeconomic targets. Other schools take their position somewhere in the middle of these two extremes. Although

1. Lecturer, Department of Economics, North South University
2. Associate Professor and Chairman Department of Economics, North South University

Economics now has become sufficiently quantitative with strong Mathematics and Econometrics, still empirical analysis cannot determine this relationship conclusively. The procedures of econometrics are not sufficiently strong to test the direction of causality and when the method is strong it suffers from theoretical ambiguity, which tells that the relationship between money and output is country and time dependent. Friedman and Schwartz (1963), Anderson and Jordan (1968), Sims (1972) among others strongly argued for non- neutrality of money. They argued that change in monetary measure can affect the real output. But the association was weakened in the 1980s. Among others, Christiano and Ljungqvist (1988), Friedman and Kuttner (1992, 1993) have documented that including data from the 1980's sharply weakens the post-war time-series evidence indicating significant relationship between money and real income. However, the relationship is still there in the sense that Stock and Watson (1989), Becketti and Morris (1992), Feldstein and Stock (1994), Hafer and Kutan (1997), and Swanson (1998) among others found significant predictive component in money for real and nominal output. This relationship between money and GDP is not only important from theoretical sense but also from policy perspective as output is the prime concern of any macroeconomic policy and government need some steering mechanism for that.

This paper tries to identify the relationship between money and national output for Bangladesh. As mentioned earlier, Macroeconomy of every country is unique and they need to be treated after considering their peculiarities. It is expected that fundamental relationships between different macroeconomic variables may follow certain common theories but local preferences are also crucial in determining their behavior. The rest of the paper is organized as follows. Section 2 presents the review of literature. Section 3 discusses the methodology and attributes of data. Econometric results and their discussion follow in Section 4 with concluding remarks.

2. Literature Review

There are at least three different competing ideas in contemporary literature apart from the initial theoretical motivation of non-neutrality of money. They are given below.

Lucas (1973), Sargent and Wallace (1975) argued in their respective version of monetarism that the unanticipated component of movements in the money stock produces non-neutrality. Anticipated changes in aggregate demand policy have no output response; thus, deterministic feedback policy rules do not help in achieving

policy targets [(Barro 1977, 1978), Barro and Rush (1980), Gordon (1982), Mishkin (1982)].

Friedman (1988) and Handa (2000) in their theories argued that the breakage of link and non-neutrality of money is due to the distortion of the traditional definition of money as a medium of payments. Improper financial aggregation and inappropriate choice of the opportunity cost of money were sources of the controversy on non-neutrality of money. Among others, Belongia (1996) documented that inferences about the effects of money on real output depend importantly on the choice of financial index because simple-sum aggregates cannot internalize pure substitution effects.

Another line of argument largely ignores money both in the analysis of the macroeconomy as well as in the formation of monetary policy. For instance, Taylor-like policy rules model the interest rate as determined by movements in the output gap and inflation: monetary aggregates play no direct function in the formulation of policy in such a setup. Empirically, the findings of Rudebusch and Svensson (1999, 2002) are often cited as evidence supporting such a money-free model.

On empirical side the role of money and its effects on national output have generated a voluminous amount of literature [Blanchard (1990), Lucas (1996), Sargent (1996)].

Friedman and Schwartz (1963) in their seminal paper argued for strong effect of money on output. Numerous studies since then have aimed to characterize and establish the interactions between money and output. Sims (1972), using a better technical way reported strong evidence of money causing output. However, the monetary effect vanishes when short-term interest rates are included as a control variable (Sims (1980), Litterman and Weiss (1985)). Mishkin (1982), using data for the US, has provided support for the proposition that monetary shocks have real short-run effects. Since then many studies have tested this proposition using US data and now it is widely accepted that these two variables are associated with each other (Cecchetti (1995), Svensson (2001)). Evidences from other courtiers are not widely confirmed and correlation may be weaker in one historical data set than in another (Robert Lucas, 1995). Poirier (1991) discovers that money is neutral in some countries, but not in others. McCandless and Weber (1995) analyze data for 110 countries over a 30 year period and discovered that there is no correlation between growth rates of money and real output. This holds for all definitions of money, but not for the OECD countries in their sample. (Correlations range between and)

Sophisticated empirical models have been devised to examine the implications of anticipated and unanticipated (Barro (1977)), positive and negative (Cover (1992) Thoma (1994)), and large and small monetary shocks (Ravn and Sola (1996)) on output movements. The set of controlling variables has been expanded to include, for example, monetary policy regimes (Bernanke and Mihov, 1998), commodity prices (Sims, 1992), and credit rationing (Galbraith, 1996).

We have some counterintuitive findings as well. Kormendi and Meguire (1985) find that the average rate of growth in the money supply and the standard deviation of money shocks are both negatively associated with real GDP. Dwyer and Hafer (1988) find that money growth is negatively related with the level of real output, but uncorrelated with the growth of real output.

3. Methodology and Data Set

We tested the existence of unit root to check the stationarity of the variables. Financial and macro variables are well known for their non-stationarity. We performed augmented Dickey Fuller test to test the existence of unit root. We found that the variables are non stationary and thus can not be regressed without making them stationary. Then we ran cointegration test to find out possible linear combination of the variables that can be considered stationary. If co-integration is found then we ran Granger Casualty test to check the possible direction of causality.

In time series analysis, non-stationary data may lead to spurious regression unless there exists at least one Cointegrating relationship. The Johansen procedure is applied to test for cointegration. This method provides a unified framework for estimation and testing of cointegration relations in the context of Vector Autoregressive (VAR) error correction models. For this approach one has to estimate an Unrestricted Vector of Autocorrelation of the form:

$$\Delta x_t = \alpha + \theta_1 \Delta x_{t-1} + \theta_2 \Delta x_{t-2} + \theta_3 \Delta x_{t-3} + \cdots\cdots + \theta_{k-1} \Delta x_{t-k+1} + \theta_k \Delta x_{t-k} + u_t$$

where Δ is the difference operator, x_i is a (n x 1) vector of non-stationary variables (in levels) and u_i is also the (n x 1) vector of random errors. The matrix θ contains the information on long run relationship between variables. If the rank of $\theta = 0$, the variables are not cointegrated. On the other hand if rank (usually denoted by r) is equal to one, there exists one cointegrating vector and finally if, $1<r<n$, there are multiple cointegrating vectors. Johansen and Juselius (1990) have derived two tests for cointegration, namely the trace test and the maximum Eigen value test. The trace statistic evaluates the null hypothesis that there are at most r

cointegrating vectors whereas the maximal Eigen value test evaluates the null hypothesis that there are exactly *r* cointegrating vectors in x_t.

According to co-integration analysis, when two variables are cointegrated then there is at least one direction of causality. Granger-causality, introduced by Granger (1969, 1980, 1988), is one of the important issues that has been much studied in empirical macroeconomics and empirical finance. Engle and Granger (1987) have indicated that the existence of non-stationary, can give misleading conclusions in the Granger causality test. It is only possible to infer a causal long run relationship between non-stationary time series when the variables are co-integrated.

If *y* and *x* are the variables of interest, then the Granger causality test determines whether past values of *y* add to the explanation of current values of *x* as provided by information in past values of *x* itself. If past changes in *y* does not help explain current changes in *x*, then *y* does not Granger cause *x*. Similarly, we can investigate whether *x* Granger causes *y* by interchanging them and repeating the process. There are four likely outcomes in the Granger causality test: (1) neither variable Granger cause each other, (2) *y* causes *x* but not otherwise, (3) *x* causes *y* but not otherwise, (4) both *x* and *y* Granger cause each other.

In this study the causality test between GDP and Financial indicators will be conducted. For this the following two sets of equation are estimated:

$$x_t = \alpha_0 + \alpha_1 x_{t-1} + \cdots\cdots + \alpha_l x_{t-l} + \beta_1 y_{t-1} + \cdots\cdots + \beta_l y_{t-l} + u_t$$

$$y_t = \alpha_0 + \alpha_1 y_{t-1} + \cdots\cdots + \alpha_l y_{t-l} + \beta_1 x_{t-1} + \cdots\cdots + \beta_l x_{t-l} + v_t$$

For all possible pairs of (*x*,*y*) series in the group. The reported F-statistics are the Wald statistics for the joint hypothesis $\beta_1 = \beta_2 = \beta_3 = \cdots\cdots = \beta_l = 0$

As explained in the introduction this paper examines the long run relationship and the direction of causality between money and national output of Bangladesh. The measure of GDP can be considered as the indicator of economic development. For money we have used different Financial Indicators (FI) like Currency outside Bank (C_oB), Narrow money (M1), Broad money (M2), Total Bank Credit (TBC) and Total Bank Deposits (TBD) in our study to capture the greater picture of measure of money as well as financial development. However, we have not done much investigation on channels through which this possible effect can pass through. Mishkin (2006) has an excellent discussion on such possible channels.

The Data for all the variables have been drawn from the different issues of Economic Trends published by Bangladesh Bank. It is mentionable here that real

GDP has been considered in our study considering 1973 as the Base Year. In this regard the GDP data has been converted twice in 1987 and 1990 to make it compatible with the base year. It should be mentioned here that since Bangladesh got her independence in 1971, the article concentrates over the period 1976-2006 for which 31 observations are available at most. Small sample size might be problematic in finding the long run relationship. Eviews 5.0 have been used as statistical software packages for all the tests run in this study. All the econometric results are available on request.

Results

Unit root tests were conducted to determine the order of integration of the data series for each of the variables. Table 1 shows the ADF statistics and corresponding critical values of all the variables in their level and first differenced forms.

From the table above, the null hypothesis of unit root in levels of the variables and the first differences of the variables at 90%, 95% and 99% confidence level cannot be rejected. It is clear that all the concerned variables are non-stationary in their level and first differences. The above results also imply that the variables would

Table 1: Augmented Dickey Fuller Unit Root Test for Real GDP and FI

	ADF Statistics (Only Constant) Variables are in levels	Decision	ADF Statistics (Only Constant) Variables are in 1st difference	Decision
RGDP	12.69405	Non Stationary	3.110956	Non Stationary
M1	3.382743	Non Stationary	1.576244	Non Stationary
M2	0.756663	Non Stationary	1.921519	Non Stationary
TBC	16.94940	Non Stationary	4.284085	Non Stationary
TBD	-0.254779	Non Stationary	7.994556	Non Stationary
CoB	1.687791	Non Stationary	2.978176	Non Stationary

yield spurious results unless the variables are cointegrated. These results, however, allow to proceed the next stage of testing for cointegration.

Results of Johansen test for co-integration are given Tables 2 and 3.

Table 2 : Johansen Test for Cointegration (Maximum Eigen value Test)

	Null Hypothesis	Alternative Hypothesis	Statistics	99% Critical Value	95% Critical Value	Conclusion
M1 and RGDP	None	At Most One	31.81 (0.12)	18.63 (6.65)	14.07 (3.76)	One Cointegrating Relationship
M2 and RGDP	None	At Most One	29.46 (2.79)	18.63 (6.65)	14.07 (3.76)	One Cointegrating Relationship
TBC and RGDP	None	At Most One	36.71 (0.31)	18.63 (6.65)	14.07 (3.76)	One Cointegrating Relationship
CoB and RGDP	None	At Most One	33.95 (2.50)	18.63 (6.65)	14.07 (3.76)	One Cointegrating Relationship
TBD and RGDP	None	At Most One	16.54 (3.97)	18.63 (6.65)	14.07 (3.76)	No Cointegrating Relationship

Table 3: Johansen Test for Cointegration (Trace Test)

	Null Hypothesis	Alternative Hypothesis	Statistics	99% Critical Value	95% Critical Value	Conclusion
M1 and RGDP	None	At Most One	31.94 (0.12)	20.04 (6.65)	15.41 (3.76)	One Cointegrating Relationship
M2 and RGDP	None	At Most One	32.25 (2.79)	20.04 (6.65)	15.41 (3.76)	One Cointegrating Relationship
TBC and RGDP	None	At Most One	36.71 (0.31)	20.04 (6.65)	15.41 (3.76)	One Cointegrating Relationship
CoB and RGDP	None	At Most One	36.45 (2.50)	20.04 (6.65)	15.51 (3.76)	One Cointegrating Relationship
TBD and RGDP	None	At Most One	20.52 (3.97)	20.04 (6.65)	15.51 (3.76)	No Cointegrating Relationship

The Granger causality test has been done and the results are reported in Table 4. The table shows that there is causal relationship running from RGDP to M1, M2 and TBC and CoB to RGDP.

Discussion on results obtained

Now summarizing the results that we have so far we see that non stationarity among financial and macroeconomic variables are somewhat expected. Test of

Table 4: Granger Causality Tests

Hypothesis	F-Statistics	P-Value	Granger Causality
RGDP does not Granger Cause M1	0.52170	0.59938	M1 causes RGDP
M1 does not Granger Cause RGDP	7.79578	0.00213	
RGDP does not Granger Cause M2	2.50953	0.10009	M2 causes RGDP
M2 does not Granger Cause RGDP	8.37772	0.00148	
RGDP does not Granger Cause TBC	0.81832	0.45222	TBC causes RGDP
TBC does not Granger Cause RGDP	7.83906	0.00217	
RGDP does not Granger Cause CoB	3.00248	0.00671	Bidirectional Causality
CoB does not Granger Cause RGDP	9.62075	0.00075	

cointegration tells that all the variables are cointegrated with real GDP except total bank deposit. This is little bit unexpected as the conventional economic theory tells that deposits (savings) are the unspent portion of income. This means that deposit is neither the significant portion of the saved income nor fuels the GDP. This probably indicates that there are other sources of deposit (income) than conventional channels. These possible "other sources" as they are not reflected in regular GDP, will be reflected in the unofficial economy. In that case we would expect that the underground economy of Bangladesh will be very high. In fact different measures of underground economy of Bangladesh have pointed out that the figure is at least 35% of official economy, which is a large value and sufficient enough to distort results (Schneider (2004)).

This effect is carried onto other results as well. Results of Granger causality test (which is the test of precedence) tell that all monetary and financial values precede real GDP. So statistically money does cause output in case of Bangladesh but output does not cause money. Three out of four money measures that were significant had a large component of cash in their measure. Credit causes GDP is a logical thing to expect but other measures of money causing output indicates that there is a source of money that is not reflected in GDP. This source may again be the unofficial economy that may distort numbers.

However the both way causality found between CoB and real GDP is interesting. This indicates that the cash money outside banks directly causes output and output also directly causes cash money. This however is expected in a mostly cash based economy. When this result is coupled with non-causality from GDP to M1 indicates that money generated through economic activities is trapped as cash and not entering into the banking system. Deposit as told earlier is not representative of real GDP. This gives somewhat an indication that the financial system in general is not as efficient as one would expect.

Conclusion

In the present study we have found that in Bangladesh money causes output, which is a standard economic phenomena. But we have also found some relationships that are not quite predicted by economic theories. Following existing literature we tried to explain them. But further research should be done especially investigating the reason behind existence of no long term relationship between bank deposit and real GDP. Official and private capital flow from foreign countries in Bangladesh is not overwhelming for last many years. So the fuel for GDP growth is expected to be within the country and in that case non-significance of bank deposit can be rationalized only by claiming Bangladesh economy as a cash based economy. While this may be the case but this needs to be proved.

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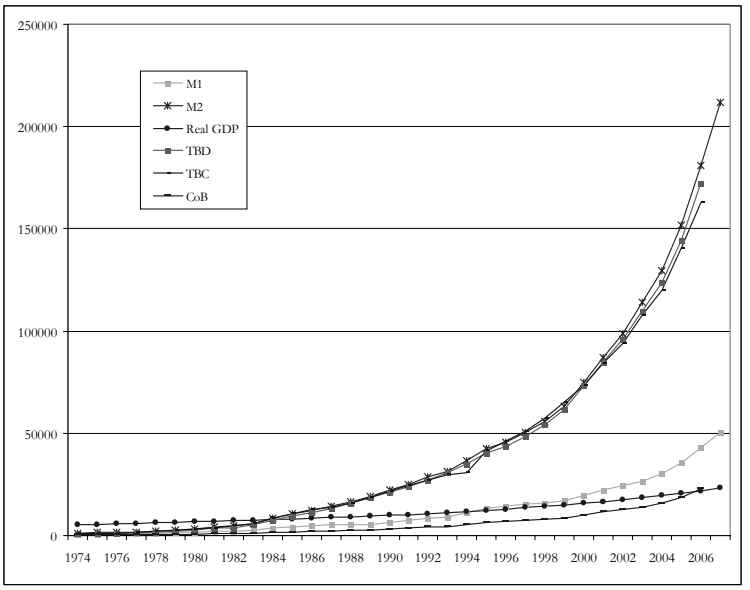
Appendix A

	M1	M2	Real GDP	TBD	TBC	CoB
Mean	12174.60	45877.86	11486.51	39160.53	38909.67	5531.77
Standard Deviation	12870.67	55317.47	5160.10	45726.78	44150.00	5875.50
Maximum	50650.00	211986.20	23404.18	172453.40	162842.70	22862.10
Minimum	755.92	1292.43	5056.90	913.20	905.00	290.20

Graph: Time series



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An Innovative Approach to Overcome Financial Barrier for Meeting Lighting Needs of Rural Markets by Solar Energy

MD. ZAHIR UDDIN ARIF[1]
FAISAL AHAMMED[1]

Abstract

Thousands of rural markets in Bangladesh are deprived of electricity. Rural markets without electricity do not attract merchants and the farmers are to sell their product at comparatively low price. This results in wastage of huge amount of unsold products leading to great loss to the farmers. An alternative option may be connection of rural markets by solar energy for meeting their lighting needs. This paper deals with the experience of CMES (Centre for Mass Education in Science), a national NGO in Bangladesh, on solar energy based lighting in rural markets.

Key Words: *Solar energy, rural markets, financial mechanism, tariff.*

Introduction

Electricity is considered to be one of the essential inputs for quality of life. As a matter of fact, per capita consumption of electricity is taken as an indicator of the standard of living in a country or a community.

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1 The authors are, respectively, Assistant Professor, Marketing Department, Jagannath University, and Senior Lecturer, School of Business Studies, Southeast University. They are grateful to Mr. Mir Saiful Islam, Program Manager, Department of Research and Development, Centre for Mass Education in Science (www.cmes-bd.org) for providing necessary information related to this study.

Only 30% of the population get grid electricity in Bangladesh (Ibrahim et al., 2000). There is no possibility of connecting all homes of remote villages and rural markets to the grid system in near future. The power system in Bangladesh mostly depends on fossil fuels, which are depleting fast. At this stage, electrification by solar energy has emerged as a viable technical option for meeting lighting and other small energy needs of millions of people living in isolated areas of Bangladesh. Solar energy can also bring considerable improvement in rural life through income generation and thus alleviating poverty. In addition, it can bring multiple positive results in terms of women's welfare, children's education, employment and income generation. But installation of solar system requires high initial cost which is really a burden for the rural people. So, an alternative financial mechanism is required to make the program successful.

Literature Review

The first Photovoltaic (PV) based rural electrification project in Bangladesh was initiated with the financial support of France, with a total installed capacity of 62 KWp, of which 29.414 KWp was for BCS (Battery Charge Station) and the rest by Solar Home System (SHS) (Dipal et al., 2001).

Hiranvarondon et al. (1999) suggested that the dissemination of PV requires an implementation strategy that should initially identify the type of the system. Government could accelerate the dissemination by removing barriers to market expansion, by removing excessive duties and taxes, and by removing subsidies on products which compete with Solar PV. They also listed the role of key players such as national governments, donor agencies, educational and research institutions and private sectors/ NGOs in the promotion of dissemination of PV systems in developing countries.

Cabraal et al. (2000) noted that successful PV market development for rural electrification requires the removal of financial and institutional barriers. The other major issues to be considered are the high initial costs, establishment of responsiveness and sustainable infrastructure, and ensuring quality products and services. These findings were based on their study on Indonesia, Sri Lanka, the Philippines, and the Dominican Republic.

Nieuwenhout et al. (2000), studying the use of PV systems in households in developing countries, notes that there is no single best organizational model to promote dissemination of SHS. They point out that dissemination depends on institutional, legal, socio-economic and cultural conditions in the country.

These studies illustrate that the factors contributing to the successful promotion of PV based rural electrification are:

- Suitable financing schemes to address the problem of high initial cost.
- Means of providing regular and proper maintenance and availability of spare parts
- Choice of available configurations to suit the consumers' needs and affordability.

Methodology

This paper is based on the experience of CMES on implementation of the solar energy system in rural markets under the project "Renewable Energy Technologies in Asia (RETs in Asia): A Regional Research and Dissemination Program", which is funded by Swedish International Development Cooperation Agency (SIDA) and coordinated by the Asian Institute of Technology (AIT), Thailand. Under this pilot project, CMES has already installed solar systems in eleven different rural markets for meeting their lighting needs (Asian Institute of Technology, 2004). These experiences have been gathered through in-depth interview of CMES personnel.

Secondary data has also been used for this study. Final Research Report of "RETs in Asia Project", Technology Fact Sheets, Monitoring Reports, Barrier Studies, Case Studies etc. prepared by CMES have also been gathered and properly analyzed.

Electrification of Rural Markets by Solar Energy

About 80% of the total population of Bangladesh live in rural areas. One of the main economical activities of rural Bangladesh is based on rural markets called "Haat" or "Bazaar". Farmers from long distance come to the "Haat" with their products to sell to merchants, who usually come from cities or major towns. The trading continues till evening. Kerosene lamps called "Kupi" and "Hurricane" are the major appliances to meet the lighting needs of the shops of a "Haat". Some shops use more expensive mantle lamps called "Hazzak" to obtain brighter light. Diesel generators supply electricity in some rural markets. All of these alternatives are hazardous for environment (Ahammed, 2004).

In the concept of electrification of rural markets by solar energy, a number of solar modules are mounted at one location, preferably in the middle of the load (light, TV etc.) distribution. The client shops are then connected to the system by

keeping the cable as short as possible. A local technician is trained for operation of the system, which is also capable of doing minor trouble shooting while the major ones are taken care of by Engineers and PV Experts of CMES.

The first solar energy based lighting was established in Manikganj Bazaar of Dinajpur district, 400 km. north of Dhaka. There were about 30 shops in the market. Lighting needs of the shops were met by "Kupi". Under the project of "RETs in Asia", CMES explained the concept of Solar Energy based electrification system to the shop owners and the Bazaar Management Committee (BMC). The operation, benefits and maintenance procedure were explained to them. They welcomed the idea. A daily tariff of Tk. 5 with no initial deposit was agreed upon. A contract was then signed with BMC and the shop owners by CMES. After that, solar energy based lighting was initiated on 28 September 1999 in Manikganj Bazaar. Six solar modules of 50 Wp each, divided into two groups, were installed in two suitable locations of the bazaar. The batteries and controllers accompanying each group were placed close to the respective solar panel.

Equipment installed:

- Six solar modules (50 Wp each)
- Six batteries (12V, 100 AH each)
- Six charge controllers
- 24 FL lights as appliances.

The users of the systems were:

- Grocery shop
- Local restaurant
- Tea stall
- Barber shop
- Village doctors' chamber.

Tariff Collection

Electrification of rural markets by solar energy may be a suitable model for implementation in rural areas where there is market for lighting needs. One of the major problems for implementing solar system is its high initial cost, considering the prevailing socio-economic condition of the rural people. But in the concept of CMES Model, the shop owners have to pay only Tk.5 tariff per night for the connection with one light. A technician, locally recruited and trained, is responsible for tariff collection and management. The simple pay back period for total investments including maintenance and spares cost is just 5 years (Ibrahim

et al., 2000). So, after 5 years another solar energy system can easily be installed in another market with the amount of tariff collection in the first 5 years.

Users' Feedback

Feedbacks from users indicate that-

- High user satisfaction with having a local and full time technician.
- The service is good and amount of light is sufficient.
- One tea stall owner noted that his income has significantly increased.
- One grocery shop owner observed that more customers were visiting his shop.
- Solar PV system is free from hazards of smoke.

The attraction of the approach to the users is that they are free from the responsibility of maintaining the system. Involvement of local community in management avoids the risk of damage of the whole system.

Prospect for Rural Electrification by Solar Energy

Solar energy based electrification in Manikganj Bazaar is a model of rural market electrification. Many visitors came to see the system and discussed its benefits to the users. There was interest from many other markets for electrification. In order to fulfill their demand, CMES has already installed solar systems in eleven different rural markets for meeting lighting needs.

Electrification of rural markets by solar energy is not only technically suitable but also financially viable if a soft loan can be available. Simple pay back period of five years may be reasonable enough to attract investors.

Conclusion

Providing electricity for meeting lighting needs of rural markets can bring several positive, impacts, including improvement of quality of life and increasing in income and employment opportunities. So, electrification of rural markets by solar energy is a model of demonstration. This approach could equally be applicable to other developing countries with similar socio-economic condition.

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Impact of Irrigation on Share Tenancy and Farm Employment in Bangladesh: A Review

MD. NAZRUL ISLAM[1]

Abstract

The present study intends to investigate the impact of irrigation on share tenancy and farm employment in Bangladesh. The study is based on secondary data. The secondary data were collected from different published and unpublished documents. New irrigation technology is essential for agricultural development of Bangladesh. Adoption and introduction of new irrigation technology have brought about significant change on share tenancy and farm employment. Sharecroppers in Bangladesh have little to achieve from the spread of new irrigation technology. In rural Bangladesh the most common form of tenancy relation is sharecropping. Under sharecropping system the tenant and the landlord share the agricultural output and risk but in some cases share the cost too. Although, output and cost are not always shared equally between the two parties. Available data indicated that large farmers in non irrigated village sharecropped-in no land but in irrigated village they sharecropped-in 1.1% of other's land. But medium farmers in irrigated village sharecropped-in more land (47.7%), where small farmers rented-in more land (67.7%) in non irrigated village (M.N.Islam 2002). However, the small farmers ranted out no land in irrigated village while medium farmers in non irrigated village sharecropped out no land (M.N. Islam 2002). Hamid et.al. (1982) pointed out that there had been no qualitative change in tenurial arrangements as results of the adoption of technology. M.K Hussain (1986) found that smalls farmers being more irrigation conscious have the tendency to sharecropped in more land (on and average went .35 acares) when they irrigated. But they sharecropped out relatively less land (on an average .31 acares) in non

1. Professor, Department of Economics, Islamic University, Kushtia .

irrigated land. But large farmers have the tendency to rent out larger proportion of their own land because they can not manage it. In the absence of written contracts tenants have no security. When tenants fail to satisfy the landlords in expanding yield rate or in using adequate modern inputs they face the consequences of eviction. M.N Islam (2002), A. Dasgupta (1998) expressed the similar view. Available data indicated that the short duration of sharecropping relationship exist in rural Bangladesh (M. Hossain 1985, M.N Islam 2002, Land Occupancy Survey of 1978). The introduction and adoption new irrigation technology have influenced the employment facilities in rural Bangladesh. When use of irrigation, HYV of seeds chemical fertilizers in agricultural farm have increase the demand for labour. M.K Hossain (1985) found that per acre labour absorption in irrigated areas was 80.95 man-days, while it was only 51.46 man-days in non irrigated areas. Hamid et. al. (1982), BAU (1975), Bayes and Sayeeduzzaman (1991), A.Dasgupta (1998) got the similar results. Some policy measures are:- (i) need for tenancy reforms is essential in Bangladesh, (ii) special attention should be given to protect the rights of sharecroppers, (iii) a minimum wage should be fixed for standard eight hours working day, subject to revision with the increase in the cost of living, (iv) public works programmes should be taken up to increase employment facilities during the lean periods.

1. Introduction

The economy of Bangladesh is mainly agrarian. Agricultural sector provides employment to half of the labour force. This sector is likely to play a vital role in achieving self-sufficiency in food production and promoting economic development. There is enormous potential for expanding agricultural output. There are, however, some vital constraints to agricultural development in our country. The constraints are scarcity of land, skewed distribution of land ownership and vagaries of nature. The most important constraint to agricultural development is the extreme pressure of population on limited land. Man-land ratio is increasing because of the increase of population. Due to the extreme pressure of population, the average size of agricultural land is declining and the extent of landlessness and unemployment has increased to a great extent. Agricultural Census data of 1960 reported the average size of farm at 3.54 acres, while it stood at 1.68 acres in 1996 (Census of Agriculture 1996). The number of landless households increased at a higher rate than the rate of growth of population. Available data indicates that the natural rate of growth of population was 2.17 percent between 1983-84 and 1996 but the number of landless rural households increased at an annual compound growth rate of 3.85 percent (M. Hossain 1999).

In Bangladesh the unemployment rate was 27.95 percent in 1996-97 (GOB, 1998, P,9). As a result, rural poverty among the small and landless labourers has increased. Due to the high pressure of population subdivision and fragmentation of agricultural land has occured. Most of the landholdings are thus very small and fragmented. It creates a barrier to efficient farm management and makes the co-operative irrigation system difficult in rural Bangladesh. In this backdrop, agricultural development is essential for our survival. Agricultural development could only be achieved with the proper adoption of modern inputs like modern irrigation, chemical fertilizers, HYV of seeds and pesticides either individually or in their suitable combination. Modern irrigation is the major factor for increasing agricultural production, and hence it is considered as the leading input in farm production. Thus special emphasis has been given to the development of modern irrigation with a view to achieving substantial growth in agriculture. Modern irrigation technology has contributed to increasing productivity but this technology has made the position of sharecroppers more vulnerable.

Due to lack of resources sharecroppers have not been able to maximize their gain by using modern technology. Modern irrigation technology has brought about significant change in labour use and employment facilities, but corresponding changes in the real wage have not come about. Due to the drop in the real wage, debt traps have worsened their economic condition over the years. It is, therefore, necessary to analyse the impact of irrigation on sharecropping and farm employment.

The main objectives of the study are as follows :

(i) To explain the impact of irrigation on share tenancy.
(ii) To analyse the impact of irrigation on farm employment.

1.1 Methodology

The study is based on secondary data, collected from different published and unpublished documents.

1.2 Importance of the Study

The results of the study may be of great use to policy markers. Extension workers may utilize the results of the study in making decisions regarding irrigation technology, share tenancy and farm employment. The results of the study have also academic importance to teachers and students of economics.

2. Results and Discussions

The impact of irrigation technology on share tenancy and farm employment is discussed in the following.

2.1 Impact of Irrigation Technology on Sharecropping

The most common form of tenancy relation in rural Bangladesh is sharecropping. Under sharecropping arrangement the tenants and the landlords share the output and risk and, and in some cases, the costs, too. But output and costs are not always shared equally between the parties. The 1960 Agricultural Census reported that 18 percent land was operated by tenants but it declined to 17 percent in 1977 (BBS, 1981). The Census of Agriculture and Livestock reported that total sharecropped land, which was only 16.81 percent in 1960 increased to 21.6 percent in 1996 (BBS, 1996). Available data indicates that the area under sharecropping has declined from 91 percent of total tenanted area in 1960 to 74 percent in 1983-84 and again to 62% percent in 1996 (M. Hossain, 2000). In the theoretical literature the impact of tenancy on adoption decision is a matter of considerable debate. Some economists (e.g. Geogesen-Roegan 1969 and Bhaduri 1973) regonised the sharecropping system as a feature of pre-capitalist modes of production. Sharecropping is also considered as a barrier to the adoption of new technology. Cheung (1969) was the pioneer of equal efficiency theory of tenancy. Following Cheung's work, Reid (1976) and Hallagen (1976) discussed the circumstances in which sharecropping can be at least as efficient as fixed rent contract or wage contract. Newberry (1973) stated that under the circumstances of uncertain product and labour markets sharecroppers may be interested in adopting modern technology.

2.2 Land Leasing and Operational Arrangement of Cropped Land by Farm Size Groups

Available data indicates that irrigators in rural Bangladesh sharecropped in more land and sharecropped out less land than the non irrigators. M.K. Hussain (1986, P. 34-35) found that under land leasing arrangement farms when irrigated sharecropped in 3.74 percent of their cropped / operated land and sharecropped out 3.50 percent of their owned land. On the other hand, the non-irrigators sharecropped out 17.35 percent of their owned land and sharecropped in 4.46 percent of their cropped / operated land. He also stated that small farms being more irrigation conscious have the tendency to sharecrop in more land (on an average 0.35 acres) when they irrigated and sharecropped out on an average 0.31

acres of non-irrigated land. He further said, large farms have the tendency to rent out a higher proportion of their owned land because they can not manage it.

Available data indicates that large farmers in non-irrigated village sharecropped - in no land. But in irrigated village the large farmers sharecropped in 1.1 percent of other's land. Medium farmers sharecropped in more land (47.70%) in irrigated village, while, small farmers sharecropped in more land (64.71 percent) in non-irrigated village (M.N. Islam 2002). On the other hand, small farmers sharecropped out no land in irrigated village, and medium farmers in non-irrigated village sharecropped out no land (M.N. Islam 2002). Hamid et. al (1982) pointed out that there had been no qualitative change in tenurial arrangements as a result of the adoption of technology. M. Hossain (1986) stated that share tenancy in Bangladesh is exploitative in nature.

2.3 Security of Tenure

There are no written lease contracts between the tenants and the landlords. In the absence of written contracts tenants of rural areas have no security. As a result the landlords can easily evict any tenant when they so desire. When tenants fail to satisfy the landlords in expanding yield rate or in using adequate modern inputs they face the consequences of eviction. M.N. Islam (2002) stated that eviction of sharecroppers for the purpose of resumption of land for self cultivation is common in the irrigated villages while it is rare in a non-irrigated village. Dusgupta (1998, P. 145) pointed out that eviction of tenants has become a common matter especially after the introduction of canal water irrigation. He also stated that a sharecropper who invests more on modern agricultural inputs gets a chance of securing a lease for the second time.

Available data indicates that the duration of sharecropping relationship is rather short. M. Hossain (1986) found that about 52 percent of the sharecropping relationship lasted less than three years. M. N. Islam (2002) found that about 70.58 percent of the lease units have been leased for one to three years (short term lease) in irrigated village, while 25 percent of the lease units have been leased for one to three years in non-irrigated village. About 11.76 percent of the lease units have been leased for five years or more (long term lease) in irrigated village. But it is only 33 percent in non-irrigated village. He further stated that sharecroppers in non-irrigated village were found to have better security than those of irrigated village. The observation of Land Occupancy Survey of 1978 on the duration of sharecropping relationship, as reported by the sharecroppers, is presented below: 26 percent of the sharecroppers had a lease contract that had lasted for less than

one year, while 20 percent of the lease contracts lasted for one to two years, and 8 percent of the lease contracts lasted for three to four years.

2.4 Input and Output Sharing

In sharecropping arrangement, full labour was provided by the sharecroppers. But the costs of irrigation, seeds, chemical fertilizers, power tilling etc were shared by the landlords. Bayes and Sayeeduzzaman (1991, P.68) found that sharecroppers bear all the input costs and surrender half of the output to the landlords. M.N. Islam (2002) observed that output shared between the sharecroppers and the

Table 1 : Use of Labour in the Cultivation of Crop

Crop	Hired Labour (days/ha)	Family Labour (days/ha)	Total Labour (days/ha)	Hired Labour as percent of total	Total Labour per ton of output (days/ha)
Dry season					
L. aus	61	90	151	40.40	99
B. aus and amon	75	80	155	48.39	53
MV Aus	104	88	192	54.19	44
MV Boro	107	93	200	53.63	36
Wet season					
T. Amon	67	70	137	49.15	45
MV Amon	86	76	162	53.33	35
All season					
Local	61	82	143	42.66	
MV	92	74	173	53.20	
Difference of MV over local (percent)	51	– 11	25		

Source : BIDS Field Survey 1991, In : Bayes and Sayeeduzzaman 1991.p.108

landlords is a standard 50: 50 basis. He also found that in irrigated village the normal practice is to share the costs of irrigation, seeds, chemical fertilizers equally between the sharecroppers and the landlords, while in non-irrigated village the practice is to equally share the costs of only seeds and fertilizers, not irrigation, by the parties. In both the villages human labour, animal labour and manures are supplied by the sharecroppers. A good number of village studies found that the landowners were sharing the costs of non-labour inputs in the sharecropped land where modern varieties of rice and wheat are produced (Zaman 1973; M. Hossain 1979; BUP 1982). Dasgupta (1998, P. 144) notes that the

sharecroppers surrender 50 percent output and bear all costs of production except land revenue and irrigation costs. Costs of modern inputs, human labour, animal labour etc are borne entirely by the sharecroppers.

The spread of new technology in Bangladesh has made the position of the tenants more vulnerable. Dusgupta (1998) expressed the view that the burden of debt, lack of tenurial security, increasing costs of agricultural inputs had worked as barrier to the spread of modern technology among the sharecroppers.

2.2 Impact of Irrigation of Farm Employment

The introduction of new technology has influenced the employment facilities in rural Bangladesh. Use of irrigation water, HYV seeds and fertilizers in land have increased the demand for labour. Dasgupta (1998) stated that in non-irrigated areas demand for labourers for the traditional crops is far less than those of HYV crops in irrigated areas.

Hamid, et al. (1982) found that per acre labour requirement is 117 man-days in irrigated areas whereas it is 75 man-days in non-irrigated areas. Due to irrigation the increase in employment is over 54 percent. BAU (1975) got more or less similar results.

M. K. Hussain (1985, P.XVII) found that per acre labour absorption in irrigated areas is 80.95 man-days, while it is only 51.46 man-days in non-irrigated areas. Hamid (1977) found that the rate of labour absorption per acre in the irrigated area is much higher than in the non-irrigated area.

Mosharraf Hossain et al. (1984) found that labour absorption per acre proved to be higher with the irrigation device rather than without the device. In their study areas labour-use with the device was higher by 26 percent than that without the device. Introduction of modern technology brought about significant change in employment facilities. Table – 1 shows the use of labour in the cultivation of crop.

It can be seen from Table – 1 that modern varieties absorbed more labour per unit of land than did the traditional varieties. The increase is about 27 percent in aus season and 18 percent in amon season. For modern varieties, labour used per hectare of cultivation is about 25 percent higher than that for local varieties in all the seasons together. Moreover, modern varieties absorbed 51 percent more hired labour than traditional varieties did. It is also evident from Table – 1 that of the total labour used, the share of hired labour required in the production of modern varieties is 53 percent as against only 43 percent utilized for the production of traditional varieties. The spread of modern irrigation technology tended to

contribute more employment opportunities by facilitating the adoption of modern varieties (Bayes and Sayeeduzzaman, 1991). Intensive intercultural operation like weeding, irrigating, transplanting etc. demand more labour. It is also evident from the Table that as compared to traditional varieties modern varieties required additional labour by 36 man-days, of which 44 percent is required for sowing and transplanting, 39 percent used for weeding and other cultural practices, and 14 percent used for harvesting (Bayes and Sayeeduzzaman 1991, P. 58). Therefore, we may conclude that irrigation has increased farm employment in Bangladesh.

3. Conclusions and Suggestions for Policy

Government should encourage modern varieties of paddy rather than local varieties in irrigated areas of the country.

The need for tenancy reforms is essential in Bangladesh. Special attention should be given to protect the rights of sharecroppers.

Administrative and legal measures should be taken to protect the sharecroppers from eviction.

Modern technology is essential for the agricultural development of Bangladesh. Introduction of irrigation technology has brought about significant change on share tenancy and farm employment. Sharecroppers in rural Bangladesh have little to achieve from the spread of irrigation technology. When tenants fail to satisfy the landlords in expanding yield rate or in using adequate modern inputs they face the consequences of eviction. Eviction of tenants for the purpose of resumption of land for self cultivation is common in irrigated land. In many cases, sharecroppers bear all the non-labour input costs and surrender 50 percent of the output to the landlords. Irrigation technology has remarkable impact on farm employment. Irrigation not only requires more labour but the proportion of labour absorption is also higher for the hired labour than family labour. The spread of modern mechanized irrigation technology tended to contribute to more employment facilities by facilitating the adoption of modern varieties. Intensive intercultural practices also demand more labour. Government should encourage modern varieties of paddy rather than traditional varieties of paddy in irrigated land. Measures should be taken to expand irrigated agriculture. Tenancy reforms is essential in Bangladesh. Administrative and legal measures should be taken to protect the sharecroppers from eviction.

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ট্রানজিটের রাজনৈতিক অর্থনীতি : বাংলাদেশের প্রাপ্তি

মোঃ মোয়াজ্জেম হোসেন খান [১]
মো: সেলিম রেজা [২]

Abstract

This paper examines issues concerning transit among SAARC countries, particularly among Bangladesh, India, Nepal and Bhutan. After a brief introduction and stating the objectives, an attempt is made to explain the relationship between transit and development in the first part of the paper. In the second part of the paper, the historical experience in transit, probable transit routes, and the possible gains from transit for Bangladesh are discussed. In the third part, the paper analyses the progress in the preparatory works for allowing transit facilities. Here the paper expresses a great deal of optimism that Bangladesh and for that matter Chittagong has all the possibilities to emerge within 2020 as the regional hub of the East. And finally, in the concluding part, the paper makes some recommendations for speedy realization of the benefits from transit.

ভূমিকা

২০১০ সালের ডিসেম্বরে সার্কের (SAARC) পঁচিশ বছর পূর্তি হয়েছে। এ উপলক্ষে আমরা কোনও রজত জয়ন্তী উৎসব দেখতে পাই নি সদস্য দেশগুলোতে। সদস্য রাষ্ট্রগুলো তথা সরকারসমূহ এ রকম কিছু ভাবছে বলেও আমরা জানতে পারি নি ।এ সুদীর্ঘ সময়েও সার্কের মূল লক্ষ্য অর্থনৈতিক সহযোগিতা ও ইন্টিগ্রেশনের ব্যাপারটি সামান্যই এগিয়েছে। আর ট্রানজিটের ব্যাপারটি তো সুদূর পরাহত ব্যাপারই রয়ে গেছে। সারা পৃথিবীতে সার্কের আবির্ভাব সবচেয়ে দেরীতে হলেও, আমরা আশান্বিত হয়েছিলাম এই ভেবে যে, সদস্য রাষ্ট্রগুলোর রাজনীতিবিদরা দেরীতে হলেও দূরদর্শিতার পরিচয় দিয়ে পৃথিবীর

১ অধ্যাপক, অর্থনীতি বিভাগ, রাজশাহী বিশ্ববিদ্যালয়
২ প্রভাষক, অর্থনীতি বিভাগ, রাজশাহী বিশ্ববিদ্যালয়

অন্যান্য অঞ্চলের অনুরূপ সহযোগিতা সংস্থাসমূহের (ইউরোপীয় ইউনিয়ন, আসিয়ান ইত্যাদি) অভিজ্ঞতার আলোকে অতি দ্রুততার সাথে সার্ককে কার্যকর সহযোগিতা সংস্থায় রূপদানে যথাযথ পদক্ষেপ গ্রহণ করবেন। সার্কের জনগণের সে আশা পূরণ হয় নি। এখনও আমাদেরকে ট্রানজিটের মত মামূলী বিষয় নিয়ে বিতর্কে জড়াতে হচ্ছে পরস্পরের সাথে। আশার কথা হচ্ছে এই যে, বর্তমানে সার্কের প্রত্যেকটি সদস্য রাষ্ট্রেই নির্বাচিত গণতান্ত্রিক সরকার ক্ষমতায় অধিষ্ঠিত আছে। এমনটা অতীতে কখনোই ছিল না। একমাত্র ব্যতিক্রম ছিল ভারত যেখানে সর্বদাই গণতান্ত্রিক সরকার ক্ষমতায় ছিল। সার্ক দেশসমূহের বিশেষ করে বাংলাদেশ, নেপাল, ভারত ও ভূটানের সরকারগুলো ট্রানজিট নিয়ে ইদানিং বেশ তৎপর হয়েছে বলে মনে হচ্ছে। যদিও ট্রানজিটের খুঁটিনাটি বিভিন্ন বিষয়ে তাদের মধ্যে মতভিন্নতা এখনো পুরোপুরি কাটেনি, তবুও তাদের উন্নয়নের গতি বাড়াতে ট্রানজিটের বিকল্প যে নেই সে ব্যাপারে মনে হচ্ছে তাদের মধ্যে কোনও মতভেদ নেই। আমাদের দেশের মাননীয় প্রধানমন্ত্রী শেখ হাসিনার ২০১০ সালের ১০-১২-ই জানুয়ারী ভারত সফরের সময়ে উভয় দেশের মধ্যে স্বাক্ষরিত সমঝোতা চুক্তির আলোকে আমরা ইদানিং বিভিন্ন ক্ষেত্রে বিশেষ করে ট্রানজিটের ক্ষেত্রে বেশ কিছু ধনাত্মক পদক্ষেপ লক্ষ্য করছি। ভারতের প্রধানমন্ত্রী ড: মনমোহন সিং-এর আসন্ন বাংলাদেশ সফরের মাধ্যমে এ ক্ষেত্রে আরও ইতিবাচক ও বাস্তব পদক্ষেপের সংবাদ আমরা পাবো এ আশা করাই যায়। এ রকম একটি আশাপ্রদ প্রেক্ষাপটে আলোচ্য প্রবন্ধে তাই আমরা ট্রানজিট ও ট্রানজিট সংশ্লিষ্ট বিভিন্ন বিষয়ের উপর আলোকপাত করার প্রচেষ্টা গ্রহণ করেছি।

লক্ষ্য ও উদ্দেশ্য

আলোচ্য প্রবন্ধের মূল লক্ষ্য হচ্ছে ট্রানজিটের মাধ্যমে আমাদের দেশের অর্থনৈতিক উন্নয়নের গতিকে কিভাবে ত্বরান্বিত করা যায় সে বিষয়ে আলোকপাত করা। আর এ মূল লক্ষ্যকে সামনে রেখে নিম্নোক্ত উদ্দেশ্যসমূহ নির্ধারণ করা হয়েছে :

১। ট্রানজিট ও অর্থনৈতিক উন্নয়নের মধ্যে সম্পর্ক ব্যাখ্যা করা ;
২। ট্রানজিট থেকে আমাদের দেশের প্রাপ্তির বিষয়ে অনুসন্ধান করা ;
৩। দ্বিপাক্ষিক ও বহুপাক্ষিক ট্রানজিট প্রদানে আমাদের দেশের প্রস্তুতিমূলক কর্মকান্ডের অগ্রগতি পর্যালোচনা ;
৪। আর ট্রানজিটের সুফল দ্রুত বাস্তবায়ণের পথ ও পদ্ধতি সম্পর্কে প্রয়োজনীয় পরামর্শ সুপারিশমালার আকারে উপস্থাপন করা।

পদ্ধতি ও তথ্য

আলোচ্য প্রবন্ধ রচনায় মূলত: মাধ্যমিক উৎসের তথ্য ব্যবহৃত হয়েছে। এর মধ্যে বিশেষভাবে উল্লেখযোগ্য হচ্ছে : বাংলাদেশ সরকারের অর্থমন্ত্রণালয় কর্তৃক প্রকাশিত বাংলাদেশ অর্থনৈতিক সমীক্ষা গ্রন্থের বিভিন্ন সংখ্যা, পরিসংখ্যান বর্ষ গ্রন্থের বিভিন্ন সংখ্যা, বাংলাদেশ অর্থনীতি সমিতিসহ বিভিন্ন সংস্থা কর্তৃক প্রকাশিত জার্নাল ও সাময়িকীর বিভিন্ন সংখ্যা। এ ছাড়াও আন্তর্জাতিক সংস্থা এসকাপের বিভিন্ন প্রকাশনা, বিভিন্ন গ্রন্থ এবং সাময়িকী ও দৈনিকে প্রকাশিত এ সংক্রান্ত অসংখ্য গুরুত্বপূর্ণ নিবন্ধ ও প্রবন্ধের সহায়তা নেয়া হয়েছে।

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ট্রানজিট ও অর্থনৈতিক উন্নয়ন

কোন একটি নির্দিষ্ট দেশের ভূখন্ড অন্য একটি দেশ বা দেশসমূহের মানুষ ও যানবাহনের যাতায়াতের জন্যে ব্যবহার করতে দেয়ার নামই হচ্ছে ট্রানজিট। যেমন, ইউরোপীয় ইউনিয়নের দেশসমূহ একে অপরের উপর দিয়ে বাস, ট্রেন, ট্রাক, গাড়ী ইত্যাদি পরিবহণ মাধ্যমের সহায়তায় যাত্রী ও মালামাল পরিবহণ করছে ; আবার পায়ে হেটেও কেউ চাইলে যাতায়াত করতে পারে ; একে অপরের বন্দর বা বন্দরসমূহ ব্যবহার করে আমদানী-রপ্তানীর কাজও করছে তারা। আসিয়ানের সদস্য রাষ্ট্রসমূহ এ রকম ট্রানজিট সুবিধা ভোগ করছে। ১৯৭২ সালে বঙ্গবন্ধুর আমলে স্বাক্ষরিত Inland Water Transit and Trade (IWTT) চুক্তির আওতায় শুধু জলপথে ভারত ও বাংলাদেশ ট্রানজিট সুবিধা ভোগ করে আসছে। পরবর্তীতে জেনারেল জিয়াউর রহমানের আমলে ১৯৮০ সালে দ্বিপাক্ষিক চুক্তির আওতায় জলপথ ছাড়াও স্থলপথে সীমিত আকারে ট্রানজিটের অনুমতি দেয়া হয় ভারতকে। এ চুক্তির মেয়াদ শেষে বেগম খালেদা জিয়ার আমলে ২০০৬ সালে মেয়াদ বৃদ্ধি করা হয় যা এখনও চলছে। ট্রানজিট দু'ধরনের হতে পারে : ক) আন্ত:দেশীয় ট্রানজিট , অর্থাৎ দুই বা ততোধিক দেশের মধ্যে ; খ) একই দেশের বিভিন্ন অঞ্চল বা প্রদেশের মধ্যে। অন্যদিকে করিডোর হচ্ছে কোন দেশের ক্ষুদ্র ভূখন্ড যা অন্য কোন রাষ্ট্রের মধ্য দিয়ে কোন বন্দরে যাতায়াতের পথ হিসেবে বা কোন ছিটমহলে যাতায়াতের পথ হিসেবে ব্যবহৃত হয়। যেমন , বাংলাদেশের লালমনির হাট জেলার পাটগ্রাম উপজেলার সীমান্ত সংলগ্ন ভারতের তিনবিঘা করিডোর যার উপর দিয়ে আমাদের দেশের ভূখন্ড দহগ্রাম-আঙ্গরপোতায় (ছিটমহল) যাতায়াত করতে হয়। এটা নিয়ে ভারতের সাথে আমাদের দেশের বিরোধ রয়েছে। তবে অতীতের যেকোন সময়ের চেয়ে বর্তমানে পরিস্থিতি অনেক ভাল। কারণ অতীতে এ করিডোর মাত্র কয়েক ঘন্টার জন্যে খোলা রাখা হতো। আর বর্তমানে সকাল থেকে রাত অবধি খোলা রাখা হচ্ছে। ভবিষ্যতে ২৪ ঘন্টা খোলা রাখার স্থায়ী ব্যবস্থা করা হবে ফ্লাইওভার নির্মাণের মাধ্যমে বলে শোনা যাচ্ছে। বৃহৎ অর্থে করিডোর ট্রানজিটেরই অংশ। প্রশ্ন হচ্ছে : ট্রানজিটের সাথে অর্থনৈতিক উন্নয়নের কোন সম্পর্ক আছে কি? আর থাকলে তা কেমন সম্পর্ক? অবশ্যই ট্রানজিটের সাথে অর্থনৈতিক উন্নয়নের সম্পর্ক আছে এবং তা সরাসরি ; অর্থাৎ ট্রানজিট সুবিধা থাকলে বা দিলে সংশ্লিষ্ট দেশসমূহের অর্থনৈতিক উন্নয়ন ত্বরান্বিত হয়। উদাহরণ হিসেবে ইউরোপ, আসিয়ান, চীন-ভিয়েতনাম, চীন-উত্তর কোরিয়া, চীন-রাশিয়া, সিআইএস ও চীন-মঙ্গোলিয়ার কথা বলা যায়।

১৯৭৩ সালে ফিনল্যান্ডের রাজধানী হেলসিংকিতে স্বাক্ষরিত সর্ব ইউরোপীয় নিরাপত্তা ও শান্তিচুক্তির আওতায় ইউরোপীয় দেশসমূহ তাদের অর্থনৈতিক উন্নয়ন ত্বরান্বিত করার লক্ষ্যে পরস্পরকে ট্রানজিট সুবিধা দিতে সম্মত হয়। এমন কি প্রাক্তন সোভিয়েত ইউনিয়নসহ পূর্ব ইউরোপের সমাজতান্ত্রিক দেশগুলোও এ সুবিধা (ট্রানজিট) লাভ করে। এখানে বিশেষভাবে উল্লেখ করা প্রয়োজন যে, পশ্চিম ইউরোপের একমাত্র বৃটেন বাদে বাকী সব রাষ্ট্রগুলোই বিগত শতাব্দীর ষাটের দশক থেকে জ্বালানী সংকটে পড়ে। ফলে তারা জ্বালানীর বিশেষ করে গ্যাসের প্রায় অফুরন্তভান্ডার সোভিয়েত ইউনিয়নের দিকে তাকাতে বাধ্য হয়। জার্মানী, ফ্রান্স ও ইতালীসহ বেশ কিছু দেশ সোভিয়েত ইউনিয়নের সাথে দীর্ঘ মেয়াদী চুক্তি করে গ্যাস সরবরাহের জন্যে। পশ্চিম ইউরোপের দেশগুলোতে চুক্তি অনুযায়ী যথাসময়ে গ্যাস সরবরাহের জন্যে সোভিয়েত ইউনিয়ন সেই সত্তরের দশকের মাঝামাঝি সময়ে ট্রান্স সাইবেরিয়ান ইন্টারকন্টিনেন্টাল গ্যাস পাইপ লাইন নির্মাণের কাজ শুরু করে। প্রায় এক দশক লেগে যায় এ গ্যাস পাইপ লাইন নির্মাণ করতে। বিগত শতাব্দীর আশির দশকের মাঝামাঝি সময় থেকে সোভিয়েত গ্যাস জার্মানী ও ফ্রান্সে পৌছে যায়। পরবর্তীতে ইতালীসহ অন্যান্য দেশে গ্যাস সরবরাহ

শুরু হয়। এখানে উল্লেখ্য যে, পশ্চিম ইউরোপের দেশগুলো তৎকালীন সমাজতান্ত্রিক দেশ সোভিয়েত ইউনিয়নের উপর তাদের অর্থনীতির চালিকা শক্তি জ্বালানীর (গ্যাসের) জন্যে সম্পূর্ণ নির্ভরশীল হয়ে পড়বে এ আশংকায় মার্কিন যুক্তরাষ্ট্র ও কানাডা তাদের দেশ থেকে সোভিয়েত ইউনিয়নে পাইপ ও অন্যান্য সরঞ্জাম (গ্যাস পাইপ লাইন নির্মাণের জন্যে) সরবরাহের উপর নিষেধাজ্ঞা আরোপ করে। ফলে সোভিয়েতরা বাধ্য হয়ে নিজেরাই তা উৎপাদন করে এবং বিশ্বের দীর্ঘতম গ্যাস পাইপ লাইন নির্মাণের কাজ যথাসময়ে সম্পন্ন করে। সাম্প্রতিককালে চাহিদা বৃদ্ধিজনিত কারণে জার্মানী বাল্টিক সাগরের তলদেশ দিয়ে আরও একটি সরবরাহ লাইন নির্মাণের জন্যে রাশিয়ার সাথে চুক্তিবদ্ধ হয়েছে। ওদিকে চীন এবং জাপানও সাইবেরিয়ার গ্যাস এবং তেল যথাক্রমে পাইপ লাইন ও মেগা ট্যাংকারের মাধ্যমে সরবরাহের জন্যে রাশিয়ার সাথে চুক্তি করেছে। ইতোমধ্যেই চীন ও জার্মানীতে নব নির্মিত পাইপ লাইনের মাধ্যমে যথাক্রমে তেল ও গ্যাস সরবরাহ শুরু হয়ে গেছে। জাপানকে তরলীকৃত প্রাকৃতিক গ্যাস (LNG) মেগা ট্যাংকারের সাহায্যে সরবরাহের জন্যে রাশিয়ার দূরপ্রাচ্যে ভ্লাডিভাস্তকের নিকটে এলএনজি টার্মিনাল নির্মাণের কাজ শুরু হয়ে গেছে। আসিয়ানের দেশগুলোও পরস্পরের উপর দিয়ে ট্রানজিট সুবিধা প্রদানের মাধ্যমে তাদের অর্থনৈতিক উন্নয়নের গতিকে ত্বরান্বিত করতে সক্ষম হয়েছে। সিংগাপুর একটি ক্ষুদ্র দ্বীপরাষ্ট্র হওয়া সত্ত্বেও সে তার ভৌগোলিক অবস্থানকে কাজে লাগিয়ে দেশকে উন্নত করতে সক্ষম হয়েছে। বিগত শতাব্দীর ষাটের দশকে সিঙ্গাপুর পুন:রপ্তানী (re-export) ব্যবসা গড়ে তোলে। গড়ে তোলে অসংখ্য তেল শোধন শিল্প ও সংরক্ষণাগার। আর এভাবে পার্শ্ববর্তী মালয়েশিয়ার তেল ও রাবারসহ বিভিন্ন প্রাকৃতিক সম্পদ পুন:রপ্তানীর মাধ্যমে সিঙ্গাপুর দ্রুত উন্নয়নের জন্যে প্রয়োজনীয় মূলধনের যোগান নিশ্চিত করতে সক্ষম হয়েছিল (৩, ৪)। অতএব দেখা যাচ্ছে যে, ট্রানজিট সুবিধা একটি দেশের উন্নয়নকে দারুনভাবে প্রভাবিত করতে পারে। অথচ দু:খজনক হলেও সত্য যে, দক্ষিণ এশিয়ার (সার্ক অঞ্চলের) দেশসমূহে এখনও আমাদেরকে ট্রানজিট নিয়ে বিতর্ক করতে হচ্ছে। সার্ক প্রতিষ্ঠার পঁচিশ বছর অতিক্রান্তহলেও (সার্ক প্রতিষ্ঠা হয় ১৯৮৫ সালের ৮-ই ডিসেম্বর) এ অঞ্চলের রাষ্ট্রগুলোর মধ্যে অদ্যাবধি আস্থা ও সৌহার্দ্যের সম্পর্ক গড়ে ওঠে নি। যে কারণে প্রায়-ই তাদের মধ্যে সংঘর্ষ ও তিক্ততার সৃষ্টি হচ্ছে, এমন কি ছোট-খাটো ও তুচ্ছ ঘটনাকে কেন্দ্র করে। সাফটা (South Asian Free Trade Area বা SAFTA) কার্যকর হয়েছে সেই ২০০৬ সালের ১-লা জুলাই (হওয়ার কথা ছিল ঐ বছরের পহেলা জানুয়ারী)। এ চুক্তিতে আশাবাদ ব্যক্ত করা হয়েছে যে, ২০১৫ সাল নাগাদ সার্ক অঞ্চল মুক্ত বাণিজ্য এলাকায় পরিণত হবে। ইতোমধ্যেই ৪ বছর অতিক্রান্ত হয়েছে। অথচ কাজের কাজ কিছুই হয় নি। মুক্ত বাণিজ্যের অন্যতম পূর্বশর্তই হচ্ছে উন্মুক্ত সীমান্ত ও ট্রানজিট। এ দুটো ক্ষেত্রেই বরফ এখনও গলে নি। আর এগুলোর সমাধান ছাড়া মুক্ত বাণিজ্য এলাকা গঠন, আমরা মনে করি, শুধু স্বপ্নই থেকে যাবে (৭)।

ট্রানজিটের ব্যাপারটি এখনও আতুর ঘরেই রয়ে গেছে। এর মূল কারণ হচ্ছে পারস্পরিক অবিশ্বাস, আস্থাহীনতা ও সহযোগিতার মনোভাবের অনুপস্থিতি। আর তাইতো আমরা দেখতে পাচ্ছি যে, আমাদের দেশে এই একবিংশ শতাব্দীতে এসেও ট্রানজিট নিয়ে বিতর্ক হচ্ছে। বিএনপি, জামাতসহ পাকিস্তানপন্থী দলসমূহ ট্রানজিটের বিপক্ষে বক্তব্য রাখছে এবং আওয়ামী লীগ ও বামদলগুলোসহ মুক্তিযুদ্ধের আদর্শ ও গণতন্ত্রে বিশ্বাসী দলগুলো এর পক্ষে অবস্থান নিয়েছে। এর ফলে জনগণ স্বাভাবিকভাবেই বিভ্রান্ত হচ্ছে। এ প্রসঙ্গে নিম্নেআমরা ট্রানজিটের পক্ষের যুক্তিগুলো তুলে ধারার চেষ্টা করবো।

১। অবকাঠামোগত উন্নয়ন নিশ্চিত হবে। কারণ ট্রানজিট দিতে হলে অবকাঠামোগত উন্নয়ন বিশেষ করে রেল পথ, সড়ক পথ ও নৌ-পথের বিকাশ অত্যন্ত জরুরী। এর সাথে সাথে বিদ্যুৎ, বন্দর, সংরক্ষণাগার ও ট্রানজিট ক্যাম্পেরও বিকাশ ত্বরান্বিত হবে।

২। আঞ্চলিক বাণিজ্য ও বিনিয়োগ বৃদ্ধি পাবে। করিডোর এবং চট্টগ্রাম, মঙ্গলা ও ভবিষ্যতে কুয়াকাটা ও সোনা দিয়ায় নির্মিতব্য সমুদ্র বন্দর ব্যবহারের বিষয়টিকে যদি ট্রানজিটের সাথে সুসমন্বিত করা যায়, তাহলে ভারতের উত্তর-পূর্বাঞ্চলের ৭টি রাজ্য, নেপাল ও ভূটান আমাদের বন্দরগুলো ব্যবহারে উৎসাহিত হবে। আর তাতে করে আমাদের দেশের ব্যবসা-বানিজ্য বহুগুণে বৃদ্ধি পাবে। উপরোক্ত দেশগুলোর ব্যবসায়ীরা যেমন আমাদের বন্দরগুলোর মাধ্যমে তাদের প্রয়োজনীয় আমদানী-রপ্তানীর ব্যবসা বিকশিত করার সুযোগ পাবে; তেমনি আমাদের ব্যবসায়ীরাও পুন:রপ্তানী (re-export) ব্যবসার সুযোগ পাবে। এ ক্ষেত্রে দু'ধরনের সুযোগ সৃষ্টি হবে: ১। ঐ সকল দেশের প্রয়োজনীয় পণ্য আমাদের ব্যবসায়ীরা আমদানী করে তাদের দেশে রপ্তানী করার সুযোগ পাবে; ২। আবার ঐ সকল দেশের উদ্বৃত্ত পণ্য আমাদের ব্যবসায়ীরা আমদানী করে অন্য দেশে রপ্তানী করতে পারবে। এ ছাড়াও সীমান্ত এলাকায় বিভিন্ন ধরণের শিল্প প্রতিষ্ঠান গড়ে তোলার মাধ্যমে ঐ সকল দেশের প্রয়োজনীয় পণ্য উৎপাদন করে রপ্তানী করার সুযোগ সৃষ্টি হবে (তুলনামূলক সুবিধার বিবেচনায় অবশ্যই)।

৩। সহায়ক অনেক সেবা খাতের বিকাশ ঘটার সম্ভাবনা। বৃহৎ অর্থে দীর্ঘ মেয়াদে ট্রানজিট সুবিধা অবশ্যম্ভাবীভাবে অসংখ্য অন্যান্য খাত-উপখাতের বিকাশে ভূমিকা রাখে। যেমন, হোটেল-মোটেল, রেষ্টুরেন্ট, বিনোদন কেন্দ্র, ব্যাংক ও বীমা, ট্যুরিজম, ইন্ডেটিং ইত্যাদি। নি:সন্দেহে এগুলো কর্মসংস্থান সৃষ্টি ও জাতীয় আয় বৃদ্ধিতে অবদান রাখবে।

৪। বিনিয়োগ বহুগুণে বৃদ্ধি পাওয়ার সম্ভাবনা। ট্রানজিট সুবিধা পাওয়ার ফলে সময় ও অর্থের বিপুল সাশ্রয়ের বিবেচনায় সংশ্লিষ্ট দেশগুলো, এমন কি আন্তর্জাতিক সংস্থাগুলোও বিনিয়োগে বিশেষ করে অবকাঠামো খাতে বিনিয়োগে অত্যন্ত উৎসাহী হবে। ভারত, চীন, এশীয় উন্নয়ন ব্যাংক ও বিশ্বব্যাংকসহ অসংখ্য দেশ ও প্রতিষ্ঠান এ ক্ষেত্রে এগিয়ে আসার আগ্রহ ব্যক্ত করেছে। ভারত তো ইতোমধ্যেই বাংলাদেশের রেলওয়ে, সড়ক ও বিদ্যুত খাতের উন্নয়নে এক বিলিয়ন ডলার ঋণ দিয়েছে বাংলাদেশকে যার বাস্তবায়ন কাজ দ্রুতই এগিয়ে চলছে। ওদিকে চীনও সোনাদিয়ায় গভীর সমুদ্র বন্দর নির্মাণসহ আরও অনেক অবকাঠামো খাতে বিনিয়োগের প্রতিশ্রুতি ঘোষণা করেছে। এশীয় উন্নয়ন ব্যাংক ও বিশ্বব্যাংকসহ বেশ কয়েকটি আন্তর্জাতিক দাতা সংস্থা ও দেশ পদ্মাসেতু নির্মাণ, রেলের আধুনিকায়ণ ও সম্প্রসারণ, চট্টগ্রাম-ঢাকা মহাসড়ককে চার লেনে উন্নীতকরণ, ঢাকায় এলিভেটেড এক্সপ্রেসওয়ে (শাহ্জালাল বিমানবন্দর থেকে ডেমরা পর্যন্ত ২৬ কি:মি: দৈর্ঘ্য) ও পাতাল রেল (উত্তরা-ফুলবাড়িয়া) নির্মাণে বিনিয়োগের ঘোষণা দিয়েছে। এ ধরনের মেগা প্রকল্পে বিনিয়োগ প্রস্তাবসমূহ পুরোপুরি বাস্তবায়িত হলে অবশ্যই আমাদের জাতীয় আয়ের প্রবৃদ্ধি ও বেকারত্ব দূরীকরণে তা গুরুত্বপূর্ণ ভূমিকা রাখবে নি:সন্দেহে।

৫। বাণিজ্য ঘাটতি হ্রাসের সম্ভাবনা। ট্রানজিট সুবিধা পুরোদমে চালু হলে ভারতের সাথে আমাদের দেশের এখনকার প্রায় তিন বিলিয়ন ডলারের বাণিজ্য ঘাটতি (১৫,১৬) অনেকটাই কমে আসবে। কারণ বাংলাদেশ তখন ফি, শুল্ক, ভ্যাট, সার্ভিস চার্জ ইত্যাদির আকারে বৈদেশিক মুদ্রায় আয় বাড়ানোর সুযোগ পাবে। আর ভারতের জন্যেও তা সময় ও অর্থের আকারে অনেক সাশ্রয়ী হবে। বর্তমানে ভারতের পশ্চিমাঞ্চলের ও দক্ষিণাঞ্চলের রাজ্যগুলো ও পশ্চিম বঙ্গ থেকে প্রয়োজনীয় পণ্য সামগ্রী উত্তর-পূর্বাঞ্চলীয় রাজ্যগুলোতে (সেভেন সিষ্টার্স) পৌছাতে একমাত্র শিলিগুড়ি চিকেন নেক করিডোর ব্যবহার করতে হয়। আর এতে ২০০০ থেকে ৩০০০ কিলোমিটার পথ পাড়ি

দিতে হয়। আর রেল লাইনের অপ্রতুলতার কারণে অধিকাংশ ক্ষেত্রে সড়ক পথে বাস-ট্রাক ব্যবহার করতে হয়। অথচ বাংলাদেশের মধ্য দিয়ে পাড়ি দিলে মাত্র ৪০০-৬০০ কিলোমিটার অতিক্রম করলেই চলবে। আর ট্রেন সার্ভিস পুরোদমে চালু হলে তো কথাই নেই। গোটা প্রক্রিয়াটি আরও সাশ্রয়ী হবে।

৬। বহুমুখী ট্রানজিট (বন্দর ও করিডোরসহ) সুবিধা বাংলাদেশের বাণিজ্য সম্ভাবনা বাড়িয়ে দিবে অনেক গুণে। শুধু দ্বিপক্ষীয় নয় বহুপক্ষীয়, অর্থাৎ ট্রানজিট প্রক্রিয়ায় শুধু ভারত ও বাংলাদেশ নয়, নেপাল, ভূটান ও চীনকে যদি সম্পৃক্ত করা যায়, তাহলে আমাদের দেশের ব্যবসা-বাণিজ্যের সম্ভাবনা কয়েকগুণ বেড়ে যাবে। এ বিষয়ে ভারত, নেপাল ও ভূটান ইতোমধ্যেই ইতিবাচক পদক্ষেপ নিতে শুরু করেছে। চীনও অদূর ভবিষ্যতে এ প্রক্রিয়ায় যুক্ত হতে ইচ্ছে প্রকাশ করেছে। কাজেই দীর্ঘ মেয়াদে ট্রানজিট যে বহুপাক্ষিক হবে তাতে কোনও সন্দেহ নেই।

৭। আমাদের দেশের দরকষাকষির শক্তি বৃদ্ধির সম্ভাবনা। বাংলাদেশের ভৌগোলিক কৌশলগত অবস্থানের কারণে ট্রানজিট সুবিধা প্রদান আমাদের দেশের উপর ভারত, নেপাল, ভূটান ও চীনের নির্ভরশীলতা অনেকাংশে বাড়িয়ে দেবে। এ ক্ষেত্রে ইতোমধ্যেই শুভ সংবাদ পাওয়া যাচ্ছে। যেমন, ভারতের আমাদের দেশের সাথে সীমান্ত সমস্যা সমাধানে কাজ শুরু, তিন বিঘা করিডোরের উপরে ফ্লাইওভার নির্মাণের মাধ্যমে স্থায়ীভাবে বিদ্যমান রাস্তা সার্বক্ষণিক ব্যবহারের সুযোগ দিতে সম্মতি, নেপাল ও ভূটানকে ট্রানজিট দিতে ভারতের সম্মতি, সড়ক ও রেল পথে মিয়ানমার হয়ে চীনের দক্ষিণাঞ্চলীয় প্রদেশ গুয়াংডং-এর সাথে যোগাযোগের জন্যে মিয়ানমার অংশে প্রয়োজনীয় সড়ক ও রেলপথ নির্মাণে সেদেশের সরকারকে রাজী করাতে চীনের ভূমিকা গ্রহণ ইত্যাদি।

৮। সাদফ (South Asian Development Fund বা SADF) ব্যবহারের সুযোগ সৃষ্টি। সদস্য রাষ্ট্র ভূটানের প্রস্তাবে ১৯৯১ সালের ২১-শে ডিসেম্বর শ্রীলংকার রাজধানী কলম্বোতে অনুষ্ঠিত ৬ষ্ঠ সার্ক সম্মেলনে এ ফান্ডটি গঠিত হয়। অদ্যাবদি এ ফান্ডের টাকায় গুরুত্বপূর্ণ কিছু হয়েছে বলে আমাদের জানা নেই। সুতরাং সার্কের সদস্য রাষ্ট্রগুলোর মধ্যে সুসমন্বিত বহুপাক্ষিক ট্রানজিট সুবিধা গড়ে তোলার লক্ষ্যে প্রয়োজনীয় অবকাঠামো নির্মাণের কাজে অবশ্যই এ তহবিলের একটা উল্লেখযোগ্য অংশ ব্যবহার করার সুযোগ সৃষ্টি হয়েছে বলে আমরা মনে করি।

অপরদিকে ট্রানজিটের বিরুদ্ধপক্ষের যুক্তিগুলো হচ্ছে নিম্নরূপ :

১। জাতীয় নিরাপত্তা ভীতি। ট্রানজিট দিলে ভারত বাংলাদেশের উপর দিয়ে সেভেন সিষ্টার রাজ্যসমূহে সৈন্য ও সামরিক সরঞ্জাম পরিবহণ করার কাজে লাগাবে এবং এভাবে সেখানকার উপজাতীয়দের বিদ্রোহ দমনের কাজে লাগাবে। আর তাতে প্ররোচিত হয়ে আমাদের দেশের উপজাতীয়রাও বাংলাদেশ সরকারের বিরুদ্ধে আন্দোলন শুরু করতে পারে।

২। সার্বভৌমত্ব হুমকির মুখে পড়তে পারে। বাংলাদেশের অভ্যন্তরে পালিয়ে থাকা ভারতীয় বিদ্রোহীদের ধরতে ভারতীয় সেনাবাহিনী আমাদের দেশের অভ্যন্তরে ঘাটি গেড়ে বসতে পারে যা আমাদের দেশের সার্বভৌমত্বকে প্রশ্নের মুখোমুখি করতে পারে।

৩। ঐতিহাসিকভাবে সৃষ্ট অমীমাংসিত সমস্যার উপস্থিতি। ট্রানজিট বিরোধী পক্ষ ভারতকে আঞ্চলিক পরাশক্তি হিসেবে বড়ভাই সুলভ আচরণের দোষে দোষী সাব্যস্ত করতে ছাড়ছেন না। কারণ

তাদের মতে ভারত তার প্রতিবেশীদের সাথে ঐতিহাসিকভাবে সৃষ্ট অমীমাংসিত সমস্যাসমূহের সমাধানে মোটেও আন্তরিক নয়। বরং সে ক্রমান্বয়ে তাদের উপর কর্তৃত্ববাদী ভূমিকায় অবতীর্ণ হতে আগ্রহী। আর এমন অবস্থায় (অমীমাংসিত সমস্যাসমূহ জিয়ে রেখে) ট্রানজিট দিলে ভারত বৃটিশদের মত প্রভুর ভূমিকায় আসীন হয়ে যেতে পারে।

৪। চীন-ভারত যুদ্ধের সম্ভাবনা। ভারতের অরুণাচল রাজ্যকে চীন এখনও তাদের ভূখন্ড বলে মনে করে। কাজেই অরুণাচল রাজ্যকে দখলে নিতে গিয়ে চীন-ভারত যুদ্ধ সত্যিই সত্যিই লেগে গেলে ভারত নিশ্চয়ই ট্রানজিট সুবিধাকে সামরিক তথা সৈন্য ও সামরিক রসদ সরবরাহের সহজ রুট হিসেবে ব্যবহার করতে পারে। আর তখন আমাদের দেশ ইচ্ছের বিরুদ্ধেই এ যুদ্ধে জড়িয়ে যেতে পারে।

৫। মাদক পাঁচার সমস্যা। ট্রানজিট বিরোধীরা যুক্তি দেখাচ্ছেন যে, ট্রানজিট দিলে মাদক ব্যবসা বৃদ্ধি পাবে। কারণ আমাদের দেশের অবস্থান হচ্ছে ঐতিহাসিকভাবে গড়ে ওঠা বিখ্যাত তিনটি মাদক পাঁচার রুটের (১। গোল্ডেন ট্রায়াংগেল; ২। গোল্ডেন ক্রিসেন্ট; ৩। গোল্ডেন ওয়েজ) মধ্যখানে।

৬। ট্রানজিট রুটগুলোর নিয়ন্ত্রণ সমস্যা। হরতাল, ধর্মঘট, ঘেরাও এবং জ্বালাও-পোড়াও এর মত রাজনৈতিক অপসংস্কৃতির বাংলাদেশের পক্ষে ভারতীয় ট্রানজিট যানবহরের নিরাপত্তা বিধান ও সময়-সূচী রক্ষা অত্যন্ত দূরুহ এবং ব্যয়বহুল হয়ে উঠতে পারে বলে তাদের ধারণা।

৭। অবৈধ বাণিজ্য হারানোর আশংকা। বর্তমানে বাংলাদেশী পণ্য অবৈধ পথে সেভেন সিষ্টার্সে ঢুকে পড়ছে সহজেই। কারণ পশ্চিম বঙ্গসহ ভারতের পশ্চিম ও দক্ষিণাঞ্চলের রাজ্যগুলো থেকে পণ্য আনা অত্যন্ত সময়সাপেক্ষ ও ব্যয়বহুল ব্যাপার। কাজেই ট্রানজিট চালু হলে আমাদের দেশের উপর দিয়ে স্বল্প সময়ে এবং সর্বনিম্ন খরচে সেভেন সিষ্টার্সে ভারতের অন্যান্য অঞ্চলের পণ্যসমূহ পরিবাহিত হবে এবং বাংলাদেশের চোরাকারবারীরা ব্যবসা হারাবে বলে ট্রানজিট বিরোধীদের আশংকা।

৮। পরিবেশগত ক্ষতির সম্ভাবনা। ট্রানজিট বিরোধীদের একটা অন্ধ বিশ্বাস রয়েছে যে, ট্রানজিট দিলে স্থল ও নৌ-পথে যান্ত্রিক যানবাহণের সংখ্যা বৃদ্ধি পাবে যা নানা ধরনের পরিবেশগত বিপর্যয় ডেকে আনবে আমাদের দেশের জন্যে।

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ট্রানজিটের অভিজ্ঞতা এবং সম্ভাব্য পথসমূহ

বৃটিশ আমল থেকেই আমাদের এ অঞ্চলে ট্রানজিট ভিত্তি পায়। ১৮৪৭ সালে বৃটিশরা তাদের প্রয়োজনে এখানে নৌ-পরিবহণ ব্যবস্থা গড়ে তোলে। তখন থেকেই তারা নিয়মিতভাবে আসাম থেকে কোলকাতায় চাসহ অন্যান্য পণ্য পরিবহণ করতো। ১৯৪৭ সালের পর বিগত শতাব্দীর পঞ্চাশের দশকের মাঝামাঝি সময়ে ভারত-পকিস্তানের মধ্যে স্বাক্ষরিত IWTT চুক্তির আওতায় তিনটি ট্রানজিট রুট গড়ে ওঠে যা ১৯৬৫ সালের ভারত-পাকিস্তান যুদ্ধের পূর্ব পর্যন্ত বলবৎ ছিল এবং নিয়মিতভাবে এ রুটসমূহে নৌ-পথে পণ্য ও যাত্রীবাহী যান চলাচল করতো। রুটগুলো ছিল নিম্নরূপ :

১। ধুবরী(আসাম)-চিলমারী-গোয়ালন্দ-চাঁদপুর-নারায়নগঞ্জ-ভৈরববাজার-ছাতক-জকিগঞ্জ সীমান্ত(আসাম) ;
২। ধুবরী(আসাম)-চিলমারী-চাঁদপুর-বরিশাল-মোলারহাট-খুলনা-বিহারী খাল(ভারত) ; ধুবরী(আসাম) ;
৩। গোদাগাড়ী(রাজশাহী)-গোয়ালন্দ-চাঁদপুর-ছাতক-জকিগঞ্জ সীমান্ত (আসাম) ।

স্বাধীনতা উত্তর বাংলাদেশে পাকিস্তান আমলের সেই IWTT চুক্তি পুনরুজ্জীবিত করা হয় ১৯৭২ সালের ২৮-শে মার্চ। তবে এবারে রুট সংখ্যা চারে উন্নীত করা হয় এবং উভয় দিকে যাতায়াতের ব্যবস্থা রাখা হয়। রুটগুলো হচ্ছে :

১। কোলকাতা-হলদিয়া-রায়মঙ্গল-চালনা-খুলনা-বরিশাল-নন্দীবাজার-চাঁদপুর-আরিচা-সিরাজগঞ্জ-বাহাদুরাবাদ চিলমারী- ধুবরী(আসাম) ;

২। কোলকাতা-হলদিয়া-রায়মঙ্গল-মংলা-কাউখালী-বরিশাল-নন্দীবাজার-চাঁদপুর-নারায়নগঞ্জ-ভৈরব-বাজার আজমিরিগঞ্জ- মারকুলী-শেরপুর-ফেঞ্চুগঞ্জ-জকিগঞ্জ-করিমগঞ্জ(আসাম) ;

৩। গোদাগাড়ী (রাজশাহী)-ধুলিয়ান (ভারত) ;

৪। করিমগঞ্জ-জকিগঞ্জ-ফেঞ্চুগঞ্জ-শেরপুর-মারকুলী-আজমিরিগঞ্জ-ভৈরব বাজার-আরিচা-সিরাজগঞ্জ-বাহাদুরাবাদ- চিলমারী- ধুবরী(আসাম) ।

এখানে উল্লেখ করা প্রয়োজন যে, নাব্যতা সংকটের কারণে নৌপথে ট্রানজিট বর্তমানে সর্বনিম্ন পর্যায়ে নেমে এসেছে। আর বৃটিশ আমলে প্রতিষ্ঠিত কোলকাতা-আসাম ও চট্টগ্রাম-আসাম রেল ট্রানজিট ১৯৪৭ সালের দেশ বিভাগের পর পুরোপুরি বন্ধ হয়ে যায়। কাজেই নৌপথের অপর্যাপ্ততার কারণে স্থল পথের গুরুত্ব বিদ্যমান পরিস্থিতিতে অত্যন্ত বেশী। স্থল পথের মধ্যে আবার রেল পথের সীমাবদ্ধতার কারণে ভারত বছরে সড়ক পথে চিকেন নেক করিডোর দিয়ে প্রায় ১০ মিলিয়ন টন পণ্য পশ্চিমাঞ্চল ও দক্ষিণাঞ্চলের রাজ্যগুলো থেকে সেভেন সিষ্টার্সে পাঠায় এবং রেলের মাধ্যমে প্রায় ৪ মিলিয়ন টন (১৭)। পূর্বেই উলেখ করা হয়েছে যে, ভারতের জন্যে এটা অত্যন্ত ব্যয়বহুল ব্যাপার। কাজেই ভারত অবশ্যই চাচ্ছে যে, বাংলাদেশ তাকে ট্রানজিট দিয়ে সহযোগিতা করুক। তবে আমাদের ধারণা যে, ট্রানজিট দিলেও পুরো পণ্যই আমাদের দেশের মধ্য দিয়ে সেভেন সিষ্টার্সে যাবে না। কারণ উত্তর প্রদেশসহ পশ্চিমাঞ্চলের রাজ্যগুলো থেকে পণ্য দূরত্বের বিবেচনায় চিকেন নেক করিডোর (শিলিগুড়ি) হয়েই সেভেন সিষ্টার্সে ঢুকবে। সেক্ষেত্রে আমাদের বিশ্বাস যে, ১০ মিলিয়ন টনের মত পণ্য আমাদের দেশের রুটগুলো ব্যবহার করে সেভেন সিষ্টার্সে যাবে। তবে সবকিছুই নির্ভর করছে রুটগুলো কত দ্রুত চালু করা যায় এবং কত আধুনিক হবে তার উপর। আমাদের দেশের ভেতর দিয়ে সম্ভাব্য আন্ত:রাষ্ট্রীয় আন্তর্জাতিক (শুধু ভারতের জন্যে নয়) ট্রানজিট রুটগুলো (দূরত্বসহ) হতে পারে নিম্নরুপ:

১। পেট্রাপোল (ভারত সীমান্ত)-বেনাপোল (বাংলাদেশ সীমান্ত)-লালনশাহ সেতু-বঙ্গবন্ধু সেতু-তমাবিল বাংলাদেশ সীমান্ত) -মেঘালয়(ভারত সীমান্ত) [৬৮৬ কি: মি:];
২। পেট্রাপোল -বেনাপোল -লালনশাহ সেতু-বঙ্গবন্ধু সেতু-আখাউড়া (বাংলাদেশ সীমান্ত)-আগরতলা (ভারত সীমান্ত) [৭৩৭ কি: মি:],
৩। পেট্রাপোল -বেনাপোল -লালনশাহ সেতু-বঙ্গবন্ধু সেতু-চট্টগ্রাম-বিলোনিয়া (ভারত সীমান্ত) [৫৩০ কি: মি:];

৪। সিন্দাবাদ (ভারত সীমান্ত)-রোহনপুর (বাংলাদেশ সীমান্ত)-বঙ্গবন্ধু সেতু-তমাবিল-মেঘালয় [৭৬৩ কি: মি:] ;
৫। সিন্দাবাদ-রোহনপুর-বঙ্গবন্ধু সেতু - আখাউড়া-আগরতলা [৪১৬ কি: মি:];
৬। সিন্দাবাদ-রোহনপুর-বঙ্গবন্ধু সেতু - চট্টগ্রাম-বিলোনিয়া [৪৮০ কি: মি:];
৭। বালুর ঘাট (ভারত)-হিলি (বাংলাদেশ)-বঙ্গবন্ধু সেতু-তমাবিল-মেঘালয় (ভারত) [৬৫০ কি: মি:];
৮। বালুর ঘাট -হিলি -বঙ্গবন্ধু সেতু-আখাউড়া-আগরতলা [৪০৪ কি: মি:];
৯। বালুর ঘাট -হিলি -বঙ্গবন্ধু সেতু-চট্টগ্রাম-বিলোনিয়া [৬৩০ কি: মি:];
১০। ফুলবাড়ী (ভারত)-বাংলাবন্ধা (বাংলাদেশ)-বঙ্গবন্ধু সেতু-তমাবিল-মেঘালয় (ভারত) [৮৭৬ কি: মি:];
১১। ফুলবাড়ী-বাংলাবন্ধা-বঙ্গবন্ধু সেতু-আখাউড়া-আগরতলা [৬২৭ কি: মি:];
১২। ফুলবাড়ী-বাংলাবন্ধা-বঙ্গবন্ধু সেতু-চট্টগ্রাম-বিলোনিয়া [৭৭০ কি: মি:];
১৩। ফুলবাড়ী-বাংলাবন্ধা-বঙ্গবন্ধু সেতু-চট্টগ্রাম বন্দর [৮২৫ কি: মি:];
১৪। ফুলবাড়ী-বাংলাবন্ধা-লালনশাহ সেতু-মংলা বন্দর [৭৫০ কি: মি:];
১৫। মেঘালয়-তমাবিল-চট্টগ্রাম বন্দর [৩৫০ কি: মি:];
১৬। আগরতলা-আখাউড়া-চট্টগ্রাম বন্দর [২০০ কি: মি:];
১৭। বিলোনিয়া-চট্টগ্রাম বন্দর [১০০ কি: মি:]।

আমরা মনে করি যে, সবগুলো রুটই সাশ্রয়ী, তবে অপেক্ষাকৃত স্বল্প দূরত্বের পথগুলো বেশী সাশ্রয়ী হওয়ায় ভারতের জন্যে বেনাপোল-আখাউড়া, রোহনপুর-আখাউড়া, হিলি-তমাবিল ও হিলি-আখাউড়ার মত রুটগুলো বেশী লাভজনক হবে। অন্যদিকে ভূটান ও নেপালের জন্যে ফুলবাড়ী-বাংলাবন্ধ-লালনশাহ সেতু-মংলা বন্দর রুটটি অধিক লাভজনক হবে। তবে মংলা বন্দরের সীমাবদ্ধতার কারণে এ দেশগুলো সকল বিবেচনায় আপাতত: ফুলবাড়ী-বাংলাবন্ধ-বঙ্গবন্ধু সেতু-চট্টগ্রাম বন্দর রুটটি ব্যবহারে আগ্রহী হবে বলে মনে হয়।

ট্রানজিটের ব্যয়

পণ্যবাহী যানবাহণের গন্তব্যের বিভিন্নতার কারণে আসলে ব্যয় বা খরচ হিসেব করা বেশ জটিল। তবে এক হিসেবে দেখা গেছে যে, কোলকাতা থেকে সেভেন সিষ্টার্সে প্রতি টন-কি: মি: পণ্য পরিবহণে বিদ্যমান অবস্থায় নৌ, রেল ও সড়ক পথে খরচ পড়ছে যথাক্রমে ০.২৫, ০.৮৫ ও ১.৫৭ রুপী (বাংলাদেশী টাকায় যথাক্রমে ০.৩০, ১.০২ ও ১.৮৮ টাকা)। অথচ বাংলাদেশের মধ্য দিয়ে সড়ক পথে ঐ একই পরিমান পণ্য পরিবহণে খরচ পড়ছে মাত্র ১.১৯ টাকা, অর্থাৎ প্রায় ৪০% কম চিকেন নেক করিডোর হয়ে পরিবহণের তুলনায় (১৭)। সময়ের দিক থেকেও ভারত লাভবান হবে বলে আমাদের বিশ্বাস। কারণ বাংলাদেশের ভূখন্ড ও বন্দর ব্যবহারের সুযোগ পেলে ভারতের পশ্চিম থেকে পূর্বে পণ্য ও যাত্রী পাড়াপাড় এবং চট্টগ্রাম বন্দরের মাধ্যমে সেভেন সিষ্টার্সরা আমদানী-রপ্তানীর কাজ করে নিজেদের উন্নয়নের গতিকে আরও ত্বরান্বিত করতে পারবে। বর্তমানে তাদেরকে কোলকাতা বন্দর ব্যবহার করতে হচ্ছে আমদানী-রপ্তানীর কাজে। এতে ত্রিপুরাকে সর্বোচ্চ ১,৬৫০ কি: মি: এবং আসামকে সর্বনিম্ন ১,৪০০ কি: মি: পথ পাড়ি দিতে হচ্ছে। অথচ চট্টগ্রাম বন্দর ব্যবহার করলে তাদেরকে গড়ে মাত্র ৪০০ কিলোমিটারের মত পথ অতিক্রম করতে হবে। অর্থাৎ চট্টগ্রাম বন্দর ব্যবহার করলে তাদের আমদানী-রপ্তানীর খরচ গড়ে প্রায় চার গুণ কমে যাবে।

রুটসমূহের রক্ষণাবেক্ষণ ও মেরামত ব্যয়

বিদ্যমান অবস্থায় সম্ভাব্য ১৭টি রুটের (বন্দর ব্যবহারসহ) মধ্যে সিংহ ভাগই চলাচল উপযোগী আছে। তবে কিছু কিছু জায়গায় সংস্কার করলেই চলবে। আর আখাউড়া নৌ বন্দর থেকে আগরতলা পর্যন্ত রাস্তার নির্মাণ কাজ তো ইতোমধ্যেই শুরু হয়ে গেছে। তবে ভবিষ্যতে সকল সড়ককেই চারলেনে উন্নীত করতে হবে। অপরদিকে রেল লাইনেরও সংস্কার, সম্প্রসারণ এবং মেরামতের কাজ শুরু হয়েছে। পূর্বেই উল্লেখ করা হয়েছে যে, ভারত প্রদত্ত ১ বিলিয়ন ডলার ঋণের একটা বড় অংশ সড়ক ও রেল পথের উন্নয়নে ব্যয় করা হচ্ছে। কাজেই অর্থের কোন সমস্যা হবে না। সরকারও মনে হচ্ছে বেশ তৎপর। আর ভারতীয় অংশে রাস্তা ঘাট ভালই আছে বলে মনে হচ্ছে। তবে রেল লাইনের ঘাটতি আছে; অর্থাৎ সব গন্তব্যে এখনও রেল লাইন গড়ে ওঠে নি। এখানে উলেখ্য যে, আসাম, মেঘালয়, মিজোরাম এবং ত্রিপুরা আমাদের দেশের সীমান্ত লাগা হওয়াতে ওগুলোতে ট্রাফিক গন্তব্যসমূহ বেশ কাছেই অবস্থিত (২০-৫০ কি: মি: দূরত্বে)। মনিপুর ও নাগাল্যান্ডের অবস্থান সর্বোচ্চ ১০০ কি: মি: হবে এবং অরুণাচলের দূরুত্ব ১০০ কি: মি: এর বেশী হবে; তবে তা ১৫০ কি: মি: ছাড়াবে না। অন্যদিকে বাংলাবন্ধা থেকে ভারত, নেপাল ও ভূটানের গন্তব্যস্থানগুলোর দূরত্ব ৩০ থেকে সর্বোচ্চ ২০০ কিলোমিটারের মধ্যে থাকবে বলে আমাদের ধারণা।

বাংলাদেশ সরকারের সড়ক ও জনপদ অধিদপ্তর সূত্রের তথ্য মতে ট্রানজিট দিলে রুটগুলোর রক্ষনাবেক্ষণ ও মেরামত খরচ ৩০ থেকে ৫০% বৃদ্ধি পেতে পারে, অর্থাৎ প্রায় ৪০০ থেকে ৫০০ মিলিয়ন টাকা প্রয়োজন হবে। এর সাথে যোগ হবে নতুন দু'টি ফিডার সড়ক নির্মাণের ব্যয়: গাজীপুর-নরসিংদী ৫০ কি: মি: ফিডার সড়ক এবং টাঙ্গাইল-ভৈরব ১৫০ কি: মি: বাই-পাস সড়ক। উক্ত সূত্র মতে এ দু'টো নির্মাণে ব্যয় হবে যথাক্রমে ১,৫০০ ও ৯,০০০ মি: টাকা (আশা করা যায় ভারতের ঋণের টাকায় এ দুটো প্রকল্প বাস্তবায়িত হবে)। আর রক্ষণাবেক্ষণ ও মেরামত খরচের অন্তত: ৫০% ভারতের কাছ থেকে এবং নেপাল ও ভূটানের কাছ থেকে যথাক্রমে ২০% ও ১০% আদায়ের ব্যবস্থা সম্বলিত চুক্তি থাকতে হবে। বাকী ২০% বাংলাদেশ বহণ করবে। তবে ট্রান্সশিপমেন্টের ক্ষেত্রে ভিন্নভাবে চিন্তা করতে হবে (ট্রান্সশিপমেন্ট হচ্ছে ট্রানজিট প্রদানকারী দেশের ভেতরে তার যানবাহণ ব্যবহার করার বাধ্যবাধকতা)। কারণ এ ক্ষেত্রে আমাদের যানবাহণের জন্যে তাদেরকে অবশ্যই ভাড়া দিতে হবে।

বাংলাদেশের প্রাপ্তি

ট্রানজিট থেকে আমাদের দেশ বিভিন্নভাবে উপকৃত হতে পারে। সম্ভাব্য প্রাপ্তি বা বেনিফিটকে দু'ভাগে ভাগ করা যায় : ক) প্রত্যক্ষ প্রাপ্তি; খ) পরোক্ষ প্রাপ্তি। প্রত্যক্ষ প্রাপ্তির উৎসগুলো হচ্ছে :

১। বার্ষিক ট্রানজিট ফি বা রয়ালটি;
২। চট্টগ্রাম ও মংলা বন্দর ব্যবহারের জন্যে ফি বা চার্জ;
৩। পণ্য শুল্ক ও কর;
৪। সেতু ও ফেরীর টোল;
৫। পরিবহণ সংশ্লিষ্ট অন্যান্য সেবার চার্জ।

পরোক্ষ প্রাপ্তির উৎসগুলো হচ্ছে :

১। সড়ক, সেতু ও রেল লাইনের বিকাশ, সম্প্রসারণ ও আধুনিকায়ন;
২। নদী ড্রেজিং ও বন্দরের বিকাশ, সম্প্রসারণ ও আধুনিকায়ন;
৩। বিনিয়োগ (দেশী ও বিদেশী) বৃদ্ধির সুযোগ সৃষ্টি;
৪। সেবাধর্মী বিভিন্ন ধরণের কর্মকান্ডের বিকাশ;
৫। ট্যুরিজম ও বিনোদনমূলক কর্মকান্ডের বিকাশ;
৬। কর্মসংস্থান সৃষ্টির সম্ভাবনা।

ট্রানজিট প্রদানের জন্যে পণ্য-কিলোমিটার বা যাত্রী-কিলোমিটারের ভিত্তিতে একটা নির্দ্দিষ্ট ফি আরোপ করা যেতে পারে অথবা বার্ষিক ভিত্তিতে নির্দ্দিষ্ট পরিমাণ রয়ালটি আরোপ করা যেতে পারে। বর্তমানে নৌ পথে ট্রানজিটে এ রকম একটা ব্যবস্থা চালূ আছে। ১৯৭২ সালের IWTT চুক্তি অনুযায়ী ভারত নৌ ট্রানজিটের জন্যে রয়ালটি হিসেবে বাংলাদেশকে বাৎসরিক ৫০ মি: টাকা দিয়ে আসছে। তবে ২০১০-১১ অর্থ বছরের বাজেটে প্রবর্তিত বিধান অনুযায়ী জাতীয় রাজস্ব বোর্ড ২০১০ সালের দ্বিতীয়ার্ধে ভারতের পণ্যবাহী দু'টি জাহাজের উপর শুল্ক আরোপ করলে ভারতীয়রা ১৯৭২ সালের উপরোক্ত চুক্তির দোহাই দিয়ে তা দিতে অস্বীকৃতি জানায়। এক পর্যায়ে এ নিয়ে দুদেশের সরকার পর্যায়ে আলোচনার মাধ্যমে শুল্ক আরোপ না করার সিদ্ধান্ত হয়। তবে বাংলাদেশ সরকার নতুন বৃহত্তর ট্রানজিটের সম্ভাবনা এবং পরিবর্তিত পরিস্থিতির আলোকে ট্রানজিটে ফি, রয়ালটি, শুল্ক, সার্ভিস চার্জ ইত্যাদি বিষয়ে একটি পরিপূর্ণ আইনের খসড়া প্রণয়নের উদ্দেশ্যে জাতীয় রাজস্ব বোর্ড, মন্ত্রণালয় , গবেষণা প্রতিষ্ঠান ও ট্যারিফ কমিশনের প্রতিনিধি সমন্বয়ে একটি কোর কমিটি গঠন করেছেন। এ কমিটি ইতোমধ্যে তাদের কাজ শুরু করেছে এবং আশা করা যায় শীঘ্রই তারা এ বিষয়ে একটি সুসমন্বিত নীতি উপহার দিতে সক্ষম হবেন। পরিবর্তিতে এ খসড়া নিয়ে ভারত, নেপাল ও ভূটানের সাথে আলোচনা করে আইনটি চূড়ান্ত করতে হবে।

প্রত্যক্ষ আর্থিক প্রাপ্তি বিষয়ে অদ্যাবধি কোনও বিশ্বাসযোগ্য ও পরিপূর্ণ গবেষণা আমাদের জানামতে হয় নি। যা কিছু হয়েছে তা অনেকটাই অনুমান নির্ভর ; তবে ভিত্তি অবশ্যই আছে বলে আমরা মনে করি। কোন কোন হিসাব মতে, ট্রানজিট দিলে আমাদের বার্ষিক নীট আয় হবে ৫৯ বিলিয়ন টাকা বা ৮৬০ মি: ডলার (১৭)। উপরোক্ত হিসেবে অবশ্য নেপাল ও ভূটানকে অন্তর্ভুক্ত করা হয় নি। তারা এটাকে এভাবে দেখেছেন: বর্তমানে চিকেন নেক করিডোর (শিলিগুড়ি) ব্যবহার করে ভারতের বার্ষিক খরচ হচ্ছে প্রায় ১০০ বিলিয়ন রূপী। যদি এর অর্ধেক পরিমান বাংলাদেশের উপর দিয়ে যায়, তাহলে আমাদের আয় হবে ৫০ বিলিয়ন রূপী বা প্রায় ৬০ বিলিয়ন টাকা। এর সাথে যুক্ত হবে সেতু ও রাস্তার টোল এবং ফেরীর চার্জ বাবদ প্রায় ১ বিলিয়ন টাকা। তার মানে মোট আয় দাঁড়াচ্ছে ৬১ বিলিয়ন (৬০+০১) টাকা। এ থেকে বার্ষিক খরচ বাবদ প্রায় ২ বিলিয়ন টাকা (রুট মেরামত ৫০০ মি:+রুট সংস্কার ও সম্প্রসারণ ৫০০মি:+নিরাপত্তা খরচ ১০০০ মি:) বাদ দিলে নীট আয় দাঁড়ায় ৫৯ বি: (৬১-০২) টাকা। আরও অনেকে অনেক রকম হিসেব কষেছেন। কিন্ত সেগুলো আমাদের কাছে তেমন নির্ভরযোগ্য ও বাস্তবসম্মত মনে হয় নি (১৭)। আমরা আশা করি বর্তমান সরকার গঠিত কমিটি এ ব্যাপারে একটি বিশ্বাসযোগ্য ও বাস্তবসম্মত হিসাব আমাদের সামনে উপস্থাপন করতে সক্ষম হবেন। অপর দিকে পরোক্ষ প্রাপ্তিটাও আমাদের জন্যে কম গুরুত্বপূর্ণ নয়। আমি মনে করি এটা আরও বেশী গুরুত্বপূর্ণ। কারণ পরোক্ষ প্রাপ্তির উৎসগুলো আসলে আমাদের দেশের অর্থনৈতিক সামর্থ্য ও সক্ষমতা বৃদ্ধিসহ টেকসই উন্নয়নের ভিত্তি রচনায় গুরুত্বপূর্ণ ভূমিকা রাখবে বলে আমরা মনে করি।

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দ্বিপাক্ষিক ও বহুপাক্ষিক ট্রানজিট সংশ্লিষ্ট কাজের অগ্রগতি

পূর্বেই উল্লেখ করা হয়েছে যে, ট্রানজিট নিয়ে বিতর্ক হয়েছে, কাজ হয় নি। এমনকি বর্তমান সরকার এ ব্যাপারে বাস্তব পদক্ষেপ নিতে শুরু করেছে; কিন্তু অগ্রগতি খুব সামান্যই। ট্রানজিটের রুটগুলোতে সড়ক ব্যবস্থা অত্যন্ত নাজুক, অপ্রশস্ত ও নিম্নমানের। একমাত্র ব্যতিক্রম বিশ্বরোডের কিছু অংশ যা বিদেশীরা নির্মাণ করেছে। রেলের অবস্থাও অত্যন্ত নাজুক। বাংলাদেশ রেলওয়ে লাইনের স্বল্পতা, সরঞ্জামের অভাব, লোকবলের অপ্রতুলতা ইত্যাদি নানান সমস্যায় জর্জরিত। অতীতের সরকারগুলোর বিশেষ করে সামরিক সরকারগুলোর অদূরদর্শী পদক্ষেপের কারণেই রেলে এ রকম দূরাবস্থা (৮)। ওদিকে নৌ পথের অবস্থা আরও খারাপ। অতীতের সরকারগুলোর অবহেলাই এ জন্যে দায়ী (৬)। বর্তমান সরকার সড়ক, রেল ও নৌপথের সংস্কার, আধুনিকায়ন ও সম্প্রসারণের জন্যে এক বিশাল কর্মজজ্ঞ হাতে নিয়েছে।

ইতোমধ্যেই পঞ্চগড় জেলার তেঁতুলিয়া উপজেলার সীমান্তবর্তী বাংলাবান্ধা স্থল বন্দরের মাধ্যমে ভারত ও বাংলাদেশের মধ্যে বাণিজ্য শুরু হয়েছে। বিগত ২২-শে জানুয়ারী ২০১১ তারিখ, শনিবার, ভারতের কেন্দ্রীয় অর্থমন্ত্রী শ্রী প্রণব মুখার্জি ও বাংলাদেশের কৃষিমন্ত্রী বেগম মতিয়া চৌধুরী এ স্থল বন্দরের কার্যক্রম উদ্বোধন করেন। এর পূর্বে এ বন্দরের কাষ্টমস ও ইমিগ্রেশনসহ যাবতীয় অবকাঠামো নির্মাণের কাজ সম্পন্ন করা হয়। সাথে সাথে ৪ লেনবিশিষ্ট সুপ্রসস্ত রাস্তা নির্মাণের কাজও শেষ হয়েছে। ভারত, নেপাল ও ভূটানের অত্যন্ত কাছাকাছি হওয়ায় ঐ সকল দেশের চাহিদা নির্ভর শিল্প-কলকারখানা ও ব্যবসা প্রতিষ্ঠান গড়ে তোলার উদ্দেশ্যে আমাদের দেশের বিভিন্ন স্থানের ব্যবসায়ী ও শিল্প উদ্যোক্তারা এ বন্দরের পাশাপাশি প্রায় সব জমি কিনে ফেলেছে। ফলে বর্তমানে সেখানে জমির দাম গগনচুম্বী। এখানে বিশেষভাবে উল্লেখ্য যে, এখান থেকে ভারতের শিলিগুড়ির দূরত্ব মাত্র ৫ কি: মি:, জলপাইগুড়ির ১০, দার্জিলিং এর ৫৮, নেপালের কাঁকরভিটার ৬১ এবং ভূটানের ফুয়েন্টসিলিং এর মাত্র ৬৮ কি: মি:। অতি শীঘ্রই ইমিগ্রেশন কর্মকান্ড শুরু হবে। আর তা হলে এ পথে শুধু মালামাল পাড়াপাড়ই নয়, সংশ্লিষ্ট দেশের নাগরিকরা এবং ঐ সকল দেশে পৃথিবীর বিভিন্ন প্রান্ত থেকে আগত পর্যটকরা নিশ্চয়ই এ সহজ ও সংক্ষিপ্ত রুটে আমাদের দেশের সমুদ্রসৈকত কক্সবাজার, কুয়াকাটাসহ সৌন্দর্য্যের লীলাভূমি সুন্দরবন ও পার্বত্যাঞ্চল দর্শনে আগ্রহী হবে। ওদিকে বেনাপোল স্থল বন্দরের আধুনিকায়নের কাজ দ্রুত এগিয়ে চলছে। আখাউড়া নৌবন্দরের সংস্কার, সম্প্রসারণ ও আধুনিকায়নের কাজ শুরু হয়েছে। আখাউড়া থেকে ত্রিপুরার সীমান্ত পর্যন্ত সড়ক প্রসস্তকরণ ও আধুনিকায়নের কাজও দ্রুত এগিয়ে যাচ্ছে। আর চট্টগ্রাম-ঢাকা মহাসড়ক চার লেনে উন্নীতকরণের কাজও ইতোমধ্যে শুরু হয়েছে। খুলনা থেকে মংলা বন্দর পর্যন্ত রেল লাইন সম্প্রসারণ এবং কক্সবাজার থেকে টেকনাফ হয়ে মিয়ানমারের ঘুণদুম পর্যন্ত রেল লাইন নির্মাণের কাজও শুরু হতে যাচ্ছে শীঘ্রই। তাছাড়া মংলা ও চট্টগ্রাম বন্দরের আধুনিকায়নের কাজ দ্রুত আগাচ্ছে। সরকার নৌপথকে সারা বছর নাব্য বা সচল রাখার জন্যে নদী ড্রেজিং-এর এক মহাকর্মজজ্ঞ হাতে নিয়েছে। এরই অংশ হিসেবে চট্টগ্রাম ও মংলা বন্দর সংলগ্ন কর্ণফুলী ও পশুর নদী ড্রেজিং এর কাজ শুরু হয়েছে। বিদ্যুৎ সমস্যার সমাধানে সরকার স্বল্প, মধ্য ও দীর্ঘ মেয়াদী পরিকল্পনা গ্রহণ করেছে। স্বল্প মেয়াদে সরকার ব্যক্তিগত খাতের সহায়তায় ভর্তুকী মূল্যে ২০১১ সালের মধ্যে প্রায় ৩০০০ মেগাওয়াট বিদ্যুৎ উৎপাদনের চুক্তি করেছে যার মধ্যে ১০০০ মেগাওয়াট ইতোমধ্যেই জাতীয় গ্রীডে যুক্ত হয়েছে। মধ্য মেয়াদে সরকারী ও বেসরকারী খাত মিলিয়ে ২০১৫ সালের মধ্যে আরও ৭০০০ মেগাওয়াট উৎপাদনের পদক্ষেপ নেয়া হয়েছে। এর মধ্যে বাগেরহাটে ১৩২০ মেগাওয়াটের

কয়লা চালিত বিদ্যুৎ কারখানা নির্মাণের প্রক্রিয়া শুরু হয়ে গেছে। চট্টগ্রামে অনুরূপ একটি কারখানা নির্মাণের প্রক্রিয়াও শীঘ্রই শুরু হতে যাচ্ছে। এ ছাড়াও বিবিয়ানায়, সিরাজগঞ্জ ও মেঘনা ঘাটে আরও তিনটি ডুয়েল ফুয়েল (গ্যাস ও তেল) বিদ্যুৎ উৎপাদনের কারখানা নির্মাণের প্রক্রিয়া শুরু হয়েছে। এগুলোর বেশীর ভাগই পাবলিক প্রাইভেট পার্টনারশিপের আওতায় নির্মিত হতে যাচ্ছে। দীর্ঘ মেয়াদে ঈশ্বরদীর রূপপুরে ১০০০ মেগাওয়াটের ২টি পারমানবিক চুল্লী সম্বলিত বিদ্যুৎ কেন্দ্র নির্মাণ করা হবে। ইতোমধ্যেই এ ব্যাপারে সমঝোতা স্মারক স্বাক্ষরিত হয়েছে রাশিয়ার সঙ্গে। এ বছরেই মাননীয় প্রধান মন্ত্রীর মস্কো সফরের সময় পুরো চুক্তি স্বাক্ষরিত হবে। তারপরেই নির্মাণ কাজ শুরু হবে। প্রাথমিক পর্যায়ে ১০০০ মেগাওয়াট ক্ষমতা সম্পন্ন ১ম ইউনিট স্থাপিত করা হবে। পরবর্তীতে ২য় ইউনিট স্থাপিত হবে। ২০২০ সালের মধ্যে স্থাপনের কাজ সম্পন্ন হবে বলে আশা করা যাচ্ছে। এ ছাড়াও ভারত , নেপাল , ভূটান ও মিয়ানমার থেকে বিদ্যুৎ ক্রয়ের ব্যাপারে সমঝোতা হয়েছে। ভারত থেকে ৫০০ মেগাওয়াট বিদ্যুৎ আমদানির উদ্দেশ্যে গ্রীড লাইন ও সাব-ষ্টেশন (ভেড়ামারা ও বহরমপুর) স্থাপনের কাজ ইতোমধ্যেই অনেক দূর এগিয়েছে। আশা করা হচ্ছে ২০১২ সাল থেকে সরবরাহ পাওয়া যাবে। স্থল ও সমুদ্র বন্দরের সংখ্যা আরও বৃদ্ধি করার পরিকল্পনাও সরকারের রয়েছে। কুয়াকাটায় দেশের তৃতীয় সমুদ্র বন্দর স্থাপনের প্রক্রিয়া শুরু হয়েছে এবং বুড়িমারী (লালমনির হাটে), ভোমরা (সাতক্ষীরায়) ও হিলি (দিনাজপুরে) স্থল বন্দর আধুনিকায়নের কাজও প্রক্রিয়াধীন রয়েছে। সবকিছু মিলিয়ে বলা যায় যে, ট্রানজিট প্রদানের লক্ষ্যে গৃহীত কার্যক্রম গতি পাচ্ছে, তবে তা আরও গতিশীল করা প্রয়োজন বলে আমরা মনে করি।

প্রাচ্যের উন্নয়ন কেন্দ্র চট্টগ্রাম

প্রশ্ন হচ্ছে চট্টগ্রাম উন্নয়নের কেন্দ্র হতে পারে কি না। আমরা মনে করি ইতোমধ্যেই চট্টগ্রাম বাংলাদেশের উন্নয়নের কেন্দ্র হিসেবে আবির্ভূত হয়েছে। প্রাচ্যের কেন্দ্র হতে তাকে আর একটু আগাতে হবে এই আর কি। চট্টগ্রামের ভৌগোলিক কৌশলগত অবস্থান অচিরেই তাকে এ অবস্থানে উত্তরণে সাহায্য করবে বলে আমরা বিশ্বাস করি। বাংলাদেশের মৌলিক ও ভারী শিল্পের অর্ধেকই চট্টগ্রামে অবস্থিত ; পোষাক ও অন্যান্য শিল্পের ক্ষেত্রেও প্রায় একই অবস্থান তার। বাংলাদেশের সবচেয়ে গুরুত্বপূর্ণ সমুদ্র বন্দর হচ্ছে চট্টগ্রাম বন্দর, যার মাধ্যমে আমাদের দেশের প্রায় ৮০% আমদানী-রপ্তানীর কাজ সম্পন্ন হয়ে থাকে। কক্সবাজার ও তিনটি পার্বত্য জেলা (রাঙ্গামাটি, বান্দরবন ও খাগড়াছড়ি) তো প্রাকৃতিক সৌন্দয্যের লীলাভূমি। এগুলোর রয়েছে অফুরন্ত উন্নয়ন সম্ভাবনা, যার কানাকড়িও আমরা বাস্তবায়ন করতে পারিনি। চট্টগ্রামকে প্রাচ্যের উন্নয়নের কেন্দ্রে রূপান্তরিত করতে হলে নিম্নোক্ত বিষয়গুলোর উপর গুরুত্ব আরোপ করা একান্তই জরুরী :

প্রথমত : ৫০ থেকে ১০০ বছরের চাহিদা (দেশীয় ও আন্তর্জাতিক) মাথায় রেখে একটি প্রেক্ষিত পরিকল্পনা প্রণয়ন করতে হবে। অন্য কথায়, বর্ণিত সময়ে কি কি উন্নয়ন কাজ করতে হবে তার একটা রূপরেখা এ পরিকল্পনায় থাকতে হবে।

দ্বিতীয়ত : চীন ও ভারতের আদলে বিশেষ অর্থনৈতিক অঞ্চল গড়ে তুলতে হবে। এটা অবশ্য গোটা বাংলাদেশের জন্যে প্রযোজ্য। চীন এখন তাদের শহরগুলোকে জ্ঞান নির্ভর (Knowledge-based) শহর হিসেবে গড়ে তোলার কাজ শুরু করেছে। বেইজিং ও সাংহাইতে এ কাজ ইতোমধ্যেই অনেক দূর এগিয়েছে। এখন তারা প্রদেশিক রাজধানীগুলোকে এভাবে গড়ে তোলার কাজে হাত দিয়েছে। গুয়াংডং (Guangdong) প্রদেশকে তারা ইতোমধ্যে জ্ঞান নির্ভর প্রদেশ হিসেবে গড়ে তোলার প্রত্যয় ঘোষণা

করেছে। এ কাজকে তারা সুদূর তিববত পর্যন্ত বিস্তৃত করার পরিকল্পনা করেছে। চীনে ইতোমধ্যে শ্রমিকের ঘাটতি দেখা দিয়েছে। দক্ষ শ্রম শক্তির মধ্যে উচ্চতর বেতনের জন্যে ঘনঘন কাজ বদলানোর প্রবণতা দেখা দিয়েছে। কাজেই এ সমস্যা সমাধানে তারা শ্রমঘন বাদ দিয়ে মূলধনঘন উৎপাদনে যাচ্ছে। এখানেই নিহিত রয়েছে জ্ঞাননির্ভর অর্থনীতির মূল রহস্য। চট্টগ্রামে আইটি পার্ক, মেরিন পার্ক, জাহাজ নির্মাণ পার্ক ইত্যাদিকে ভিত্তি করে বেশ কিছু বিশেষ অর্থনৈতিক অঞ্চল গড়ে তোলা সম্ভব।

তৃতীয়ত : তিন পার্বত্য জেলাকে এবং কক্সবাজারকে বিশেষ সংরক্ষিত অঞ্চল ঘোষণা করতে হবে। এখানে শিল্প প্রতিষ্ঠান গড়ে তোলা নিষিদ্ধ করতে হবে। এখানে হবে শুধু পর্যটন ও বিনোদন কেন্দ্র। এখানে স্বাস্থ্যনিবাস বা স্যানাটোরিয়াম গড়ে তুলতে হবে। প্রয়োজনীয় যোগাযোগ অবকাঠামো গড়ে তুলতে পারলে উপরোক্ত উপ-খাতগুলো থেকে শিল্পায়নের চেয়ে অনেক অনেক গুণ বেশী আয় হবে বলে আমরা বিশ্বাস করি।

চতুর্থত : কক্সবাজারে বিশেষ করে টেকনাফ ও সেন্টমার্টিনে থাইল্যান্ডের ব্যাংককের আদলে মেরিন পার্ক গড়ে তুলতে হবে , যেখানে সামুদ্রিক সকল প্রাণির পরিচিতিসহ বিশাল বিশাল এ্যাকুয়ারিয়াম থাকবে। কক্সবাজার সমুদ্রসৈকতকে অবশ্যই আন্তর্জাতিক মানে উন্নীত করতে হবে (অত্যাধুনিক নিরাপত্তা ব্যবস্থাসহ)। আর এ সব করতে পারলে দীর্ঘ মেয়াদে চট্টগ্রাম অবশ্যই প্রাচ্যের কেন্দ্রভূমি বা হাব হিসেবে পরিচিতি পাবে বলে আমরা দৃঢ়ভাবে বিশ্বাস করি।

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সুপারিশমালা

১। ট্রানজিট চুক্তি অবশ্যই বহুপাক্ষিক ও সুসমন্বিত হতে হবে। অর্থাৎ এর সাথে সাথে আমাদের দীর্ঘ দিনের সমস্যাগুলোর সমাধান করে নিতে হবে। বঙ্গবন্ধুর আমলে ১৯৭৪ সালের বাংলাদেশ-ভারত চুক্তির (মুজিব-ইন্দিরা চুক্তি) আলোকে সীমান্ত সমস্যা ও ছিটমহল সমস্যার সমাধান স্থায়ীভাবে করতে হবে। ৫৪টি নদীর পানি বন্টন সমস্যার স্থায়ী সমাধান করতে হবে। এর পরে আসছে বঙ্গোপসাগরে জলসীমা নির্ধারণের ব্যাপারটি, যেটি এখন জাতিসংঘের আর্বিট্রেশন আদালতে আছে। আমরা মনে করি জাতিসংঘের নির্দেশনার (রায়ের) আলোকে ভারত ও মিয়ানমারের সাথে এ ব্যাপারে সমঝোতা করে একটা স্থায়ী সমাধানে আসতে হবে। কোন মতেই সমস্যা জিয়ে রাখা যাবে না। কারণ তাহলে ট্রানজিটের উদ্দেশ্য অর্জিত হবে না।

২। ট্রানজিট চুক্তি অবশ্যই বহুপাক্ষিক হওয়া উচিৎ। আগামী ৫০-১০০ বছরে কি কি পরিবর্তন আসতে পারে তা মাথায় রেখে এ ব্যাপারে পদক্ষেপ নিতে হবে। কারণ ভারত , নেপাল ও ভূটানের যেমন আমাদের দেশের উপর দিয়ে ট্রানজিট প্রয়োজন, আমাদেরও তেমনি বর্তমানে ও ভবিষ্যতে ঐ সকল দেশের উপর দিয়ে অনুরূপ ট্রানজিট প্রয়োজন হবে বিশেষ করে চীনে যাওয়ার জন্যে। অন্যদিকে চীনেরও প্রয়োজন হবে উপরোক্ত দেশগুলোর উপরদিয়ে আমাদের দেশে প্রবেশের জন্যে ট্রানজিট সুবিধা। ইতোমধ্যেই চীনারা ভারতের সিকিম ও নেপাল সীমান্ত পর্যন্ত সড়ক পথ নির্মাণ করে ফেলেছে। এখন তারা রেল পথ নির্মাণের পরিকল্পনা করছে। এছাড়াও তিববতে তারা ৫টি আন্তর্জাতিক মানের বিমান বন্দর স্থাপন করছে, যার মধ্যে দু'টি ইতোমধ্যেই

চালু হয়েছে (১৪,১৫,১৬)। এসবের মূল লক্ষ্য হচ্ছে দক্ষিণ এশিয়ার বাজারে প্রবেশ করা, যা চীনের বিশেষ করে তিববত অঞ্চলের অর্থনৈতিক উন্নয়নের গতিকে দ্রুততর করবে।

৩। ট্রানজিটের ক্ষেত্রে নিরাপত্তার বিষয়টি অবশ্যই মাথায় রাখতে হবে। নিষিদ্ধ পণ্য যেমন, মাদকদ্রব্য, আগ্নেয় অস্ত্র, বোমা ইত্যাদি এবং এর সাথে সাথে জঙ্গি ও অপরাধি অনুপ্রবেশ ঠেকাতে আন্তর্জাতিক মানের নিরাপত্তা (স্ক্যানার ইত্যাদি) সরঞ্জাম দ্বারা সজ্জিত করতে হবে প্রবেশ ও প্রস্থানের বন্দরগুলোকে। অপরাধীদের ধরতে আন্তদেশীয় হেলিকপ্টার স্কোয়াড গঠন করা যেতে পারে।

৪। ট্রানজিটের আইনগত, প্রশাসনিক এবং কারিগরি বিষয়গুলোর ব্যাপারে আন্তর্জাতিক অভিজ্ঞতা বিশেষ করে ইউরোপীয় ইউনিয়ন ও আসিয়ানের কাছ থেকে শিক্ষা গ্রহণ চুক্তি করার ক্ষেত্রে খুবই উপকারে আসতে পারে।

৫। সবশেষে আমাদের দেশের সাথে ভারতের বাণিজ্যিক ভারসাম্যহীনতার বিষয়, সীমান্তে নিরাপত্তাবাহিনী কর্তৃক নিরীহ মানুষ হত্যা, ট্রানজিট থেকে উদ্ভূত পরিবেশগত সমস্যা ইত্যাদি বিষয়গুলো যথাযথভাবে বিবেচনায় নিতে হবে। এগুলোর সমাধান না করে ট্রানজিট চালু করলে তা কখনই টেকসই তথা স্থায়ী রূপলাভ করবে না বলে আমাদের বিশ্বাস।

উপসংহার

পৃথিবী এগিয়ে যাচ্ছে। সার্কও এগিয়ে যাচ্ছে, তবে সময়ে যতটা, উন্নতিতে ততটা নয়। সার্কের দেশগুলো এখনও নিজেদের মধ্যে অত্যন্ত স্বল্প বাণিজ্য করে (৭, ১০, ১১)। তাদের ব্যবসা-বাণিজ্যের সিংহ ভাগই হচ্ছে সার্ক বহির্ভূত রাষ্ট্রগুলোর সাথে। অথচ আসিয়ান ও ইউরোপীয় ইউনিয়ন অর্ধেক বাণিজ্য করে নিজেদের মধ্যে। আর এটা সম্ভব হয়েছে ট্রানজিটের জন্যেই। দক্ষিণ এশিয়ার ভবিষ্যতও নিহিত আছে ট্রানজিটের মধ্যে। ট্রানজিট প্রদানের মাধ্যমে আমরা পরস্পরের উন্নয়নকে প্রভাবিত করতে পারি, পারি দক্ষিণ এশিয়ার ভাগ্যাহত মানুষের জীবন মানের উন্নয়ন ঘটাতে এবং সংশ্লিষ্ট রাষ্ট্রগুলোর আর্থ-সামাজিক উন্নয়নের গতিকে ত্বরান্বিত করতে। বলা হচ্ছে একুশ শতাব্দী এশিয়ার তথা চীনের। এমনি এমনি তো আর এটা বলা হচ্ছে না। এর ভিত্তি আছে। আর তা হচ্ছে অর্থনৈতিক উন্নয়ন। গোটা পৃথিবীতে মহাদেশ বিবেচনায় এশিয়ার প্রবৃদ্ধি সর্বোচ্চ এবং এর পেছনে চীনের ভূমিকা সর্বোচ্চ। ২০১০ সালেও চীনের প্রবৃদ্ধির হার ছিল ১০.৩%। বিগত তিন দশক যাবত চীন দু' অংকের ঘরে ছিল প্রবৃদ্ধির ক্ষেত্রে। আমরা কি সেরকমটা চাই না? নিশ্চয়ই চাই। আর তা হলে আসুন ট্রানজিট নিয়ে সকল বিতর্কের অবসান ঘটিয়ে সামনে এগিয়ে যাই। বদলে ফেলি দক্ষিণ এশিয়াকে। দিন বদলের এখনই সময়।

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Effects of IBBL's Investment in Rice Processing as an Agro-Processing Business in Some Selected Areas of Bangladesh

S. ISLAM[1]
M. AKTERUZZAMAN[2]
MD. BAKHTIAR UDDIN[3]

Abstract

This short paper examines the contribution of Islami Bank Bangladesh Limited (IBBL)'s investment in the rice husking mills and identifies the growing participation of women in decision-making in activities pertaining to the operation of these rice processing mills. Based on a sample survey of 30 rice millers from Mymensingh and Gazipur district, a regression exercise shows that IBBL's investment in automatic rice mills is more rewarding than the semi-automatic rice-processing mills. In the semi-automatic rice mills, 50 percent of the workers are women workers that perform various milling activities. In the automatic rice mills, however, only 27 per cent workers are women. Instances of taking joint decision in family affairs have now increased considerably. Activities in rice mill operation are now helping women empowerment in the society, an issue to which the Government of Bangladesh at present attaches a high priority. Equal participation of male and female in family decisions has already been globally recognized for peaceful family life and the present study may at least be an example in this respect.

Key Words: *Rice husking, decision-making processing, IBBL, investment,*

1 Ex-Graduate Students, Department of Agricultural Economics, Bangladesh Agricultural University, Mymensingh-2202, Bangladesh

2 Professor, Department of Agricultural Economics, Bangladesh Agricultural University, Mymensingh-2202, Bangladesh (dakteruzzaman2009@yahoo.com)

3 Lecturer, Department of Economics, Jatiya Kabi Kazi Nazrul Islam University,Trishal, Mymensingh.

and gender role.

1. Introduction

Rice is one of the major food items in the diet of more than half of the population of the world and it is the major food item for the people of Bangladesh. According to International Rice Research Institute (IRRI), rice demand in Asia is projected to rise 30 per cent in 2010 as the regional economic slowdown forces more people to rely on the staple due to the higher cost in diversifying diets. Bangladesh is one of the leaders in per capita consumption of rice with an indicated consumption of slightly more than 150 kilos of milled rice per person annually (Das, 2006). Bangladesh was a food deficient country up to 1971-1999. Due to the adoption of HYV rice and improved method of rice cultivation the country achieved almost self-sufficiency in rice production (GOB, 2008).

Rice processing includes parboiling (soaking and streaming), drying and milling in order to obtain milled rice. In a few places parboiling practice is not followed. They get milled rice by milling raw paddy. The total production of milled rice was about 18 million tons (BBS, 2007). More than 80 per cent of rice is processed in the village and about 20 per cent is processed in the commercial rice mills (Khan, 2005). Rural women play a significant role in rice processing system. Rice milling is the largest single food industry in Bangladesh. Although a huge amount of capital is invested in Bangladesh rice milling industry, the efficiency of the industry is far lower than that of other countries, including our neighboring country, India (Das, 2006). Women in agriculture today are a popular area of study. It is now accepted that women were the initiators of agricultural activities in the history of mankind, while in Bangladesh about 75% of the women live in farming families and have responsibility for most post-harvest activities. The most concentrated and busiest time in rice production occurs after the rice is harvested and brought into the homestead, and so women carry a heavy load to convert paddy to edible grain by threshing, soaking, parboiling, drying, husking, winnowing and preserving seed. Milling is the final stage in rice post-harvesting processing. It includes pre-cleaning, destining, husking, bran removal, cleaning and grading. Mobile rice hullers are gaining popularity in rural areas and the traditional *Dheki* for rice dehusking is gradually disappearing. People like mobile rice hullers because it provides home service. Commercial rice mills of different capacities (small, medium, and large, traditional, semi-automatic, and automatic) are available all over the country, although the exact number of these mills is not known. Similarly, the mechanical devices for post-harvesting operations have a great potential to be used by landless farmers for earning money and improving

their livelihood. Participation of women is most common in post-harvest farming operations although some field operations are also done by wage earning females in certain areas. Landless women are directly involved in rice processing, particularly in parboiling, and drying at the farm level though they live in extreme poverty measured in terms of their minimal calorie intake per day.

Islami Bank Bangladesh Limited (IBBL) plays a vital role in the economy by investing a huge amount of money in different sectors. In the agriculture sector, IBBL invested Tk. 9110 million, i.e. 5.06 per cent of the total invested capital.

Table 1 : Investment of IBBL in different sectors

SL No.	Areas of Investment	2008		2007	
		Amount in million BDT	% of total investment	Amount in million BDT	% of total investment
1	Industry	99233	55.11	78788	54.37
2	Commerce	51332	28.51	43877	30.28
3	Real Estate	10172	5.65	8588	5.93
4	Agriculture	9110	5.06	6485	4.47
5	Transportation	4082	2.27	2656	1.83
6	Others	6125	3.40	4.527	3.12
7	Total	180054	100.00	144921	100

Source: IBBL, Annual report 2008.

Table 1 shows the IBBL's investment by sectors up to 31st December 2008.

Rice is a very important cereal crop of Bangladesh. So, for husking paddy a large number of paddy processing mills have been established in Bangladesh. There are, however, a large number of mills in the country, which do not have adequate capital for the processing of paddy. There is no specific policy of providing bank loans to this sector even though it is the largest single agricultural industry in the country. For a well-planned development of rice mills, an effective policy for bank lending to the rice mills is urgently needed. In Bangladesh a large number of workers are directly or indirectly employed in rice processing mills. But there has been no exclusive study so far concerning the investment of commercial banks in the activity. The present study, therefore, has been undertaken to evaluate the contribution of IBBL's investment in rice husking mills that operate in some

selected areas of the country.

It is expected that such studies would be useful to the government policy planners, independent researchers and academicians. These studies would help government in taking pragmatic decision to uplift the condition and performance of the rice millers, and the socio-economic status of the rural poor in general and women, in particular who are engaged in rice husking mills, which would help the country to reduce poverty, a core objective of the Millennium Development Goals.

The specific objectives of in present study are as follows:

i) To evaluate the contribution of Islami Bank Bangladesh Limited (IBBL)'s investment in rice husking mills.

ii) To examine the gender role in decision-making process of the women workers engaged in rice husking mill.

2. Methodology and Data Sources

The study is based on primary data collected from selected rice millers through a field survey and carefully designed interviews as well as informal discussion with the rice millers. The data was also collected from secondary sources, which include publications of the Bangladesh Bureau of Statistics (BBS), Papers and leaflets of IBBL, Census Reports, Research Reports of the Bangladesh Institute of Development Studies (BIDS), and different national and international journals.

For the present study, information was collected from Rice millers of Mymensingh and Gazipur District. On the basis of information of IBBL, four upazilas namely Muktagacha, Trishal, Mymensingh Sadar and Phulpur of greater Mymensingh District and one Upazila of Gazipur District namely Sreepur were purposively selected.

Table 2 : Information of sample and sampling procedure

District	Upazila	Population (No.)	Sample (No.)
Mymensingh	Muktagacha	11	4
	Trishal	8	2
	Sadar	13	8
	Phulpur	9	4
Gazipur	Sreepur	20	12
Total		61	30

For achieving the ultimate objectives of the study, a total of 30 rice millers and 30 female workers were surveyed in this study (Table 2). Among them, 18 rice processing mills were from Mymensingh District and 12 from Gazipur District. The researcher visited all the rice processing mills and necessary data were collected through personal interviews. The rice millers, on whom the Islami Bank Bangladesh Limited made investment, were considered as sampling unit.

The collected data were edited, transferred to computer and analysed by using the Microsoft Excel and SPSS program.

Empirical model

The empirical model (Gujarati, 2003) for both agriculture and business respondents is specified as:

$Y = a X_1^{b1} X_2^{b2} X_3^{b3} X_4^{b4} X_5^{b5} X_6^{b6} e^{u}$ ———————————————— (i)

The equation in log-linear form is:

$\ln Y = \ln a + b_1 \ln X_{1i} + b_2 \ln X_{2i} + b_3 \ln X_{3i} + b_4 \ln X_{4i} + b_5 \ln X_{5i} + b_6 \ln X_{6i} + e^{u}$ --(ii)

Where

Y = Income (Tk.)
a = Constant term
X_1 = Education (Year of schooling)
X_2 = Own capital (Tk.)
X_3 = Investment of IBBL (Tk.)
X_4 = Experience (year)
X_5 = Rice processed in study year (kg)
X_6 = Establishment cost (Tk.)
u_i = Error term

b_1 —— b_6 = Co-efficient of respective variables

3. Results and Discussions

3.1 Factors Affecting and Contribution of IBBL on Rice Processing Mill

The IBBL invested a huge amount for the development of the agriculture sector. IBBL also invested a large amount for the development of rice processing mills. In the study area, IBBL's investment accounted for 32.18 per cent of the total capital of semi-automatic rice mills, and 46.76 percent of automatic rice mills (Table 3). The Cob-Douglas production function was run to quantify the influence of the different variables on the income of the studied rice millers. Table 4 shows

the level of influence of different variables on income of the automatic and semi-automatic rice mills.

Educational qualification (X_1)

Table 3 : Average Investment of IBBL on rice husking mills

Types of rice mill	Tk. In million (average)		Total
	Own capital	Credit from IBBL	
Normal/ semi-automatic	2.73 (67.82)	1.29 (32.18)	4.03 (100)
Automatic	4.47 (53.24)	3.92 (46.76)	8.39 (100)

Source: Field Survey, 2009

Note: Figures within parentheses indicate percentages.

Table 4 : Estimated Values of the coefficients of Independent Variables (Dependent Variable: Y (Income)

Explanatory variables	Automatic Rice Mill		Semi-automatic Rice Mill	
	Co-efficient	t-values (df=8)	Co-efficient	t-values (df=8)
Constant	11.861	3.600	6.717	3.319
Education (X_1)	0.284	1.662	0.089	1.189
Own capital (X_2)	0.351**	4.067	0.359*	2.451
Investment of IBBL (X_3)	0.268*	2.553	0.226	2.164
Experience (X_4)	0.330	1.188	0.191	1.708
Rice processed in study year (X_5)	0.232	1.698	0.555**	3.631
Establishment cost (X_6)	0.393*	2.287	0.314**	5.635
R^2	0.870	-	0.957	-
Adjusted R^2	0.740	-	0.915	-
F-value	6.703**	-	22.400**	-

** Significant at 1 per cent level

* Significant at 5 per cent level

The co-efficient of the variable educational qualification is 0.284 for automatic and 0.089 for semi-automatic rice millers. Both coefficients are not statistically significant.

Own capital (X_2)

The co-efficient of the variable own capital of automatic rice miller was 0.351 and that for semi-automatic millers was 0.359 that were statistically significant at 1 per cent and 5 per cent level of confidence with positive sign, respectively.

Investment of IBBL (X_3)

The co-efficient of the variable investment of IBBL of automatic rice miller was 0.268 and semi-automatic rice miller was 0.226. The co-efficient for automatic rice miller is significant at 5 per cent level of confidence with positive sign. This implies that, keeping other things constant, 1 per cent increase in investment of IBBL would lead to an increase in the rice-millers' income by 0.268 per cent.

Experience (X_4)

The co-efficient of the variable experience of the automatic rice miller is 0.330 and semi-automatic rice miller 0.191 Both of these coefficients are statistically insignificant.

Rice processed in study year (X_5)

The co-efficient of the variable rice processed in study year of automatic rice miller is 0.232 and semi-automatic rice miller is 0.555.

Establishment cost (X_6)

The co-efficient of the variable establishment cost of the respondent of automatic rice miller is 0.393 and semi-automatic rice miller is 0.314. These coefficients are positive and statistically highly significant.

Values of R^2 and adjusted R^2

The value of the co-efficient of multiple determinations R^2 is 0.870 in automatic rice mill, which means that the explanatory variables included in the model explained 87 per cent of the variation in total income of the automatic rice miller. It is also evident from the same table that the value of adjusted R^2 is 0.740 indicating that after taking into account the degrees of freedom the explanatory

variables in the model explain about 74.0 per cent of the variations in the dependent variable.

The value of the co-efficient of multiple determinations R^2 is 0.957 in semi-automatic rice miller, which means that the explanatory variables included in the model explained 95.7 per cent of the variation in total income of the semi-automatic rice mill. It is also evident from the table that the value of adjusted R^2 is 0.915 indicating that after taking into account the degrees of freedom those explanatory variables in the model explain about 91.5 per cent of the variations in the dependent variable.

F-value

The F-values are highly significant at 1 per cent level, implying that all the included explanatory variables are important for explaining the variations in income (Y) of both automatic and semi-automatic rice millers.

From the above estimated variables, it can be concluded that the importance of investment of IBBL on automatic rice mill is more significant than the semi-automatic rice-processing mill. The education of the rice millers did not play any significant role in influencing the income of both rice millers.

3.2. Gender Role in Decision Making

Women in general, have very little participation or are often very less concerned in the decision making process even at the household level activities. In this study, attempt was made to analyze the pattern of participation of women in household decision-making process (Table 5). Responses to questions on decision-making are coded in three categories as defined below:

(a) “Decision taken by the husband” means that the wives have no say in decision making and the husband determines all matters by himself without any consultation with wife.

(b) “Decision taken by the wife” means that all matters are decided by women themselves without any consultation with husband.

(c) “Decision taken by both husband and wife” means that all decisions are arrived at by mutual consent of the husband and wife. In such decision making process, both the husband and the wife have equal authority to reject or accept a decision.

Male domination in decision-making has come down significantly after the

women started working in rice mills. Men that previously took monopoly decision now realize that women should also join in decision-making for smooth running of income generating activities (IGAs). Taking joint decision in family affairs has thus increased considerably. As Table 5 will show, during the study year, 100 percent of decisions relating to children's education and daughter's/son's marriage were taken jointly by husband and wife. The percentages were 98 percent in the case of works in the mills, 85 percent in labour selling, 80 percent in housing, 53 percent in matters of rearing children, and 56 percent in matters of social function. It can, therefore, be said that the rice mill operation has been helping women empowerment in the society, which also occupies a high priority in government's policy toward women.

4. Conclusion and Recommendations

The of IBBL's investment in automatic rice mills has proved more productive than in the semi-automatic rice-processing mills. Measures should be taken to provide institutional credit in easy terms and conditions for establishing automatic rice mill.

Table 5 : Participation of Women in household decision-making

Decision making topics	Work in rice mill (%)					
	Before			After		
	Husband only	Wife only	Equal	Husband only	Wife only	Equal
Crop production	95	-	5	63	-	37
Labor selling	90	-	10	15	-	85
Housing	82	18	-	10	10	80
Work in rice mill	54	20	26	-	2	98
Take care of children	-	80	20	-	47	53
Child education	70	20	10	-	-	100
Allocation of income	86	10	4	50	25	25
Daughter/son's marriage ceremony	55	-	45	-	-	100
Participation in voting	75	25	-	-	-	100
No. Children to raise	70	30	-	-		100
Group meeting	100	-	-	50	25	25
Participation in social function	90	5	5	44	-	56
Visiting relatives	62	20	18	46	15	39

Semi-automatic rice mills employ more labor, specially women workers, for performing various milling activities compared to automatic rice mills. This is because in automatic rice mills most of the milling activities are electric machine-operated. Government along with all banks try in their own way to assist this industry to grow in order to generate a good employment opportunity.

Gender inequality in decision-making is gradually disappearing at least in the rice mills that have been the subject of this paper. Men that previously took monopoly decision have now begun to realize that women should also join in decision-making for smooth running of income generating activities. However,

Government should frame and implement proper rules and regulations so that any woman worker does not encounter gender based discrimination.

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The Impact of Microcredit Program on Socio-Economic Condition of the Households of Dropout Borrower

MD. HUMAYUN KABIR MAJUMDER[1]

Abstract

This paper investigates the nature and extent of borrowers' dropout from different micro-credit institutions (MCI). The changes in the socio-economic conditions of the borrower households, which had happened in between borrowers' enrollment and dropout from credit institutions has been extremely unpleasant. The study is based on primary survey data and both the qualitative and quantitative tools have been used to deepen the understanding about various aspects of MCI and make some policy prescriptions.

1. Introduction

Micro-credit has come to light as the latest alternative approach to alleviating rural poverty after the failure of the previous approaches. The main belief of group-based micro-credit program, initiated by Nobel laureate Dr. Yunus, has been acknowledged as a model of poverty alleviation. It has created a notion of high expectation since early 1990s as a powerful instrument of creating freedom and self-employment opportunities for the distressed rural poor. Through captivating publicities Grameen Bank (GB) has drawn global attention and then micro credit (MC) program got recognition as a very successful approach to poverty alleviation. At present, micro-credit program following 'Grameen Bank

1 Associate Professor, Department of Economics, Rajshahi Government College, Rajshahi.

** The author is alone responsible for any shortcomings of the study.

Model' is being run in more than eighty countries of the world, including supper power U.S.A., for the eradication of massive poverty from the countries in question. According to CDF statistics till December 2007, the member borrowers of only Grameen Bank and 535 recognized Mico-credit institutions is a total of 47,100,000, which is more than one-third of the total population and almost half of total households of our country.

However, despite the tremendous growth in the number of institutions, amount of loan disbursement, and the number of borrowers, the incidence of unemployment and malnutrition situation in Bangladesh has reached precarious level at present. A huge number of borrowers are found to be dropping out from the institutions. The causes and extent of borrowers' dropout and the socio-economic changes of the borrower households during the period of using micro-credit are analyzed in the present study.

2. Methodology

The focal point of this study is the impact of the credit program on the households of dropout borrower. A total of 70 credit receivers, who had already left the micro-credit institutions, have been interviewed through using a well-designed

Table 2.1: The Description of the Study Area and Sample Borrowers

Rajshahi District		
Name of Upazila	Number of Respondents	Percentage
Ghodagari	09	32.14
Paba	10	35.71
Mohanpur	09	32.14
Total	28	100.00
Comilla District		
Name of Upazila	Number of Respondents	Percentage
Shahrasti	14	58.33
Laksham	10	41.67
Total	24	100.00
Noakhali District		
Name of Upazila	Number of Respondents	Percentage
Laxmipur	08	44.44
Chatkhil	10	55.56
Total	18	100.00
Grand Total	**70**	**100.00**

Source: Field Survey

questionnaire. Sample borrowers were selected from four largest micro-credit institutions covering seven Upzilas under three districts of Bangladesh. These micro-credit institutions are: (a) Grameen Bank, (b) BRAC, (c) ASA, and (d) PROSHIKA. A number of 28 Grameen dropout borrowers and another 32 dropout loan receivers of BRAC, ASA, and PROSHIKA were interviewed from June to September 2008 from Comilla and Noakhali district regions. The distribution of sample is shown in Table 2.1.

A uniform pre-designed questionnaire was used for the sample borrowers belonging to all the four institutions. The data have been collected randomly; the purposive method has been applied to exclude the borrower who had been taking loan for less than three years before send-off. The trend of borrower dropouts is

Table 2.2 : The Trend of Borrowers Dropout from the Sample Branches of Institutions

Number of Branches/Centers	Period	% of Annul Dropout on an Average
5 Branches of Grameen Bank	July 2001 to June 2007	20.25
5 Centers of BRAC	July 2001 to June 2007	18.99
5 Centers of ASA	July 2001 to June 2007	17.22
5 Centers of PROSIHKA	July 2001 to June 2007	24.25

Source: Field Survey

*** This trend is measured by considering annual new enrollment and actual growth rate of borrowers at branch/center level.*

shown in Table 2.2.

3. Data Analysis

In this section, individual profiles of the dropout borrowers and the socio-economic condition of the respective households are analyzed so as to show the effect of credit programs on them during the use of loan. In that pursuit, the field survey data have been used.

3.1 Age Structure of the Respondents

The age structure of the dropout members is shown in Table 3.1

Table 3.1 shows that the majority of the dropout borrowers were over-aged during joining and using GB loan.

3.2 Marital Status of the Respondents

Table 3.1: The Age Structure of the Dropout Borrowers

Age in years	At the time of leaving GB		At the time of joining GB	
	No. of Respondents	Percentage	No. of Respondents	Percentage
Up to 30	01	01.43	02	02.86
31-40	17	24.29	49	70.00
41-50	44	62.85	17	24.28
51 and above	08	11.43	02	02.86
Total	70	100.00	70	100.00

Source: Field Survey

Table 3.2 : Marital Status of Respondents

Marital Status	At the time of leaving GB		At the time of joining GB	
	No. of Respondents	Percentage	No. of Respondents	Percentage
Unmarried	01	01.43	01	01.43
Married	47	67.14	61	87.14
Separated/Deserted	06	08.57	02	02.86
Widow	08	11.43	03	04.28
Divorcee	08	11.43	03	04.29
Total	**70**	**100.00**	**70**	**100.00**

Source: Field Survey

The Marital status of the dropout borrowers is shown in the Table 3.2.

Table 3.2 reveals that divorce and separation has increased among the dropout borrowers after their enrollment in the GB, which indicates that the status of the dropout women were degraded after their joining the GB.

3.3. Occupation of the Respondents

Table 3.3 : Occupation of the Respondents

Occupations of the dropout borrowers	At the time of leaving GB		At the time of joining GB	
	No. of Respondents	Percentage	No. of Respondents	Percentage
Only Housewife	58	82.85	66	94.29
Housewife and House maid	06	08.57	02	02.85
Daily labourer	06	08.58	02	02.85
Total	**70**	**100.00**	**70**	**100.00**

Source: Field Survey

The occupation of the respondents is shown in Table 3.3.

It is seen from Table 3.3 that most of the respondents were only housewives at the time of joining and leaving the GB. Although a very few of the total respondents were found to be employed after joining the GB, the field of these employment is independent of GB loan.

3.4. Amount of Cultivable Land Owned by the Respondent Households

Table 3.4 : Amount of Cultivable Land Owned by the Respondent

Amount of land owned by the respondents households	At the time of leaving GB		At the time of joining GB	
	No. of Respondents	Percentage	No. of Respondents	Percentage
Below 50 decimals	52	74.29	55	78.57
51-100 decimals	18	25.71	15	21.43
Total	**70**	**100.00**	**70**	**100.00**

Source: Field Survey

The amount of cultivable land owned by the households of the dropout borrower is shown in Table 3.4.

Table 3.4 shows that 73.33% and 80% of the sample households were functionally landless at the time of joining and leaving the GB, respectively.

3.5. Occupations of Households of the Dropout Borrowers

Table 3.5 : Occupations of Respondent Households

Occupation of the respondents households	At the time of leaving GB	At the time of joining GB
Only Agriculture	12(17.14)	22(31.43)
Agriculture and daily laboring	41(58.57)	40(57.14)
Petty business	09(12.86)	05(07.14)
Rickshaw and Van pulling	08(08.58)	03(02.86)
Total	**70(100.00)**	**70(100.00)**

Source: *Field Survey*
** Figure in parenthesis shows the percentages*

The Occupation of the dropout borrowers at the time of joining and leaving the GB is shown in Table 3.5.

From Table 3.5 it is seen that the occupation of the households of the respondents remained almost the same at the time of joining and leaving the GB.

3.6. Duration of Using GB Loan

Table 3.6 : Duration of Using GB Loan

Years	Number of Respondents	Percentage
Below 5 years	04	05.71
5-6 years	08	11.43
6-7 years	54	77.14
10 years or more	04	05.71
Total	70	100.00

Source: Field Survey

The period for which the borrowers could continue the membership in GB is shown in Table 3.6

Table-3.6 shows that major part of the dropout borrowers continued the membership of the GB for a period below five years.

Table 3.7 : Nature of Dropout

Nature of dropout	Number of Respondents	Percentage
Willingly stopped borrowing	08	11.43
Expelled by GB	62	88.57
Total	70	100.00

Source: Field Survey

3.7. Nature of Dropout

The nature of dropout of the selected borrowers is shown in the Table 3.7.

Table 3.7 shows that 88.57% of the respondents were expelled by GB, and the rest 11.43% stopped GB borrowing willingly.

Table 3.8 : Causes of Expulsion

Causes of expulsion	Number of Respondents N=28	Percentage
Inability to repay weekly installments	67	95.71
Violation of other discipline	02	02.86
Others	01	01.43
Total	70	100.00

Source: Field Survey

3.8. Causes of Expulsion

The causes of expulsion of the respondents by GB are shown in Table 3.8.

Table 3.8 reveals that 95.71% the respective borrowers were expelled by the GB due to their inability to repay the weekly installments in time.

Table 3.9 : The Number of Installments the Borrowers Failed to Repay Before Expulsion from the GB

Number of Installments	Number of Respondents	Percentage
01	14	20.00
02	54	77.14
03 or more	02	02.86
Total	70	100.00

Source: Field Survey

3.9. The Number of Installments Failure before Expulsion from GB

The number of weekly installment failures for which the borrowers were expelled from GB is shown in Table 3.9.

It is seen from Table 3.9 that among the dropout borrowers, 77% were expelled by the GB due to the failure of two weekly installments.

Table 3.10 : Number of Respondents, who got Notice before Expulsion

Information	Number of Respondents	Percentage
Got notice	02	02.86
Did not get notice	68	97.14
Total	70	100.00

Source: Field Survey

3.10. Number of Respondents that got Notice before Expulsion from GB

The number of respondents who got notice before expulsion from GB is shown in the Table 3.10.

From Table 3.10, it is seen that a large majority of the expelled members (97.14%) did not get any previous notice regarding their dismissal from GB.

3.11. Information Regarding Share and Dividends

It was seen during field survey that no dropout borrowers got share certificates or dividends against their membership in GB. Even GB does not maintain any relation with these dropout borrowers.

Table 3.11: Amount of Unpaid Loan

Amount in TK.	Number of Respondents	Percentage
Up to 1000	06	08.57
1001-2000	18	25.71
2001-3000	22	31.43
3001-4000	08	11.43
More than 4000	16	22.86
Total	70	100.00

Source: Field Survey

3.11. Amount of Unpaid Loan

The amount of unpaid loan, for which the respondents were expelled from GB, is shown in Table 3.11.

Table 3.11 shows the amount of unpaid loan of the expelled respondents at the time of their leaving the GB. It is seen that the amount of unpaid loan was upto TK. 1000, TK. 1001-2000, TK. 2001-3000, Tk.3000-4000 and more than TK. 4000 for 8.57%, 25.71%, 31.43%, 11.43% and 22.86% of the borrowers.

Table 3.12 : Sources of Repayment of the Unpaid Loan

Sources of repayment	Number of Respondents	Percentage
Adjustment with the obligatory savings, that was deposited in GB	39	55.71
Selling assets	10	14.29
Did not repay	00	00.00
Borrowing from other sources	21	30.00
Total	70	100.00

Source: Field Survey

3.12. Sources of Repayment of the Unpaid Loan

The sources of repayment of unpaid GB loan by the dropout borrowers are shown in Table 3.12.

Table 3.12 reveals that GB recovered 55.71% of the unpaid loan by adjusting it

Table 3.13 : Amount of Obligatory Savings

Level of obligatory savings	Number of Respondents	Percentage
Up to 1000	10	14.29
1001-2000	29	41.42
2001-3000	14	20.00
3001-4000	17	24.29
Total	70	100.00

Source: Field Survey

with the obligatory savings that were deposited by the respondents in GB fund. About 30% of the unpaid loans were repaid by the borrowers by borrowing from other sources, and GB recovered 14.29% of the unpaid loans by selling the borrowers' assets.

3.13. Amount of Obligatory Savings

The amount of obligatory savings deposited by the respondents to GB till losing

Table 3.14 : The Amount of Loan used from GB before dropout

Amount of borrowing in TK.	Number of Respondents	Percentage
Up to 20000	17	24.29
20001-30000	29	41.43
30001-40000	24	34.28
Total	70	100.00

Source: Field Survey

the membership is shown in Table 3.13.

Table 3.13 shows that the amount of obligatory savings deposited by the respondents till their dropout from GB were more than Taka 2000 in most of the cases.

3.14. Amount of Loan used from GB

The amount of loan used by the respondents until their dropout from GB is shown

Table 3.15 : Information Regarding the Borrowing on Interest

Information regarding borrowing on interest	Before Joining the GB		After Joining the GB	
	Number of Respondents	Percentage	Number of Respondents	Percentage
Did not borrow on interest	60	85.71	16	22.86
Used to borrow on interest and interest-free	06	08.57	09	12.86
Used to borrow on interest	04	05.71	45	64.28
Total	70	100.00	70	100.00

Source: Field Survey

in Table 3.14.

It is seen from Table 3.14 that most of the dropout borrowers used more than Taka 30000 GB loan before their dropout from GB.

3.15. Information Regarding Borrowing on Interest:

The use of non-institutional loan on interest by expelled borrower households

Table 3.16 : Changes in the Level of Assets

Type of assets	**Increase**	**Decrease**	**Constant**
Cultivable land	00	20(28.57)	40(57.14)
Homestead	00	08(11.43)	62(88.57)
Dwellings	04(05.71)	01 (01.43)	65(92.86)
Livestock	00	12(17.14)	58(82.86)
Poultry	00	48(68.57)	22(31.42)
Furniture and home articles	02(02.86)	20(28.57)	48(68.57)
Capital goods	00	12(17.14)	58(82.86)
Investment in business	00	10(14.28)	60(85.71)

Source: Field Survey

before and after joining the GB is shown in Table 3.15.

From Table 3.15 it is seen that the use of non-institutional loan on interest has increased among the borrowers after their joining GB.

3.16. Changes in the Amount of Assets of the Households of Dropout Borrowers

The changes that occurred in the level of assets of the households of the expelled borrower during the use of GB loan are shown in Table 3.16.

It is seen from Table 3.16 that the amount of assets decreased among the expelled borrower households while using GB loan.

4. Summary and Conclusions

From the foregoing analysis, it is seen that micro-credit institutions expelled all of the dropout borrowers due to their inability to repay the weekly installments of loan. Like the active borrowers, all of these expelled borrowers were found to be female and majority of them were over-aged. Majority households of these dropout borrowers were functionally landless. Most of these respondents had used GB loan for a period of more than five years before leaving GB. No positive impact of micro credit loan was found on the borrowers and their dependents in terms of self-employment and income generation. The assets of most households of these dropout borrowers has declined during the use of loan. The overall indebtedness of the respondent has increased significantly. A stark revelation of the study is that the GB's claim that the ownership of GB rests with its member borrowers is totally false. No respondents were found to have been given share certificates or annual dividends. To bring down the number of dropout borrowers and make the micro-credit program effective the following policy prescriptions

are suggested here.

** To ensure the declared ownership of member borrower (as the GB pioneer sternly mentions that the land-less member borrowers own 94% shares) in the micro finance institutions (MCI), the member borrower must be given share certificates, and the annual dividends must be distributed among them.

** The correct statistics regarding borrowers' dropout from different MCIs must be maintained and published from branch/center level.

** The number of borrowers overlapping in different MCIs must be identified and published from branch level to disentangle the contribution of master MCI from others.

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Does Bangladesh Benefit from a Preferential Liberalisation? Some Ex Ante Evidence from BIMSTEC FTA

MAHFUZ KABIR[1]

Abstract

Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC), a regional grouping of South and Southeast Asian countries, is heading towards forming a free trade area (FTA). This paper examines some ex ante effects of the FTA by standard Global Trade Analysis Project (GTAP) model. Results suggest that Bangladesh would incur a net welfare loss, but BIMSTEC derives net gain. The overall intra-bloc export is likely to increase, although Myanmar's potential exports are not that encouraging. The group comes up with a trade deficit. These imply that there is a need for designing a compensation package and extending technical support for Bangladesh to cope with adverse effects.

Keywords: *BIMSTEC, welfare effect, allocative efficiency, trade balance, GTAP*

1. Introduction

Regional cooperation, whether market-driven or policy-induced, is a catalyst of economic integration. Free trade maximises global welfare but such a Pareto optimal state is impossible in practice due to multiple distortions, which leads to economic regionalism. Regionalism has become so widespread that at present

1. Research Fellow, Bangladesh Institute of International and Strategic Studies (BIISS), Dhaka. This paper is based on Chapter 1 and Chapter 5 of my PhD thesis. I am grateful to Prof Harry Bloch, Dr Ruhul Salim and Prof Helen Cabalu of School of Economics and Finance, Curtin University of Technology, Australia, for their helpful comments and suggestions.

sixty per cent of world trade is conducted among the members of the blocs.[1] At the advent of new regionalism, countries are forming the complex web of regional trading arrangements (RTAs). The body of theoretical and empirical literature suggests that economic regionalism is beneficial for trade flows and welfare gains (*e.g.*, Baldwin, 1993), but some studies find it as a stumbling block for multilateral liberalisation efforts (such as Bhagwati and Panagariya, 1996; Panagariya, 2000). Now, there are two fundamental questions pertaining to regional groupings: *First*, is there any significant scope of expanding intra-grouping trade, which can serve as an economic incentive behind such efforts? *Second*, does a preferential liberalisation within the regional arrangement result in any non-trivial mutual gains?

This paper tries to answer these questions in the context of an emerging regional bloc, Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC)[2]. Initially it intended to promote cooperation between economic sectors, trade and investment. The group is now heading towards an FTA vis-à-vis the schemes of sectoral cooperation. The potential of intra-BIMSTEC trade remains untapped due to tariff and non-tariff barriers, and to the absence of agreements on services and investment. According to IMF's Direction of Trade Statistics database, the main import sources and export destinations of most of the BIMSTEC countries remain outside the bloc although the recent trend in trade growth is higher within the group than that with the world. As the World Bank (2008) observes, some of the countries initiated trade reforms in the recent past although the markets are normally restrictive in the group except for Myanmar and Thailand.

Only two studies have been conducted so far to the best our knowledge. Bhattacharya and Bhattacharyay (2007) assess the trade potential of BIMSTEC countries that contextualise a BIMSTEC-Japan FTA. They calculate trade gains of BIMSTEC countries as well as of Japan using gravity model and find significant trade gains in different scenarios, in which the most preferable one is a free trade regime. Strutt (2008) makes projections for 2001-2020, which demonstrate that Bangladesh incurs a net revenue loss although BIMSTEC's total export and

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1 The attraction and recent phenomenal growth of preferential trading arrangements (PTAs) may be largely due to a preference for manufacturing industry and the prospect of greater foreign direct investments in the member countries (Ahmad, 2008).

2 The idea of BIMSTEC was first mooted by Bangladesh, India, Sri Lanka and Thailand which came out as a regional grouping in the Bangkok Declaration of June 1997. Myanmar, Nepal and Bhutan joined BIMSTEC after 1997.

import, as proportions of those of the world, as well as intra-bloc trade, will increase.

This paper works out the possible effects of economic integration for preferential tariff elimination scenario of BIMSTEC FTA in Global Trade Analysis Project (GTAP) model especially to examine Bangladesh's potential gains and losses. GTAP is a global computable general equilibrium (CGE) model, which is widely used to analyse the possible effects of regional trade agreements and economic integration. The rest of the paper is organised as follows. Following the introduction, Section 2 briefly discusses the intra-BIMSTEC trading pattern. The basic structure of GTAP is described in Section 3. The empirical estimates of various effects are presented in Section 4. Finally, concluding remarks have been made in Section[3].

2. Intra-BIMSTEC Trade: An Overview

Amongst the members of BIMSTEC, India is the biggest economy in terms of its macroeconomic indicators while Bhutan is the smallest in the bloc. In between these two, only Thailand can be noticed as an influential country in the group. The combined gross domestic product (GDP) of BIMSTEC member economies is nearly US$1.6 trillion with a population of around 1.44 billion as of 2007. Currently the countries are at different levels of economic and industrial development (Table 1).

The intra-BIMSTEC trade potential remains untapped due to tariff and non-tariff barriers, and to the absence of agreements on liberalisation of services and investment. The economies are also incurring significant loss in terms of its volume and share in the economy due to the existing tariff structure. Kee *et al.* (2008) demonstrate that the linearly approximated deadweight loss (DWL) associated with the existing tariff structure ranges between 0.43 to 0.71 per cent of the total GDP of important member countries.[4] The proportion of estimated DWL is much lower in more liberalised East Asian countries, such as Japan (0.02 per cent), South Korea (0.09 per cent) and Indonesia (0.11 per cent).

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3 DWL is divided into three components associated with the contributions of import-weighted tariff, tariff variance, and the covariance between tariffs and import demand elasticities. A positive contribution of the covariance indicates that countries impose higher tariffs on more elastic imports.

4 The detailed decomposition of the multi-region EV is given in Huff and Hertel (2001), pp.29-45.

The share of intra-BIMSTEC trade remains meagre in the world trade (Table 2.1). In 1997, the intra-bloc import was 2.81 per cent of the world import, which increased to 4.42 per cent in 2007. The figures for export were 2.80 and 5.27 per cent, respectively. However, there is an implicit positive trait in the trading pattern, which is missing in the recent literature, such as Bhattacharya and Bhattacharyay (2007) and Strutt (2008). After the formation of BIMSTEC, there has been a proportionate increase in the intra-group trade compared to trade with the world. This can be expressed in terms of increase in individual member's trade with BIMSTEC compared to their trade with the world during 1997-2007. All the member countries experienced a higher increase in both imports from and exports to the group.

Table 1 : Key Characteristics of BIMSTEC Member States

	Bangladesh	Bhutan	India	Myanmar	Nepal	Sri Lanka	Thailand
1997							
Population (million)	131.52	0.52	965.43	44.29	22.76	18.37	58.83
GDP (US$ billion)	42.32	0.37	410.92	..	4.92	15.09	150.89
GDP per capita (US$)	322	721	426	..	216	821	2,565
GDP growth (annual %)	5.39	5.31	4.05	5.65	5.05	6.41	-1.37
Shares of GDP							
Agriculture	25.78	32.48	26.12	59.45	41.43	21.87	9.45
Manufacturing	15.61	10.04	16.38	7.10	9.45	16.41	30.17
Services	49.07	34.36	47.11	30.28	35.70	51.23	50.39
% of World Trade	0.10	..	0.68	0.04	0.02	0.09	1.11
Trade per capita (US$)	82	..	78	90	90	540	2,098
2007							
Population (million)	158.57	0.66	1,124.78	48.78	28.11	20.01	63.83
GDP (US$ billion)	68.42	1.10	1,176.89	..	1,0.32	32.34	245.35
GDP per capita (US$)	431	1,668	1,046	..	367	1616	3,844
GDP growth (annual %)	6.43	19.11	9.06	..	3.19	6.78	4.75
Shares of GDP							
Agriculture	19.24	20.86	18.11	..	33.58	11.69	11.42
Manufacturing	17.77	5.12	16.32	..	7.72	18.50	34.83
Services	52.37	36.26	52.38	..	49.32	58.38	44.68
% of World Trade	0.10	..	1.66	..	0.01	0.06	1.01
Trade per capita (US$)	213	..	491	..	170	1,044	5,246
Membership							
GATT	1972	No	1948	1948	No	1948	1982
WTO	1995	Accession	1995	1995	2004	1995	1995

Note: .. Data not available. GATT and WTO stand for the General Agreement on Tariffs and Trade and the World Trade Organisation, respectively.

Source: World Bank. *World Development Indicators* (online, http://ddp-ext.worldbank.org); *World Trade Indicators* (online, http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/TRADE).

Table 2.1 : Intra-BIMSTEC Trade Flows (US$ million)

IMPORTS

From / To	Bangladesh		Bhutan		India		Myanmar		Nepal		Sri Lanka		Thailand	
	1997	2007	1997	2007	1997	2007	1997	2007	1997	2007	1997	2007	1997	2007
Bangladesh	--	--	4.14	10.43	795.62	2,646.58	2.66	29.66	10.99	15.67	9.25	13.45	86.00	442.02
Bhutan			--	--										
India	53.65	211.05	18.50	129.44	--	--	212.30	757.76	87.43	768.52	33.95	566.81	224.28	2,930.53
Myanmar	0.42	6.35			50.16	186.85	--	--	0.00	0.00	0.00	0.56	0.00	1,054.64
Nepal	7.70	4.93			435.80	1,838.55	0.00	0.00	--	--	1.60	0.20	28.60	41.87
Sri Lanka	2.00	10.92			560.00	2,610.14	6.00	5.49	5.00	0.08	--	--	153.00	230.81
Thailand	14.02	14.37			594.00	2,085.01	0.00	2,315.38	0.04	0.73	30.23	36.61	--	--
BIMSTEC	77.78	247.62	22.64	139.86	2,435.58	9,367.13	220.96	3,108.30	103.45	784.99	75.02	617.63	491.88	4,699.86

EXPORTS

To / From	Bangladesh		Bhutan		India		Myanmar		Nepal		Sri Lanka		Thailand	
	1997	2007	1997	2007	1997	2007	1997	2007	1997	2007	1997	2007	1997	2007
Bangladesh	--	--	0.33	4.85	37.22	209.71	0.38	5.77	0.93	4.48	3.91	10.15	10.77	12.70
Bhutan			--	--										
India	807.13	2,405.98	15.48	146.48	--	--	48.28	169.86	168.93	1,671.41	486.25	2,372.86	369.78	1,895.47
Myanmar	2.41	26.97			168.62	688.87	--	--	0.00	0.00	5.45	4.99	0.00	2,104.89
Nepal	8.70	14.25			91.60	698.65			--	--	0.10	0.07	0.00	0.66
Sri Lanka	11.00	22.75			44.00	515.28	0.00	0.51	2.00	0.18	--	--	34.00	44.70
Thailand	127.04	511.00			294.48	2,664.12	0.00	958.76	19.41	38.06	147.76	273.55	--	--
BIMSTEC	956.28	2,980.95	15.81	151.33	635.92	4,776.64	48.65	1,134.91	191.27	1,714.14	643.47	2,661.62	414.55	4,058.42

Note: The total value of exports and imports shows discrepancy, which is due to exclusion of transport and other costs of trade from the exports data.
Source: IMF. *Direction of Trade Statistics* (online).

Table 2.2 : BIMSTEC's Trade with the World (US$ million)

IMPORTS

From / To	Advanced Economies		Euro Area		Emerging & Dev. Economies		Developing Asia		Central and Eastern Europe		Middle East		Western Hemisphere		World	
	1997	2007	1997	2007	1997	2007	1997	2007	1997	2007	1997	2007	1997	2007	1997	2007
Bangladesh	3,381.6	6,516.5	585.3	1,087.2	2,766.0	10,583.5	2,273.6	6,897.2	37.2	163.8	260.0	2,376.9	101.0	377.7	7,129.6	18,476.3
Bhutan																
India	24,060.2	110,110.0	7,914.2	34,348.6	16,779.4	76,842.6	3,607.8	44,697.8	312.6	2,001.2	8,706.9	14,215.4	577.6	6,100.6	40,896.6	249,566.0
Myanmar	1,552.2	1,723.2	166.8	235.4	1,296.7	4,673.6	1,266.4	4,578.7	15.1	2.7	11.7	12.6	0.2	2.4	2,861.5	5,520.1
Nepal	856.7	356.2	58.2	90.7	737.1	2,435.2	569.5	2,341.9	0.8	3.2	148.7	71.8	15.4	1.2	1,640.4	3,123.3
Sri Lanka	3,159.0	5,050.6	453.0	768.0	2,094.0	6,173.1	1,259.0	4,534.0	19.0	84.5	569.0	1,471.3	183.0	43.0	5,282.0	11,301.0
Thailand	45,884.5	76,185.9	6,823.2	9,556.9	16,368.2	62,594.6	9,157.5	37,954.4	879.2	418.2	4,365.8	18,113.7	1,155.2	2,373.7	64,127.3	141,346.0
BIMSTEC	78,894.2	199,942.4	16,000.6	46,086.9	40,041.4	163,302.5	18,133.8	101,003.9	1,263.9	2,673.5	14,062.1	36,261.7	2,032.2	8,898.8	121,937.4	429,332.7

EXPORTS

To / From	Advanced Economies		Euro Area		Emerging & Dev. Economies		Developing Asia		Central and Eastern Europe		Middle East		Western Hemisphere		World	
	1997	2007	1997	2007	1997	2007	1997	2007	1997	2007	1997	2007	1997	2007	1997	2007
Bangladesh	3,133.5	9,743.5	1,081.6	4,375.3	474.9	1,180.1	194.3	465.4	44.3	266.1	124.4	179.0	25.1	101.8	3,627.6	12,718.9
Bhutan																
India	23,051.6	81,392.6	6,651.2	23,774.3	11,149.1	71,234.2	4,108.1	28,483.0	443.7	3,784.3	3,367.4	22,619.8	630.2	5,269.7	34,624.4	153,130.0
Myanmar	615.6	823.8	107.0	255.2	498.2	3,841.4	333.3	3,443.4	1.3	13.7	14.1	49.6	17.1	49.1	1,132.1	4,753.7
Nepal	286.7	235.5	160.2	90.0	102.5	748.1	100.8	733.0	0.4	7.6	0.0	3.7	0.6	2.4	396.9	1,008.5
Sri Lanka	3,601.0	5,417.4	619.0	1,312.3	925.0	1,943.9	210.0	827.9	129.0	131.5	321.0	593.4	67.0	135.6	4,629.0	7,740.0
Thailand	44,008.7	91,448.3	6,821.6	15,075.5	13,635.9	60,490.9	10,177.0	42,415.0	517.1	2,569.4	1,635.0	6,733.8	659.8	3,909.9	59,302.9	152,460.0
BIMSTEC	74,697.1	189,061.1	15,440.6	44,882.7	26,785.6	139,438.6	15,123.5	76,367.6	1,135.9	6,772.6	5,461.9	30,179.4	1,399.8	9,468.5	103,712.8	331,811.1

Note: The total value of exports and imports shows discrepancy, which is due to exclusion of transport and other costs of trade from the exports data.
Source: IMF. *Direction of Trade Statistics* (online).

Bangladesh's intra-bloc trade increased substantially from 1997 to 2007, and the rate of increase has been higher than that with the rest of the world (ROW). Its value of imports from BIMSTEC was US$3.16 billion in 2007, which was 17.09 per cent of that from the ROW. Its imports from the bloc increased by 275 per cent compared to that of 1997, whereas it increased by 180 per cent with the ROW. Its volume of exports to the group was US$247.67 million in 2007, which was 1.95 per cent of exports to the world. The amount was meagre because the main export destination of the country was the advanced economies (Table 2.2). Still, the increase in its export to the bloc during the same time period was higher (307 per cent) than that to the ROW (283 per cent). Most of its intra-bloc trade increase could be explained by its trade with India.

Some further characteristics of intra-BIMSTEC trade can be revealed from complementarity, intra-industry trade (IIT) and concentration indices. Chakraborty (2007) demonstrates that trade complementarity index is lower for Bangladesh and Sri Lanka than that of India and Thailand, which indicates highly skewed trade baskets of these countries towards a few product lines. The overall IIT index is low for Bangladesh with the other partners, which implies a lower trade across industry categories including intermediate products. Conversely, the higher IIT between Thailand and Sri Lanka and between Thailand and India indicates a greater trade within same product categories among them. However, the export and import concentration indices are substantially higher than that of the bloc's trade with the ROW, which suggests that the group's trade is skewed towards a few product categories in the trade basket. Thus, the preferential tariff elimination in the major traded items would increase intra-bloc trade of the existing items substantially.

3. The GTAP Model

GTAP is a multi-region competitive CGE model comprising a system of linear equations. It is suitable for a comparative-static analysis of the preferential liberalisation among the BIMSTEC countries. Tariff and other distortions often have ramifications beyond the sector wherein the distortions take place (Gilbert, 2001). The CGE approach is capable of examining the appropriate feedback and interaction effects more appositely, particularly where the distortions are manifold that cannot be captured in the gravity or partial equilibrium models. It attempts to represent the main structural elements of interdependent open economies, using modern economic theory as a guide to equation specification through a large number of simultaneous equations. The model is widely used to estimate the

effect of an FTA by simulating the impact of eliminating tariffs on trade flows between FTA member countries (deRosa & Gilbert, 2005).

3.1 Basic Structure

For the present analysis, the standard GTAP model is adopted because most of the application adopts the standard model (Huff & Hertel, 2000). The effect of complete tariff elimination has been analysed for BIMSTEC keeping the external tariff of the individual members at the previous level. The examination of possible effects includes decomposition of welfare effect, trade balance and, the effect on the growth of real GDP on the member countries.

The standard GTAP model has been described in Hertel (1997). In the model, all markets are assumed to be perfectly competitive. Regional government can drive wedges between prices of the producers and consumers by imposing taxes and subsidies on commodities and factors. Buyers differentiate between home-grown and imported goods, and also different sources of imports by region of origin. Investment in each region comes from a global pool of savings wherein each region contributes a fixed proportion of its income. Investment allocation is made according to the existing relative rates of return (Siriwardana & Yang, 2008).

Formally, the production in sector i in region r uses labour, capital and intermediate inputs to produce output according to the following Leontief production technology:

$$Y_{i,r} = \min\left[\frac{INT_{j,i,r}}{a_{i,j,r}}, \left(K_{i,r}^{\beta_r} L_{i,r}^{1-\beta_r}\right)\right]$$

where $Y_{i,r}$ is the output of sector i good in r, $K_{i,r}$ and $L_{i,r}$ are capital labour respectively used to produce sector i good. $INT_{j,i,r}$ indicates an intermediate input originated in sector j in r but used to produce sector i good in r; $a_{j,i,r}$ is the coefficient that gives the amount of sector j intermediate input of r used to produce the sector i good in r; and β_r indicates the share of capital income in sectoral output in r. In case of agricultural sector, additional inputs are land and natural resources.

For region r, the output of good i is represented by the following function:

$$Y_{i,r} = [\delta_{i,r} YD_{i,r}^{\eta_{i,r}} + (1-\delta_{i,r}) X_{i,r}^{\eta_{i,r}}]^{1/\eta_{i,r}}$$

where $Y_{i,r}$ is the output supplied to home region or elsewhere, $YD_{i,r}$ is the domestic sales of output, $X_{i,r}$ implies exports of good i from r, $\delta_{i,r}$ indicates the

share of domestic sales of gross output, and $\eta_{i,r}$ is the elasticity of transformation between domestic sales and exports.

The domestic supply of goods comes from domestic sales and imports. A CES aggregation of imports and domestic supplies constructs the absorption of *r* as follows:

$$A_{i,r} = [\mu_{i,r} YD_{i,r}^{\sigma_{i,r}} + (1-\mu_{i,r}) M_{i,r}^{\sigma_{i,r}}]^{1/\sigma_{i,r}}$$

where $A_{i,r}$ is the Armington aggregation of domestic and imported goods, which implies that imports come from all regions with their share depending on import prices; $\sigma_{i,r}$ is the elasticity of substitution between domestic and imported items; $\mu_{i,r}$ indicates the share of domestic production in Armington product; and $M_{i,r}$ is *r*'s imports.

The value of *r*'s imports is equal to value of exports of other region and transportation costs of trade. Transportation services, $T_{i,r,s}$, are proportional to trade from *r* to another region *s* ($M_{i,r,s}$):

$$T_{i,r,s} = \tau_{i,r,s} M_{i,r,s}$$

Where $\pi_{i,r,s}$ is the transport cost per unit $M_{i,r,s}$.

The utility function in *r* is represented by a CES or Cobb-Douglas aggregation of final consumption of available in *r*. The total domestic demand is divided between household and consumption. Household consumption is a Cobb-Douglas aggregation of sector *i* commodities over all regions:

$$U_r = \prod_{i,r} C_{i,r}^{\gamma}$$

where U_r is *r*'s utility and $C^{y}_{i,r}$ its total consumption of *i*. Conversely, households earn factor income and receive transfers from their governments. Thus, the income of the representative household in *r*, I_r, can be presented by

$$I_r = \sum_i w_r L_{i,r} + \sum_r r_r L_{i,r} + RV_r$$

where w_r and r_r are wage and interest rates, and RV_r is the transfer received by the representative household in *r*.

A Cobb-Douglas aggregate also presents the government's consumption demand for all *i* commodities in region *r* as follows:

$$G_r = \prod_{i,r} GD_{i,r}^{\gamma}$$

where $GD^{y}_{i,r}$ represents the government consumption of commodities i in region r. This consumption is accommodated by its total revenue (G_r) from various sources:

$$G_r = \tau_k r_r \bar{K}_r + \tau_w w_r \bar{L}_r + \tau_{i,r} P_{i,r} Y_{i,r} + \tau_{N,r} P_{i,r} INT_{j,i,r}$$

where τ_k, τ_w, $\tau_{i,r}$ and $\tau_{N,r}$ represent the tax rates on capital, labour, intermediate income and intermediate inputs, respectively, and $P_{i,r}$ is the price vector.

Now, the market clearing condition for goods market is

$$Y_{i,r} = \sum_r C_{i,r} + \sum_{r,j} a_{i,j,r} INT_{j,i,r}$$

The global capital market clearing condition is

$$\sum_r \bar{K}_r = \sum_{i,r} K_{r,ri}$$

And labour market clearing condition for r implies

$$LS_r = \sum_i LS_{i,r}$$

3.2 Implications of Tariff Reform

A reduction in the bilateral tariff on imports of i from r reduces its price. Domestic consumers immediately substitute away from competing imports. The composite price of imports of sector j also reduces, thereby increasing the aggregate demand for imports. Cheaper imports also help reduce the composite price of the $INT_{j,i,r}$, which leads to excess profits at current prices. This results in increased output and creates an expansion effect in the economy, which increases the demand for primary factors. All these transmit the shock to other sectors in the liberalising region (Hertel & Tsigas, 1997).

3.3 Welfare

In the basic analysis of welfare changes, the standard GTAP model features a representative household of a region (country). Its behaviour is governed by an aggregate utility function, which is specified over private household consumption, public expenditure and savings per capita. The GTAP simulations compute the welfare change variable as the percentage change in aggregate per capita utility for a region due to a domestic policy shock. The changes in region r's money-metric equivalent variation (EV) of utility change (du_r) and any change in population (n_r) can be written as

$$dEV = 0.01\left(1 - (\Phi_{EV} / \Phi)\right) Y_{EV}\, n + 0.01(\Phi_{EV} / \Phi)(Y_{EV} / Y) D$$

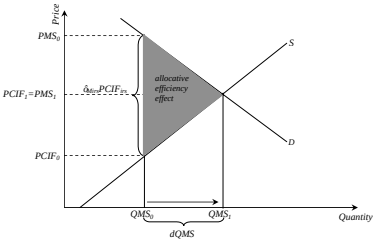
where y and x are the percentage change in regional total and per capita expenditure respectively, and p is the percent change in general price level to convert the nominal income and expenditure into real. Φ is the elasticity of expenditure with respect to utility in the regional demand system, which captures the impact of non-homothetic preferences for private consumption on a region's per capita utility. The region's total real income (D) is $D = Y(y - p)$ and $u\ \Phi = (x - p)$. And Y_{EV} is the expenditure required to obtain the new level of utility at initial prices due to a policy shock (Huff & Hertel, 2001).

For GTAP multi-region model, the decomposition of the *EV* is similar to that of the single region, wherein the main differences involve additional terms arising from the presence of import and export tariffs and the effect of changes in regional terms of trade.[4] The other important difference is the added regional dimension of the decomposition. Thus, changes in welfare in the multi-region model are attributed to

i. the interactions between taxes (both pre-existing and newly introduced taxes) and quantity changes taking place, expressed in the allocative efficiency gain (or loss),
ii. changes in the region's terms of trade, and
iii. changes in the relative prices of investment (capital goods) and savings (I-S effect).

Figure 1 displays the allocative efficiency effects of a region from preferential tariff elimination, where $\tau_{Mirs}PCIF_{irs}$ is the per unit tariff revenue on imports of good i from exporting region r into importing region s, associated with the *ad valorem* tariff rate τM_{irs}. It is multiplied by $dQMS_{irs}$, the change in the imports of i from r into s. The "Harberger triangle" is depicted by the shaded area in the Figure, which is the outcome of the tariff elimination. Both the base ($\tau_{Mirs}PCIF_{irs}$) and the height ($dQMS_{irs}$) are considered to evaluate the area of this triangle, and then add its value to the aggregate welfare measure (Hertel *et al.*, 2007).

Figure 1: Allocative efficiency effects from tariff elimination



4 The detailed decomposition of the multi-region EV is given in Huff and Hertel (2001), pp.29-45.

4. Results and Implications

An analysis of preferential liberalisation of BIMSTEC ideally involves analysing implications of the policy instruments on the structure of production at various levels. Tariffs exert direct and indirect influences on the relative prices of commodities. Demands for factors of production also change because of the changed product mix. The changes of relative prices of both outputs and inputs due to a trade liberalisation within BIMSTEC will be transmitted to the industries and input markets of the members as well as the other trading partners. A robust analysis of the possible welfare consequences of BIMSTEC FTA requires contextualisation of interactions among different sectors of the group. The GTAP model allows these changes within and between sectors in output mix and factor demands (Jallab *et al.*, 2007).

4.1 Welfare Effects

Based on GTAP database 7, the money-metric decomposition of welfare effect in the standard GTAP model of BIMSTEC FTA is depicted in Table 3. The simulation is carried out after aggregating the data of 57 sectors into 10 broad sectors.[5] The net welfare effect is the sum of allocative efficiency, terms of trade and I-S effects, which is US$972.7 million in BIMSTEC. The results demonstrate that Bangladesh is net loser in forming BIMSTEC FTA, which amounts to US$ 213.8 million from full tariff elimination. The other countries derive net welfare gain from the preferential liberalisation, although the amount varies depending on the extent of various effects. Thailand derives the highest net gain, which is US$ 582.2 million, followed by India, Sri Lanka and Myanmar.

Table 3: Decomposition of welfare effects of BIMSTEC FTA (measured by Equivalent Variation) ($US million)

	Allocative Efficiency	Terms of Trade	IS	Total
Bangladesh	-95.1	-119.2	0.5	-213.8
India	18.5	318.8	57.8	395.1
Sri Lanka	-2.1	117	25.6	140.5
Myanmar	-13.5	80.4	1.7	68.6
Thailand	112.2	540.1	-70.1	582.2
ROW	-364.6	-4.4	-0.2	-1,321.7

Source: GTAP simulation

[5] The base year of the data is 2004. See, Narayan and Walmsley (2008) for details on the atabase.

The ROW incurs loss in allocative efficiency in almost all the sectors with very small gain in extraction and transport sectors. However, its loss of terms of trade takes place in all the sectors. The amount of loss is reported in Table 3.

The welfare gain for Thailand is due largely to allocative efficiency improvements. For Bangladesh, the overall welfare impacts are negative, much of which can be attributed to adverse terms of trade effects.

Among the BIMSTEC members, only Bangladesh incurs terms of trade loss, which is significant. The order of terms of trade gain for the other countries is the same as net welfare gain. I-S effect is negative for Thailand and Bangladesh. Thailand and India derive allocative efficiency gains while the other members reveal loss.

Table 4 : Commodity decomposition of welfare effects

	Bangladesh	India	Myanmar	Sri Lanka	Thailand	ROW
Allocative Efficiency						
Grains Crops	22	10.6	9.8	0.8	2.9	-34.1
Animal and Meat	-0.4	1	0.1	0	0.4	-6.6
Extraction	-5.3	9.7	1	-4.8	53.5	0.3
Processed Food	-1.3	-5.1	0.1	0.1	10.3	-40.9
Textiles & Wearing Apparel	-74.3	-7.8	-9.4	-3	5.8	-88.1
Light Manufacturing	5.5	10.2	-1.9	-1.1	24.3	-48.6
Heavy Manufacturing	-44.6	-5.6	4.3	-4.6	9.1	-70.8
Construction Services	1.1	6.4	3.5	-0.1	18	-70.8
Transport & Communication	-0.3	1.1	-4.3	-0.9	-5.5	2.9
Other Services	2.5	-2	-5.3	0.1	-6.6	-15.3
Terms of Trade						
Grains Crops	-6.7	6.8	11.5	41	18.2	-64.3
Animal and Meat	0	3.6	0.1	1.1	3.9	-8.9
Extraction	4.4	14.4	4.2	13.4	-10.8	-30.3
Processed Food	-4.1	18.4	5.4	13	39.2	-73.2
Textiles & Wearing Apparel	-115.1	59.2	43.1	3.2	44.5	-38.9
Light Manufacturing	-1.7	65.6	1	3.1	91.1	-160
Heavy Manufacturing	-2.7	55.2	12	1.5	206.1	-270.6
Construction Services	0	1.2	0.6	0	2	-3.9
Transport & Communication	1	33.1	28	2.2	99.5	-163.8
Other Services	5.7	61.3	11.1	1.9	46.4	-127.6

Source: GTAP simulation.

The results support the findings of Strut (2008) who conducted simulation of BIMSTEC FTA based on database version 6 in recursive dynamic model projected for the year 2020. The findings reveal a net welfare loss for Bangladesh, amounting to US$ 267 million, which includes loss of terms of trade, capital and equity, although a meagre gain of allocative efficiency (US$ 3 million) is found in the net welfare effect. The other countries derive significant welfare gain from full tariff elimination within the bloc. This indicates that BIMSTEC FTA is beneficial for the members except Bangladesh although there is a possibility of a small efficiency gain for the country in the long run when all the sectors of the economy are taken into account.

Commodity decomposition of the allocative efficiency effect helps identify the sectors which incur loss and pull off gains. The results reported in Table 4 indicate that six broad sectors out of ten end up with loss. Bangladesh incurs substantial allocative efficiency loss in the textiles and wearing apparel sector, which is followed by heavy manufacturing. Indeed, the textiles sector is the major strength of the Bangladesh economy which earns more than three quarters of its export receipts and employs around 2 million labourers. A substantial loss in this sector implies significant adverse effect of the FTA on the economy. Conversely, grains crops achieve notable gains, followed by light manufacturing and some other sectors. But these cannot offset the losses and the country ends up with significant allocative efficiency loss as depicted in Table 4. India, Sri Lanka and Myanmar also go down in textiles but these are small compared to that of Bangladesh.

4.2 Effects on Intra-BIMSTEC Trade

The country level changes in sector-wise exports are interesting. Bangladesh's exports to Sri Lanka and Thailand increase in most of the sectors, and majority of the sectors would increase exports to India and Myanmar. The textiles and apparel sector, which faces substantial allocative efficiency and terms of trade loss, witnesses a notable increase in exports except to Sri Lanka. Exports of heavy manufacturing also increase notably, except to Myanmar. Overall, BIMSTEC FTA opens up a significant potential export market for Bangladesh in India and a reasonably prospective market in the other countries.

India's exports to Sri Lanka increase in all the sectors, while decrease marginally in a few sectors like construction, transport and other services in Bangladesh, Myanmar and Thailand. Conversely, Myanmar's exports to Bangladesh demonstrate notable reduction in sectors that include agriculture, extraction, textiles, manufacturing and services. Its export to India and Sri Lanka also decreases in five to six sectors but significant loss takes place in livestock.

Table 5 : Changes in intra-BIMSTEC exports (per cent)

	Bangladesh					India				
	India	Sri Lanka	Myanmar	Thailand	ROW	Bangladesh	Sri Lanka	Myanmar	Thailand	ROW
Grains Crops	127.13	23.17	26.37	36.05	3.92	70.1	108.78	18.87	59.06	-2.64
Animal and Meat	148.87	11.35	30	43.27	8.45	19.78	267.47	88.08	129.76	-3.77
Extraction	-12.64	-20.53	-23.57	18,260.17	-23.61	300.42	231.91	24.79	1,304.2	-3.03
Processed Food	173.86	57.77	52.22	640.08	2.81	48.85	83	25.38	93.81	-1.94
Textiles & Wearing Apparel	189.87	12.86	182.17	579.76	9.45	235.2	4.04	89.59	262.67	-2.64
Light Manufacturing	139.88	63.55	31.89	17.55	0.84	210.96	54.57	18.53	23.21	-1.89
Heavy Manufacturing	106.99	120.41	9.3	112.85	1.47	127.49	38.15	8.2	67.65	-1.46
Construction Services	-1.77	5.21	-1.28	-0.97	-2.85	0.93	6.34	-0.22	0.1	-1.8
Transport & Communication	-0.97	3.97	-0.3	0.16	-1.71	-1.04	4.07	-0.19	0.25	-1.6
Other Services	-1.56	2.88	-1.63	-0.62	-2.18	-1.26	3.31	-1.22	-0.21	-1.77

	Myanmar					Sri Lanka				
	Bangladesh	India	Sri Lanka	Thailand	ROW	Bangladesh	India	Myanmar	Thailand	ROW
Grains Crops	-18.26	123.14	41.25	10.1	-38.02	76.76	428.52	28.56	79.18	-6.95
Animal and Meat	-43.46	-37.62	-39.39	-14.75	-39.58	217.1	1558.21	-34.75	-12.84	-13.92
Extraction	-28.04	63.39	-6.66	-11.73	-11.59	465.12	159.64	-28.98	4,548.83	-28.29
Processed Food	107.11	119.85	-1.14	-11.48	-26.7	116.12	302.56	-5.31	502.48	-4.32
Textiles & Wearing Apparel	-24.69	-7.38	-8.21	66.77	-4.37	349.98	148.5	136.29	473.44	-9.94
Light Manufacturing	68.62	97.22	30.49	5.35	-10.49	193.1	145.72	389.73	8.97	-1.74
Heavy Manufacturing	144.08	201.94	46.03	12.28	-12.21	132.17	161.27	40.66	69.72	-6.99
Construction Services	0.21	-1.42	5.58	-0.62	-2.51	-8.39	-9.86	-9.42	-9.13	-10.85
Transport & Communication	-5.46	-5.28	-0.57	-4.22	-5.99	-9.95	-9.77	-9.16	-8.77	-10.45
Other Services	-7.54	-7.44	-3.26	-6.56	-8.02	-10.29	-10.19	-10.25	-9.33	-10.75

	Thailand				
	Bangladesh	India	Sri Lanka	Myanmar	ROW
Grains Crops	133.31	371.86	146.97	114.57	-1.76
Animal and Meat	128.45	489.13	355.51	-11.76	-3.99
Extraction	49.55	220.45	74.17	18.86	-5.92
Processed Food	146.82	605.33	79.53	21.71	-1.83
Textiles & Wearing Apparel	271.83	165.31	4.16	31.89	-3.87
Light Manufacturing	217.11	147.44	75.92	36.88	-3.04
Heavy Manufacturing	221.44	127.26	68.3	14.48	-2.29
Construction Services	-0.49	-2.08	4.88	-1.59	-3.15
Transport & Communication	-2.65	-2.45	2.4	-1.79	-3.18
Other Services	-2.87	-2.76	1.63	-2.82	-3.36

Source: GTAP simulation.

Sri Lanka experiences an insignificant loss of exports to Bangladesh and India in service sectors. In addition to these sectors, the loss of exports to Thailand extends to livestock. The notable decrease in the country's exports to Myanmar takes place in livestock and extraction sectors. On the other hand, Thailand's loss is small in exports to Bangladesh and India in services, to Myanmar in services and livestock, and to Sri Lanka in no sector.

In general, Thailand appears to be the most promising export market for Bangladesh, India and Sri Lanka especially for potentially spectacular growth in exports of extraction. These countries are also potentially good export market for Thailand; that is the possible gains are both ways. Thailand has good prospects in grain exports to Myanmar and has the possibility to expand exports in extraction and manufacturing. Myanmar also has good prospects in enhancing export in processed food and manufacturing to Bangladesh, and in grains and extraction in addition to these two sectors to India. Its textiles sector has a good prospect in Thailand.

The countries also incur loss in exports to the rest of the world in all the sectors excluding Bangladesh. The losses are very small for Thailand and India in all sectors, but significant in grains crops and meat for Myanmar and extraction for Sri Lanka. Bangladesh's exports of extraction sector are also affected significantly.

4.3 Trade Balance and Real GDP

The trade balance or net exports, defined to be the difference between the monetary value of exports and imports in an economy over a period of time, is found to be negative for BIMSTEC. At the country level, India will enjoy a trade surplus whereas the other countries will come up with trade deficit due to BIMSTEC FTA. Thailand's loss is the highest among the members, which accounts for most of the negative trade balance of the grouping.

Table 6 : Changes in Trade Balance and Real GDP

	Bangladesh	India	Sri Lanka	Myanmar	Thailand	ROW
Trade Balance ($US Million)	-251.11	389.43	-214.05	-31.91	-1426.33	2,212.94
Value of GDP (% change)	-0.61	0.42	2.09	4.68	0.87	-0.02

Source: GTAP simulation.

Now the question is whether the possible trade deficits are necessarily bad or otherwise. Unbalanced trade flows have two benefits. They shift worldwide production to its most productive location and allow individuals to stabilise their consumption over the business cycles. That the trade balance declines due to BIMSTEC FTA indicates that a member invests in physical capital to take advantage of productive opportunities, which in turn expands the physical infrastructure, strengthen capacity to access natural and human resources, and take advantage of new technologies. This new investment is partly financed by borrowing from foreign sources without reducing the current level of consumption. The trade balance goes into surplus when the country repays the debts. Thus, a trade deficit may be an indication of an emergent and vigorous economy. In addition, it is important for long-term sustenance of the economic development by increasing a country's productive capacity.

Table 6 also portrays the impact of the implementation of BIMSEC FTA on real GDP for the member economies. This reveals clear and substantial gains from liberalisation for the BIMSTEC members except Bangladesh. The LDC member Myanmar is likely to derive substantial growth of real GDP, followed by a developing member Sri Lanka. The average GDP growth for BIMSTEC is also positive and notable. In a dynamic projection in GTAP, Strutt (2008) reveals that Bangladesh's growth of real GDP would be substantial in the long run.

The rest of the world would enjoy a trade surplus, which is just the opposite of the outcome for BIMSTEC. However, the positive growth effect for the grouping may result in an insignificant average economic slowdown outside the bloc.

5. Concluding Remarks

The present paper adopts GTAP model to analyse the possible effects of a preferential liberalisation in BIMSTEC through forming an FTA within the grouping. The analysis indicates that the trade effects are higher for the bigger economies. This has a powerful policy implication for devising a proper design of the compensation mechanism for the smaller economies and extend technical support so that they can recover loss and turn out to be competitive before long in order to make the grouping more promising and prolific. Policymakers should draw lessons from the successes and drawbacks from similar liberalisation schemes and initiate course of actions accordingly.

The analysis reveals that Bangladesh is the only member which would incur a net welfare loss by joining the BIMSTEC FTA. The findings of Strutt (2008) also support the present evidence, which indicate that LDC member Bangladesh would

incur a net welfare loss immediately and in the long run in terms of dynamic projection. The country would incur trade deficit and a negative growth of real GDP. The real outcome would, however, depend on the trajectory of the liberalisation and investment promotion within the scheme, as well as the future dynamics of regional and global economy. Since the bloc's welfare effect is positive, an FTA would have an overall positive impact on the bloc. Keeping in mind the possible net loss of Bangladesh, careful attention has also to be given to the exact nature of the reform particularly in terms of negative list.

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The Effectiveness of Microfinance in Reducing Poverty of the Beneficiary Households: A Micro Level Study

Md. Alamgir Hossain Bhuiya[1]

Abstract

The study attempts to evaluate the influence of the microfinance programme of BRAC on poverty status of the beneficiary households. Although both primary and secondary data have been utilized for the study, emphasis has been given on primary data collected through field investigation covering 205 beneficiary and 100 non-beneficiary households in four programme villages of Phultala thana under Khulna district of Bangladesh. Primary data has been used mainly to show and examine the influence of the programme on poverty status of the beneficiary households. Secondary data has been utilized for necessary comparison and comments. The impact of the intervention has been shown mainly at household levels comparing the poverty status of Eligible Programme Member (EG-PM) households along with that of Eligible Non-programme Member (ENPM) households in terms of identified indicators. Although various indicators are utilized to show the impact on poverty status, we have consciously selected some crucial indicators, such as: estimation of poverty lines (upper and lower); calculation of incidence of poverty, poverty gap, and severity of poverty based on field data - using Foster Greer Thorbecke (F.G.T) poverty index. Our findings show evidence of positive impact of the intervention in reducing poverty of the beneficiary households, but the result is not statistically highly significant.

1. Professor, Deptment of Economics, Islamic University, Kushtia

1. Introduction

Probably among the most critical issues confronting economics and economists today is 'poverty', which has come to acquire an increasing rural face. Over the years, diverse policies have been used to reduce poverty especially in the South Asian region particularly after the Beijing Conference of 1995. Among them the most prominent is the innovative strategy of microfinance, focusing on poverty reduction integrating the most dis-advantgaed rural poor especially women. Utilizing micro-credit as a vehicle, efforts are being made to strengthen the status of the rural poor not just economically but socially as well.

The growth of micro-credit based organizations over the last two decades has attracted the attention of bilateral and multilateral donor organizations, the commercial banking sector, national governments, and the media. This 'small peer-group' model of financing system is eulogized by the global development community as the panacea that impacts positively on both poverty and dis-empowerment of the poor, in particular, women. Microfinance programmes have achieved worldwide recognition of reaching especially the dis-advantaged in remote rural areas. "To reach credit assistance to 100 million of the world's poorest families by 2005, especially the women of these families, to enable them to set up income-generating enterprises"- is the consensus at the Micro-credit Summit held in Washington. This is the ultimate recognition of 'micro-credit' as the panacea for the structural issues of poverty and underemployment (Micro-credit Summit Declaration, 1997, **http://www.microcreditsummit.org**).

The origin of the 'Micro-credit' model was initiated in Bangladesh, which has historically created some of the world's largest, oldest and best-known anti-poverty programmes. The scale of micro finance institutions (MFIs) and the magnitude of their outreach has been quite remarkable, the growth of the NGO-financed micro-credit movement today being so massive that it has overtaken the formal financial sector. It is estimated that the NGO-financed micro-credit sector provides 17 billion taka in micro-credit in Bangladesh, while agricultural banks and nationalized commercial banks provide 11 billion taka (Kalpona, 2004, p.2).

Bangladesh is one of the poorest countries in the world, with a high level of underutilized and unutilized natural resources, combined with an environment, which has a high natural calamity risk. It has a high population density and an untrained and illiterate workforce. It is predominantly rural where about 76 percent of the population live in the rural areas and about 44 per cent being below the poverty line (HIES 2000, p.38). Poverty alleviation is one of the most urgent

and important challenges faced by the policy makers at present in Bangladesh. About half of the labour force of Bangladesh are women and majority of them live in the underdeveloped and undeveloped rural areas. However, they are deprived even more than man in getting economic opportunities due to the lack of proper education, training and employment opportunities. Increasing participation of women in the economic activities is indispensable for the proper expansion and development of the country.

Credit is one of the most important resources to which the landless poor do not have easy access. Lack of access to credit is the major constraint for the dis-advantaged rural poor from participating in economic activities. Collateral requirement, complex procedure, poor communication and inadequate banking networks have restricted the availability of credit in the rural areas. Against this background, various government and non-government agencies, intellectuals, researchers and policy makers have realized that true development can never be achieved unless and until the disadvantaged rural poor are mobilized and participate in the development process. For that, along with various government interventions, a large number of Non-Government Organizations (NGOs) registered with the Ministry of Women Affairs and NGO Affairs Bureau (NAB) are working in remote rural areas for reducing poverty of the rural poor. Among them, the most important are Bangladesh Rural Advancement Committee (BRAC), Grameen Bank (GB), Association for Social Advancement (ASA), and Proshika Manobik Unnayan Kendra (PK).

Although a large number of organizations are working for reducing poverty of the rural poor, we have consciously selected the most well-known and largest micro-credit programme of BRAC in order to assess its economic impact on the poverty status of the beneficiary households. Although BRAC implements a variety of programmes for the economic and extra-economic well-being of the poor, its core function is alleviation of rural poverty through micro-credit. BRAC is now recognized as a model for rural development because of its Micro-Credit (MC) scheme. Hence this study attempts to evaluate the impact of MC intervention rather than evaluation of BRAC in its entirety.

The main reasons behind the selection of BRAC's programme for detailed investigation are: First, BRAC is broadly representative of the micro financial market in Bangladesh aiming to reduce poverty in remote rural areas. Second, BRAC has a commitment to deliver most of its finance to hard core rural poor and also to create employment opportunities for those unemployed. This is not true for any of the other rural credit programmes of Bangladesh. Third, this programme

has been in operation since 1990 covering all the 64 districts of Bangladesh, with the objective of bringing about a positive change in the welfare of the rural poor through especially home-based income generating activities; and finally, besides micro-credit, BRAC has additionally implemented the Human Rights and Legal Education Programme (HRLEP) for its beneficiaries in order to increase their knowledge about human rights, legal issues and social awareness. No other institution has taken up such types of initiatives.

Our focus is to evaluate whether BRAC's micro-credit programme plays any role in reducing poverty of the beneficiary household. This evaluation is based on the estimation of identified indicators, such as: i) poverty line — both upper and lower, ii) incidence of poverty, iii) poverty gap, and iv) severity of poverty — using Foster Greer Thorbecke (F.G.T.) class of poverty index.

For clear representation, this paper has been organized as follows: section 1.2 deals with the objectives of the study; section 1.3 briefs the methodology of the study; section 1.4 presents the detail findings of the study; and finally, section 1.5 provide conclusions and policy recommendations.

1.2 Objectives of the Study

The main objective of this study is to show the impact of the microfinance programme of BRAC on poverty status of the beneficiary households. For that the specific objectives are:

- to calculate the 'poverty line(s)' ? both upper and lower based on field data;
- to calculate the incidence of poverty - both absolute and hard core;
- to measure the 'depth of poverty' and 'severity of poverty'- using Foster Greer Thorbecke (F.G.T) class of poverty index; and finally-
- to examine the impact of the scheme on poverty status of the borrower's households.

1.3 Methodology

The study is based mainly on primary data collected through household investigation. Secondary data have also been sometimes used for necessary comparison and comments. Based on household expenditure data, the cost of basic needs (CBN) food bundle approach and Foster Greer Thorebecke (F.G.T) poverty index have been used to estimate the selected poverty indicators of the sample households. The survey was conducted during October 2008 and December 2008.

1.3.1 Study Area Selection and Choice of Villages for Primary Field Survey

The location of our study area 'Phultala Thana' is under Khulna district of Bangladesh. The Thana consists of 4 unions and 25 villages having a total population of about 86,000 persons (Community Series of Bangladesh Population Census, Khulna, 2001, pp. 4-7). Although no data is available regarding poverty status at Phultala thana level, Khulna division and national level data suggest that both absolute and hard core poverty are slightly higher in Khulna as compared to their national level counterparts (Table 1.3.1-B), but the difference is not significant. In considering the indicators mentioned in tables 1.3.1-A and 1.3.1-B, the Phultala figures suggest that the thana is close to being 'average' status, except higher population density as well as larger household size as compared to the district, division and national averages.

Table 1.3.1-A: Annual Growth Rate of Population, Density and Average Household Size for Phultala Thana, Khulna District, Division and National Levels of Bangladesh.

Sl. No	Indicators	Phultala Thana	Khulna District	Khulna Division	Country
1	Annual growth rate of population (%)	1.60	1.28	1.32*	1.48
2	Density of population (per sq. km)	1195	712	682	843
3	Average household size	5.2	4.6	4.7	4.8

Sources: 1) Bangladesh Population Census 2001, pp. 4 –7, 16-18
2) Population Census 2001, Community Series, Khulna District, pp. x –xv.

Table 1.3.1-B: Poverty Status of Phultala Thana, Khulna Division and National Levels of Bangladesh (% of population below poverty line)

Sl. No	Indicators	Phultala Thana	Khulna Division	National Level
1	Absolute Poverty (using upper poverty line (<2112 K.Cal/person/day)	--	51.4	49.8
3	Hard Core Poverty (using lower poverty line (<1805 K. Cal/person/day)	--	35.4	33.7

Sources: i) Report of the Household Income and Expenditure survey 2000, pp. 43

1.3.2 Sampling Techniques & Collection of Data

In identifying the sample, we adopted the two-stage cluster sampling design. In the first stage, we divided the total geographical area of the Upazila into four different clusters, each of them having one Union. In the second stage, we randomly selected one village from each of the four clusters, and finally our sample villages became 4. We selected only four villages in considering expenditure and time limitation. After selecting four villages, we decided to collect data from all the beneficiary households of the villages and finally we interviewed a total of 205 beneficiary women. Along with BRAC beneficiaries from the four villages, we additionally selected 25 non-beneficiary households of similar attributes from each village having a total of 100 non-beneficiary households. Non-beneficiary households or comparison group included those households, which have similar socio-economic condition but were not associated with BRAC or any other poverty alleviation programmes. Finally, our total sample size is thus 305 households, that is, 205 beneficiary and 100 non-beneficiary households.

After selecting the sample households a detailed survey was carried out using a structured questionnaire covering all the sample households. As we decided to calculate the poverty line based on cost of basic needs approach, we emphasized data collection mainly on various aspects relating to expenditure. The survey covered both food and non-food items using different reference periods. A very important focus in the survey was on the household level impact of BRAC's credit as measured through per-capita expenditure. Data on household expenditure have been analysed to explain the poverty status of the sample households.

1.3.4 Techniques of Data Processing and Analysis

For analyzing data, respondents are divided primarily into two groups according to their socio-economic status and affiliation with the programme. These are: Beneficiary Group or Programme Members (PMs) and Eligible Non-beneficiary Group or Eligible Non-Programme Members (ENPMs). Programme Member households have been further divided into two sub-groups according to BRAC's official eligibility criterion: Eligible Group (EG) and Non-eligible Group (NEG). The total sample households are thus categorized into three sub-groups:

i. Eligible Programme Member (EG-PM)
ii. Non-Eligible Programme Member (NEG-PM), and
iii. Eligible Non-Programme Member (ENPM)

After dividing the total sample households into the above three sub-groups, comparisons have been made between eligible Programme Member households (EG-PM) along with Eligible Non-Programme Member (ENPM) households in order to show and compare the programme impact on poverty status of the beneficiary households in terms of selected indicators.

Length of programme membership is considered in this study as a proxy to show the impact over time. For that, all sampled programme members are divided into three categories by measuring length of membership in months. The categories are: new members with membership length up to two years (1-24 months group), those with membership length of more than two years to six years (25-72 months group), and the oldest group with membership length of more than six years (72+ months group). Inter-group comparison will show if there exists any bias during member selection, which may affect their performance. Further, it will show whether there exists any positive or negative association between the length of membership and changes in poverty status of the beneficiary households in terms of the identified indicators. Various statistical tools and methods have been used for the study. Computer software mainly MS-Excel has been applied to analyze the data.

1.4 Findings of the Study

For analyzing the impact of micro-credit intervention on poverty status of the beneficiary households, the amount of credit, training and other logistic supports are considered as input variables, which may influence the poverty status of the participating households. The present study attempts to investigate whether the microfinance intervention has had any influence in reducing poverty of the beneficiary households. Though a number of indicators directly or indirectly are related in poverty measurement, we have consciously chosen here only some crucial indicators (poverty lines, incidence of poverty, poverty gap and severity of poverty) for estimation in order to show the programme impact on poverty status of the beneficiary households.

1.4.1 Estimated Results and Discussions

The minimum energy requirements for the average Bangladesh population as recommended by various institutions vary significantly. Several studies on rural poverty in Bangladesh used a consumption bundle providing an intake of 2112 k. calories for upper poverty line (absolute poverty) and 1805 k. calories for lower poverty line (hard core poverty), which by and large conforms to the minimum

diet recommended by the Food and Agriculture Organization (FAO) of the United Nations (Cited in Muqtada, 'Poverty and Inequality', 1998, p.59).

The cost of basic needs (CBN) food bundle approach has been used to compute the poverty line based on the household expenditure survey data. Table 1.4.1-A illustrates the goods used, the price used to cost the various items (the prices were derived from the independent price survey carried out in Khulna between June and September 2003) and the poverty line expenditure per head. As Ravellion et. al. (1994) pointed out, whilst there is considerable controversy with regards to whether to use the 'Cost of Basic Needs' (CBN) or Food Energy Method (FEM), there is little disagreement in Bangladesh with the composition of the 'typical' bundle of goods and their individual weights within the food bundle. The expenditure required on food bundle to cross the absolute poverty line on a calorific threshold of 2112 calories per person per day has been calculated taka 28.20 and the Ultra poverty line (hard core poverty) based on threshold of 1805 calories is 24.10 taka.

Table1.4.1-A: Cost of Basic Needs Food-bundle used to derive the Poverty Line in Phultala, Khulna, 2008

Sl. No.	Items in Minimum Consumption-bundle	Per Capita Normative Daily Requirement		Price	
		Calories	Grams	Taka/ kg	Cost of required amount
1	Rice (course)	1386	397	26	10.32
2	Wheat	139	40	20	.80
3	Pulse (khessri)	153	40	46	1.84
4	Milk (cow)	39	58	30	1.74
5	Oil (soabin)	180	20	75	1.50
6	Meat (beef)	14	12	180	2.16
7	Fish (fresh water)	51	48	120	5.76
8	Potato	26	27	15	0.40
9	Other vegetables (leafy & non-leafy)	36	150	16	2.40
10	Sugar/Guur	82	20	36	0.72
11	Fruits (banana)	6	20	28	0.56
12	**Total**	**2112**	**832**	**–**	**28.20**

Absolute poverty line expenditure on food (2112 k.cal) is calculated taka.28.20/ person/ day and hard-core poverty line expenditure (1805 k.cal) is taka.24.10/ person/ day.

After determining poverty line(s) expenditure (upper poverty line expenditure Tk.28.20 per day, per person and lower poverty line expenditure Tk.24.10 per day, per person), we have classified the sample households around this line according to the extent, depth and severity of poverty. The Foster Greer Thorbecke (FGT) poverty indicators have been used for the measurement of poverty in terms of incidence of poverty, poverty gap and severity of poverty of both the beneficiary and non-beneficiary group in order to show the programme impact in reducing poverty. Algebraically F.G.T poverty index can be expressed as follows:

$$P_\alpha = \frac{1}{n}\sum_{i=1}^{q}\left\{\left[\frac{z - y_i}{z}\right]\right\}^\alpha \qquad \textbf{… …. (i)}$$

Where, z is the poverty line
q is the number of person/households living below the poverty line
y_i is the expenditure of ith dividuals/ households
n is the size of the survey population and
α is 0, 1, 2 (respectively indicates incidence, poverty gap and severity of poverty)

- If is 0, then P_0 q/n = …… (ii)

The P_0 measure tells us about the 'incidence of poverty' or the 'headcount ratio'— which indicates the number of people/household below the poverty line as a proportion of the total population. A limitation of this measure is that it does not take into account the average income shortfall from the poverty line (i.e. poverty gap). However, this limitation can easily be overcome using the following equation.

- If α is 1, then $P_1 = \sum_{i=1}^{q}\left[\frac{z - y_i}{z}\right]$ ……. (iii)

P_1 indicates the '**depth of poverty'** or **'poverty gap'**, which tells us the average shortfall in expenditure per head of a poor household from the poverty line. P_1 is also useful in that it can be used to calculate the minimum cost requirement, per head of population in order to eliminate poverty. If an anti-poverty scheme 'filled' each household's gap exactly to the point where all poor households reach the poverty line, then this would constitute the minimum cost of eradicating poverty (Ravellion 1995). However P_1 does not capture income inequalities, which the (severity of poverty) measure does.

- If is 2, then $P_2 = \frac{1}{n}\sum_{i=1}^{q}[\frac{Z - y_i}{Z}]^2$ ..... (iv)

P_2 indicates the '**severity of poverty'** or **'poverty intensity.** P_2 measure allows for an expenditure improvement of a person/household for below the poverty line to be valued more than the same gain for a person just short of the poverty line. Hence P_2 is an indicator of the 'severity' of poverty and help us to capture income inequalities.

Depending on the poverty line expenditure (both upper and lower) and using the Foster Greer Thorbecke poverty index, the estimated results of poverty incidence (both absolute and hard core poverty), poverty gap (P_2) and severity of poverty (P_2), are presented in Tables 1.4.1-B and 1.4.1-C, according to eligibility and length of membership status.

Before analyzing the estimated results presented in Tables1.4.1-B and 1.4.1-C, it ought to be mentioned here that the estimated poverty incidence (both absolute and hard core poverty) are higher among sample (beneficiary) households as compared to their Khulna division and national level counterparts (Table 1.3.1-B). It is because both Khulna division and national level poverty incidence have been calculated considering all households, instead of any category of the society, but in our study we have considered only programme beneficiary and eligible non-beneficiary households — those normally are the marginal, dis-advantaged and the poorest class of households of the society. According to BRAC's official eligibility criterion, a household is eligible to become its member if it owns less than or equal to 50 decimals of land and the main bread winner has to sell 100 days of labour per year for their survival. So, it is quite reasonable that the incidence of poverty among programme member households is higher, compared to that of division and national levels. Therefore, instead of comparing the estimated poverty indicators of our sample beneficiary households along with that of division and national level, we have compared it to the eligible non-programme member (ENPM) households (the households that are eligible to participate in the BRAC's poverty alleviation programme according to it's official eligibility criterion but did not participate yet- are termed as ENPM households) in the programme area and logically hope that it would be able to represent much more accurate and clear-cut evidence to show whether the programme has any impact in reducing poverty of the beneficiary households.

Table 1.4.1-B shows the proportion of households living under the absolute poverty line is 79 per cent for ENPM households, but 65.8 percent for PM households at aggregate level, and 73.3 per cent for EG-PM households. Those

living under extreme poverty line have been estimated at 44.4 per cent for PM members as a whole and 52.6 per cent for EG-PM households, compared to 61 per cent for ENPM households. The proportion of households living under absolute poverty and hard-core poverty lines of EG-PM households are respectively 6 per cent and 9 percent less than those of their counterpart of ENPM households.

Among PM households, the proportion below the ultra poverty line, poverty depth and severity figures suggest that EG-PM households who are poor are more likely to be 'ultra poor' as compared to NEG-PM group. For instance, the typical poor PM (EG-PM) members' shortfall is 19 per cent from the poverty line consumption, which is significantly greater than 5 per cent shortfall of the NEG-PM group (Table 1.4.1-B).

The relative share of absolute poor and ultra poor are higher for ENPM group as compared to EG-PM households. Similarly, depth of poverty (P_2) and severity of poverty (P_2) figures are also higher for ENPM group as compared to their respective counterpart of EG-PM households (Table 1.4.1-B).

Further, though the incidence of poverty does not show any specific trend along with the length of membership, which might be the results of incorporating a higher proportion of non-eligible households in BRAC's credit scheme in recent times. But in case of poverty gap () and severity of poverty (), the figures have been found lowest for the oldest (above 72 months category) membership length group (Table1.4.1-C). These findings suggest that, to some extent, BRAC's micro-credit intervention has been able to lift a proportion of its members out of poverty due to their association with the programme. Further, it also reveals that the programme has helped to reduce the poverty gap, and the severity of poverty of the member households.

Table 1.4.1-B: Poverty Indicators by Household Eligibility Status

Sl. No	Poverty Indicators	PM Households			ENPM Households N=100
		EG-PM N=135	NEG-PM N=70	Total N=205	
1	% below absolute poverty line (P_o)	73.3	51.4	65.8	79
2	% below hard core poverty line (P_o*)	52.6	28.6	44.4	62
3	Poverty depth (P_1)	0.19	0.05	0.14	0.22
4	Poverty Severity (P_2)	0.07	0.04	0.06	0.09

Source: Household expenditure survey. Poverty lines (absolute and hard core) are calculated based on cost of basic needs approach. Incidence of poverty, depth of poverty, and severity of poverty indicators, have been estimated using Foster Greer Thorebecke class of poverty index.

Fig-A: Incidence of Poverty (absolute & hardcore) by Household Eligibility Status

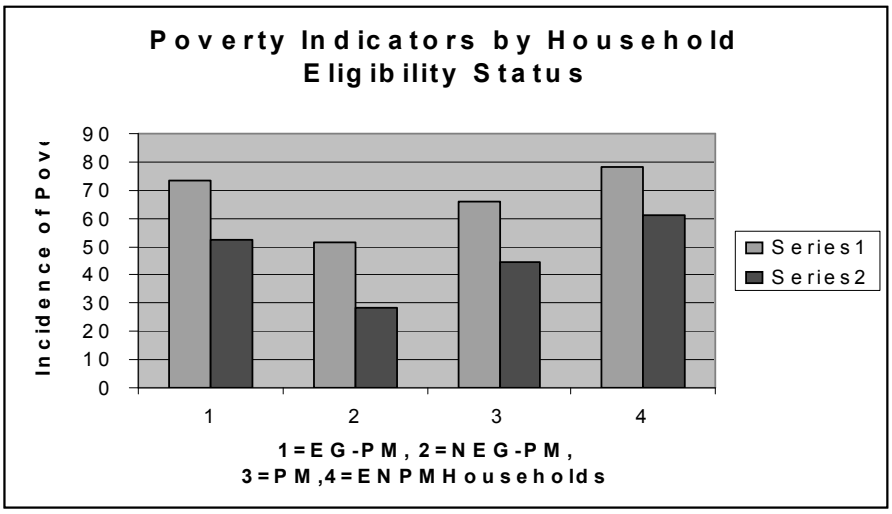
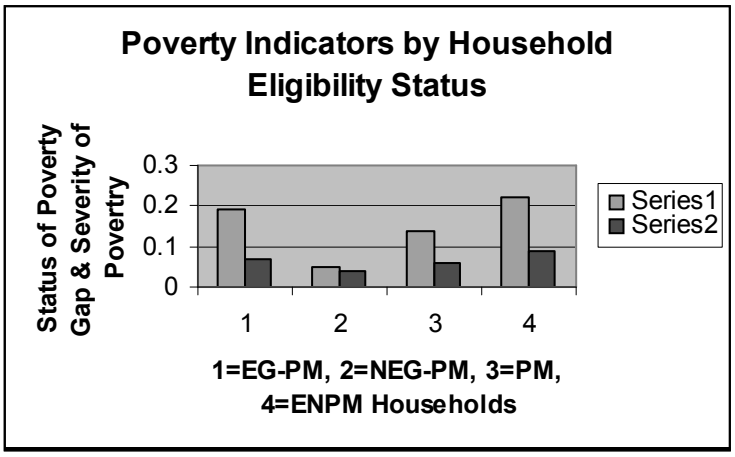


Fig-A: Poverty Gap and Severity of Poverty by Household Eligibility Status



1.5 Conclusions and recommendations

The findings of this study show that BRAC inputs have a positive impact on poverty status of the participants as well as their households but the results are not highly significant. In summarized form we can draw the following conclusions.

Findings in terms of identified poverty indicators have shown positive results. The incidence of poverty both in terms of 'absolute' and 'hard core' poverty has been found lower in EG-PM households as compared to their respective counterparts in the ENPM households.

Table: 1.4.1-C Poverty Indicators by Length of Membership Status

Sl. No	Poverty Indicators	PM Households (Length of membership in months)			
		1-24 months N=37	25-72 N=102	Above 72 N=66	Total N=205
1	% below absolute poverty	62.2	69.6	62.1	65.8
2	% below hard core poverty	43.2	47.1	40.9	44.4
3	Poverty depth (P_1)	0.14	0.15	0.12	0.14
4	Poverty severity (P_2)	0.07	0.07	0.05	0.06

Source: Household expenditure survey. Incidence of poverty, poverty gap, and severity of poverty indicators, have been estimated using F. G. T. class of poverty index.

The proportion of households living under the 'absolute' poverty line has been found to be 79 per cent for ENPM households, but 73 per cent for EG-PM group, which is 6 per cent higher for ENPM households. Similarly, those living under the extreme poverty line have been estimated to be 10 percent higher for ENPM households. Similarly, depth of poverty (P_2) and severity of poverty (P_2) figures are higher for ENPM group.

The above findings suggest that BRAC's micro-credit intervention has been able to lift a proportion of its members out of poverty during their decade long association with the programme. Our findings also reveal that the programme has helped to reduce the poverty gap, and the severity of poverty of the member households but the result is not highly significant.

Recommendations : The findings of this study have several significant implications and policy recommendations for BRAC.

i) Eligibility Criterion

According to BRAC's official eligibility criterion, 66 per cent of our sample households belong to the eligible group (EG-PM), and 34 per cent to the non-eligible group (NEG-PM). Further, more than half (51%) of NEG-PM households who joined BRAC are below the absolute poverty line, with more than one-fourth (27%) of EG-PM households being above the poverty line (Table: 1.4.1-B). These findings reinforce Ravellion's (1995) view that although land-based selection is a reasonably good indicator for identifying the poor, it is not perfect. Hence, we argue that a degree of discretion needs to be applied by programme officials when

granting membership. If a household has more than 50 decimals of land but is 'obviously poor', then BRAC officials ought to be encouraged to include them in its credit programme. This discussion implies that the present village organization membership selection criterion needs to be reassessed. Land ceiling seems to be an imperfect criterion for several reasons.

Firstly, the amount of land owned by a household may be small or large, but the effective land holding depends on several other things, which include quality and location of the land, and also on the household size. **Secondly**, the only source of livelihood of a significant number of households in the rural areas is not agriculture, rather petty trade, services and other non-farm activities. Consequently, the amount of land holding as a criterion for member selection may not be applicable to these households. **Similarly**, cut-off calorie intake or expenditure to determine who are poor might not be operationally feasible for member selection as these calculations are expensive, time consuming and require specialized technical know-how.

On the basis of our above findings based on the membership coverage and the limitations of the prevailing eligibility criterion for member selection, we recommend that new criterion should be developed to identify an eligible member more accurately. For that, along with the present criterion of land ownership, certain other criterion may have to be added to determine the real eligibility of BRAC membership, such as quality and quantity of land, earner's ratio, and wealth ranking status of households. This integrated technique may enable BRAC field-staff to make more realistic identification and incorporation of the poorest households as of village organization (VO) members for improving the coverage of the programme.

ii) Weekly Loan Repayment Schedule

During field survey nearly one-third of the borrowers reported against the current weekly loan repayment schedule, especially those that are engaged in the long-term income earning activities which generate revenue at specific times of the year (mainly fishery, livestock, and cultivation of agricultural products like jute, paddy, banana, vegetables etc.). So, considering the revenue generation pattern of member's income earning activities, along with the current weekly installment system, BRAC should set up flexible (appropriate) repayment schedule i.e. monthly, quarterly, half yearly etc, in considering the revenue generation period of the activities where loans are invested. It will decrease the rate of dropout as well as ensure the graduation of the participants in the scheme. **In addition**, the

programme also can approve a minimum 'grace period' for the borrowers considering the revenue generation period of their credit-invested income earning activities.

iii) Cost of Loan

Based on the discussion with beneficiaries and also with the BRAC officials, our study reveals that the cost of credit is extremely high, interest rates ranging from 24 per cent to 36 per cent, which is more than two times than the rate prevailing at the Commercial Banks of the country. So, if BRAC authority really wants to alleviate the poverty of the poor, providing them credit and other logistic support for income earning activities, it is necessary to immediately fix a reasonable interest rate which should be much less than the prevailing rate, and hopefully less than that of the rate charged by Commercial Banks, since the loan is weekly repayable and the repayment installment starts just after one week of loan disbursement.

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Socio-economic Analysis of Rickshaw Pullers: An Introduction of Mini-bus Services of Chittagong University

MOHAMMAD MAMUN MORSHED BHUYAN[1]
KAZI JULFIKAR ALI

Abstract

This paper examines the effect of introduction of mini-bus services on the daily income of rickshaw pullers that ply their rickshaws on the Chittagong University campus. An empirical model has been used for the purpose. The findings, which are statistically significant at 1% level, show that introduction of mini-bus services sharply reduces the income of the rickshaw pullers. This paper also looks at the transport problem of Chittagong University campus. Though the introduction of mini-bus services was inevitable and imperative for meeting the transport need of students, teachers and employees of the University, it has had a negative impact on the rickshaw pullers' daily income.

1. Introduction

Employment generation and adoption of modern technology are most important elements of economic development. But each of them is negatively correlated. The common idea is that if production or service system is mechanised, the number of employment will decline because a machine can replace more than one man. However, for this argument mechanisation process has not been stopped. It has increased demand for its speed, accuracy and cost saving. However, it is resisted by the existing workforce in an underdeveloped and thickly populated

* Assistant Professor (Economics), Department of Humanities, Chittagong University of Engineering and Technology, Chittagong-4349, Bangladesh.

country for fear of loss of employment and income. Such a common decision was the introduction of mini-bus services in the Chittagong University campus. This service was partially provided by the rickshaw pullers.

Rickshaw is a man driven labour oriented semi-automated vehicle, which provides transport services for goods and passengers on small scale for short distance without the use of fuel of any kind – natural gas, diesel and petroleum. But University of Chittagong, the second largest public university in Bangladesh, is situated 20 km away from Chittagong city. Most of the students of this university are daily commuters by availing the train services offered by the university authority. But this service is not sufficient and convenient for about 25 thousands non-resident students. To overcome this problem, after a long struggle with the rickshaw pullers, university authority was successful to introduce the Mini-bus from Chittagong city to university campus. Rickshaw is one of the most important sectors of the Bangladesh economy and provides a means of subsistence for groups of people for whom there is quite literally no alternative. (Whitelegg et.al. 2003: 160). A large proportion of rickshaw pullers appear to come from the rural extreme poor (Begum and Sen 2005: 14) and work not only under the conditions identified above but also within a framework of poverty and malnutrition. In addition, rickshaw pulling is unskilled and requires no particular level of education. This exacerbates an already negative view of rickshaw pullers and evictions. During hartals, rickshaws are the only form of vehicular transport that is allowed to operate.

The site of Chittagong University explains why the university authority has so long felt the pressing necessity of a good network of transportation that would keep the institution operational. Since its inception, the location of the university from the population centre became a constant headache that haunted the administration but with the passage of time due to poor sense of priority, the plan visualized to make the institution fully residential got buried. So the problem of carrying non-residential students, teachers, officers and the staff to and from the campus became an everyday problem resulting in many frequent unpleasant situations that retarded academic progress of the institution. Moreover, university offices, halls, quarters and classrooms are not within the walking distance from one another. But as time passed by, rickshaw service showed its shortcomings proving it expensive, time consuming and at times problem-some. In fact, most of the universities in Bangladesh are situated far away from city approach. So the importance of generalization of this study can never be over-emphasized. Due to its distinctive location, the initiatives of the Chittagong University authority to introduce mini-bus services need to be judged for socio-demographic enquiries.

The main objective of the paper is to examine how a pragmatic decision to solve a problem might create problem of inequality and economic losses. The remainder of the paper proceeds as follows: methodological issues and the data used in the empirical analysis are dealt with in Section 2, while the results and discussion are presented in Section 3. Finally, summery and policy implications are presented in Section 4.

2. Methodology

2.1 The Data

In this study, only primary data were used to analyse the socio-economic impact on rickshaw pullers by introducing mini-bus services in Chittagong University campus area. Chittagong University campus has been taken as the study area. A structured questionnaire was prepared in the light of the objectives of the study that was filled up by direct interview. Random sampling technique was employed to collect the data. There were about two hundred and fifty rickshaw pullers in Chittagong University campus area, of which one hundred and sixty rickshaw pullers were selected for purpose of this study. The data were collected from the respondents during the period of January 2008-March 2008. All filled-up questionnaires were fully scrutinized and the data thus collected were processed and analysed to reach a conclusion in line with the research objective.

2.2 Specification of the Model

Using the survey data a simple classical linear regression model has been estimated in this Section to examine how the duration of work, the number of working days of the university (when university remains open), introduction of mini-bus services and ownership of rickshaw affect the income of the rickshaw puller. The daily income of the rickshaw puller is a function of duration of work, working days of the university, introduction of mini-bus services, and ownership of rickshaw. The income model can be written as:

$$Y_i = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + u_i$$

where, Y_i = daily income
X_1 = duration of work
X_2 = if the university is open
0 otherwise
X_3 = if mini-bus services are introduced
0 otherwise

X_4 = if rickshaw puller owns rickshaw
0 otherwise
u_i = error term

A priori expectation about the sign of the coefficients is . The error term is assumed to be random and serially independent having zero mean with finite variance. In order to determine the appropriate technique of estimation, the empirical model is estimated by the OLS method. To better facilitate different diagnosis like autocorrelation, multicollineality have been used in this study.

2.3 Hypothesis of the Study

Income

Income can be defined as a flow of money, goods or services to any economic agent or unit. In other words, it refers to consumption opportunity gained by an entity within a specified time frame, which is generally expressed in monetary terms. In this paper it is used to measure the amount of money or its equivalent received by the rickshaw pullers during a period of time in exchange for plying rickshaw in and around the university campus.

Duration of Work

Duration of work is a quantitative variable and it indicates the time period that the rickshaw puller utilizes per day. This duration varies significantly on the basis of whether the university remains open or not. It is observed that if the university remains open the working hour is found to be less due to huge influx of people and vice-versa.

H_0: There is no relationship between duration of work and income of the rickshaw pullers.

H_1: There is relationship between duration of work and income of the rickshaw pullers.

Working Day of the University (University Remains Open)

This variable is introduced here to compare the income of the rickshaw pullers during the period, when the university is closed with that of when it remains open. It is a qualitative variable and it indicates all days of the week when classes and offices remain open.

H_o: There is no relationship between working days of the university and income of the rickshaw pullers.

H_1: There is relationship between working days of the university and income of the rickshaw pullers.

Introduction of Mini-bus Services

In this study it is incorporated as a dummy variable and it is a qualitative variable and is used to mean that the university authority introduced the mini-bus services as a new transport system to carry the non resident students, teachers, officers, staffs and others to and from the campus and to smoothen academic progress of the institution.

H_o: There is no relationship between introduction of mini-bus services and income of the rickshaw pullers.

H_1: There is relationship between introduction of mini-bus services and income of the rickshaw pullers.

Ownership of Rickshaw

Ownership of rickshaw is incorporated as a dummy variable in this study to measure the amount of income and it indicates whether a rickshaw puller owns a rickshaw of his own or not.

H_o: There is no relationship between ownership of rickshaw and income of the rickshaw pullers.

H_1: There is relationship between ownership of rickshaw and income of the rickshaw pullers.

2.4 Socio-economic Analysis

In order to get the vivid picture of the condition and to meet the socio-demographic enquiries, this paper includes age, asset condition, sanitation, pure drinking water and education level of the rickshaw pullers. The average age of the sample rickshaw pullers is about 35 in which most of them are in the age group 30-40.Though negligible in number, it is alarming to mention that 5% of the child rickshaw pullers are plying rickshaw to maintain their livelihood. Most of them took this as a hereditary profession. About 82 percent of the sample rickshaw pullers are married, 16 percent are unmarried, and only 2 percent are widowed or divorced of which 1 percent got married more than once. Both in terms of

household human capital assets and physical capital assets, they come from very poor origin and most deprived social categories. Only a few of them have cultivable land as they were gradually evicted during the inception of the university and their house status is not up to the mark. About 38 percent of the rickshaw pullers can read and write, 26 percent can only sign, and the rest are illiterate. All of them send their children to school, which indicates that their sense of priority of education has increased to a remarkable extent. Almost all of them use sanitary latrine and drink water from tube well. The average dependent household of rickshaw pullers is 5 which is above the national standard and make it more difficult to reach the subsistence level.

3. Results and Discussion

The findings show that duration of work is statistically significant at 1 % level of significance. The coefficient of duration of work variable X_1 is 12.86 and in that case the null hypothesis can be rejected at 1 % level of significance. The results indicate that as duration of work increases by one hour, daily income increases by

Table 1 : Empirical Results on the Basis of Survey Data

Variable	Parameter Estimated	Standard Error	T Statistic	p value	Eigenvalue	Condition Index
X_1	12.86*	1.269	10.139	0.0001	3.59199	1.00000
X_2	14.30*	5.201	2.749	0.0067	0.59640	2.45413
X_3	-26.13*	5.155	-5.069	0.0001	0.50104	2.67752
X_4	6.33	5.309	1.192	0.2351	0.29161	3.50967
Intercept	-6.57	13.633	-0.482	0.6305	0.01896	13.76384
R^2	0.5034					
DW	1.875					

Source: Field data
** indicates 1% level of significance*

more than TK. 12 per hour. The coefficient of university open variable X_2 is 14.30 and in that case the null hypothesis can be rejected at 1 % level of significance. The results indicate that if the university remains open, the daily income of the rickshaw pullers increases by about TK. 14 per day. The coefficient of variable introduction of Mini-bus service X_3 is –26.13 and in that case the null hypothesis can be rejected at 1% level of significance. This result implies that introduction of mini-bus services reduces the income of the rickshaw pullers severely and about TK. 26 has been reduced from his daily income. The value of coefficient ownership of rickshaw is 6.33 and it is statistically insignificant but has meaningful sign and it indicates that if the rickshaw puller owns the rickshaw, his

income increases by TK.6 daily. The preceding regression differs only in the intercept coefficient but not in the slope coefficient. It is interesting to note that all qualitative variables affect the daily income of the rickshaw puller significantly.

To check the reliability of the above results, the diagnosis of multicollinearity, and autocorrelation is essential. Though not widely shared, some authors suggested condition index as the best available technique to detect it. The mechanism behind this measure is to use the square root of the ratio of largest to the smallest characteristics root. For our postulated model, according to the rule of thumb multicollinearity is not a troublesome problem. Again to judge the validity of the aforementioned results, though not inevitable for cross-section data, the test for presence or absence of autocorrelation or serial correlation has been conducted. In Table 1, the value of d statistic is 1.875, which is greater than tabulated value. In that case it can be said that there is no serial correlation in the residuals.

Table 2: Descriptive Statistics of the Variables Used in the Model

Variable	Maximum Value	Minimum Value	Mean	Standard Deviation
X_1	250	40	121.58	45.32
X_2	15	06	10.18	0.1637

Source: Field data

To articulate the scenario and the descriptive statistics of the variables in the model, the mean and standard deviation are presented in Table 2. From this table, the average income of the rickshaw puller is obtained about Tk.121.58 and standard deviation is 45.32.The result is remarkable in the sense that the introduction of mini-bus services reduced the income of the rickshaw pullers drastically and this causes standard deviation to increase. The mean and standard deviation of the duration of work variable is 10.18 and 0.1637 hours, respectively. Descriptive statistics are not calculated in this text because the rest of the variables are qualitative in nature.

4. Summary and Conclusions

Most of the universities of Bangladesh are situated in remote areas but the position of Chittagong University is worse than others. A significant number of rickshaw pullers became landless during the inception of the university. They were gradually evicted and their income fell by a significant extent. After the

withdrawal of inter-bus service, rickshaws became a major source of carriage. This illiterate and landless section of the society chose this profession for their survival and found it profitable. But this unprecedented introduction of mini-bus services shattered their dream and disrupted their normal way of life. Because of low income, the rickshaw pullers have never enjoyed a comfortable living, but their economic condition was not as worse as at present.

Their past earnings enabled them to get basic necessities for survival. When mini-bus services were commenced, their children were compelled to leave school in search of jobs for getting money because their parents were unable to bear their educational expenses. The empirical findings show that the duration of work, the number of working days of the university, and the introduction of mini-bus services variables are statistically significant. On the other hand, only ownership of the rickshaw variable is insignificant, since very few of them have rickshaws of their own due to abject poverty. Virtually no information is available that directly addresses the conditions of this poorer section of the society. This is not a special case at all as these catastrophes may occur when a modern technology is adopted to make life vibrant and mobile.

Our empirical study shows that the introduction of mini-bus services has badly hurt the rickshaw pullers and more than two hundred and fifty rickshaw pullers have fallen easy victims of the circumstances. Introduction of mini-bus services has reduced the income of the rickshaw pullers to a considerable extent as their income falls by about TK.26 every day.

A few suggestions can be made to improve the conditions of the rickshaw pullers – the people that have no bargaining power. The authority should create opportunities for alternative work for this poorest section of the society so that they can increase their income to keep alive. Having no money or means of investment these people absolutely depend on their physical strength, which they find hard to keep intact. These rickshaw pullers failing to keep pace with the changing needs of time will, instead of surviving, go into the land of oblivion and none will lament their obscurity. But they have a right to social protection and security and the means that will enable them a modest living.

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A Comparison of Relative Efficiency of Islamic Banks and Interest Based Banks of Bangladesh

Mainul Islam Chowdhury[1]
A. F. M. Ataur Rahman

Abstract

Conventional (interest based) banks and Islamic banks operate side by side in Bangladesh, as in many other courtiers. Although they offer comparable services and products to their customers their operations are stemmed in very different bases. Conventional banks operate on pure profit maximizing approach but their Islamic counterparts want to optimize profit without violating Shariah. So theoretically we may expect to have some variation in their level of efficiency. This exercise aims to compare the relative efficiency of these two groups of institutions using Data Envelopment Analysis (DEA). Firm level accounting data of 43 commercial banks have been used in the exercise. Looking at the issue of efficiency from four different perspectives the paper finds that there is no conclusive evidence that one or the other group is unquestionably superior to the other. Rather they operate almost at the same level of efficiency.

Introduction

The recent global financial meltdown has drawn a renewed interest to Islamic financial institutions especially towards Islamic banks, which can be more resilient to such crises as they do not deal with debt instruments and keep themselves out from market speculation. In 2008 the Standard & Poor's 500 Index and the Dow Jones Industrial Index in the US fell by 38.5% and 33.8%,

[1] Authors are, respectively, Lecturer and an Associate Professor at the Department of Economics, North South University, Dhaka.

respectively. By contrast, the Dow Jones Islamic Financial Index showed a modest loss of 7% for that year (Tayyebi 2009). Islamic banking industry is growing at a rate of 15% every year (Rashid and Nishat, 2009) globally, which is an indication of their greater acceptability in the financial world. The major difference between an Islamic bank and a conventional one is that while the latter deals with interest, Islamic banks run on a profit loss sharing mode (PLS) and avoid any transaction involving interest. This, however, puts Islamic banks into a more difficult situation than their "regular" counterparts. Islamic banks have to adhere to the laws of the land (which are not always designed for an interest free environment) where they are operating and to the financial guidelines of Islam (Samad 2004). In many cases they need to deal with individuals and institutions that may not necessarily follow the *Shariah*[1] regulation. For example, in the case of liquidity shortage they cannot borrow from the inter-bank money market or from the central bank where they may have to deal with interest. They cannot take part in repo and reverse repo auctions because those are done on interest bearing terms. Islamic banks also avoid swaps or foreign exchange options like forwards, which expect gain out of speculation.

The issue of efficiency for financial institutions is important in the sense that it is an indicator of profitability for owners, viability for regulators, and worthiness for researchers (Rahman and Chowdhury, 2009). The literature on bank efficiency is simply overwhelming. But these mostly focus on conventional banking institutions. The number of studies focusing on the efficiency of Islamic banks is relatively small, and among them only a few use data on Bangladesh. This exercise is an attempt to fill that gap. In this exercise, we used Data Envelopment Analysis (DEA) to measure the relative efficiency of conventional banks vis-à-vis Islamic banks as groups using 2008 data.[2] There were 48 banks operating in Bangladesh in 2008. We took 43 of them in our sample leaving 5 specialized banks (SBs) out. SBs are different from usual commercial banks as they are neither (operationally) profit-oriented nor focused for extending financial services to general public. Depending on banking operation we categorized each bank in one of the 3 broad categories i.e., conventional banks, Islamic banks, and banks having a dual operation (hereafter dual banks). There are 27 conventional banks, 10 dual banks and 6 Islamic banks in our sample. We compared their relative efficiency following four different perspectives, namely production perspective,

1 Islamic religious jurisdictions are sometimes called *Shariah*

2 In 2008 there were 6 full fledged Islamic Banks in Bangladesh. First Security Islamic Bank converted its conventional banking operation to Islamic banking in 2009.

intermediation perspective, investor's perspective, and regulator's perspective. The overall average efficiency scores considering production perspective were 74.47%, 73.53% and 87.85% for conventional, dual, and Islamic banks, respectively. These figures were 81.34%, 78.30% and 78.67%, respectively, considering intermediation perspective.

The rest of the paper is organized as follows. Section 2 provides a brief review of the existing literature. Section 3 describes the methodology followed by the description of the data in section 4. Section 5 presents the result of the analysis and section 6 concludes.

Literature Review

There are few studies that discuss the issue of efficiency among Islamic banks. Samad (2004) examined the comparative performance of Bahrain's 6 Islamic banks and 15 conventional commercial banks for the period from 1991 to 2001. The author measured the performance of these banks in terms of profitability, liquidity risk and credit risk using nine financial ratios. The paper found no major difference in performance between Islamic and conventional banks with respect to profitability and liquidity. However, he found a superiority of Islamic banks in terms of credit performance.

Yudistira (2004) calculated technical and scale efficiency of 18 Islamic banks of 12 countries following DEA. The study took intermediation perspective using total loans, other income and liquid assets as outputs, and staff costs, fixed assets and total deposits as inputs. They found that Islamic banks suffered little inefficiency during the global crisis of 1998-99. This would suggest the interdependence of Islamic banks to other financial system. They found little difference in efficiency scores among banks but later they found that they could explain the difference using country specific factors.

Batchelor and Wadud (2004) investigated the efficiency of Islamic Banks of Malaysia using DEA. They compared technical and scale efficiency measures of Islamic banks and dual banks of both local and foreign ownership. It was found that foreign banks increased efficiency levels to achieve full efficiency over the six-year period considered, while domestic banks made smaller improvement in efficiency and the Islamic banks experienced a general decline in efficiency, which was solely attributed to scale inefficiency.

Another study by Mokhtar et al. (2006) compared Islamic banks, dual banks and conventional banks in Malaysia using stochastic frontier approach and intermediation perspective. They used total deposits and total overhead expenses as input, and total earning assets as output. The paper identified an improving trend in the efficiency of Islamic banking industry although the level was lower than that of conventional banks. However, they found that Islamic banks were more efficient than dual banks while dual foreign banks were more efficient than their domestic counterparts.

Cihák and Hesse (2008) presented a cross-country empirical analysis of Islamic banks' impact on financial stability using z-scores as a measure of stability. Their sample covered 77 Islamic banks of 20 countries for a period from 1993 to 2004. They used a panel regression analysis using z-score as the dependent variable. They found that small Islamic banks tend to be financially stronger than small commercial banks, large commercial banks tend to be financially stronger than large Islamic banks, and small Islamic banks tend to be financially stronger than large Islamic banks. The authors suggested that it may become significantly more complex for Islamic banks to adjust their credit risk monitoring system as they become bigger. Given their limitations on standardization in credit risk management, monitoring the various profit-loss-arrangements becomes rapidly much more complex as the scale of the banking operation grows, the resulting problems related to adverse selection and moral hazard becoming more prominent. Another possibility is that small banks concentrate on low-risk investments and fee income, while large banks do more PLS business.

There are some studies that investigated the efficiency of Islamic banks using Bangladeshi data. Sarker (1999) analyzed performance of Bangladeshi Islamic banks measured five efficiency criteria (productive efficiency, operational efficiency, allocative efficiency, distributive efficiency and the stabilization efficiency) involving financial ratios. However, the study did not compare the performance of Islamic banks with other commercial banks. Therefore, generalization of the result was not feasible. The paper argued that Islamic products have different risk characteristics and consequently different prudential regulation should be erected.

Ahmad and Hassan (2007) analyzed the asset quality, capital ratios, and operational ratios such as net profit margin, net interest income, income to asset ratio, non-interest income to asset ratio and liquidity ratios of commercial banks in Bangladesh for seven years from 1994 to 2001. The study found no difference between Islamic banks and private commercial banks in terms of asset quality

performance. In capital ratio measures, Islamic banks are in general better capitalized than other banks. Private commercial banks showed best performance in the category of operational ratios. Islamic banks on an average were the preeminent performer in terms of lowest non-performing to gross loan ratio, capital funds to total asset ratio, capital funds to net loans ratio, capital funds to short-term loan ratio, capital funds to liabilities ratio, non-interest expense to average asset ratio, and most of the liquidity ratios. Therefore, they concluded that Islamic banks are outperforming others in capital adequacy and adequate liquidity. Except Return on Equity Ratio, Islamic Banks were at par with the industry in all other cases.

Rashid & Nishat (2009) compared the financial performance and its deviations among different conventional and Islamic banks in Bangladesh. They looked at profitability status, riskiness and performance of Islamic Banks with the industry average and across different generations of banks. Then they identified points-of-riskiness for Islamic Banking Sector. The study considered 12 important financial ratios and common size income statement and balance sheet information of Islamic banks for 2001 to 2006. Results showed poor performance of Islamic banking sector in almost every aspect, especially in the areas of profit maximization, investor management and operating inefficiency.

Summarizing these exercises we see that we can not make any definite conclusion regarding the superiority of Islamic banks on conventional banks or vice versa considering different efficiency criteria. Rather they are more or less comparable groups. In some studies authors found Islamic banks to be more efficient while others pointed out some deficiencies. This is true not only for Bangladesh but also for cross country analysis.

Methodology

DEA efficiency measures can be done in input or output orientation. Efficiency can be defined either maximizing output to a given input mix or minimizing inputs given an output mix. In case of input orientation DEA method tries to decrease inputs keeping outputs constant. That is, to what proportion we can reduce input without negotiating output. Conversely, in output orientation, DEA method tries to maximize outputs keeping input level fixed. We used the input oriented radial measure all through in our exercises, that is, radial reduction[3] of input while keeping output constant. First we assumed constant returns to scale

[3] Radial reduction of input refers to a condition where all the inputs are reduced by the same proportion.

(CRS) and then variable returns to scale (VRS) to get the effect of scale. The CRS measure will give us the total efficiency measure, which includes scale efficiency and technical efficiency. The VRS measure takes the level of production into consideration and extracts the effect of efficiency entrapped in input output mix only, i.e., given the level of production whether a DMU is optimally using its input mix compared to other DMUs operating at the same level. In that sense it can be termed as technical efficiency as well. Scale efficiency gives us the idea about how well the institution is performing given the level of production, i.e., efficiency comparison between the best performing DMU(s) in a pool regardless of the level of production and a technically efficient DMU for a particular level of production. Total efficiency compares an institution with the best performing institution of the group irrespective of its level of production.

First, we determined banks' relative efficiency in 0.00 to 1.00[4] scale. Mathematically, we solved the following linear program

$$Max\lambda_o = \frac{\sum_{i=1}^{s} v_i x_{io}}{\sum_{j=1}^{r} \omega_j y_{jo}}$$

Subject to $\sum_{i=1}^{s} v_i x_{im} \leq \sum_{j=1}^{r} \omega_j y_{jm}$ for all m= 1,2 ...n

And ≥ 0 for all and i= 1,2, ... s and $\omega_1 \geq 0$ for all j= 1,2, ... r

Where λ_0 is the efficiency measure of Oth DMU in a pool of *n* DMUs. There are *r* inputs denoted by y_j and *s* outputs denoted by x_i. Solution of the above linear program will give us CRS efficiency measure.

We can get VRS efficiency measure from this model simply by changing the optimizing function. The problem will look like

$$Max\lambda_o = \frac{\sum_{i=1}^{s} v_i x_{io} + c_o}{\sum_{j=1}^{r} \omega_j y_{jo}}$$

Subject to $\sum_{i=1}^{s} v_i x_{im} + c_o \leq \sum_{j=1}^{r} \omega_j y_{jm}$ for all m =1,2,.. n

And $v_i \geq 0$ for all i =1,2,... s and $\omega_j \geq 0$ for all j = 1,2,... r

4 Efficiency score of 1.00 is defined in Charnes and Cooper (1985) as the state of production when none of its inputs can be decreased without either (i) decreasing some of its outputs, or (ii) increasing some of other outputs none of its outputs can be increased without either (i) increasing one or more of its inputs, or (ii) decreasing some of its other outputs

After determining efficiency following constant returns to scale for individual DMU, we measured efficiency following variable returns to scale and from both measures we calculated the measure of scale efficiency.

In the second step, we tried to determine scale efficiency. To determine that we calculated scale efficiency as $\lambda_{0=}\lambda_0$ (CRS) I λ_0 (VRS), if λ_0 equals to 1 then the DMU is scale efficient. If λ_0 is less than 1 then the DMU is operating under scale inefficiency. To determine whether this inefficiency is due to increasing returns to scale (IRS) or decreasing returns to scale (DRS)[5] we then calculated efficiency score assuming non-increasing (NIRS) returns to scale. If then inefficiency is due to increasing returns to scale, however ifthen inefficiency is due to decreasing returns to scale[6].

The whole process is explained in Figure 1.

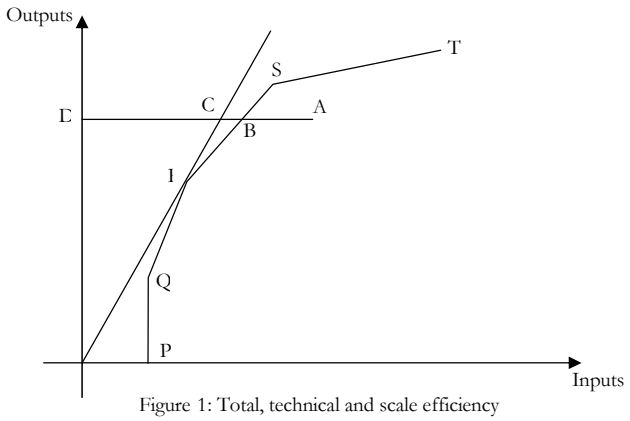

Figure 1: Total, technical and scale efficiency

In Figure 1, suppose input magnitude is placed along abscissa and output magnitudes are placed along ordinate. PQRST represents the most efficient frontier. If a certain bank operates on this frontier, the bank will be considered as technically efficient or even totally efficient. But suppose a bank operates at point. In that case its total efficiency, technical efficiency and scale efficiency will be

$$Total\ efficiency = \frac{DC}{AD} \qquad Technical\ efficiency = \frac{DB}{AD}$$,and $$Scale\ efficiency = \frac{DC}{DB}$$

This is a very simple two dimensional version of this problem.

5 Inefficiency may arise from overuse or under use of inputs. If inefficiency is due to IRS a DMU can increase its efficiency by increasing the scale of operation and vice versa.

6 For further discussion see Norman and Stoker (1991)

The above efficiency measures are radial efficiency measure in the sense that it argues for equi-proportionate reduction in all inputs. This, however, can leave slacks in inputs, which introduce non-radial measure of efficiency that does not leave any slack. However, in that case the reduction is not proportional and thus we will have one reduction factor for each input. Here we use the non-radial efficiency measure proposed by Färe and Lovell (1978). By comparing non-radial efficiency and radial efficiency one can make comments about over- or under-utilization of a certain input. Suppose following non radial measures, contraction factors forth inputs are λ_t and corresponding radial reduction factor is λ^*. Now if $\lambda_{t<}\lambda^*$ then that will indicate an over-utilization of a certain input factor. If $\lambda_1 > \lambda^*$ then that will indicate an under-utilization and for the case where $\lambda_{1=}\lambda^*$ we would expect to have optimum usage of i^{th} input.

Prudent use of DEA methodology lies in the choice of inputs and outputs. For financial institutions choosing the set of inputs and outputs can be tricky. Sometimes it depends on the perspective that we are looking at. There are two major perspectives regarding input-output combination for banks, production perspective and intermediation perspective. These two arguments, although suitable for academic investigations, may not necessarily be very useful for either owners or regulators. Following Rahman and Chowdhury (2009) we used two more sets of inputs and outputs putting ourselves in the shoes of investors and regulators.

Data

Out of 48 scheduled banks operating in Bangladesh 7 are operating as full fledged Islamic banks. Besides 10 other banks including some foreign banks are running Islamic banking operation through 21 branches and windows. Recently seven other banks including Sonali, Janata, Agrani and Pubali have applied to Bangladesh Bank to open up Islamic banking windows. We included 43 banks in our data set. Out of these 43 banks, 27 banks were running conventional banking, 10 were dual banks (running Islamic banking operation through branches side by side conventional banking) and 6 were Islamic banks in 2008.

We picked four sets of input output specifications following four different arguments. They are explained below with brief motivation.

Production perspective

Banks are considered as firms to produce loans and deposits (through their aggressive marketing operation, prudent planning and proper quality control) by

using capital and labors. Both deposits and loan accounts are considered as equally important indicator of their success.

Inputs: Total labor (total operating expenses) and total capital

Outputs: Total loans, total deposits and total fee-based income (non interest income).

Intermediation perspective

Banks are considered as firms to intermediate funds from ultimate savers to borrowers. The primary idea of banking is to facilitate financing operation bridging maturity mismatch. In this process accountability is obviously maintained. So success depends on how much of deposit is converted into loan. The growing importance of borrowed funds and non loan investments in banking operation tempted us to include them in our specification.

Inputs: Deposits and borrowed funds

Outputs: Loans, investments and percentage of performing loan in total loan (1-NPL)

From investor's perspective

Investors, when they take decision to invest, are typically interested in their return. Depending upon investor's planning horizon return can be long or short. However, we expect that rational stable investors would like to invest in shares of a banking firm if that firm shows short term profit prospect and long term survival potential. From that perspective we have chosen inputs and outputs here. However it is true that not all banking firms are open to investors. Some are state owned and some are not listed in the stock market. Yet we think that these arguments are important irrespective of their ownership structure. The second and fourth factors in output specifications capture the level of riskiness.

Inputs: Capital, expense on deposit and loans taken and other expense.

Outputs: Total asset, percentage of performing loan in total loan (1-NPL), net profit, ratio of total deposits and borrowings with respect to capital

From regulators' perspective

Regulators perceive the whole situation from a different perspective. They are less concerned about the profitability of a certain institution rather they are more

concerned about the long term viability and safety of depositor's money. They are also interested in non-profit oriented issues like availability of banking services in rural areas etc. Considering these factors we picked the following inputs and outputs.

Inputs: Deposits, borrowed funds and capital

Outputs: Percentage of performing loan in total loan (1-NPL), return on asset, rural-urban branch ratio, non interest income/interest income[7] and total asset/off balance sheet activities

All data were collected from different offices and departments of Bangladesh Bank. Stock variable figures were for 31st December 2008. Flow variables were for the year between 1st January 2008 and 31st December 2008. All figures are in crore taka.

Results

Looking through production perspective we have found that the average total efficiency score of banks is 76.12%. This figure tells that an average bank from this pool can reduce their input by 23.88% without reducing output if they had the best practice in the trade. Eight institutions achieved 100% efficiency score and they come from all three groups of banks.

Table 1 compares the total, technical and scale efficiency of different groups of banks following production perspective. The overall average efficiency (total efficiency) of 27 conventional banks, 10 dual banks and 6 Islamic banks included in the sample were found to be 74.47%, 73.53% and 87.85%, respectively. The relatively high average efficiency score of the Islamic banks can be due to their low operating expense (which is used as an input) of 89.65 crore *taka* compared to 165.01 and 147.96 crore *taka* of the dual operation banks and conventional banks, respectively, while their total deposit and lending volumes are comparable to that of other groups taking into consideration their volume of operation. If we look at technical efficiency, which extracts the efficiency of input-output mix taking into consideration the scale of operation, we find that Islamic banks are still as a group moving ahead. The average technical efficiency of Islamic banks is 90.60% against 79.16% and 74.46% for conventional and dual banks, respectively. Standard deviations in case of both total and technical efficiency are also low for Islamic banks which indicate that the performances of all banks

7 Non-profit income /Income from profit for Islamic Banks

within that group are quite at par. If we look at scale efficiency we find that 9 banks out of the total pool are scale efficient of which 6 are conventional banks, 2 are Islamic banks and the remaining one is a dual operation bank. The source of inefficiency in most cases (28 out of 34 inefficient banks) is increasing returns to scale which means banks could improve their efficiency by increasing their scale of operation.

Table 1: Relative Efficiency of Commercial Banks (Model 1)

	Total Efficiency			Technical Efficiency			Scale Efficiency		
	Conventional	Dual	Islamic	Conventional	Dual	Islamic	Conventional	Dual	Islamic
Average	74.47%	73.53%	87.85%	79.16%	74.46%	90.60%	94.23%	98.53%	97.13%
St. Dev.	18.65%	18.02%	10.61%	17.09%	17.51%	11.42%	11.84%	1.97%	4.63%
Max	100%	100%	100%	100%	100%	100%	100%	100%	100%
Min	43.18%	45.86%	75.25%	44.72%	48.43%	75.27%	58.94%	94.69%	88.56%
No. of Efficient Banks	3	1	1	10	4	2	3	1	1

Table 2 shows that from intermediation perspective 3 conventional banks, 1 dual operation bank and 1 Islamic bank achieved 100% efficiency. The average total efficiency level of Islamic banks is lower than that of conventional banks under this approach. In case of technical and scale efficiency the performance of conventional and Islamic banks are comparable while dual banks are a little behind. Higher standard deviations for Islamic banks indicate that performances of different Islamic banks are more dispersed. If we look at scale efficiency, the source of inefficiency in case of conventional and dual banks is decreasing returns to scale but in case of Islamic banks inefficiency occurs in most cases due to increasing returns to scale. This means that by increasing the scale of operation Islamic banks can probably attain superior efficiency level.

Table 2 : Relative Efficiency of Commercial Banks (Model 2)

	Total Efficiency			Technical Efficiency			Scale Efficiency		
	Conventional	Dual	Islamic	Conventional	Dual	Islamic	Conventional	Dual	Islamic
Average	81.34 %	78.30 %	78.67 %	88.22 %	85.77 %	88.26 %	92.86 %	90.37 %	92.04 %
St. Dev.	11.59 %	12.38 %	17.01 %	12.28 %	14.20 %	15.58 %	9.76%	9.04%	15.05 %
Max	100%	100%	100%	100%	100%	100%	100%	100%	100%
Min	57.45 %	58.79 %	61.22 %	57.46 %	63.18 %	66.44 %	63.5%	69.6%	61.66 %
No. of Efficient Banks	5	1	2	6	1	3	6	1	2

Following the third approach which we call investors' perspective the average total efficiency of all banks reaches 87.58%. Table 3 shows that 16 banks attained 100% efficiency under this approach of which 4 are Islamic banks, 3 are dual banks and the rest 9 are conventional banks. The average total efficiency of Islamic banks is 96.69% with a lower standard deviation than their competitors. So, Islamic banks as a group have a room for reducing input usage only by a little more than 3%. Therefore, from the investors' perspective Islamic banks' input-output mix are quite optimal.

Table 3 : Comparative Total Efficiency (Model 3)

	All Banks	Conventional	Dual Operation	Islamic
Average	87.58%	86.74%	84.39%	96.69%
Standard Deviation	13.64%	14.36%	13.76%	5.15%
Max	100.00%	100.00%	100.00%	100.00%
Min	56.74%	56.74%	65.01%	89.52%
No. of efficient banks	16	9	3	4

From regulator's perspective none of the groups' performance is very buoyant. The overall total efficiency of all banks is 62.12% (Table 4) meaning banks can reduce their input by as much as 37% but can still produce the same level of output. Though efficient banks come from all the groups, Islamic banks are lagging behind conventional banks in terms of efficiency score. The performance of Islamic banks is also very dispersed under this approach. This low performance can be due to a very high average deposit collection (which is considered to be an input under this approach) by Islamic banks compared to the other groups of banks but limited investment opportunities complying *shariah* law which makes Islamic banks' ROA and ROE ratios comparatively low. Ratio of non performing loans is also higher for this group but if we ignore the performance of one particular bank in this group then the average NPL ratio of this group becomes lower than that of other groups. Rural-urban branch ratio for Islamic banks (0.33) is lower than that of conventional bank group (0.49). This high ratio for conventional banks is largely due to the strong presence of four nationalized banks namely *Sonali, Janata, Agrani* and *Rupali* banks in rural areas. The ratio of non-interest income to interest income[8] is low for the Islamic banks group which

[8] See footnote 6.

also negatively affects their performance under this approach. The ratio of total asset to off-balance sheet activities which is another output considered under this approach is higher for the Islamic banks group (8.7) compared to 6.3 and 4.5 for conventional and dual banks, respectively.

Table 4 : Comparative Total Efficiency (Model 4)

	All Banks	Conventional	Dual Operation	Islamic
Average	62.12%	67.75%	45.61%	57.35%
Standard Deviation	25.91%	21.96%	28.33%	31.05%
Max	100.00%	100.00%	100.00%	100.00%
Min	14.81%	26.62%	14.81%	19.13%
No. of efficient banks	7	4	1	2

Conclusion

The paper looks at the comparative efficiency of Islamic banks operating in Bangladesh vis-à-vis conventional and dual banks. We used DEA method under four different input-output settings. The result is mixed. In some specifications Islamic banks' performance is better than conventional banks but for some other specifications they fall behind the conventional (interest based) banks. But the difference in either side is very small. This is somewhat intuitive as, they operate in the same market and compete for the same depositor's money. It is true that due to some non-economic personal factors some consumers are inherently inclined to Islamic banks and they would not like to go to conventional banks whenever they need some banking service, but that "hardcore", consumer group is relatively small. Most of the banking service users are "economic agents" and would like to patronize the institution that gives them higher return. It has also been found that Islamic banks can improve their performance by increasing their volume of operation. Islamic banks' performance as a group is most impressive under the investor's perspective. Under the regulator's perspective Islamic banks are lagging behind.

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Impact of Microcredit Program on Poverty Alleviation in Sylhet: An Approach to Targeting Women

TAMANNA SHARMIN MAZUMDER[1]
M. MIZANUL HAQUE KAZAL[2]

Abstract

Microcredit programs have become an increasingly important component of women development strategies to create employment, reduce poverty or promote micro entrepreneurial development. These credit programs are mostly on targeted groups of women, because most of the poor women are credit worthy as their repayment rates nearly reach hundred percent. Improved access to credit by women could lead to two developments: increased employment in income-generating activities and an incentive to adopt improved technology. The role of women could be enhanced if their resource base were expanded by the addition of complementary resources. From this aspect, credit becomes important because when women had improved access to credit they could expand their "expenditure savings" activities into "income-generating" ones and in the process improve their livelihood and economic status in society and contribute to alleviating their poverty.

Introduction

Microcredit programs give a better chance to alleviate poverty in Bangladesh, but the result may not come fast. The higher rate of economic growth in a country will

1 Former MSS Research Student of Shah Jalal University of Science and Technology (SUST), Sylhet.

2 Professor and Head, Department of Economics, American International University-Bangladesh (AIUB), Dhaka

give the poor people a better chance to show the real power of microcredit in changing their lives. Therefore, the microcredit programs have been developed with an aim to provide credit facility to the poor. The development of micro-enterprises through poor women by channeling cash in the family, which improves their position and bargaining edge in the household, will raise women's empowerment, which is a recognized means to alleviate poverty. If women had opportunities for gainful work outside the household, it would make their contribution to the household more visible, and concurrently reduce their economic dependence on their husbands.

Among various targeted poverty reduction programs that were being executed by the government, the Integrated Rural Development Program (IRDP), which preceded the BRDB, started organizing cooperatives for landless men Bittahin Samabay Samity (BSS) and women Mohila Bittahin Samabay Samity (MBSS) in 1974 as one of the main thrusts of its poverty alleviation program (Commonwealth Secretariat, 1992).

A major goal of self employment analysis is to highlight the role of credit programs in improving women's economic participation. A large proportion of the credit provided by these programs goes to poor women, which aims to increase their employment and productivity (Khandker and Khalily, 1994).The poor people need money for their survival and as a result of it they become the part of the vicious circle of poverty where at one time they approach the moneylenders and at other times to formal financial institutions. Microfinance is a middle path in which poor people can mobilize their savings, link it with credit, and finally become self-employed (Singh, 2003).

Objectives

This is a comparative study in nature and its main objectives are:

- To identify the socio-economic conditions of women of different microcredit programs; and
- To assess the impact of microcredit programs on poverty alleviation of women at household level.

Methodology

Selection of the sample and study area is an important step for the research work. The study area was selected purposively and all of the participants were selected

randomly. The study was conducted upon five different microcredit programs namely: ASA, BRAC, BRDB, GB and FIVDB existing in different areas (Akhalia, Sheikhghat, Nathpara, Mirbukshatula and Tukerbazar) in Sylhet. Data were collected from primary source for the study. The primary data were collected through sample survey techniques. A comparative study was performed to assess the impact of microcredit programs on poverty alleviation of women at household level, under five microcredit programming areas. For this study, a total sample size of 150 respondents (among a total of 530 respondents) were selected on random basis, of which 30 respondents were interviewed (out of 80) from the BRDB's microcredit program areas, 30 respondents (out of 100) from the ASA, another 30 (out of 150) from the BRAC, 30 (out of 100) from the GB, and another 30 (out of 100) respondents from the FIVDB were selected for this purpose. Out of the total sample of 150, 15 respondents were reluctant to make the desired response about their poverty status and were therefore excluded from the total sample. So, for purpose of the study the total sample size is 135.

Analytical Technique

The study used both univariate and multivariate techniques to explore the poverty alleviation scenario. The univariate technique was used first to study the variation of poverty alleviation on several covariates. The multivariate technique viz., multiple logistic regression models, was used to identify the determinants of poverty alleviation. The reason behind the use of logistic regression model is that the outcome variable - poverty alleviation – is dichotomous in nature. Such model is helpful to predict the probability of selected microcredit programs to achieve success in alleviating poverty of women at household level.

Multiple Logistic Regression Model

Multiple regression analysis is the most widely used technique when the dependent and independent variables are measured in interval scale under the assumption that they are normally distributed with equal variances. The logistic regression model can be used not only to identify risk factors but also to predict the probability of success. This model expresses a qualitative dependent variable as a function of several independent variables - both qualitative and quantitative (Fox, 1984).

Let Y_i denote the dichotomous outcome variable (dependent variable) for the i-th observation and

$$Y_i = y_i = 1, \quad \text{if the i - th individual is success to alleviate poverty}$$
$$= 0, \quad \text{if the i - th individual is a failure}$$

In order to give a simple notation, we use the quantity $\pi(x) = E(y_i | x)$ to represent the conditional mean of Y given X when the logistic distribution is used. The method is to model the response using the logistic function given by

$$\pi(x_i) = \frac{e^{\hat{a}_0 + \hat{a}_1 X_i}}{1 + e^{\beta_0 + \beta_1 X_i}} \text{----------(1)}$$

where, X_i is an explanatory variable and β_i's are the regression coefficients.

$$E(y_i = 1 | X_i) = \pi(X_i) = \frac{e^{\beta_0 + \beta_1 X_i}}{1 + e^{\beta_0 + \beta_1 X_i}} \text{----------(2)}$$

$$\text{and } E(y_i = 0 | X_i) = 1 - \pi(X_i) = \frac{1}{1 + e^{\beta_0 + \beta_1 X_i}} \text{----------(3)}$$

Therefore, we can write

$$\frac{\pi(X_i)}{1 - \pi(X_i)} = e^{\beta_0 + \beta_1 X_i} \text{----------(4)}$$

Now if we take natural logarithm of the equation (4), we get

$$L_i = \log_e [\frac{\pi(X_i)}{1 - \pi(X_i)}] = \beta_0 + \beta_1 X_i \text{----------(5)}$$

The equation (5) is known as simple logit regression model. $\frac{\pi(X_i)}{1 - \pi(X_i)}$ Here given in (4) is simply the odds ratio and the term L_i given in (5) is known as log-odds.

Interpretation of the Parameters

Since the logit transformation, $L_i = \log_e \left(\frac{\pi_i}{1 - \pi_i} \right)$, is linear in parameters, we can interpret the parameters using arguments of linear regression. Thus, the interpretation may be described as follows:

We have, $\pi_i = \frac{e^{\beta_0 + \beta_1 x_1 + ... + \beta_k x_k}}{1 + e^{\beta_0 + \beta_1 x_1 + ... + \beta_k x_k}}$ is linear in parameter

So, as in the case of linear regression model we can say that $\beta_j (j = 1,2,....., k)$ represents the rate of change in $\log_e \left(\frac{p_i}{1 - p_i} \right)$ for one unit change in X_j, other variables remaining constant.

The interpretation of the parameters in logistic regression has another interesting aspect when the explanatory variable is qualitative. To describe this, we first consider that the independent variable (X_j) is dichotomous. The description is given below:

We have $$\text{Log}_e\left(\frac{\pi_i}{1-\pi_i}\right) = \beta_0 + \beta_1 X_1 + ... + \beta_j X_j + ...\beta_k X_k$$

Now if X_j is a dichotomous variable taking values 0 and 1, then the odds ratio 'OR' (say) for X_j=1 against X_j=0 (keeping all other X_i's fixed)

$$\text{OR} = \frac{\text{p}_\text{i}\left(y_i = 1 \middle| x, x_j = 1\right) \Big/ \left\{- p_i\left(y_i = 1 \middle| x, x_j = 1\right)\right\}}{\text{p}_\text{i}\left(y_i = 1 \middle| x, x_j = 0\right) \Big/ \left\{- p_i\left(y_i = 1 \middle| x, x_j = 0\right)\right\}} = \frac{e^{\beta_0 + \beta_1 X_1 + ...+1.\beta_j + ...+ \beta_k X_k}}{e^{\beta_0 + \beta_1 X_1 + ...+0.\beta_j + ...+ \beta_k X_k}}$$

$$= e^{\beta_j}$$

$$\Rightarrow \log\text{OR} = \beta_\text{j}$$

So, we can directly estimate the coefficients of a logistic regression model as log of odds ratio (OR) and hence can interpret. If a qualitative independent variable has m categories, we introduce (m-1) dummy variables and the remaining one is taken as reference category.

Study Variables

Dependent Variable with Categories

Name of the dependent variable	Category
Poverty Alleviation	1 = 'yes' 0= 'no'

Results and Discussions

Differentials of Poverty Alleviation

Poverty Alleviation by Microcredit Organization: Table 1presents the poverty alleviation scenario according to the organization that provided credit to the women under five different microcredit programs in the study area. It is observed from the study that providing microcredit facilities in the study areas was not fruitful up to the mark.

List of Independent Variables with Categories

Name of the Independent variables	Category
Total Members (in number)	1= '1-5' 2= '6-7'
Earning Members (in number)	1= '1' 2= '2' 3= '3'
Monthly Income (in Tk.)	1= '<6000' 2= '?6000'
Education	1= 'Illiterate' 2= 'Educated' 3= 'Higher Educated'
Occupation	1= 'Unemployed' 2= 'Employed'
Amount of Loan (in Tk.)	1= '<5000' 2= '5000-15000' 3= '>15000'
Savings Amount (in Tk.)	1= '<5000' 2= '?5000'

Table 1 : Poverty Alleviation Situation on the Basis of Microcredit Organization

Name of the Organization	Status of Poverty Alleviation		Total
	No	Yes	
ASA	19(67.9)	9(32.1)	28
BRAC	19(70.4)	8(29.6)	27
BRDB	21(84.0)	4(16.0)	25
GB	18(72.0)	7(28.0)	25
FIVDB	23(76.7)	7(23.3)	30
Total	100(74.1)	35(25.9)	135

Note: Figures in the parentheses indicate percentage
Source: Field Survey, 2008

Poverty Alleviation by Household Members: It is observed that the large families failed (80 percent) to bring poverty alleviation after receiving the loan from the microcredit organization in comparison with small families (Table 2).

Poverty Alleviation by Household Earning Members: Table 3 indicates the status of poverty alleviation for the selected households according to their earning

Table 2 : Status of Poverty Alleviation according to Household Members

Total HH Member (in number)	Status of Poverty Alleviation No	Yes	Total
1-5	55(69.6)	24(30.4)	79
6-7	45(80.4)	11(19.6)	56
Total	100(74.1)	35(25.9)	135

Note: Figures in the parentheses indicate percentage
Source: Field Survey, 2008

members. The result indicates that microcredit programs did not have any significant impact on poverty alleviation.

Table 3 : Status of Poverty Alleviation according to Household Earning

HH Earning Member (in Number)	Status of Poverty Alleviation No	Yes	Total
1	64(75.3)	21(24.7)	85
2	30(73.2)	11(26.8)	41
3	6(66.7)	3(33.3)	9
Total	100(74.1)	35(25.9)	135

Note: Figures in the parentheses indicate percentage
Source: Field Survey, 2008

Poverty Alleviation by Household Monthly Income: The impact of household's high monthly income on alleviation of poverty of poor women is depicted in Table 4. The Table shows that higher income of household has a better chance of success in poverty alleviation.

Table 4 : Household s Monthly Income to Alleviate Poverty

Monthly Income (in Tk.)	Status of Poverty Alleviation No	Yes	Total
< 6000	35(79.5)	9(20.5)	44
? 6000	65(71.4)	30(28.6)	91
Total	100(74.1)	35(25.9)	135

Note: Figures in the parentheses indicate percentage
Source: Field Survey, 2008

Poverty Alleviation by Women Education: Table 5 shows that women with higher education status, if they have access to credit, can have highest success in poverty alleviation.

Table 5 : Education Status of Women to Alleviate Poverty

Education Status of Respondents	Status of Poverty Alleviation		Total
	No	Yes	
Illiterate	39(73.6)	14(26.4)	53
Educated	55(76.4)	17(23.6)	72
Higher Educated	6(60.0)	4(40.0)	10
Total	100(74.1)	35(25.9)	135

Note: Figures in the parentheses indicate percentage
Source: Field Survey, 2008

Poverty Alleviation by Occupation of Women: Microcredit organizations provide credit to women to raise their status through independent income generation and thereby alleviate poverty. Table 6 indicates that the microcredit facility given to the employed women was more effective in poverty alleviation than unemployed women.

Table 6 : Occupation Status of Women to Alleviate Poverty

Occupation	Status of Poverty Alleviation		Total
	No	Yes	
Unemployed	73(75.3)	24(24.7)	97
Employed	27(71.1)	11(28.9)	38
Total	100(74.1)	35(25.9)	135

Note: Figures in the parentheses indicate percentage
Source: Field Survey, 2008

Poverty Alleviation the size of the Loan: Table 7 shows that women who received larger amount of loan from any microcredit program could alleviate their poverty more than those women that received lower amount of loan.

Table 7 : Status of Poverty Alleviation according to the Amount of Loan Received

Amount of Loan (in Tk.)	Status of Poverty Alleviation		Total
	No	Yes	
<5000	22(81.5)	5(18.5)	27
5000-15000	68(73.9)	24(26.1)	92
> 15000	10(62.5)	6(37.5)	16
Total	100(74.1)	35(25.9)	135

Note: Figures in the parentheses indicate percentage
Source: Field Survey, 2008

Poverty Alleviation by Amount of Savings: Female borrowers want to accumulate savings in their own names, and microcredit programs enable them to realize this objective. So, larger savings amount contributes more to alleviate poverty of women (Table 8).

Table 8 : Savings Amount of Women to Alleviate Poverty

Savings Amount (in Tk.)	Status of Poverty Alleviation		Total
	No	Yes	
<5000	88(75.9)	28(24.1)	116
?5000	12(63.2)	7(36.8)	19
Total	100(74.1)	35(25.9)	135

Note: Figures in the parentheses indicate percentage
Source: Field Survey, 2008

Determinants of Poverty Alleviation

The logistic regression model seems to be the most appropriate multivariate technique to explain the situation since the dependent variable - poverty alleviation, is binary. Therefore, the study develops a multiple linear logistic regression model by considering household members, earning members, monthly income, education and occupation of respondents, amount of loan, and savings amount as explanatory variables.

The result of the logistic regression model is shown in Table 9. Total household members of women borrowers influence their level of poverty. The number of household members is negatively related with the dependent variable. The relationship between probability and odds ratio is shown in the footnote[3].

Household earning members is another important determinant of poverty alleviation. The households with more earning members reduce poverty through their income more than the households having fewer earning members.

The economic well being of women borrowers is largely determined by their household's monthly income. The success of poverty alleviation was 66.81 percent for the households with monthly income above Tk.6000, which is higher in comparison to the households with monthly income less than Tk.6000.

Educational status plays a vital role to alleviate poverty of women. Though the impact on poverty reduction was found almost the same for the employed and

3 Probability = [Odds / (1+Odds)]

unemployed women, the success of poverty alleviation is higher for employed women than the unemployed ones.

Amount of loan is another factor that influences poverty alleviation. The reason is that a woman having a large sum of loan can properly utilize the loan for poverty alleviation.

Microcredit programs positively influence borrowers' ability to save, which can help them in times of emergency or other needs. So, it can be said that women that have larger amount of saving have greater ability to alleviate poverty and reduce their vulnerability at the household level.

Overall Interpretation

From the results of the study it is observed that households with too many members have a negative effect on poverty alleviation, while the larger number of household earning members has a positive effect on poverty alleviation. The results also suggest that women's higher education status, employment opportunity, and monthly income of their household have the greatest positive impact on poverty alleviation. For example: the higher education level of women as opposed to lower level of education or illiteracy of women has a greater impact on their poverty alleviation. Our results also suggest that a larger amount of loan received and accumulation of savings of the poor women will be more effective to alleviate poverty.

Conclusion

The present discussion on the credit activities of government and non-government microcredit programs reveals that disbursement of credit of these organizations was not much effective to alleviate poverty of poor women at household level. Some policy recommendations are made in this paper to the microcredit organizations for extending microcredit facility to poor women borrowers to alleviate their poverty.

Table 9 : Determinants of Poverty Alleviation: Logistic Regression

Variables	B	Standard Error	Wald	Odds Ratio
Household Members				
1-5 *RC*	-	-	-	1.000
6-7	-1.100	.485	5.144	.333**
Household Earning Members				
1 *RC*	-	-	-	1.000
2	.346	.547	.399	1.413
3	.531	.849	.391	1.700
Household Income (in Tk.)				
< 6000 *RC*	-	-	-	1.000
? 6000	.700	.493	2.017	2.013
Education				
Illiterate *RC*	-	-	-	1.000
Educated	-.297	.452	.432	.743
Higher Educated	.427	.788	.293	1.533
Occupation				
Unemployed *RC*	-	-	-	1.000
Employed	.070	.540	.017	1.073
Loan (in Tk.)				
<5000 *RC*	-	-	-	1.000
5000-15000	.320	.598	.286	1.377
>15000	.695	.792	.770	2.004
Savings (in Tk.)				
<5000 *RC*	-	-	-	1.000
?5000	.876	.611	2.057	2.401
Constant	-1.612	.617	6.820	.200

Source: Field Survey, 2008

Note: 1.RC: Reference Category

*2. **=p<0.05.*

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Micro Finance for Poverty Alleviation in Bangladesh: An Analysis of Outreach, Impact and Sustainability

MD. GOLZARE NABI[1]

Abstract

Microfinance has emerged as an effective tool in fighting poverty in Bangladesh. Yet outreach of microfinance remains well below its potential; only half of the poor households have been under microfinance programs. The article thoroughly examines outreach of microfinance programs, its impacts and sustainability and opines that it is imperative to substantially expand outreach with sustainability for bringing the remaining poor households under microfinance network. It also suggests some policy measures to ensure continued supply of funds, the main bottlenecks in extending outreach, and combating poverty.

1. Introduction

Bangladesh has been able to draw the attention of the world community heralding new approaches to poverty alleviation through micro finance operations among poor households. A large number of NGOs have emerged to provide collateral free low cost credit to the poor inspired by the apparent success of Grameen Bank in reaching the poor. The model of Grameen Bank in poverty alleviation is being widely imitated in many developing countries. Even some poor regions of the developed countries such as USA and Canada are following the path of Grameen Bank in fighting poverty. The massive growth of Micro Finance Institutions (MFIs) has made national governments, development partners and NGOs across

1. Joint Director, Monetary Policy Department, Bangladesh Bank

the globe think micro finance program as a way of helping credit-starved poor people. This has also created much fervor among researchers, development economists in particular, to research on the emergence, role, objectives and methods of micro finance program as well as its outreach, impact and sustainability.

In Bangladesh, like many other LDCs, local moneylenders dominate the informal credit market. Although the indigenous moneylenders are easily accessible for loans, they often charge annual interest rate of more than 100 percent, leading potentially profitable projects into ruins. On the other hand, formal banks have left the poor unbanked because they do not have suitable physical collaterals to offer. The lion share of Government-sponsored rural credit has gone to the rural elite rather than to the poor. The operators of micro finance argue that micro finance can be widely used as an effective tool in poverty alleviation. The Grameen Bank and other successful NGOs have led the way in developing appropriate methodologies in serving the poor. The existing theoretical literature attributes this success to peer group micro lending, monitoring, peer pressure, mutual insurance, information transfer etc. MFIs address the problems of targeting, screening, monitoring and enforcement innovatively. The problem of screening i.e. distinguishing the good (creditworthy) from the bad (not creditworthy) borrowers is solved by MFIs through formation of groups. Since all borrowers of a group are jointly liable for each other's loan and they know each other in almost all respects, a bad borrower has little chance to enter into a group. The problem of monitoring is also resolved through joint liability of all members of a group as well as close supervision of MFI's staff. Borrowers under joint liability lose the right to future credit in case of default by a member implying that group members monitor each other and compel debt repayments by threatening to impose social sanctions upon peers who default strategically. Though the poor have no useful physical collateral, peer pressure works as social collateral that makes group members to repay loans regularly.

MFIs have emerged over the last three decades in Bangladesh with the objectives of delivering micro financial services among the poor people for poverty alleviation. Many NGOs starting as relief and social awareness creating organizations have turned into micro finance institutions (MFIs). Micro finance has become the sole program for many NGOs though some NGOs are implementing micro credit program along with several social development programs like education, health, skill training and environmental issues. There are more than one thousand NGOs operating micro credit programs in Bangladesh

(Micro Credit Regulatory Authority, 2009). But Grameen Bank and 10 large NGOs dominate the micro finance industry covering 81 percent of total outstanding loans (around BDT 157.82 billion) and 87% of total savings (around BDT 93 billion). A sector-wise distribution of loans reveals that MFIs mainly finance the informal sector of the economy such as small business, cottage industries, mini transportation, livestock, fisheries, nurseries etc (Ahmed, Salehuddin 2004). Now micro finance accounts for more than half of the rural financial transactions and serves about 35 percent of rural households in Bangladesh. Now financial services of around BDT 160 billion are being rendered to 30 million poor people (Micro Credit Regulatory Authority, 2009). It is claimed that micro finance has been able to break the vicious cycle of poverty of millions of poor people.

Although micro finance has a positive impact on the living standard of the poor as many studies show, a large portion of the poor people, hardcore poor in particular, are yet out of the micro finance network (Hashemi 1997, Zaman 1997 and Ahmed, 2004). Besides, MFIs are largely dependent on subsidized or donor funds but with higher operational costs. In the backdrop of the declining trend of foreign fund, donor's insistence on financial sustainability and huge unmet demand of micro finance, it is imperative to assess the ability of micro finance programs to attract both subsidized and commercial fund to cater to the growing demand for micro financial services of thousands of the poor. The paper attempts to analyse the outreach of microfinance programs, their impacts on recipients and sustainability in Bangladesh. The objectives of the paper are two fold: first, to review outreach, impact and sustainability of micro finance programs in Bangladesh, and second, to put forward policy options to build a strong micro finance market capable of channeling the funds gathered both from donor agency and private sector to the poor people for alleviation of poverty through self-employment.

The rest of the paper is organized as follows. Review of literature is made in Section II. Section III reviews the outreach of micro finance programs in Bangladesh. Section-IV analyses the impact of micro finance programs on borrowers, which is followed by a discussion on sustainability in Section-V. Finally, Section VI contains findings, policy implications and conclusions.

2. Review of Literature

There has been a mushroom growth of studies on different issues of micro finance. There are some studies relating to target/outreach of micro finance

programs such as Grosh and Baker (1995), Zaman (1998), and Meyer, Nagaranjan and Dunn (2000).The major impact studies on micro finance are Nigar Nargis (2008), BIDS (1990,1999 & 2001), Khandhker (2003), and Zaman (1997,1999,2004). Though there is a dearth of quality impact studies that reveal the actual impact on the beneficiaries, most studies show positive impacts on income, saving and employment of the poor, women in particular. Sustainability is vital for survival of micro finance institutions but to our knowledge only a few studies have been undertaken to address the issue (Khandaker, Khalily and Khan,1995; Conning,1999; and Khalily, Imam and Khan, 2000).

3. Outreach

The term 'outreach' is typically used to refer to the efforts by MFIs to extend loans and financial services to ever-wider poor borrowers (breath of outreach), especially toward the poorest of the poor (depth of outreach). MFIs established on the principle of serving the poor people measure their outreach in terms of scale or the number of clients they reach, and depth or the level of poverty of their clients. Characteristics of the clients take into accounts some key features like gender (male/female), poverty level (poor/ultra poor), and geographical focus (rural/urban). In addition to financial performance indicators, the level of outreach serves as a key indicator to assess the performance of MFIs.

Usually MFIs use land-based targeting of the poor, often in combination with additional criteria like the extent of labour selling, ownership of non-land asset etc. Large MFIs use land-based targeting of the poor, which is simple to implement because MFIs can easily select their potential clients with this criteria and they can also verify the information of the exact nature of ownership of land of the poor from their neighbors. The two large MFIs of Bangladesh have designed techniques of targeting the poor people based on ownership of land. The Grameen Bank brings such people under its micro finance program, who possess less than 50 decimals (0.5 acres) of land. Another large NGO, BRAC, selects poor households having less than 50 decimals (0.5 acres) of land and at least one family member of that household engaged in manual labor.

MFIs like GB and BRAC have reported success in reaching their targeted people. According to Micro Credit Regulatory Authority, Grameen bank and 10 large MFIs have brought 28.4 million people under micro finance programs up to June 2008 (Annexure-2). A study by Khandhker (1998) reveals that members in GB, BRAC and BRDB include only 11, 18 and 15 percent non-poor household. One of the striking features of microfinance is that more than 90% participants are

women. Though male members dominate in microfinance programs during the initial stage, women now outperform men overwhelmingly in microfinance activities.

Notwithstanding the success of MFI in targeting and reaching among millions of poor, women in particular, its failure has been noticed not to cover millions of poor, hardcore poor in particular. Currently, microfinance covers approximately half of the poor in Bangladesh.

4. Impacts

The term “impact” refers to both economic (i.e. increase in income, consumption and assets level) and social (i.e. skill development, empowerment etc.) benefits the poor households receive after joining the microfinance programs. The key success of microfinance hangs on how far it can address the constraints faced by the poor in poverty alleviation. The constraints include lack of ownership of productive assets and adequate employment opportunities. It is evident that microfinance provides an alternative form of productive resources for the poor households, which eases the constraints in the credit market and thereby creates self-employment, and increases productivity and earnings. It is observed that the amount of microfinance disbursed by MFIs has been increasing very fast in Bangladesh with high recovery rate (Bangladesh Bank, various issues). The assessment of key impact studies also shows a positive impact of micro finance on the lives of the poor people (Ahmed, 2004).

The overall impacts of microfinance in Bangladesh can be analyzed under the following headings.

(1) Impact on Poverty via Promotion of Employment, Income and Expenditure

The key success of microfinance is the generation of self-employment for near 30 million poor households in different economic activities, off-farm activities in particular. MFIs have made good strides in creating self-employment for the poor, women in particular. Microfinance has contributed to labor productivity of the poor through addition to the existing capital. Following the rapid expansion of microfinance, a large number of hard working poor women have been engaged in different income generating activities and thereby alleviating poverty. Some studies show that the generation of self-employment is the main mechanism through which microfinance has been effective in accelerating the growth of income/expenditure and reducing poverty. This is reflected in the higher labour

force participation ratio among participants in microfinance programs as compared to non-participants. It is also revealed that poverty situation has improved among recipients of microfinance (Hossain, 1984, 1988; Rahman 1996; BIDS 1990, 1999 & 2001; Morduch 1998; Khandhker S.R 1998, 2003; and Zaman H 1999 & 2004).

Impact studies by Hussain (1984,88) reveal that microcredit encourages the participating households to involve in non-agriculture occupation. The study by Hussain (1988) also reveals that the average household income of the Grameen Bank members was about 43 percent higher than the income of the target group in the control village and about 28 percent higher than that of the target group non-participants in the project villages. Poverty situation has been less serious among Grameen Bank members: only 61 percent among Grameen Bank members were moderate poor compared to 80 percent for the target group in the control villages.

The study by Rahman (1996) also confirms higher labor force participation ratio between both male and female borrowers. Rahman (1996) showed that about 97 percent borrowers achieved an increase in income and only one percent reported a decline. Households expenditures who borrowed more than once was found to be 17 percent higher than those who did not borrow. Findings of the BIDS studies (1999, 2000, 2001) reveal that micro credit has a positive and significant effect on poverty status of the program households. It is revealed from these studies that wage earning of the participating households was 8% higher than that of the non-participating households due to higher wage earning from transport and other non-farm activities run on micro credit.

Khandker (1998) estimates that for every 100 taka lent to a woman, household consumption increases by 18 taka; the figure is 11 taka if the same amount was lent to a man. Moderate poverty falls around by 15 % and ultra-poverty by 25% for households who have been BRAC members for upto three years. Micro credit also smoothes consumption of the poor households. Morduch (1998) shows that consumption variability is 47% lower for eligible Grameen households, 54% lower for eligible BRAC households, and 51% lower for eligible BRDB households, compared to control group. The consumption smoothing is driven by income smoothing as evidenced by the significantly lower labor supply variability experienced by micro credit members.

A recent study (Khandker 2003) based on panel data reveals that micro credit has significantly contributed to reducing poverty. It also reports surprisingly that the extreme poor benefits more using micro credit compared to the moderate poor.

One of the key strengths of microfinance is reflected in its capacity of reducing vulnerability of poor households affected by natural disasters (Zaman 1999 & 2004; BIDS 2001). Many MFIs provide emergency as well as rehabilitation assistance to micro credit members to cope with crises arising from natural disasters and thereby reduce vulnerability of the poor.

(2) Impact on Savings and Investment

MFI influences the rural informal credit market through its impact on poor household's savings and investment. MFIs help to reduce the dependency of poor on the informal money market directly through the provision of microfinance and also indirectly through the scope for increased savings by poor households. Loans from MFIs supplement their own investment and bridge the consumption need in slack reason. In addition to cash savings, poor household's savings take various forms of direct investment. The value of such investment may be substantial and it may even be higher than cash savings. MFIs are expected to contribute to accumulation of both working and fixed capital of the poor. *(Hossain, 1984; Mustafa et al, 1996; Khandker and Chowdhury 1996; Rahman 1996;* Zaman 2004).

Micro credit reduces the dependency of poor households on the informal credit market, and thus stops the mechanism through which poverty is perpetuated. The study by Hussein (1988) shows that the dependency of Grameen Bank participants on non-institutional sources was lower in comparison to similar groups of non-member households in the project and control villages. Only 6 percent of GB members received loans from non-institutional sources compared to about 18 percent of the bank's target group in the villages and 20 percent among non-members within the project villages. The share of institutional loans to total loans was 78 percent after the GB entered into rural financial market. The study also reports that 80 percent of households reported accumulation of non-agricultural capital after joining Grameen Bank and the average amount of investment was higher for the two term borrowers than for one time borrower. His findings also showed that the share of equity in total investment increased from 11 percent to 28 percent for members borrowing four times or more.

A study by Rahman (1996) shows that micro finance has positive impact on savings and assets accumulation. It is observed in Rahman's study that the first time borrowers did not spend much on capital assets; but those who borrowed more than once, spent a much higher amount on capital assets.

An Impact assessment of ASA borrowers shows that the average value of physical assets increased by 127% in rural areas and about 150% in urban areas over a five year period. Moreover, the average increase in cash savings was 133% and 111 % in rural areas and urban areas, respectively, over the same five-year period. BRAC, Grameen and PKSF partner organizations have the similar experiences (Zaman 2004).

(3) Impact on Empowerment of Women

The most important impacts of microfinance is reflected in the empowerment of women. Empowerment of women includes both material and non-material benefits achieved through participation in micro credit programs. Material benefits means increase in income, nutrition, food security, health care facilities etc. Non-material benefit includes increase in the power of decision-making, self-sense of honor, respect and recognition from family members and others of the society, and higher mobility.

In Bangladesh, above 90% of the recipients of microfinance are women who have been able to raise their status in decision-making process in the family through involvement in income generating activities. Microfinance can help women to break the vicious circle of poverty and deprivation. Though Goetz and Gupta (1996) reveal a minimal impact of microfinance on empowerment of woman, many studies like Rahman (1996), Hashemi, Schular and Riley (1996), and Zaman (1998), Mahmud S (2000, 2004) show positive correlation between participation in microfinance and empowerment of woman.

The study of Goetz et al (1996) gave a sceptical view on impact of micro credit on women. Women's control over loans as the indicator of empowerment is used in the study. The study concluded that credit reinforces gender roles and inequalities, which they believe, will do little to alter the social status quo. However, this study fails to recognize that credit becomes part of the overall household income and that household members jointly participate in the loan investment. Even if the woman is not controlling the credit, she is still the bearer of the money, which gives her a stronger bargaining power within the household.

(4) Impacts on Human Capital Formation

MFIs help human capital formation of the poor through enhancing productivity. Some MFIs have adopted non-formal primary education programs, which contribute to increase in school enrollment and education of children of poor

households. Most MFIs require that the members learn to sign their names. Besides, some NGOs have training schemes. Thus MFIs have been effective in generating relevant skills and social awareness which leads to human capital formation badly needed for socio economic upliftment of the poor. (Rahman 1996; Hossain, 1998, Khandker 1998, BIDS 2001).

The studies of Rahman (1996) and Hossain (1998) reveal that the households who participate in MFIs have a higher school enrolment rate of children compared to the control group. The study of Khandker (1998) also confirms the same view. Halder (1998) shows that the awareness and school training programs have been useful in the daily life of BRAC members. The BIDS 2001 study shows that in addition to reduction in poverty, improvements in other social indicators (child immunization, use of sanitary latrines, contraceptive prevalence) are also noticeable for micro credit program members compared to non-members (Zaman 2004).

(5) Impact on Non-participants

Microfinance programs have impacts on non-participant members as well, which are routed through many channels. The social impacts in the form of knowledge, awareness and better practices of health, sanitation and family planning are spread to the non-participant members. Such spillover effects are expected to be positive. MFI may affect the rural labor and capital market in such a way that non-participants are also benefited. Since supply of institutional credit increases due to the expansion of microfinance, the total available credit will also increase, leading to a decline in the rate of interest. In the labor market, an increase in self-employment among the microfinance recipients has been demonstrated. This has been associated with a decline in the wage employment among participants. As a result, the non-participant poor will obtain more wage employment (Hossain 1988).

The study by Khandhker (2003) reports that micro finance not only affects the welfare of participants but also the welfare of non-participants. The study demonstrates that male borrowing from micro finance programs increases welfare of non-participants by promoting food and non-food consumption and reducing extreme poverty. Female borrowing has no significant effect on consumption of non-participants but it reduces extreme poverty and increases household's non-land assets of non-participants. The study cites that non-participants benefit due to the externality of borrowing by participants and thus raise the overall welfare of the society.

Though micro finance has positive impacts, it is also revealed in few studies that MFIs have been able to reach only half of the poor of the country. MFIs have failed to reach the very poor in particular. The very poor or hardcore poor accounts for 24% of rural populations, who are often severely undernourished, marginalized and often become ill or unable to work. They are excluded from microfinance for a range of causes relating to their low capacity, low self-esteem and vulnerability. It is also observed with surprise that MFIs/NGOs could not be able to alleviate poverty in economically backward monga-prone (semi-famine situation) regions such as greater Rangpur district and some other parts of the country. It implies that the success of NGO operations depends largely on the better performance of key sectors (agriculture or industry) of national economy and that without Government's direct support, NGOs' approach is ineffective to produce pro-poor growth in economically backward regions.

Another provocative question is whether MFIs are in a position to help those who graduated using microfinance and need large loan to develop SMEs. Critics of micro-finance refute the claim that micro finance can help the poor, saying that micro-finance, instead of helping the poor, has created debt cycles to pay the installments of loan by making fresh loan from moneylenders. A World Bank Report reveals that some NGOs are illegally involved in political activities in Bangladesh (The Financial Express May 18, 2006). The report also cites that some NGOs are making brisk business without paying taxes and duties to the national treasury. The debate over impact should be further researched with appropriate tools and methods under independent research organizations without the influence of donor agency and MFIs.

5. Sustainability

Sustainability is taken to mean full cost recovery or profit making and is associated with the aim of building microfinance institutions that can last into future without continued reliance on government subsidies or donor's funds. Sustainability is generally attained at two levels: operational sustainability and financial sustainability (Morduch 1999). The operational sustainability refers to the ability to generate sufficient revenue to cover operating costs, financing costs, and provision for loan losses but not necessarily the full costs of capital. The financial sustainability means covering all operating costs including costs of funds. An ideal MFI first attains operational sustainability and then financial sustainability. Both levels of sustainability are required for an MFI for survival in the long run. The issue of sustainability has drawn much attention of all

stakeholders of microfinance, researchers in particular, due to (a) a greater dependence of microfinance on subsidies/donor fund, (b) high interest rate and operational cost, and (c) the desire for transforming microfinance programs into financially viable ones to attract commercial funds for extending outreach among millions of poor remaining outside the microfinance network.

There are two different views on sustainability: (i) poverty lending approach and (ii) financial system approach (Robinson M 2001). Advocates of poverty lending approach do not recognize the importance of sustainability arguing for a focus on targeted outreach rather than sustainability. They are of the opinion that access to credit is a universal fundamental right of the poor and they contend that a narrow insistence on cost recovery and the elimination of subsidies would force MFIs to shed the poor from their portfolios of borrowers because they are precisely the most difficult and costly to attend. They also argue that society should be willing to consider subsidizing MFIs for they can efficiently target and positively affect the livelihood of the poor. The proponents of financial system approach stress on sustainability through raising interest rate and lowering cost. They argue that subsidized institutions tend to be inefficient and unsustainable. Besides, they support profit motive to attract massive commercial funds from the private sector to extend outreach of microfinance among thousands of poor because mere dependence on donor funds or subsidized funds are not sufficient to cater to the growing demand for microfinance. It is also observed that donor-funded institutions have high expenses preference than do the less donor-funded programs implying that cheap funds drive overhead costs up.

There are also intense debates regarding tradeoffs between poverty alleviation and sustainability A large body of critics suggest that sustainable microfinance programs are effective only for the moderate poor (consumption under 2112 kcals/head/day), not for the hardcore poor (consumption under 1805 kcals/head/day). The moderate poor can use commercial micro credit efficiently and can make regular repayments. The hardcore poor needs subsidized funds plus other assistance like food, shelter and medicare so that they can qualify for commercial micro finance in the future.

Though in Bangladesh, some MFIs have attained near sustainability, a large number of MFIs are still dependent on subsidized funds like Palli Karma Sahayak Foudation (PKSF) fund and donor’s fund. Micro credit programs may be subsidized in their early years of operation and these programs may attain self-sustainability over time. Following this approach, Grameen Bank is close to sustainability after 15 years of operation and similarly quasi-formal MFI ASA has

attained a higher degree of sustainability within seven years. In fact, if we want to extend outreach of microfinance among millions of the poor, we need innovative microfinance programs capable to invite commercial funds for poverty alleviation since subsidized and donor's funds are not sufficient to finance poverty alleviation activities. But there is no legal framework and supervisory agency for MFIs to gather funds from the public and other commercial sources. Recently formed Micro Credit Regulatory Authority (MRA) is a bold step to bring MFIs under a proper legal structure. Most MFIs have governance problems to handle commercial funds cost-effectively.

6. Findings, Policy implications and Conclusions

Briefly, the main findings of the study are that (a) MFIs have been able to reach half of the poor in Bangladesh; the other half of the poor, hardcore poor in particular, are yet out of the microfinance network; (b) microfinance has positive impacts on the poor's employment, savings and health care and empowerment of women; (c) though some large NGOs have attained near sustainability, a large number of NGOs are still dependent on donor funds or subsidized funds; (d) MFIs have failed miserably to reduce poverty in economically poor areas.

Based on the above findings, some key policy implications can be derived.

i) To reach the poor, the hardcore poor in particular, MFIs should re-examine the targeting tools. Steps should be taken to upgrade innovatively targeting tools so that NGOs can choose the genuinely poor people to bring them under the microfinance programs.

ii) To assess the proper impact of microfinance programs on participants and non-participants, a comprehensive and in-depth study should be undertaken. MRA, PKSF and BIDS can conduct the study jointly.

iii) To attain sustainability, following measures may be adopted:

   (a) Adequate supply of Funds: In order to reduce dependency on donor funds, enhanced supply of funds can be made possible by (i) raising voluntary and involuntary savings of NGOs/MFIs; (ii) attracting commercial funds; (iii) increasing the size of wholesale funds;(iv) introducing loan guarantee services; (v) raising funds from capital markets (vi) securitization of income receivables of MFIs.

   (b) Building Sound Legal Framework: It is surprising that MFIs operate in a loose regulatory environment. Microfinance is provided

to the poor without following the rules, practices of formal banking system since objectives and operational mode of formal banks and MFIs are different, and they are not taking deposits with checking facilities. But MFIs need a sound legal framework for smooth and wide scale operation based on commercial funds**.** It is expected that the newly formed 'Microcredit Regulatory Authority' under Microcredit Regulatory Authority Act, 2006 would give MFIs necessary legal coverage to function properly.

(c) **Diversification of Financial Products**: MFIs must diversify financial products and innovate suitable products for extending horizontal and vertical outreach of microfinance with a view to addressing the financial needs of the poor. Such diversification will ensure the viability of MFIs as well as its programs designed for poverty alleviation. All groups of the poor are likely to need financial services relating to savings, credit and insurance.

(d) **Rational Service Charges**: A crucial factor to attain sustainability is the application of rational interest rate. It is argued that MFIs set high interest rate in the name of poverty alleviation and the poor people would not be able to break the vicious circle of poverty if interest rate is not lowered. This is not justified. MFIs in Bangladesh charge between 11-15 percent flat interest which is much lower than that of money lender (more than 100%) and BRI (27%) - a successful commercial MFI in Indonesia. The interest rate of MFIs is high as compared to that of commercial bank since transaction costs are higher in dealing with small loans and taking financial intermediary directly to the poor's doorstep. Surplus generated from this operation is ploughed back through the revolving fund in order to be able to serve more clients and enhance loan size. MFIs should charge such interest rate to cover operational cost with a view to achieving sustainability and attracting huge commercial funds into microfinance industry.

(e) **Measures for Hardcore Poor**: Microfinance programs based on commercial motive can not solve problems of the hardcore poor; they need support beyond subsidized funds, which includes food relief, training and health facilities. Target oriented programs like BRAC's successful program 'Income Generation for Vulnerable Group Development' (IGVGD) may be undertaken to address the problems

of the hardcore poor. Government support must also be continued for the hardcore poor through different ministries/departments.

(f) Operation of other poverty-reduction Tools viz-a-viz Microfinance: A study by Nigar Nargis (2008) showed that microcredit intervention in its present form appears to be inadequate in helping the poor to sustain accumulation of income. The study also revealed that if it takes the poverty head count ratio six years to decrease by five points, that is approximately one point each year, it may take another 70 years to eradicate poverty from its current level of 68%. Obviously, besides micro credit tool, poverty reduction strategy should include adoption of coherent measures for sustained growth in agriculture and SMEs with macroeconomic stability, manpower export, agrarian reform, formation of national climate fund, and inclusive democratic process from below.

There is no denying that micro finance has emerged as an effective poverty-alleviating tool in Bangladesh but it covers only half of the poor households due mainly to want of sufficient capital. Donor's funds and subsidized government funds are not enough to meet the growing demand of micro finance. Both horizontal and vertical expansion of micro finance is necessary in Bangladesh to combat the growing unemployment and acute poverty. To this end, a strong micro finance market run on market force having a proper legal base needs to play an effective role of financial intermediary to attract both commercial and subsidized funds for self-employment and smooth advancement of micro-enterprises. Commercial funds are also required to support graduation of microfinance recipients to SME entrepreneurs. The hardcore poor needs subsidized funds plus other social supports because the invisible hands of the market economy cannot remove their hardships. We should also remember that poverty is a multidimensional complex problem; microfinance is not the sole panacea in fighting poverty. The overall improvement in the living conditions of the poor requires, among other things, agrarian reform, democratic decentralization, public actions towards better physical and social infrastructures, sustainable measures for mitigation of sufferings of people affected by recurring natural disasters and adoption of pro-poor growth policies.

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Electronic Banking in Bangladesh: A Quantitative Analysis

MIHIR KUMAR ROY[1]
SK. KAMRUL HASSAN[2]
MM BHUIYA[3]

Abstract

Advances in electronic banking technology have created novel ways of handling daily banking affairs, especially via the online banking channel. The acceptance of online banking services has been rapid in many parts of the world, and in the leading e-banking countries the number of e-banking contracts has exceeded 50 percent. This study investigates online banking acceptance in light of the traditional technology acceptance model (TAM), which is leveraged into the online environment. DBBL is inclined to investigate a relation between Perceived usefulness (PU), Perceived ease of use (PEU), Perceived enjoyment (PE), information on online banking, security and privacy and online banking use of DBBL consumers. The research was conducted with a survey sample (n=100). The findings of the study indicate that perceived ease of use, security and privacy and information on online banking on the Web site were the main factors influencing online-banking acceptance.

The analysis of this study has produced several impeccable findings that need to be dealt with proper care for improving customers' online usage. The findings are as follows:

Perceived ease of use, security and privacy and online information are significantly positively correlated with online banking uses of the customers. Therefore, DBBL should consider these factors when they are looking

1. The authors are respectively professor, Lecturer and Graduate Student, Department of Business Administration, City University, Dhaka, Bangladesh. This paper is the abridged version of a study completed under the Internship Program of the University.

forward to increasing their online banking uses, which in turn would increase the organizational development.

The regression outputs suggest that perceived ease of use and security and privacy are the most essential and crucial variables that could explain variations in online banking uses. This is why DBBL should improve and give proper attention to make sure the ease of use of online banking and ensure customers' security and privacy.

Introduction

1. Background of the study

Since the mid-1990s, there has been a fundamental shift in banking delivery channels toward using self-service channels such as online banking services. During the past years online banking acceptance has been rapid and currently 55 percent of the private banking customers in Finland have an online banking contract with their bank (**The Finnish Banker's Association, 2003**; **Nordea Oyj, 2003**). In general, Europe has been and still is the leader in online banking technology and usage (**Schneider, 2001**). By comparison, at the end of 2000 only roughly 20 percent of the US banks offered online banking services and only 20 percent of US private banking customers equipped with an internet connection used online banking services (**Sheshunoff, 2000; Orr, 2001**). By the end of 2002, about 120 largest US banks offered online banking services (**Pyun** *et al.*, **2002**). Although in recent years this number has grown rapidly, there is some evidence supporting the opposite fact that online banking acceptance is faced with problems. **Robinson (2000)** for instance found that half of the people that have tried online banking services will not become active users.

An interesting and notable difference between US and European banks is that US banks are not allowed to have a vast bank branch network covering the whole country (**Pyun** *et al.***, 2002**). Thus, online banking services as well as ATMs have fostered competition between banks in the USA.

Online banking in this study is defined as an Internet portal, through which customers can use different kinds of banking services ranging from bill payment to making investments. Therefore, banks' Web sites that offer only information on their pages without possibility to do any transactions are not qualified as online banking services. Dutch-Bangla Bank Ltd (DBBL) has been one of the prominent banks among the commercial banks in Bangladesh. Now, they want to explore the

technological advances to deal with the customers as to why the management is lingering to go for online banking.

1.1 Problem statement

In today's banking environment, Thai banks are continuously looking to making a better use technology by attempting to move low-value transactions away from the branch counter to ATM networks and to the internet and telephone banking (Chudasri, 2002). As a consequence, most commercial banks have launched web sites to offer online services to bank customers. They are beginning to use the internet as a new distribution channel in the belief that the future of service lies in electronic banking. This is facilitated by the Thai government's support for the economy by moving it towards electronic commerce as laid out in the Ninth National Economic and Social Development Plan (Boonruang, 2000). DBBL is an upcoming bank with huge potential. The bank has recently introduced the internet banking in all its branches. The management now wants to decide whether the clients have accepted and understood the online banking system or not. Keeping this objective in view, they have decided to go for a relational research on the online banking use of the existing customers (clients) of DBBL.

In this study, the researchers examine the relationship between Perceived usefulness (PU), Perceived ease of use (PEU), Perceived enjoyment (PE), information on online banking, security and privacy and online banking use of DBBL customers.

1.2 Purpose of the Study

The purpose of this study is to increase our current understanding of the factors that influence online banking acceptance in the light of the technology acceptance model (TAM) (Davis *et al.*, 1989; Mathieson, 1991; Davis and Venkatesh, 1996). More precisely, online banking acceptance will be studied from the information systems acceptance point of view referring to the idea that customers are using bank's information system (online banking service) directly and hence more knowledge on the factors that affect information systems adoption is needed in order to better understand and facilitate the acceptance.

1.3 Limitations of the Study

This paper presents an initial phase of a sustainable research program and as such has limited itself in terms of research design.

Firstly, non-probability sampling method is adopted for the research, meaning that statistical inferences regarding the population may not be made accurately. **Secondly,** data collection was confined to only one DBBL branch of Dhaka city because of the short time span of the research. Therefore, a significant number of customers were overlooked whose belief could have been imperative for the study in the process. **Thirdly,** it was time consuming and spontaneous respondents for the questionnaires developed were hard to find. Therefore, the data collection procedure almost resembled to be an interview session on some occasions. **Again,** there was limited secondary literature available on the topic that restricted the researchers to explore the sector related to it.

2. Literature Review

Information technology adoption and actual usage of IS (Information System) in the workplace has been a central concern to many researchers and practitioners due to its importance in technology diffusion. In the last two decades, a number of studies have provided some theoretical framework for research in the acceptance of information technology and information system (IT/IS) (Ajzen, 1985, 1991; Davis, 1989; Davis *et al*., 1989; Mathieson, 1991; Moore, 1987; Taylor and Todd, 1995). Among them, the technology acceptance model (TAM) is believed most robust, parsimonious, and influential in explaining IT/IS adoption behavior (Davis, 1989; Davis *et al*., 1989; Igbaria *et al*., 1995; Mathieson, 1991). TAM was proposed by Davis (1989) and introduced two important constructs – perceived usefulness and perceived ease of use.

2.1 Perceived Usefulness

Perceived usefulness is defined as the degree to which a person believes that using a particular system would enhance his or her job performance (**Davis, 1989**). As we commented above, the perception that users will want to perform an activity "because it is perceived to be instrumental in achieving valued outcomes that are distinct from the activity itself, such as improved job performance, pay, or promotions" (**Davis *et al.*, 1992**). In applying TAM to student use of the internet, **Anandarajan *et al.* (2000)** found that perceived usefulness was related to time spent on the internet. Perceived usefulness in the TAM model originally referred to job related productivity, performance, and effectiveness (Davis, 1989). This is an important belief identified as providing diagnostic insight into how user attitude toward using and intention to use are influenced – perceived usefulness has a direct effect on intentions to use over and above its influence via attitude (Davis *et al*., 1989; Davis, 1993; Taylor and Todd, 1995). Incorporating concepts

used in expectancy theory, Triandis (1980) proposed that an important factor influencing behavior is the expected consequences of the behavior. In the context of user acceptance, the concept of perceived usefulness is, therefore, expanded to include both near-term consequences and long-term consequences. Improvement in productivity, effectiveness, job performance or satisfaction is considered attributes of near-term consequence. Triandis' explanation for near-term consequence is equivalent to the perceived usefulness in TAM. Long-term consequence refers to consequential result in one's career prospects or social status. This definition of long-term consequence reflects the concept of image in Rogers' (1983) diffusion of innovations. Rogers argued that the desire to gain social status is a most important motivation for adopting an innovation. Decomposing usefulness explicitly into near-term and long-term provides more insightful information in understanding user perception of usefulness.

Along this stream of thought, Chau (1996) split the construct of perceived usefulness in his modified TAM model into two parts: perceived near-term usefulness and perceived long-term usefulness. He hypothesized that behavioral intention to use a particular technology is dependent on the above two variables as well as on perceived ease of use. The empirical findings supported his hypothesized relationships between perceived near-term and long-term usefulness, and intention to use. The relationship between perceived near-term and long-term usefulness and attitude to use was not investigated here in order to simplify the model.

2.2 Relationship between Perceived Usefulness and Online Banking Use

Previous research has found that perceived usefulness has a strong and consistent relationship with computer usage. For example, Davis (1989) found that perceived usefulness was significantly correlated with both self-reported current usage and self-predicted future usage. Similarly, Igbaria *et al*. (1995) found that perceived usefulness has strong direct effects on system usage dimensions. Igbaria *et al.* (1994) and Adams *et al.* (1992) also confirmed that perceived usefulness is positively related to system usage. A probable reason is that individuals will use computers only if they perceive that such usage will help them to achieve the desired task performance.

Perceived usefulness represents the first motivational factor influencing microcomputer usage. The importance of perceived usefulness as an important motivating factor derives from the TRA model, which proposes that perceived usefulness affects microcomputer usage due to reinforcement values of outcomes.

Adams *et al.* (1992) and Davis *et al.* (1989) report that user acceptance of computer systems is driven to a large extent by perceived usefulness. In addition, Davis (1989) found that perceived usefulness exhibited a stronger and more consistent relationship with usage than did other variables reported in the literature including various attitudes, satisfaction and perceptions measures. Other studies by Igbaria (1990), Thompson *et, al.* (1991) and Robey (1979) suggest that perceived usefulness is positively associated with system usage.

Perceived usefulness influences web usage indirectly through attitude and directly through intent. TAM thus posits that perceived usefulness is influenced by perceived ease of use. A system that is difficult to use is less likely to be perceived as useful; in other words, between two systems offering identical functionality, a user will probably find the one that is easier to use more useful. Davis (1993) noted that perceived ease of use might actually be a prime causal antecedent of perceived usefulness. Nevertheless, perceived usefulness is not hypothesized as having an impact on perceived ease of use. Davis (1993) states that making a system easier to use, all else held constant, should make the system more useful. The converse does not hold, however. Furthermore, Davis (1989) stated his original TAM model where he found a stronger support of perceived ease of use construct with perceived usefulness rather than with intention to use. Again, from a causal perspective, the regression results suggest that ease of use may be an antecedent to usefulness, rather than a parallel, direct determinant of usage. These relationships have been examined and supported by many prior studies (Davis, 1989, 1993; Davis *et al.*, 1989; Venkatesh and Davis, 1996, 2000). However, as we commented above, there is a significant body of theoretical and empirical evidence regarding the importance of the role of intrinsic motives in web acceptance and use. Researchers have become increasingly aware of the relevance of the non-extrinsic motives of use such as intrinsically enjoyable experiences (i.e. flow) in understanding attitudes and behaviors. Next, we evaluate the role of flow affecting the web-based behaviors as a highly subjective variable among individuals, and, in turn, explaining and improving the users' experience of being in and returning to the web.

2.3 Perceived Ease of Use

The perceived ease of use refers to the degree to which an individual believes that using a particular system would be free of physical and mental efforts (Davis 1989). In TAM, similar to TRA, an individual's belief determines the attitude toward using the system and, in turn, the attitude develops the intention to use.

Finally, this intention influences the decision of actual system usage. Especially, with the proliferation of the internet and e-commerce, researchers have adopted and adjusted TAM to demonstrate the empirical evidences of TAM in the new World Wide Web (WWW) context. Perceived ease of use refers to the degree to which the user expects the use of the system to be user friendly. Since effort is a finite resource that a person may allocate to various activities (Radner and Rothschild, 1975), it implies that all else being equal, an application perceived to be easier to use than another is more likely to be accepted by users. Past research has generally confirmed that perceived ease of use can influence computer usage directly (Davis, 1986; 1989). In general, if a system is easy to use, it requires less effort on the part of users, thereby increasing the likelihood of adoption and usage. Conversely, systems that are complex or difficult to use are less likely to be adopted since it requires significant effort and interest on the part of the user. In the context of the Internet, the easy to use browsers have largely been responsible for the rapid growth in the number of Internet users.

2.4 Relationship between Perceived Ease of Use and Online Banking Use

Perceived ease of use has an inverse relationship with the perceived complexity of use of the technology, it affects perceived usefulness. Morris and Dillon (1997) found that TAM contributes to the prediction of individual usage of software in World Wide Web environment. In a similar study, Suh and Han (2002) addressed "trust" to investigate the acceptance of internet banking, and revealed that "trust", together with PU and PEU, is an important predictor of the attitude toward the internet banking system.

Perceived ease of use is another major determinant of attitude toward use in the TAM model. This internal belief ties to an individual's assessment of the mental effort involved in using a system (Davis, 1989). Perceived usefulness and perceived ease of use are distinct but related constructs. Improvements in perceived ease of use may contribute to improved performance. Since improved performance defines perceived usefulness that is equivalent to near-term usefulness, perceived ease of use would have a direct, positive effect on perceived near-term usefulness. Davis (1989) once proposed to test the generality of the observed usefulness and ease of use tradeoff and to assess the impact of external interventions on these internal behavioral determinants. The empirical research findings are, however, mixed (Davis *et al.*, 1989; Davis, 1993; Chau, 1996; Venkatesh, 1999). Ease of use is correlated positively with use of the internet for business activity. A more recent investigation suggested that students' course web

site use tended to be greater when the site was viewed as being useful and easy to use (Selim, 2003).

On the other hand, quite a few empirical studies confirmed the effect of ease of use on attitude toward use (Al-Gahtani and King, 1999; Lu and Gustafsen, 1994; Moore and Benbasat, 1991; Venkatesh and Davis, 1996). Venkatesh (2000) believes that for any emerging IT/IS, perceived ease of use is an important determinant of users' intention of acceptance and usage behavior. Even though Chau (1996) excluded the original construct of perceived ease of use in his modified TAM model, he admitted that in the exploratory state of technology use, ease of use plays an important role. This point was also supported by a recent survey done in Europe. A mail survey by Embedded Solutions among 800 professionals in England in 1999 found ease of use among the top five factors in order of significance for determining use of wireless handheld devices (Clarke, 2000).

2.5 Perceived Enjoyment

Davis *et al.* (1992) theorized that perceived enjoyment directly influenced computer-usage intention (i.e. a word processing program). Also, Igbaria *et al.* (1996) studied the effect of perceived fun-enjoyment. In this study, support was found for a positive relationship between perceived fun-enjoyment and system usage among managers and professionals who either had a microcomputer on their desk or had easy access to one in the daily performance of their job. Perceived enjoyment may be defined as the extent to which the activity of using the computer is perceived to be enjoyable in its own right, apart from any performance consequences that may be anticipated (Carroll and Thomas, 1988; Deci, 1971; Malone, 1981a). Hence, individuals that experience immediate pleasure and joy from using the computer will be more likely to use it more extensively than others. This notion is supported by Triandis (1971, 1980) who posited that affect – "the feeling of joy, elation, pleasure or depression, disgust, displeasure and hate associated by an individual with a particular act" – has an impact on behavior. Furthermore, research on the role of enjoyment in workplace computing (Webster, 1989; Webster and Martocchio, 1992) and computer games (Holbrook et al., 1984; Malone, 1981, 1981) have suggested the importance of enjoyment on usage intentions and behaviors. In a similar vein, Davis et al. (1992) found that perceived enjoyment has significant effects on intention to use a word processing program.

2.6 Relationship between Perceived Enjoyment and Online Banking Use

Perceived enjoyment associated by individuals with a particular act, could thus have a major impact on an individual's response to the web, their attitudes and behaviors. However, although as shown in previous research, perceived enjoyment could occur during goal-directed activities, experiential users are specifically moved by an intrinsic motive (e.g. feeling pleasure and enjoyment from the activity itself) (Bloch *et al.*, 1986). The use of microcomputers may also be motivated by intrinsic psychological rewards.

Again, Perceived enjoyment and fun represent an intrinsic motivation for microcomputer usage. Individuals who experience pleasure and joy from using the machine and perceive any activity involving use of microcomputers as inherently enjoyable, apart from any anticipated improvement in performance, are likely to use it more extensively than others (Davis, 1992; Malone, 1981). Davis et al. (1989) found that while perceived usefulness emerged as the major determinant of computer acceptance in the workplace, enjoyment had a significant effect beyond perceived usefulness.

Hofstede's (1980) cultural dimension of uncertainty avoidance relates to the extent to which people are threatened by uncertainty or unstructured situations. Since playfulness involves creativity as well as unstructured experimentation with computer-based tasks, it could be argued that customers from moderate to high uncertainty avoidance cultures such as Nigeria would not be motivated to perceive using the computer as enjoyment.

2.7 Amount of Information on Online Banking

The amount of information consumers have about online banking has been identified as a major factor impacting the adoption. According to Sathye (1999), while the use of online banking services is a fairly new experience to many people, low awareness of online banking is a major factor in causing people not to adopt online banking. In an empirical study of Australian consumers Sathye (1999) found that consumers were unaware about the possibilities, advantages/disadvantages involved with online banking.

2.8 Security and Privacy

The importance of security and privacy to the acceptance of online banking has been noted in many banking studies (Roboff and Charles, 1998; Sathye, 1999; Hamlet and Strube, 2000; Tan and Teo, 2000; Polatoglu and Ekin, 2001; Black *et*

al., 2002; Giglio, 2002; Howcroft *et al.*, 2002). To be more precise, privacy and security were found to be significant obstacles to the adoption of online banking in Australia (Sathye, 1999). Roboff and Charles (1998) found that people have a weak understanding of online banking security risks although they are aware of the risks. Furthermore, they found that consumers often rely that their bank is more concerned about privacy issues and protect them. Finally they argue that although consumers' confidence in their bank was strong, their confidence in technology was weak (Howcroft *et al.*, 2002). As the amount of products and services offered via the Internet grows rapidly, consumers are more and more concerned about security and privacy issues. Generally speaking, many consumers are unwilling to give private information over the telephone or the Internet, for example credit card information (Hoffman and Novak, 1998).- According to many studies (Westin and Maurici, 1998; Cranor *et al.*, 1999) privacy issues have proven important barriers to the use of online services. Basically, consumers are not willing to accept that they do not have full control over their own behaviours. They want to master their own acts and to know the causes and consequences of their own and others' acts (Baronas and Louis, 1988). Users want to control what kind of data is collected, for what purposes, how long data is recorded for, how and for what purposes their data is processed (Kobsa, 2001; Kobsa, 2002). Gathering and recording user data without consumers' awareness concerns them (DePallo, 2000).

3.1 Research Questions and Hypothesis

This study investigates the following questions:

1. Is there any significant relationship between Perceived usefulness and online banking use in the context of DBBL?
2. Is there any significant relationship between Perceived ease of use and online banking use in the context of DBBL?
3. Is there any significant relationship between Perceived enjoyment and online banking use in the context of DBBL?
4. Is there any significant relationship between information of online banking and online banking use in the context of DBBL?
5. Is there any significant relationship between security and privacy and online banking use in the context of DBBL?

3.2 Research Hypotheses

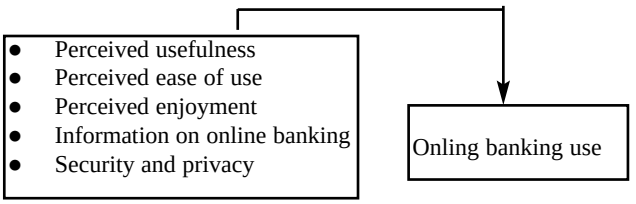
Seeking answers to the research questions in the context of DBBL, we test the following hypotheses:

1. There is a significant relationship between perceived usefulness and online banking use.
2. There is a significant relationship between perceived ease of use and online banking use.
3. There is a significant relationship between perceived enjoyment and online banking use.
4. There is a significant relationship between information of online banking and online banking use.
5. There is a significant relationship between security and privacy and online banking use.

3.3 Conceptual Framework

A conceptual framework providing relationship between Perceived usefulness, Perceived ease of use, Perceived enjoyment, information on online banking, security and privacy and online banking use in context of DBBL is presented below.

Figure 1: Conceptual framework



4. Research Methodology

4.1 Research Design

The conceptual framework presented in Figure 1 shows the relationship among these variables. The independent variables for this study are Perceived usefulness, Perceived ease of use, Perceived enjoyment, information on online banking and security and privacy. The dependent variable is online banking use. The research questions and hypotheses provide sufficient support for the conceptual framework. Hence, the researchers have adopted a co- relational study, which is justified since the focus of the study is on establishing a relationship between the stated variables.

4.2 Sampling Method

The study was conducted on 100 customers of DBBL who frequently visit the bank during peak hours. Simple random sampling was used by selecting every 9th customer for the survey. Only the account holders in the bank were considered in the sample frame.

4.3 Data Collection and Analysis

The data was collected through structured questionnaires. A previous research done by Hsu, Lu & Hsu (2006) adopted an online survey but in this part of the world it is difficult to persuade online users to fill up a questionnaire.

SPSS (Statistical package for social science) was used for data analysis, unlike in the previous research by Hsu, Lu & Hsu (2006), where factor analysis was implemented. Due to the lack of technical and statistical knowledge, we considered the correlation and regression analysis as ideal.

Correlation matrix was prepared for assessing the relationship among the variables. In the correlation matrix, significant positive and negative relationships were taken for interpretation and justifying the hypothesized relationships. The stepwise regression analysis was pursued for investigating to what extent the independent variables explain the dependent variable.

5. Results

5.1 Reliability Coefficient and Descriptive Statistics

The reliability coefficients, means and standard deviations of all the constructs in the current study are displayed in Table 1. The coefficient alphas for the different constructs were computed using the reliability procedure in SPSS. Nunnally (1978) suggested that for early stages of any research the reliability of .50-.60 is sufficient. The reliabilities of all the constructs in this study are found to be above the standard set by Nunnally (1978).

Mean scores have been computed by equally weighting the mean scores of all the items. On a five-point scale, the mean score for perceived usefulness is 3.54 (SD = .63) which indicates the perceived usefulness of customers is on the higher side on the scale. However, the SD is moderately high so there has been a limited difference of opinion among the customers. The mean score for perceived ease of use is 3.42 (SD =.57), which is higher than average and the perceived ease of use is well appreciated by the customers. The mean score for perceived enjoyment is

Table 1 : The table of Reliability Coefficient and Descriptive Statistics of perceived usefulness, perceived ease of use, perceived enjoyment, security and privacy, online information and online banking use

Scale	Number of Items	Alpha	Mean	Std. Deviation
Perceived usefulness	6	.81	3.5450	.63469
Perceived ease of use	6	.77	3.4250	.57510
Perceived enjoyment	5	.59	3.5720	.54533
Security and privacy	6	.72	3.4733	.58350
Banking information	2	.50	3.4600	.74766
Online banking use	4	.68	3.4600	.62736

3.57 (SD = .54), which is higher than average on the scale. The mean score for security and privacy is 3.47 (SD = .58), which is higher on the scale. The mean scores of online information of DBBL is 3.46 (SD = .74) indicating that customers perception is moderately high. The mean scores of online banking use of DBBL is 3.46 (SD = .62).

Table 2 : Correlation Matrix for perceived usefulness, perceived ease of use, perceived enjoyment, security and privacy, online information and online banking use

		Perceived usefulness	Perceived ease of use	Perceived Enjoyment	Security and privacy	Online information
Perceived usefulness	Pearson Correlation	1	.617(**)	.558(**)	.503(**)	.334(**)
	Sig. (2-tailed)	.	.000	.000	.000	.001
	N	100	100	100	100	100
Perceived ease of use	Pearson Correlation	.617(**)	1	.344(**)	.373(**)	.320(**)
	Sig. (2-tailed)	.000	.	.000	.000	.001
	N	100	100	100	100	100
Perceived Enjoyment	Pearson Correlation	.558(**)	.344(**)	1	.740(**)	.718(**)
	Sig. (2-tailed)	.000	.000	.	.000	.000
	N	100	100	100	100	100
Security and privacy	Pearson Correlation	.503(**)	.373(**)	.740(**)	1	.576(**)
	Sig. (2-tailed)	.000	.000	.000	.	.000
	N	100	100	100	100	100
Online information	Pearson Correlation	.334(**)	.320(**)	.718(**)	.576(**)	1
	Sig. (2-tailed)	.001	.001	.000	.000	.
	N	100	100	100	100	100
Online Banking use	Pearson Correlation	.701(**)	.731(**)	.382(**)	.396(**)	.398(**)
	Sig. (2-tailed)	.000	.000	.000	.000	.000
	N	100	100	100	100	100

*Note: *p < .05, **p < .01.*

5.2 Correlation Analysis

A correlation analysis was conducted on all variables to explore the relationship between variables. The bivariate correlation procedure was subject to a two tailed statistical significance at two different levels highly significant (p<.01) and significant

The result of correlation analysis for all the variables is shown in Table 2. It examines the relationship between perceived usefulness, perceived ease of use, perceived enjoyment, security and privacy, online information and online banking use.

The variable, weakly and significantly correlated with online banking use was perceived usefulness (r =.701, p< .01). Perceived ease of use was found to be significantly and strongly positively correlated with online banking use (r = 731, p< .01). Again, perceived enjoyment was significantly positively related with online banking use (r = 382, p < .01) but the relationship was weak. The variable significantly and moderately positively correlated with security and privacy was online banking use (r = .396, p< .01).. There was significant moderate positive relationship between online information and online banking use (r = .398, p< .01).

5.3 Regression Analysis

Both stepwise and entered regression were conducted to asses the relationship between the study variables.

Stepwise regression

A stepwise regression analysis was performed to identify the relationship between perceived usefulness, perceived ease of use, perceived enjoyment, security and privacy, online information and online banking use.

Table 3 : Stepwise regression on Online banking use

Variables	B	SE B	â	R2	?R
Step 1				.560	
Security and privacy	.793	.072	.793***		
Step 2				.60	0.04
Security and privacy	.426	.063	.654***		
Online information	.286	.050	.189***		
Step 3				.62	0.02
Security and privacy	.317	.071	.539***		
Online information	.296	.048	.173***		
Perceived ease of use	.250	.086	.180**		

Table 3 depicts that in DBBL security and privacy, online information and perceived ease of use have been significantly related and found to be significant in explaining online banking use. The predictor variables, which were statistically significantly related, together explained 62 % of the variance in online banking use whereas security and privacy, online information and perceived ease of use explained about 56% (step 1), 4% (step 2) and 2% (step 3) of online banking use, respectively.

From the above regression models of stepwise regression, step 3 was found to be the most representative one. Three out of five predictors explained variation in online banking use. Here, β was the highest for security and privacy which was found to be 53.9 % ($p<.001$) and signifies for an additional 1 unit change in customer participation, there will be .539 unit of change in online banking use, keeping all the other predictors constant.

Perceived ease of use had β of 18 % ($p<.001$), which signifies that for every 1 unit change in perceived ease of use there will be .180 unit change in online banking use, keeping all the other predictors constant. Then the ? of online information was found to be 4 % ($p<.01$), which indicates that the change of every 1 unit in supervisor support will cause .04 unit change in online banking use.

6. Assessment of the Hypotheses

Hypothesis 1

There is a significant relationship between perceived usefulness and online banking use in DBBL, which was found to be strong and positive ($r =.701$, $p< .01$). Therefore, the result we derived from correlation analysis satisfies hypothesis 1.

But, in stepwise regression, perceived usefulness was omitted, which provides partial support for the hypothesis 1.

Hypothesis 2

There is a significant relationship between perceived ease of use and online banking use in DBBL, which was found to be highly positive ($r = 731$, $p< .01$). So, the result we derived from correlation analysis satisfies hypothesis 2.

The result of stepwise regression indicates that perceived ease of use ($p<.01$) was statistically significantly related with the dependent variable online banking use in DBBL.

The β was found to be (.04) ($p < .01$), which indicates that an additional 1 unit of change in perceived ease of use would cause .04 unit of change in online banking use. Therefore, perceived ease of use has some significant relationship with the change of online banking use.

Therefore, the result of stepwise regression analysis provided support for hypothesis 2.

Hypothesis 3

There is a significant relationship between perceived enjoyment and online banking use in DBBL. The relationship was found to be moderately positive ($r = 382$, $p < .01$). Therefore, the result we derived from correlation analysis satisfies hypothesis 3.

The result of stepwise regression indicates that it was omitted from the step and it was not statistically significantly related with the dependent variable online banking use in DBBL. Therefore, the result of stepwise regression analysis provided partial support for hypothesis 3.

Hypothesis 4

There is a significant relationship between online information and online banking use in DBBL, which was found to be moderately positive ($r = .398$, $p < .01$). Therefore, the result we derived from correlation analysis satisfies hypothesis 4.

The result of stepwise regression indicates that online banking information ($p<.001$) was statistically significantly related with the dependent variable online banking use in DBBL.

The β was found to be (.173) ($p < .001$), which indicates that a 1 unit of change in online information would cause .173 unit of change in online banking use. Therefore, online information has a significant relationship with the change of online banking use of the customers. Therefore, the result of stepwise regression analysis provided support for hypothesis 4.

Hypothesis 5

There is a significant relationship between security and privacy in DBBL, which was found to be moderately positive ($r=.396$, $p<.01$). Therefore, the result we derived from correlation analysis satisfies hypothesis 5.

The result of stepwise regression indicates that security and privacy ($p<.001$) was

statistically significantly related with the dependent variable online banking use in DBBL.

The ? was found to be (.539) ($p < .001$), which indicates that a 1 unit of change in security and privacy would cause .539 unit of change in online banking use. Therefore, security and privacy has the best significant relationship with the change of online banking use of the customers.

Security and privacy explained about 56% variation in online banking use of the customers. Therefore, the result of stepwise regression analysis provides support for hypothesis 5.

7. Recommendation

The study has produced several impeccable findings that need to be dealt with proper care for improving customers' online usage. The findings are as follows:

Perceived ease of use, security and privacy and online information are significantly positively correlated with online banking uses of the customers. Therefore, DBBL should consider these factors when they are looking forward to increasing their online banking uses, which in turn would increase their organizational development.

The regression results suggest that perceived ease of use and security and privacy are the most essential and crucial variables that could explain variation in online banking uses. This is why DBBL should improve and give proper attention to make sure the ease of use of online banking and ensure customers security and privacy.

8. Conclusion

With a view to maintaining a standard online banking usage of the customers, the role that online banking uses plays is invaluable. These days, the quality of service has been the decisive factor in companies' strong position.

Therefore, it is hoped that in near future DBBL will be able to ensure the online banking use of its customers for greater development of the organization and enable itself to hold a lion's share of the market for the banking sector.

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Ethical Business Cases in Bangladesh: Standards and Norms

VICTORIA WISE[1]
MUHAMMAD MAHBOOB ALI[2]

Abstract

Ethics in business is directly related to both organizational efficiency and social values and negatively related to corruption in society. It is argued that the process of business, both domestic and international, should be guided by codes of ethics. A code of ethical conduct cognizant of the nature of organizations and considering the perspective of the country where the business process occurs should be developed and be properly implemented if acceptable ethical standards and levels of corporate social responsibility are to be achieved. If organizational management establishes proper managerial rules and regulations, incentive and disincentive systems for business personnel on the basis of their ethical conduct will act to discourage corruption, and hence ethics in business should improve.

Keywords*: Codes of ethics, Ethical standards, Corporate social responsibility; Incentives for ethical conduct*

1. Introduction

Business involves a number of objectives, including profit maximization within a framework of social and other obligations. Ethics in business is related to national factors as well as global perspectives, varies from country to country, and potentially it is affected by many factors including the strength of legal and business regulation and human characteristics such as ethnicity, gender, level of

1 Deakin Business School, Australia

2 Professor, School of Business and Economics, Atish Dipankar University of Science and Technology, Bangladesh

education and socio-cultural environment. The term 'corporate social responsibility' arises from ethical conduct in business. Under competitive conditions when a free market economy prevails in many countries, managers make choices to maximize short-run profit but to be sustainable in the long-run organizations must usually satisfy both profit expectations and ethical standards.

Business ethics examines ethical issues within a commercial context, that is the various moral or ethical problems that can arise in a business setting, and any special duties or obligations that apply to persons who are engaged in commerce. Generally speaking, business ethics is a normative discipline, whereby particular ethical standards are assumed and then applied. Specific judgments are made about what is right or wrong (http://en.wikipedia.org/wiki/Business_ethics 2009). Ethics in business is directly related to efficiency of the organization, social values and norms and global business trend and negatively related to corruption in society. Without human values ethics cannot be well exercised. Business organizations should be cognisant of their stakeholders.

A low level of ethics in the business sector is a part of wider socio-economic and political problems faced by many countries: often loopholes in legal and business regulation contribute to the corruption that can plague business operations. Further, there is often a dilemma between the pursuit of profit and business ethics. Customers as well as investors are significant stakeholders of business organizations and their, sometimes conflicting, interests must be borne in mind by management. As the globalization process takes hold and the world begins to resemble a global village, so business ethics is becoming an international issue. The United Nations (UN), in Article 14 (http://www.amnestyusa.org/business/sharepower/bhopal.html, 2009) discusses the norms for transnational corporations and other business enterprises. Further, studies have been conducted that rank nations and organisations according to their ethical conduct and stance; generally emerging economies such as Bangladesh do not rank highly. Both customers and investors pay heed to these rankings and so improving the rankings should be of concern to management when they make decisions considering profitability issues and ethical business conduct.

In this paper we present a range of case studies based on events in Bangladesh and in other nations. The data is drawn from secondary sources. We use this set of case studies to contrast the different ethical conduct that occurs both within a nation and across international borders. Our concern is that the business practices observed in Bangladesh indicate a general need for strengthening of business regulation in Bangladesh to meet international norms for ethical business conduct.

We commence with a review of relevant literature to outline various perspectives on business ethics. This is followed by a selection of illustrative case studies. Finally, we make a series of recommendations directed at strengthening the legal and business regulatory processes in Bangladesh with the aim of strengthening its ethical business conduct and international reputation.

2. Literature review

We commence the reviews with – what is ethical behavior in business? Sobhan (2000) argues that the supreme ethics in any society must be founded on the principle of justice. A society, which deprives its most productive citizens of resources, despite their proven integrity in the use of such resources, is likely to perpetuate poverty as well as underdevelopment and will in the process erode the foundations of a democratic society. Woods (1992) suggests that ethical actions are not, in the final analysis, the responsibility of the individual alone. Instead, most actions are the result of managers and employees following the norms of accepted behavior in the companies in which they work.

Trevino and Nelson (1995) define ethics as the principles, norms and standards of conduct governing an individual or group. They also comment that two types of factors influence ethical behavior: characteristics of the individual and the characteristics of the organization. Lizabeth (2006) suggests that ethical decisions are made by business people based on the following considerations: i) how employees can feel fulfilled professionally; ii) how customers can be satisfied; iii) how profit be assured for the stakeholders or shareholders; and iv) how the community can be served. Trevino and Weaver (1997) linked the matter of concern about ethics in business practices to three factors: ethical failures diminish reputation; articulating ethical standards now makes it easier to respond to criticism later; and, adoption of ethical standards is a hallmark of a profession.

Shafique (1996) commented that ethical behavior appears to be largely influenced by a range of factors including the law, government regulation, social pressure, industry sector, ethical codes and personal standards. He observed that banking, despite being a highly regulated industry in most countries, has not gone untouched by ethical crises. He identified some ‘unfortunate examples’ of unethical practices including abuse of inside information for personal gain, theft, discrimination, embezzlement, pursuit of profitability at the customer’s expense, money-laundering and insider-loans.

Regulatory costs

Vickers (2005) suggests that although society wants companies to create many and well-paying jobs, those same organizations also want to limit compensation costs and raise productivity levels. Customers on the other hand, want to purchase goods and services at low prices: this creates a conflict with businesses that have a fundamental objective of operating to maximize profits. A further conflict arises between societal demands for reducing pollution costs and carbon emissions and businesses that want to minimize the cost that environmental regulations may add to their operations.

Stakeholder and political pressures

Afful (2002) observes that ethical issues in decision making have often created a dilemma for managers. He argues that managers may be influenced by self-interest when they make decisions, and self-interest also governs whether the decision will be effectively implemented. Cramton and Dees (2002) argue that in a competitive and morally imperfect world, business people are confronted with serious ethical challenges. Syeduzzaman (2002) notes that, in some cases, banks have sanctioned loans more in consideration of political expediency than viable financial fundamentals. This type of organizational culture adversely impacts the ethical perception of the corporation level as well as having implications for acceptability of certain individual ethical behaviours.

Badaracco (2003) notes that most companies are now enmeshed in networks of on-going relationships. Strategic alliances link organizations with their customers, suppliers and even their competitors. Many companies also have complicated dealings with media, government regulators, local communities and various interest groups. These network relationships are also networks of managerial responsibility. Taken together, a company's business partners and stakeholders have a wide range of legitimate claims, but no company is likely to be able to satisfy all of them. At times, a manager's stakeholder responsibilities may conflict with their personal and organizational obligations.

Rule of law and regulation

Paine (2003) argues that while compliance is based avoiding legal sanctions, organizational integrity is based on the concept of self–governance in accordance with a set of guiding principles. From the perspective of integrity, the task of ethical business management is to define and give life to an organization's guiding values, to create an environment that supports ethically sound behavior

and to instill a sense of shared accountability among employees. The need to obey the law is viewed as a positive aspect of organizational life, rather than an unwelcome constraint imposed by external authorities.

Bribery is also closely related to unethical practices and has considerable potential to provide unfair advantages and disadvantages. Some nations have introduced regulation aimed at making the practice illegal. The issue of bribery is addressed in the Tibor-Scitovsky double-test. In this theory there is a provision that where compensation is not actually paid, it is sometimes possible for the losers to bribe the gainers to abandon the proposed change. In the double-test criteria, tests are based on an implicit value judgment and assume that actual compensation is not being paid. If compensation is paid, then welfare can be attained in accordance with Pareto criteria.

According to Hurther et al. (2002) in countries where corruption and poor governance are matters of serious concern, the priorities in anti-corruption efforts should be to establish the rule of law, to strengthen institutions of regulation and accountability, and to encourage government interventions to focus on improving ethical practices.

Codes of ethical behavior for business

Kast and Rosenzweig (1981) suggest that codes of ethics are prescriptions for what a person's values should be, rather than descriptions what they actually are. Srivastava, Johri and Chaddha (2005) suggest that organizations need to deal with the sources of ethical dilemma to address the problem. A better process for understanding and dealing with ethical dilemmas faced by managers stems from the development and use of codes of conduct where relationships, situations and decisions are viewed from a variety of stakeholders' perspectives and consideration is given to the interactions of multiple systems that exist within an organizational and institutional context that reflects contemporary society.

3. Case studies related to unethical practices in business

In under-developed countries like Bangladesh where a proper legal system does not function efficiently there is a negative flow-on effect for the business sector. The collapse of BCCI in 1991 is an example of the closure of a bank due to unethical activities. Another ethical dilemma in business can arise owing to low-level work ethics and/or work culture. For example if excessive powers are used in the sanctioning of loans and advances by corporate officers or if inefficient personnel are recruited, then conflicts of interest between owners and managers

can arise. Further, if owners interfere or attempt to interfere in management the chain of command may be broken and management inefficiencies can occur which, in turn, can lead to demoralization of personnel and to inefficient remuneration practices.

Though many business organizations in Bangladesh have their own service rules which operate as a code of conduct, this does not satisfy the need for a professional, independently developed code of conduct. In the absence of a code of conduct staff of business organizations facing work place dilemmas have no benchmark or rules to guide their conduct. This may lead to some personnel being tempted by bribes or becoming involved in corrupt practices.

We now consider a selection of case studies that indicate a general need for strengthening of business regulation in order for businesses to meet achieve ethical business conduct.

Case Study 1: NAICOM may sanction operators on unethical practices in insurance industry (Source: www.ngrguardiannews.com/).

The National Insurance Commission (NAICOM) has warned operators of insurance business in Nigeria to desist from all forms of unethical practices as machinery has been set up to deal with all cases of malpractices in the industry. The Commissioner for Insurance, Mr. Fola Daniel, while declaring open the African Insurance Brokers Association conference in Lagos, said that henceforth, the commission will closely monitor the activities of operators, especially on rate cutting, premium purchase, and non-settlement of genuine claims among others.

The NAICOM boss said that despite the global economic meltdown, the industry operators were supposed to take advantage of the financial crisis to make money by way of doubling their premium income, because those who understand the benefits of insurance would want to insure their assets in the present circumstances. But he regretted that due to unhealthy competition among practitioners, there are widespread unethical practices in the system. For instance, fire insurance policy is being given for nothing, while 90 per cent discount is granted on motor insurance. He said: “My worry is that the present global economic meltdown is an opportunity for the industry to exploit and increase our premium. Private individuals and corporate organisations who understand the importance and benefits of insurance as a shock absorber in the economy will always insure their assets.”

Case Study 2: Unethical and unauthorized medical practice - An alarming situation (Source: http://www.banglajol.info/index.php/ JOM/article/ view/ 1369/1355).

Bangladesh is a land of vast population which is nearly 15 crore. At present there are approximately 40,000 registered physicians working in both the public and private sector. But this is very meager in the context of the population. In Bangladesh the Doctor-Patient ratio is about 1:47191. There are only 25 specialized hospitals and six post graduate hospitals. The number of total hospital beds is 40,773 in which over 29,000 belong to government hospitals.

It is very difficult to give quality service to all with this strength of doctors. That's why in the early 1980s the necessity of Paramedics or 'Pollychikitshok' arose to help the medical graduates in the primary level hospital and also to provide primary health care to rural people. Subsequently a post was created in the Union and Upazilla health complex namely Sub assistant Community Medical Officer (SACMO).

In Bangladesh 77% of people still live in the rural areas so the rural people are a great concern for the health system. For lack of registered doctors, most of the villagers depend upon paramedics (Polly chikitshok) including sub-assistant community medical officers (SACMO) whose main work is to assist doctors and give primary advice to patients. They are given requisite training for these tasks. It is undeniable that paramedics are the part and parcel of the Bangladesh health system. It is also true that many of them are giving dedicated service to patients, but a large number of them are engaged in unethical and illegal practice by unauthorized prescribing of medicine. Some of them are also using "Doctor" in their names. It is unethical that they pose as full-fledged medical practitioners. This is an absolute breach of Bangladesh Medical and Dental Council (BMDC) rules and regulation as nobody can practice without the registration of BMDC. The government needs to take strong regulatory steps regarding control of this practice. If the prescribing of drug by these paramedics can be controlled, pharmaceutical company will not use the paramedics for their promotional activities.

A further unethical practice that is emerging in Bangladesh is some medical-related bachelor degree holders beginning to practice as physiotherapists and pchychotherapists etc. In some cases they also use "Doctor" in their names. This is also a breach of law which should be monitored strictly by the appropriate authority. The Government needs to be very strict to combat such malpractices.

Case Study 3: SEC of Bangladesh complains against audit firm for not reporting irregularities (Source: Daily The Independent of Bangladesh, 23 January, 2006)

The Securities and Exchange Commission (SEC) of Bangladesh has lodged a complaint against an audit firm for its negligence to note a company's unusual holding of Tk 27,247,204 in hand for two consecutive years, official sources said. "The management of the Chittagong Vegetable Oil Industries Ltd has kept the amount as 'cash in hand' in its accounts during the years 2003 and 2004. But the auditor company did not make any observation on the issue" said an SEC official, seeking anonymity. "The auditor should have counted the figure, as the amount has remained constant in hand in two consecutive years," he said, adding, "We have complained about the matter to the Institute of Chartered Accountant of Bangladesh (ICAB)."

According to the financial statement of the Chittagong Vegetables, it was observed that the company management, in its accounts, showed TK 27,247,204 as 'cash in hand' during the year 2002-03 and 2003-04 while depositing Tk 15,629 'cash at bank'. Instead, the auditor of the Chittagong Vegetables, Sarwar Salamat & Co in its opinion, said, "Owing to the nature of the company's records, we were unable to satisfy ourselves as to inventory quantities by other audit procedures." "Except for the effects of such adjustments, if any, as might have been determined to be necessary had we been able to satisfy ourselves as to physical inventory quantities," it said.

"It sounds abnormal or fictitious if such a large amount is kept in hand consecutively over one year," said Chief Executive Officer of the Dhaka Stock Exchange (DSE) Salahuddin Ahmed Khan. He said the auditor should have noted the matter in its remarks. Asked, a Chartered Accountant, (CA) preferring not to be quoted, termed it 'impractical' from the context of auditing.

Case Study 4*:* Corruption–Bangladesh counts graft's costs
(Source: http://www.ethicalcorp.com/content.asp?ContentID=5427).

For five years Bangladesh has held the dubious honour of being perceived as the world's most corrupt country, according to anti-bribery watchdog Transparency International. To rehabilitate the nation's poor reputation, the military-backed government has launched an unprecedented anti-corruption crackdown. A month after declaring a state of emergency and cancelling general elections, the army-installed administration signed up to the UN Convention against Corruption. Since then, more than 200 influential politicians, businessmen and bureaucrats –

including two former prime ministers, a son of an ex-prime minister, several ministers, business leaders and most recently a UN human rights expert – have been charged and put behind bars.

The newly formed Anti-Corruption Commission (ACC) continues to release updates of the latest public figures to be implicated as a fast-track anti-graft court hands out speedy verdicts. Every day for the past six months, Bangladeshis have woken to the news of high-profile individuals being arrested, their bank accounts frozen, vehicles impounded, stashes of cash recovered and mansions confiscated. Of the businesses caught in the clampdown, many are clothing manufacturers for big multinational brands. It is as yet unclear how brands will react to their suppliers being caught in bribery scandals.

Currently, brands' supplier codes of conduct do not include auditable standards that expressly prohibit bribery. All major business associations including the Employers' Federation and the Bangladesh Garment Manufacturers and Exporters Association (BGMEA), the nation's most powerful business group, have issued a joint statement welcoming the anti-corruption drive. A former BGMEA chairman told Ethical Corporation that bribes increase costs by 5% for garment exporters. Another garment exporter revealed the extent of the challenge facing law enforcers, saying: "Bribery is not as open as before because of the crackdown. But it is not over yet. In some cases, the asking price has actually gone up because of the enhanced risk."

Transparency International Bangladesh, which has been campaigning against corruption since 1996, estimates that the country loses about $1.5 billion – about 2% of GDP – to corruption every year. World Bank and International Finance Corporation surveys have indicated that 91.8% firms in Bangladesh report having to pay bribes. International development organisations have long complained that widespread corruption is the main obstacle to economic growth in Bangladesh, where more than 60 million people survive on no more than $1 a day. In fact, Millennium Challenge Corporation, which operates US assistance for poor countries, has excluded Bangladesh from the list of beneficiaries for the past two years, citing corruption as the reason.

Case Study 5: The culture and ethics of software piracy (Source: Donaldson (2003).

Before jumping on the cultural relativism bandwagon, stop and consider the potential economic consequences of a 'when-in-Rome attitude toward business ethics. Take a look at the current statistics on software piracy. In the United States,

pirated software is estimated to be 35% of the total software market, and industry losses are estimated at $2.3 billion per year. The piracy rate is 57% in Germany and 80% in Italy and Japan; the rates in most Asian countries are estimated to be nearly 100%.

4. Discussion

The examples presented in section 3 reveal just some of the many ethical issues that can occur in business: potentially they range across all business sectors and have the potential to damage all sectors of society. Some argue that the global financial crisis emerged from the failure of business reporting practices and lack of transparency and the failure to check unethical practices. In an ethical void business may be successful in the short time period: but, sustainability in the long-run is dependent on the application of ethical norms and practices.

Woof (2006) suggests that one significant result of the Enron collapse in the US has been the strengthening of the case for International Accounting Standards (IAS) as the pre-eminent set of standards for global accounting practices. The chief competitor, US Generally Accepted Accounting Principles (US-GAAP) continues to draw its key strength from its rule-based approach, which is directed to the accommodation of the growing complexity of business management procedures and technological development. IASs have gained some ground against US-GAAP because of the principles-based approach upon which IASs are based which may create a structural framework of ethical business practice better able to restore public confidence in corporate conduct. However, given the rapid development of innovations in financial services over the past quarter century to accommodate the growth of global business, some commentators are beginning to argue that IASs are inadequate. For example, the ‘mark-to-market’ rule creates significant volatility in the reported profits and balance sheets of organizations. Regulatory agencies cannot keep pace with the accelerated rate of change of financial services and instruments with the result that ‘loopholes’ in the regulations can be exploited by ‘creative’ preparers of financial reports.

5. Concluding remarks and recommendations

The process of business, both domestic and international, should be guided by a professionally and independently developed code of ethics. Professionalism in the business sector can be the mechanism to check unethical practices. Codes of conduct should be properly implemented in the business process in order that ethical standards are upgraded and that corporate social responsibility be attained.

Human values and morale are related to ethics. As such steps should be taken to emphasise human values and the creation of ethical practices. From childhood, ethics should be practiced: one should know what is right and what is wrong. Ethical business standards are achieved through the practice of integrity, legality, proficiency, loyalty and confidentiality by individuals. These standards can be achieved only when individual human values are similar.

Currently social values and society suffer from unethical business practices in Bangladesh. Crimes and irregularities like money-laundering, black-marketing, profiteering and loan-defaulting related to unethical practices in business process appear to be largely overlooked. Moreover, there is little in the way of social infrastructure to which people can look to for guidance.

If the business sector can improve its ethical standards, then the economic condition of the country can also be improved. As such, social responsibility within the business sector is very important: the mere earning of profit should not be the sole driving activity of the organization. If management establishes fair and proper rules and regulations, including an equitable reward and punitive system for personnel on the basis of their competence and ethical standards, and discourage corruption, then ethics in the business process can be achieved.

Human resource planning within organizations is very important to face the challenges of operating in a global village as there is no substitute for productive human resources. Appropriate training should be provided to improve the knowledge of personnel as well as their working capability. Proper recruitment policies and appropriate training facilities promote loyalty to an organization. If promotion is blocked and employees cannot adequately develop themselves then this is unlikely to lead to positive motivation, indeed it may lead to or perpetuate corruption in the workplace.

Recommendations

Each business organization must develop a code of ethics of its own. This should cover stakeholders' rights, managers, employees, customers' ethics and integrity and responsibilities and it should assist in sharing the organization's identity among the different groups of society. Other recommendations to improve ethical standards and norms in the business sector include:

a. The appointment of a National Ombudsman. This person should be able to act independently to investigate complaints regarding business activities. Adequate discretionary power to investigate any allegation of corruption in the business sector and to facilitate proper recommendations is mandatory.

b. Moral education should be emphasized: particularly innovative practices aimed at promoting a high standard of morals and ethics in the business sector are required. Various training institutes including public and private should be encouraged to arrange training courses, workshops, and conferences on ethics.

c. Ethical practices and processes within business organizations should be encouraged. Any unfair business practices should be discouraged. This can be achieved in a variety of ways including improved reporting transparency and business controls such as audit and strengthening of internal management information systems. Ethical practices cannot be ensured through imposition of law: but it can be checked and by this means, unfair practices can be discouraged and reduced.

d. Social prestige of ethical business personnel should be improved. They should be appropriately honored so that they are motivated to continue to work in an ethical way for the organization. Journalist should be more vigilant: however, role of the media should be positive–in a sense that besides publishing and broadcasting negative news they must also promote and publicise positive ethical conduct. In this way publicity can boost morale and improve the profile of ethical employees and executives of an organization.

e. Business personnel should work hard and with honesty and integrity. They should refrain any and all sorts of unfair activities. Management of organizations should be encouraged to use moral persuasion for conducting fair business. In developing nations such as Bangladesh, professionalism in the business sector should be nurtured.

f. In developing nations such as Bangladesh, undue pressure from board of directors or owners or management should be discouraged. Those who are responsible for audit and inspection in organizations must have sufficient knowledge and experience of the business sectors they are scrutinizing.

g. Sound business regulations should be established so that organizations can operate free from political interference. Political pressure should be zealously monitored and eliminated.

h. Services provided by business organizations should be improved. Customers should get proper and due services at a reasonable cost.

i. The opportunities to comply with ethical practices in business should be made a top priority in order to boost the economy. To facilitate this, recruitment policies in the business sector should be improved so that efficient and competent people can be employed in organizations: unfair employment practices should be eliminated. To maintain honesty and integrity of the personnel of the organization each of them should be given wages cognizant of their purchasing power parity.

j. Multinational companies should be aware of ethical practices: they should refrain from and discourage unethical practices.

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Global Climate Change: Impact on Agro-Sector of Bangladesh

Nirmal Chandra Bhakta[1]
Hasan Tareq Khan
Amitabh Chakraborty

Abstract

Bangladesh is one of the most climate vulnerable countries in the world and will become even more so as a result of climate change. Floods, tropical cyclones, storm surges and droughts are likely to become more frequent and severe in coming years. These changes will threaten the significant achievements that Bangladesh has made over the past 25 years in increasing income and reducing poverty. Not only this, it will also make it more difficult to achieve the Millennium Development Goals (MDGs). It is essential for us to be prepared for adapting to climate change and safeguard our future well-being. One thing must be mentioned that the most important sector of our economy, the agriculture sector, is in the most vulnerable position due to the effects of climate change.

Over the last 39 years, the Government of Bangladesh, with the support of development partners, has invested over 10 billion US$ (at constant 2007 prices) to make the country less vulnerable to natural disasters. These investments include flood management schemes, coastal polders, cyclone and flood shelters, and the raising of roads and highways above the flood level. In addition, Governments at different times have developed state-of-the-art warning systems for floods, cyclones and storm surges and are still trying to expand the community-based disaster preparedness. Climate resilient varieties of rice and other crops have also been developed. The

1. Authors are General Manager & Assistant Directors of Bangladesh Bank, respectively. Opinions expressed in the paper are their own, and in no way reflect the official position of Bangladesh Bank.

challenge Bangladesh now faces is to scale up these investments to create a suitable environment for economic and social development of the country and to secure the well-being of our people, especially the poorest and the most vulnerable groups, including women and children.

1. Introduction

The climate system is highly complex. It consists of 5 major components, namely- the atmosphere, the hydrosphere, the cryosphere, the land surface and the biosphere along-with interaction between them. Whereas global climate change refers to any change in global climate over time and it may be due to natural viability or as a result of human activity. Bangladesh is gifted with a large area of fertile soil. Almost every region of the country is favorable for crop cultivation. Since independence, GDP has more than tripled in real terms, food production has increased three-fold, and the population growth rate has declined from 2.9% per annum (in 1974) to 1.4% per annum (in 2006). The country is now in a state to be called food-secure. Over last two decades, growth has accelerated and Bangladesh is on track to become a middle income country by 2020. In four out of the last five years the economy has grown at over 6%. Between 1991 and 2005, the percentage of people living in poverty declined from 59% to 40% and the country's Human Development Index (HDI) improved from 0.347 (in 1975) to 0.547 (in 2005). Child mortality has fallen substantially and gender parity in primary education can be said to have been achieved. Despite these successes, more that 50 million of our population still live in poverty. Most of these people live in remote or ecologically fragile part of the country, such as 'chars' and cyclone-prone coastal belts, which are especially vulnerable to natural disasters. In the recent PRSP (2009-2011), the Government of Bangladesh reaffirmed its commitments to the Millennium Development Goals (MDG) targets, including halving poverty and hunger by the year 2015, through a strategy of pro-poor growth and climate-resilient development. Climate change will severely challenge the country's ability to achieve the high rates of economic growth needed to sustain these reductions in poverty. In coming years it is predicted that there will be increasingly frequent natural disasters, which will disrupt the life of the nation and the economy.

2. Rationale of The Study

Bangladesh is one of the few countries, which are most vulnerable to climate change environmental hazards. This will cause frequent floods, tropical cyclones, storm surges and droughts in the country. Already, the climate global change has

caused a grave concern to the country's agriculture, irrigation, navigation, ecology, bio-diversity, environment and underground water levels. Rainfalls, floods, cyclones, droughts, cold and hot spells, sea and surface warming, water contamination, water and soil salinity, degradation of aquatic systems, silting and drying up of rivers, lowering of underground water levels are the effects of climate change, causing immense harm to our agriculture. Major part of our population depends on agriculture sector for their earning, directly or indirectly. So, the effects of the climate change on the agriculture sector of Bangladesh will obviously fall on these people. The present situation of climate change is causing rise in temperature, increase in CO_2 level, sea level rise etc., which are also considered as agricultural vulnerabilities as agriculture is strongly interrelated with climate factors. Governments of all countries most vulnerable to climate change risks should be prepared to face these challenges. The present research is initiated to examine the fuller impacts on Bangladesh of climate change and recommend measures, which are critical for facing the climate change situation.

3. Objectives of The Paper and Methodology

The objectives of this paper are:

(a) To provide a view of Global scenario of climate change, including that in Bangladesh.

(b) To provide some information regarding the **Global Climate Change: Impact on Agro-sector of Bangladesh** so that the interested stakeholders/people/Government can adequately address the existing and forthcoming impacts of climate change on the agriculture sector.

The paper is based on descriptive research. The authors have gathered and reviewed all available documents and reports on this issue in order to be able to make meaningful recommendations for the government and policy makers. Relevant data have been collected from related agencies, including Bangladesh Bureau of Statistics, Bangladesh Bank, Bangladesh Agricultural Research Center, Ministry of Agriculture, Ministry of Environment and Forestry, etc.

4. Global Climate Change: A Burning Issue for The Whole World

Global climate change being a real burning issue for whole world, a global summit, namely United Nations Climate Change Summit, 2009 was held in Copenhagen, Denmark. In 2008, the International Union for Conservation of Nature (IUCN) ranked a total of 130 countries on the basis of their *Environmental*

Treaty Ratification, i.e., total number of ratified environmental treaties by these countries was considered. The World Bank in their *World Development Indicators 2008* published a list of 130 countries considering their carbon di-oxide emission per capita in metric tons (in increasing order). The list reveals that some developed countries like UK, Japan, Russia, Singapore, Australia, Canada, and USA, and some major oil-producing countries like Saudi Arabia, Brunei, UAE, Kuwait, and Qatar are the highest emitter of CO_2. This means that the developed countries and a few high-income oil-exporting countries are emitting most of the CO_2 in the atmosphere and they are mainly responsible for this adverse situation of global climate change. But, ironically, countries like Bangladesh, Maldives, etc. which are least responsible for this global warming will face most of the suffering caused by this change.

For purpose of this paper, we consider the case of Bangladesh, a country which is least responsible for global warming but which will be drastically affected by global climate change. According to experts, climate change will cause an increase in CO_2 (carbon di-oxide), as a result of which both the global temperature and sea-level will rise abnormally. Also, the frequency of natural calamities like cyclones, floods, abnormally high/low rainfall, etc. will increase. As published in "The Independent" of 13/9/2009, excessive disintegration of ice during the period 2006-2008 caused the sea-level to rise by 0.2 inches. This is, in fact, a warning for us, a warning to being immediately conscious regarding protection of the global environment and to keep it suitable for living. To tell frankly, the industrially developed countries are mostly responsible for this. The 'green-house' gas produced by these countries has caused global warming and is responsible for frequent natural disasters worldwide. Climate change is a burning issue right at this moment, at least for a country like ours. It is causing suffering for billions of poor people around the world. A lot of activities are being undertaken regarding this matter. We could see that the present government is very much aware of this challenge, because it may have an impact on all spheres of life and society in Bangladesh. It is important to learn about the state of knowledge we have in climate change, about the causes and origins of climate change, about vulnerability and the most likely impacts of climate change, and the responses to climate change at international levels and at national levels in Bangladesh.

5. Agriculture is Strongly Interrelated With Climatic Factors

Agriculture is strongly interrelated with climatic factors. Agriculture vulnerabilities are the rise in temperature, and the increase in CO_2 level, sea level rise, etc. Experts observed that climate change will increase temperature, decrease

the availability of fresh water, scale up the sea-level, trigger glacial melting in the Himalayas, trigger the intensity and frequency of natural calamities and compel shifting of cropping zones in Bangladesh affecting the agriculture sector.

The climate of the country is strongly influenced by monsoon. Although it occupies 7% of the combined catchment area of the *Ganges-Brahmaputra-Meghna* river basin, the country has to drain out 92% of the flow into the Bay of Bengal. Too much water in the monsoon affects different sectors, livelihoods and food security. According to experts, monsoon rainfall will increase by 11% by 2030 and 27% by 2070. Also, the general rise in surface average temperature will increase to 1.3^{O}C by 2030 and 2.6 ^{O}C by 2070. The number of rainy days will increase by about 20 days.

The implication of this climate change scenario is that about 18% of the currently low flooded areas will be susceptible to higher levels of flooding while about 12% to 16% new areas will be at risk from inundation. On an average about a quarter of the country's landmass is currently flood prone in a normal hydrological year, which may increase to 39 percent, while the frequency of a catastrophic flood (affecting over two-thirds of the landmass of the country) could increase under climate change scenarios. Prolonged flooding can effectively reduce overall the potential for HYV Aman production.

Again, during the post-monsoon to pre-monsoon cycle, rainfall diminishes while temperature increases. Low rainfall runoff reduces river flows; consequently salinity penetrates along the coastal rivers. A combination of increased temperature and reduced rainfall results in an increase in evapo-transpiration, detrimental to crop growth.

Under climate change scenario projections, already low rainfall in the dry season will be further diminished. However, winter and pre-monsoon temperatures will rise significantly. The resulting effect will be a sharp rise in evapo-transpiration. Diminishing rainfall will further reduce available flows in rivers. As a result, salinity will penetrate inland, restricting choice for the most preferred crops. Also, the lowering of rainfall runoff will either limit irrigation or put increased economic constraints on the already poor farmers. Production of wheat, HYV Aus and Boro might no longer be economically suitable under climate change. Increased surface temperature will lead to more carbon release from the topsoil, which in turn will reduce fertility of soils.

Increased water demand for irrigation will lead to increased withdrawal from the already lean surface water systems leading to a decrease in lean season flow in the

rivers. An additional quarter of a million hectare land will become affected by salinity, on top of the 3.05 million hectares already affected. This will force farmers to grow crops of economically lesser returns.

Effects on agriculture are loss of crop coverage and decrease in crop yields, enhanced land degradation, loss of soil productivity, more infestation of pests and diseases, soil salinity build-up, loss of agro-biodiversity, erosion of land mass, increased intensity of devastating floods, irrigation water scarcity and lack of quality water, threatened food security and deterioration of livelihood of the poor living in the fragile ecosystem, etc.

Temperature, which is one of the main factors of climate, is closely associated with agricultural production. In agriculture, rice production is affected by deviation in temperature. Climate change will increase the temperature, which will bring changes in rice farming activities and affect crop yields. Various studies indicate that a rise of 10^0C to 20^0C, in combination with lower solar radiation, causes sterility in rice spikelet, and high temperature was found to reduce yields of HYVs of Aus, Aman and Boro rice in all study locations and in all seasons in Bangladesh (Bangladesh National Adaptation Program of Action 2000). As temperature has an influence on plants, temperature change will modify rate of pollination and flower blooming, seed distribution, plant growth etc., as a result of which the production of rice, wheat, and maize will decrease. Climate change will act as a factor for sea level rise in the coastal regions of Bangladesh. This will cause an increase in salinity in water and soil in the coastal regions. Growth of standing crops (like rice, jute, sugarcane etc.) will be affected due to soil salinity, and this will limit overall crop production in the costal regions as well as make the soil unsuitable for many potential crops.

It is feared that due to climate change, humidity, wind flow, and temperature in Bangladesh will change. These three climatic mechanisms, in changing conditions, cause an increase in insects, pests, diseases and microorganisms in agriculture, and accordingly, crop production will decrease. The production of potato, brinjal, lady's finger, tomato, cauliflower, sugarcane, groundnut, ginger, onion, garlic, banana, date, plum etc. will decrease. The increase of diseases, pests and insects will also affect transportation and storage of different crops and vegetables. Less rainfall during winter due to climate change will lead to a decrease in moisture content of the topsoil as well as less recharging of the ground water. Higher evaporation will cause drought-like conditions. In summer, increased precipitation will worsen the flood situation, which will have negative effect on agriculture production (Bangladesh State of the Environment, 2001).

Climate change will lead to extreme weather, which will increase the burning or destruction of crops. Due to climate change, occurrence of tornadoes, cyclones and hailstorms will be greater than before. It will hamper the total agriculture production. Bangladesh is an agro-economy-based developing country. There is no doubt that its agriculture will be badly affected by the climate change. Loss in agriculture would increase many social problems, and force the import of food, which will require spending of hard currency. Therefore, from now on, adaptation and awareness about the impact of climate change in agriculture, and many other sectors, are imperative for the development of Bangladesh. In this respect, the government, the people of Bangladesh, and international bodies will have to work together to face the climate change problem.

6. Present Affects of Climate Change- A Short Overview of Global Situation

The Climate Risk Index (CRI) was presented by the NGO Germanwatch, during the second day of UN Climate Change Summit, 2009 in Denmark. This index estimates that throughout the world, 6 lac people have died in 11,000 of natural disasters over the past 10 years. In 2008, there were 654 disasters worldwide, causing around 93,700 deaths and cost of damage worth US$123 billion. As per information of International Rice Research Institute (IRRI), if the temperature rises by 1º C at night time, the production will fall by 10%. If the present situation continues, the production of paddy will decline by further 8% and the production of wheat by 32%. According to Germanwatch and Munic De NatCat SERVICE, ten countries most affected from extreme weather events during the period 1990-2008 were: Bangladesh, Myanmar, Honduras, Vietnam, Nicaragua, Hiti, India, Dominican Republic, Philippines and China.

If we have a look through the recent events, we can see that the southern parts of USA, mainly in Texas and Florida, were hit by cyclones several times. Indonesia and Srilanka were badly hit by tsunami. Many people died in China because of huge floods and landslides. Many more unwanted natural calamities took place in different places of the world in the recent period.

Citing an Intergovernmental Panel on Climate Change (IPCC) report, which said that South Asia might experience a 30 percent drop in agricultural production by 2050, ActionAid said the slide was already evident. Food price volatility, which could be compounded by increasing climate change variability, is likely to be a serious problem for the foreseeable future, according to Action Aid. The report said that support for sustainable climate-resilient agriculture was key to enabling

farmers to increase food security and adapt. Meanwhile, in an effort to address this, farmers have taken to raising their vegetable beds, maintaining the soil's moisture by covering the seed beds (and the manure around plants) with straw and leaves to prevent excessive evaporation and erosion, and increasing the amount of organic material in the soil.

7. Effects of Global Climate Change on Agro-Sector of Bangladesh

Presently, climate change is affecting the country in many ways. For instance, rising sea levels are causing some agricultural land in coastal areas to become more saline, reducing both the quality and quantity of the produce available. In southern districts where land is only centimeters higher than the brackish estuarine water, large swathes of agricultural land are becoming arid. Crop yields are shrinking as a result of increased salinity due to rising water levels in the Bay of Bengal. Agronomists and agricultural experts now worry that the creeping salinity will engulf more and more land in this low-lying nation. Every year, production of paddy is 5 lac tons lower than the requirement.

Ghulam Mohammad Panaullah, former research director of the Bangladesh Rice Research Institute (BRRI) warned "The impact of climate change on agriculture is undeniable and will most certainly worsen if governments and donors fail to take appropriate steps right now". He also said that in coastal areas, cocoa nut and betel nut trees do not yield even half of what they did two decades ago, while banana groves are dying out in their hundreds. At the same time, vegetables sold in the urban markets of Dhaka, Khulna and Rajshahi are deemed tasteless and fetch low prices, compared to produce from salt-free regions. In a country where almost 80 percent of the populations live in rural areas, this is bad news. According to the World Bank, Bangladesh's agriculture sector accounts for about 22 percent of gross domestic product (GDP), with another 33 percent of GDP derived from the rural non-agriculture economy, which is also linked to agriculture. Around 54 percent of the rural population is employed in agriculture. According to our climate change experts and agricultural scientists, the variability of temperature and rainfall pattern in our country exhibits early signs of climate change. The country experienced 32% less rain than normal during the June-July period in 2008, the peak time for transplanting Aman paddy. If the pattern of rain and winter keeps changing due to global warming, there is no doubt that the country's agriculture sector will be hit the hardest.

Effects of climate change on the country's agriculture sector have not been assessed and mitigation efforts not determined precisely although extreme

weather events are taking their toll on Bangladesh's agriculture, heavily dependent on climate conditions. Almost all the sub-sectors of agriculture — crops, fisheries, livestock, water resources bio-diversity and livelihoods — are exposed to climate change effects, say experts on the basis of available research, forecasting the impacts in various ways and degrees at different parts of the country. Much delayed and less-than-average monsoon rain badly affects rice farming in Bangladesh almost every year and fears of flash floods either delay or make uncertain more than one crop. Climate change is likely to reduce agricultural productivity by at least 30 per cent in countries such as Bangladesh, one of the most vulnerable to global warming.

'The high incidence of poverty and heavy reliance of poor people on agriculture and natural resources increase their vulnerability to climate change,' observed the government's draft Climate Change Strategy and Action Plan. But, Bangladesh is yet to formulate and adopt detailed action plans to face the scourge of climate change in the coming years. The initiatives taken so far by the agriculture ministry, which deals with agriculture sector, are limited to literatures that touched on the ideas such as floating vegetable gardens and issues of agricultural research programs to develop high-yielding crop varieties, which are tolerant of salinity, droughts and floods.

Even with the best efforts to mitigate climate change, it is inevitable that poor farmers will be affected, noted a recent paper on 'Agriculture and Climate Change: An Agenda for Negotiation in Copenhagen' prepared by the International Food Policy Research Institute (IFPRI), though it could not predict exactly what would be the effects on agriculture. 'Water sources will become more variable, droughts and floods will stress agricultural systems, some coastal food-producing areas will be inundated by the seas, and food production will fall in some places in the interior,' read the IFPRI research paper.

According to the Global Climate Index (CRI), 2010 published on the edge of United Nations Climate Change Summit held in Copenhagen, natural disasters have caused the greatest loss of life in Bangladesh over the last decade than any other country of the world. An average of 8,241 people died each year in 244 instances of extreme weather conditions in Bangladesh with cost of damage to the tone of US$2,189 million a year and loss of GDP by 1.81 percent.

Economic costs associated with natural disasters, including extreme weather events, have increased 14-fold in agriculture since the 1950s, an expert of the UN Food and Agriculture Organization told the World Climate Conference that was held in Geneva. The challenges of chronic and acute weather impacts need greater

attention at a time when agriculture has an increased role to play in the supply of food, animal feed, fiber and energy, said Alexander Mueller, an assistant director-general of the global body. Agriculture still is the principal livelihood of 70 per cent of the world's poor.

'Climate change is likely to deal severe blows to Bangladesh's agriculture. We don't know yet exactly what will be the adverse effects, especially on livelihoods,' said Khawaja M. Minnatullah, a climate change expert at the World Bank Dhaka office. He suggested that national programs on mitigation and adaptation of climate change targeting agriculture should focus on cropping in coastal areas, protection of the Sunderbans, salinity intrusion, droughts and fall in underground water level, environment in char and haor areas, and soil erosion in Chittagong Hill Tracts.

8. Some Important Reports

It would not be out of place to flash here some AFP news, published in the press worldwide, on the impact of climate change. One AFP News captioned **Over 100 icebergs drifting to New Zealand** (NEW ZEALAND), says that, more than 100, perhaps hundreds, of Antarctic icebergs were floating towards New Zealand and these were, as per the experts' opinion, the remains of a massive ice floe which split from Antarctic as sea and air temperature rise due to global warming. If the rise of temperature continues, this will occur many more times in the future. Environmental group WWF said that flooding in the world's most port cities caused by melting icecaps could cause up to 28 trillion US$ in damage in 2050. Ulrike Saul, the In-charge of climate and energy for WWF, Switzerland, told that if the temperature rises between 0.5 to 2 degree Celsius between now and 2050, then it is possible that the sea level will rise by half-a-meter bringing major financial damages.

Another AFP news from Paris, captioned **Antarctic ice loss vaster, faster than thought,** reports that the East Antarctic ice-sheet, once seen as largely unaffected by global warming, has lost billions of tons of ice since 2006 and could boost sea levels in the future (as per a new study- Nature Geo-science published on Sunday, Nov. 22, 2009). Scientists are worried that rising global temperatures could trigger a rapid disintegration of West Antarctica, which holds enough frozen water to push up the global ocean watermark by about five meters. Many of these scientists said that even if heat trapping CO_2 emissions are curtailed, the ocean watermark is more likely to go up by nearly a meter, enough to render several small island nations unlivable and damage fertile deltas home to hundreds of millions.

9. Findings

Climate change is affecting the whole world, more or less. According to experts, 20% of Bangladesh's land will go under water within the next century. Already we are facing many natural calamities like flood, cyclone, drought, storm surge, heavy rain-fall, etc. A number of cyclones, including 'Sidr' on November 15, 2007 and 'Aila' in May, 2009, hit the country. Johan Harry, a world-famous journalist wrote a report in 'The Independent' (a British newspaper) regarding the vulnerability of Bangladesh to the climate change and environmental hazards. Mr. Harry wrote that there would be writing in the tomb-stone 'Bangladesh, 1972-2071: Born in blood, died in water'. Even seven Nobel-winning scientists of USA have expressed their worries about the vulnerability of countries like Bangladesh and Maldives.

Bangladesh Prime Minister has asked the international community to assist the country for facing these odds. Already, Bangladesh has on its own taken a 100 million US$ program in this regard. The G-8 countries have decided to form a 200b US$ fund for assisting the developing countries to face their food deficit caused by climate change. Anyway, whatever happens, we must fight the consequences of climate change that fall on our agriculture and other sectors. To face this, like other developing countries, we will need financial aid. In the Commonwealth Conference of November, 2009 a proposal was placed for 10 billion US$ of aid to the poor countries for facing the climate change situation. More than 192 nations met in Copenhagen on 7-18th December of that year to hammer out a global climate deal to curb climate change and help poor countries like Bangladesh to cope with its consequences.

10. Conclusions and Recommendations

10.1 Conclusions

University of Texas professor Jianli Chen and colleagues analyzed nearly seven years of data on ocean-icesheet interaction in America. Covering the period up to January 2009, the data was collected by the twin GRACE satellites, which detected mass flows in the ocean and polar regions by measuring changes in Earth's gravity field. They found that

- West America dumped an average of 132 billion tons of ice into sea each year, give or take 26 billion tons.
- East Antarctica is likewise losing mass, mostly in coastal regions, at a rate of about 57 billion tons annually.

- Acceleration of ice loss in recent years over the entire Antarctic continent indicated that the continent would soon be contributing significantly more global sea level rise.

Another study published on November, 2009 in the journal *Nature* reported an upwardly-revised figure for Antarctic temperature during prior 'inter-glacial' warm periods such as our own that have occured roughly every 1,00,000 years. During the last interglacial, which peaked some 1,28,000 years ago, called the Eemian Period, temperatures in the region were probably 6^0 Celsius higher than today, which is about 3^0 Celsius above previous estimates.

Experts in a seminar organized by the Institute of Water Modeling (IWM), a trust established by the Bangladesh government, said salinity in the water is apprehended to become 5-7 parts per thousand (ppt) by 2050, posing threats to food production. They said a 60 centimeter rise in the sea-level is apprehended in Bangladesh coastal zone by the same year that will submerge 18% of the nation's landmass. They also said salinity will intrude more landmass especially during dry season due to sea-level rise.

The information mentioned above is enough to describe the effects of climate change. This will have a deep impact on agriculture. *Effects on agriculture are l*oss of crop coverage and decrease in yield of crops, enhanced land degradation, loss of soil productivity, more infestation of pests and diseases, soil salinity build-up, loss of agro-biodiversity, erosion of land mass, increased intensity of devastating floods, irrigation water scarcity and lack of quality water, food insecurity and deterioration of livelihood of the poor living in the fragile ecosystem, etc. As an agriculture-based country we should consider these effects very seriously and take proper actions to face the challenges. After all, Bangladesh should not suffer for the fault of others who are responsible for global warming and climate change.

10.2 Recommendations

As a result of global climate change, mostly caused by the industrially developed countries, the major sector i.e., agro-sector of our economy will be adversely affected. So, following recommendations may be considered while formulating future policy on climate change and its impact on our agro-sector:

Measures recommended for paper reducing risks include local level planning, community based action plans, upgrading technology bases and innovations, motivation and capacity building, and in extreme cases, restructuring of agricultural production systems and cropping patterns.

Development and adoption of improved agricultural practices may be considered to increase agricultural output and ability of small and marginal farmers to adjust to the adverse effects of climate change.

Plans for ensuring augmented flow of fresh water in the major rivers in Bangladesh, the world's largest delta country, should be taken in consideration. This is vital for preventing salinity level and to shield the country's agriculture sector against climate change shocks. The positive sign is that the Bangladesh government, as part of its all-out efforts to check climate change-induced salinity intrusion, has decided to go for capital dredging in the country's major rivers.

Some policy options suggested by experts are fixing priorities keeping track of the vulnerability index, empowering local actions, forming local level coordinating body involving GO/NGO, and CBOs, activating local government institutions on climate change impact, generating fund for community operations, developing networks to reach those who have little or no access in the vulnerable areas.

An intensive international discussion should be initiated to claim compensation for countries, including Bangladesh, which are being adversely affected by global climate change.

Stricter restrictions over the use of non-disposable synthetic bags may be considered because these have a damaging effect of reducing fertility of agriculture land.

A Social and Environmental Management policy guideline and an Operational Manual for FI financed projects should be developed, consistent with Bangladesh Environmental and Social Assessment laws.

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Bangladesh Economic Association
4/C, Eskaton Garden Road
Dhaka-1000, Bangladesh
Tel : 934 5996, Fax : 880-2-934 5996
Websid : www.bdeconassoc.org
E-mail : bea.dhaka@gmail.com