BANGLADESH JOURNAL OF
POLITICAL ECONOMY

Vol. 7 No. 1 B

Conference 1986

PAPERS AND PROCEEDINGS
OF THE
Seventh Biennial Conference
OF THE
BANGLADESH ECONOMIC ASSOCIATION
Jahangirnagar University, Savar, Dhaka
December 17-19, 1985

MUHIUDDIN KHAN ALAMGIR
WAHIDUDDIN MAHMUD
Editors

DECEMBER 1986
BANGLADESH ECONOMIC ASSOCIATION (1986 & 1987)

* Bangladesh Journal of Political Economy is published by the Bangladesh Economic Association. Mailing address: Bangladesh Economic Association, C/O Department of Economics, University of Dhaka, Dhaka—2

* The price of each part of the Conference issue is Taka 100.00 (domestic) and US $ 10.00 (foreign). Correspondence for subscription may be sent to the Business Editor, Bangladesh Journal of Political Economy, C/O Department of Economics, University of Dhaka, Dhaka—2

* No responsibility for the views expressed by authors in the Bangladesh Journal of Political Economy is assumed by the Editors or Publisher.

* Asia Foundation deserves special thanks for its generous financial support for the publication of this volume.

President
Prof. Muzaffer Ahmad

Vice-Presidents
Dr. Muhittin Khan Alamgir
Prof. Sekander Khan
Mr. M. L. Rahman
Mr. Abu Ahmed Abdallah
Mr. Shah Md. Habibur Rahman

General Secretary
Dr. A.T.M. Nurul Amin

Treasurer
Mr. A.H.M. Mahbubul Alam

Joint Secretary
Dr. Atiur Rahman

Assistant Secretaries
Mr. Md. Abdur Rab
Mr. A.K.M. Shameem
Mr. Zasheemuddin Ahmed

Members
Mr. Md. Akhtaruzzaman
Dr. Abdul Ghafur
Mr. Md. Sirazuddin Miah
Mr. M.A. Sattar Bhuiyan
Dr. Md. Azhar ud-Din
Mr. Md. Anisur Rahman
Ms. Fazilatun Nessa
Mr. Mushfiqur Rahman
Dr. Kh. Mustehidur Rahman
Ms. Rushidan Islam Rahman
Mr. Nityananda Chakraverty
Ms. Fatema Zahora
EDITORIAL ADVISORY BOARD

1. Prof. Akhlaqur Rahman
2. Prof. S.A. Letifur Reza
3. Prof. Ayubur Rahman Bhuiyan
4. Prof. Solaiman Mandal
5. Prof. M.A. Hamid
6. Prof. Sekander Khan
7. Prof. Atcul Huq
8. Prof. Rahlan Sharif
9. Dr. Amirul Islam
10. Mr. Abu Ahmed Abdullah

EDITORIAL BOARD

1. Chairman
   Prof. Rehman Sobhan
2. Executive Editors
   Dr. Muhluddin Khan Alamgir
   Dr. Wahidduddin Mahmud
3. Asstt. Executive Editors
   Dr. S.M. Hashemi
   Mr. Anu Muhammed
4. Publication Editor
   Dr. Atiur Rahman
5. Business Editors
   Dr. Moinul Islam
   Mr. Abdus Sattar Bhuiyan
6. Book Review Editor
   Prof. Muzaffer Ahmad
7. Communication Editor
   Dr. A.T.M. Zahurul Huq

Copy editor for this volume was Dr. Nazmul Bari.
Editors' Introduction

This volume, which is published in two parts, contains the papers and proceedings of the seventh biennial conference of the Bangladesh Economic Association held during December 17-20, 1985. Most of the papers here are invited, not contributed; some of them had to be edited to improve content and style and satisfy space requirements. A few papers had to be excluded altogether to meet extreme space constraint and the publication deadline. We hope that, subject to the usual refereeing process, these excluded papers can be published in a regular issue of the journal.

The general theme of the conference was development planning in Bangladesh, with particular reference to the Third Five-Year Plan. Although the papers deal with a wide variety of topics related to different aspects of planned development, they have been arranged according to certain dominant themes. The ordering arrangement is not intended to reflect in any way the relative merits of the papers.

The editors gratefully acknowledge the help and advice received from many friends and colleagues. Professor Muzaffer Ahmad, President of the Association, has given encouragement and valuable guidance. Dr. Nazmul Bari has played a key role in the production of this volume. Dr. Mustafa Alam, Dr. Selim Jahan, Mr. Mosharraf Hossain Munir, Mr. Nazrul Islam and Ms. Shahnaz Perveen have helped in the editorial work. Valuable assistance has also been provided by Mr. Shatiqu Rahman, Ms. Shaheen Khan, Ms. Hamida Ara Ahmed, Mr. Saliful Huda, Mr. Asghar Ali, Ms. Khaleeda Akhter, Ms. Lutfunessa, Ms. Rebeca Sultana and Ms. Shaheda Alam.

Muhiuddin Khan Alamgir
Wahiduddin Mahmud
## FOOD, AGRICULTURE AND WATER RESOURCE

1. Agrarian Transition in Bangladesh — Plans and Prospects
   - Author: Shapan Adnan
   - Page: 1

2. Policy Responses to Food Shortages
   - Author: KAS Murshid
   - Page: 16

3. Water Management: Strategy and the Third Five Year Plan of Bangladesh
   - Author: M. A. Hamid
   - Page: 29

4. A Review of the Planning Experience with respect to Fishery Sector of Bangladesh
   - Author: Ali Ahmed Rushdi
   - Page: 40

## ECONOMIC SYSTEMS AND INDUSTRIALISATION STRATEGY

5. Role of Public Enterprise in a Post-Colonial Society
   - Author: Muzaffer Ahmad
   - Page: 51

6. An Industrial Policy for the TFYP—Role of the Private Sector
   - Author: S. H. Kabir
   - Page: 72

7. Strategy of Rural Industrialisation in Bangladesh
   - Author: Nuimuddin Chowdhury
   - Page: 81

## POPULATION, MANPOWER AND HEALTH

8. The Treatment of Employment in the Third Five Year Plan—Model Results and Current Activities
   - Author: Salahuddin Ahmad
   - Page: 113

10. Manpower Planning in the Third Five Year Plan : Kazi Saleh Ahmed 142

11. Health Care Strategy for the Third Five Year Plan : M. R. Khan 153

WOMEN AND DEVELOPMENT


13. Expanding Economic Opportunities for Women in Bangladesh: Some Selected Issues : Khaleda Selahuddin 180

DEVELOPMENT PLANNING EXPERIENCE


15. Some Thoughts on the Philosophy of Development Planning : M. Raihan Sharif 226

16. General Comments on Bangladesh's Five Year Plan—A Qualitative Appraisal : Mohammad Ali Akbar 236

17. Problems of Plan Implementation in Bangladesh : M. A. Halim Khan 244
FOOD, AGRICULTURE AND WATER RESOURCE

Agrarian Transition in Bangladesh
Plans and Prospects

By
SHAPAN ADNAN *

I. The Issues

An unsuspecting reader of the Third Five Year Plan (TFYP) may be forgiven if he/she imagines that unfavourable weather conditions constitute the major barrier to planned development in agriculture. This appealing logic, however, cuts both ways: if the blame for failure is to be delegated to the weather, then the credit for success, when weather permits, cannot be usurped by others. This minor inconsistency has been brushed aside by the authors of the Plan, but it is symptomatic of the current state of the art in this country.

While the implementation of the TFYP commenced officially from mid-1985, the plan document itself arrived on the scene quite some time after. A conference paper on “Planning for Agrarian Transition” in Bangladesh, based on about a week’s acquaintance with the plan document, cannot thus claim to do justice to the planners and policy makers involved. While explicitly acknowledging these limitations, I have tried to raise a number of issues which take-off from the TFYP blueprint, but go well beyond in terms of the prospects of the future. These can be put as follows: How does the TFYP itself pose the question of agrarian transformation? Does it spell out a coherent strategy which would be adequate for bringing about such change? Are the ends and means consistent and based upon a structure of causation which is plausible? And if not, why not? Another set of questions become relevant when we raise our sights from the Plan documents itself: What are the alternative scenarios of agrarian transition, in terms of the ex ante and the ex post states, as well as the causality underlying structural transformation? How feasible are these alternative options? In the particular instance of agrarian Bangladesh, is the ‘historical schema’ likely to accord with conventional neoclassical or Marxist views? If one or more of these alternative scenarios of transformation of the economy look more probable than that posited in the TFYP, then would implementation of the latter be conducive or counter-productive to such an outcome?

* Department of Economics, University of Chittagong.
It is apparent that the second set of questions take us into the hazardous terrain of speculation. In discerning the future, there is little option: One cannot but speculate. However, such an exercise can attempt to be informed with what we know of the present and the past. What follows in the later part of this paper is therefore not prediction, but an assessment of possibilities and their relative probabilities.

Section II below looks at some of the major programmes of the agricultural sector in the TFYP in order to identify the strategy of development as well as the explicit or implicit assumptions on which it is based. In particular, an attempt is made to 'extract' from the text: the 'structure of causation' implied for agrarian transformation. The validity of this posited structure of causation is then critically assessed.

The speculative exercise is contained in Section III where several alternative scenarios of agrarian transition are outlined, inclusive of the preconditions of such change. An assessment of the relative probabilities of these alternative scenarios, as well as the respective policy implications is provided. In conclusion, the differences between conventional views (historical schemes) of agrarian transition and what might happen in the specific instance of Bangladesh are pointed out.

II. The Third Five Year Plan: An Assessment

The TFYP is the latest in a tradition of planning which has successively produced the First Five Year Plan (FFYP), the Two Year Plan (TYP) and the Second Five Year Plan (SFYP). While the TFYP has certain distinctive features, there are also some things in common. For example, self-sufficiency in foodgrain is the major objective of the agricultural sector, and this has been the case with the FFYP, TYP and SFYP as well. The TFYP provides altogether six objectives to be attained in agriculture which range from stabilisation of agricultural output to broadening the genetic base of HYVs. In the overall list of objectives of the TFYP, food self-sufficiency appears fifth in order (of priority?), though elsewhere "rural development with" food and agriculture as the cetera-piece" is put forward as the Plan's major objective.

Whatever the ordering of relative priorities, there is little doubt that attainment of self-sufficiency in foodgrain is a paramount concern. The target set is 20.7 million tons in 1989-90, involving an annual growth rate of 5.2%. Technically, it is to be achieved through expansion of irrigated acreage by 57%, concentrating in particular on HYV Boro paddy which has had the highest rates of yield and output growth during the SFYP. The relatively better weather conditions of the rabi season and greater water control under irrigation figure prominently in the choice of this particular technological strategy. The programme component on 'Flood Control and Water Resources' fits in as a necessary supplement to the food
self-sufficiency objective, by accelerating the process of capital formation in agriculture (i.e. means of irrigation and flood control).

The social/institutional aspect of agrarian transformation is presented in the Plan document under the rubric of ‘Rural Development’. Provision of greater opportunities of productive employment to the rural poor through improvements in rural technology and the development of skills in farm and non-farm sectors constitute the major objectives. In terms of planned targets, bringing at least 10% of the rural poor above the poverty line is specified; another, somewhat vaguer, target is to ensure better access of the rural poor to the means of production by organising them for productive activities.

The Chapter on “Food, Agriculture, Water Resources and Rural Development” (Ch.IX) includes other components such as livestock, fisheries and forestry, but a review of the components outlined so far should suffice for present purposes. The critical question here is: what are the specific means to these ends? In particular, what are the concrete policy packages put forward? Are these sufficient for reaching the targets proposed? Here again, selection of issues will be necessary to pursue the matter in some detail. In the text itself, there is a frequent lack of coherence, with various programme components compiled unsystematically (in ‘check-list fashion’). There are even repetitions (vide ‘Agricultural Credit’) and virtually undecipherable passages (vide ‘Rural Development’). However, it is possible to look at reasonably coherent sections on agricultural credit, input and output pricing policies, land use and rural development. Cutting across these various programmatic components are two major policy directions which are of sufficient importance to the planners to be accorded separate chapters by themselves: privatisation and decentralisation (of development administration to Upazila level). I shall also briefly consider the last of these two policy packages.

Agricultural Credit

The Plan, concerned with increasing foodgrain production, argues that “it is only natural that with output expansion use of commercial inputs will grow faster than the former”. Agricultural credit will be needed on account of “irrigation equipment, draught power, land development, construction of water structures, farmhouses” etc. Further, since the “majority of farmers are of small means”, realisation of the investment and output targets will require provision of institutional credit. It is estimated that Tk. 4500 crore of private investment will take place over the Plan period, while the demand for short term production loans may exceed Tk. 8000 crore.
However, the history of agricultural credit disbursement and repayment, particularly over the SFYP, is somewhat disturbing. The amount of agricultural credit disbursed rose from Tk. 269 crore in 1979—80 to Tk. 1131 crore in 1984—85, but the level of (cumulative) outstanding credit rose from Tk. 368 crores in 1980—81 to Tk. 1736 crores in 1984—85 (p. VII—7). For the Bangladesh Krishi Bank, in particular, the respective figures were Tk. 62 crore and Tk. 506 crore. (These amounts for exceed the outstanding loans of the Bangladesh Shilpa Bank and the Bangladesh Shilpa Hin Sangstha to the industrial sector over the same period (p.VII—5).

The planners suggest that ‘leakages’, administrative weaknesses and the accelerated pace of loan disbursement were partially responsible for such levels of default; however, “successive loss of crops by farmers due to floods and droughts” is put forward as the main explanation (p. VII—7 and p. IX—14). Since farmers cannot be blamed for “failures caused by factors beyond their control” the solution advocated is to re-vitalize their production capacity by continued expansion of agricultural credit over the TFYP period.

It is further suggested that the rural banking system is insensitive to agricultural needs – reflected in the flow of surplus rural deposits to urban areas and a reverse flow of official credit from town to country (p. IX—7—8). This is thus substitution of local-level, high risk credit by centrally programmed, low risk credit.

Now, it is fairly well documented that in rural Bangladesh the biggest defaulters on institutional credit are not the poor, but the rich – not least because the poor have little access to it in the first place, and also because, the rich often default even if they have repaying capacity, since they expect to be able to get away with it (given their connections with officialdom). That is, differences in institutional access and clientelist leverage between classes of borrowers have not an insignificant part to play in the default story.

This consideration also bears upon the matter of ‘substitution’ of local credit by official funds. The poor who borrow from the usurious credit market presumably do so because they do not have access to institutional credit in the first place. On the other hand, the rich borrowing from official sources are frequently moneylenders themselves – indeed, they may even be financing the latter by the former, pocketing the difference between the respective rates of interest. What appears to be a process of substitution of high risk, local credit by low risk, official credit at the aggregated level may turn out to be much more complex when decomposed in class terms.

Indeed, the one market in Bangladesh which is generally agreed to be highly imperfect – if not significantly compartmentalised between non-interacting ‘transacting pairs’ through personalised interlocked market
relationships—is that of agricultural credit. The absence of any such notions in the planners’ perceptions of agricultural credit processes is disturbing enough, given the realities of the rural economy in Bangladesh. But there are further implications for the ‘structure of causation’ underlying their view of agricultural production and the processes of change.

It is assumed, for example, that given conducive weather conditions, expansion of agricultural credit will ‘automatically’ lead to increased production and output. This may well be the general rule under (competitive capitalist) conditions of reproduction, where any defaulting capitalist producer would be subject to the discipline of impersonal market forces and be compelled to ‘go out of business’, if so required. But are the rich peasant defaulters here, borrowing from state-sponsored institutions, and subject to administered prices and sanctions, called upon to meet any such stringent requirements? If not, and it continuous to be possible to ‘reproduce’ without providing repayment, then there is no systematic necessity impinging upon them to increase production and productivity levels in order to repay loans and survive in the manner of producers operating under capitalist rules of the game.

Clearly, the varied possible relationships obtaining between production and the market in agrarian Bangladesh cannot be necessarily presumed to be capitalist ones. In which case, the mere ‘pumping in’ of greater amounts of credit will not necessarily ensure increasing levels of output even if weather conditions are conducive—indeed, it may well lead to correspondingly greater levels of default. The advocacy of this ‘quantitative’ view of development in the TFYP occurs precisely because there is a systematic failure (or refusal) to appreciate qualitative differences in the relationships obtaining between production and the market. Such studied ‘innocence’ may accord with neoclassical orthodoxy, but does not help to shed light on the problem of bringing about planned changes in agrarian Bangladesh.

Input and Output Pricing Policies

In comparison to strident fundamentalist views on giving ‘free play to market forces’ amongst certain governmental and donor agencies, the tone of the TFYP on pricing policies of inputs and outputs is relatively cautious and muted. Past policies of reducing subsidies on fertiliser and minor irrigation equipment are described rather than justified, and the continuation of such policies during the TFYP in accordance with governmental directives are merely re-stated (pp. IX 5–6, 12–13). A price-support programme during the Plan period is not explicitly espoused, even though it is suggested that a balanced use of input and output pricing policies will be pursued.
Nevertheless, the TFYP does reiterate the rather worn assertion that reduction of input subsidies will promote greater efficiency of resource use (pp. IX-12-13). This 'efficiency' argument has been taken to task in a recent report by Osmani and Quasem who pointed out that considerations of static allocative efficiency can be overruled if society attaches greater value to the attainment of some paramount objective, such as food self-sufficiency. Further, they have also argued that in the specific context of Bangladesh, the use of world prices to determine domestic input (e.g., fertiliser) prices cannot even be justified on efficiency grounds if, (i) foreign exchange currently being utilised for the import of fertiliser cannot be freely transferred to the importation of food grain and (ii) if farmers are not actually using (or able to use) fertiliser up to the level where its marginal product equals the fertiliser/rice price ratio in the domestic market. Indeed the authors go on to argue that recent declines in intensity of fertiliser use and the sale and rental of minor irrigation equipments can be explained in terms of the counterproductive effects of the reduction of input subsidy.

While there is no need to repeat their arguments here, the implications for the TFYP can be noted. The Plan document does note the recent decline in the "average area coverage" of shallow tube-wells as well as shortfalls in the aggregated area coverage of shallow and hand tube-wells (pp. IX-6, 35), but attributes this to technical reasons alone like improper siting (e.g., overcrowding and proximity to deep tube-wells). It is thus not surprising that it remains sanguine about the siting of another 46,000 shallow tube-wells over the plan period (p. IX-42), presumably with adjustments for proper siting. If, however, Osmani and Quasem's hypothesis proves to be correct, then the planners may be in for a big surprise - for, a decline in the intensity of use of minor irrigation equipment (as well as fertiliser) will give rise to consequential decline in output levels, affecting the avowed prime objective of food self-sufficiency.

**Land Use Policy, Land Reforms and Rural Development**

The section on land use policy is primarily concerned with technical considerations of "spatial engineering", i.e., the distribution of settlement and arable land, environmental and ecological considerations in the conservation of land, agroecological allocation of crops etc. It assumes interest not because of what it actually says but rather for what it does not (but makes oblique references to): namely, land reform policies. But what, or which, land reform? One of the perplexing things about the TFYP is that things just appear out of the void to rapidly disappear again; in this case, no substantive discussion of land reform either precedes or succeeds the statement: "land reforms will improve efficient use of land over the landholding and farm sizes", (p. IX 30).
In a subsequent section (on Rural Development), however, we do find fragmentary references to land reform, but in a different and somewhat motivated context. Even here, all that is available are brief citations of the proposed land reforms in the TFYP and the SFYP (pp. IX–65–72). The history of land reforms in this country is, of course, strewed with much paper legislation and statements of intent. Not surprisingly, it is observed that “for lack of land reforms, envisaged in the First Plan, land distribution deteriorated against the sharecroppers and small farmers... the land system continued to inhibit the distribution of development benefits in favour of the rural poor; rather it deteriorated further” (p. IX–66). Further on, commenting on area development projects, the Plan notes that “inadequacy of the programmes for the rural poor and greater emphasis on agricultural development within the present framework of ownership of land have not been able to change the lot of the rural poor for the better”.

So far so good. But, what do the TFYP planners (and the policymakers directing them) actually propose to do about it? The silence is deafening. Nothing is to be done about implementing land reform proposals which are already on the book, nor are any fresh attempts to be made. Nothing is to be done about changing the existing structure of landownership – the critical ‘initial conditions’ – which are held to be the major barriers to the rational and productive reorganisation of production. Nothing more devastating than the formation of tame cooperatives is to be done about organising the rural poor and landless (the much-beloved ‘target groups’ of varied apostles of enlightened self-interest).

In which case, how are the edifying objectives of the TFYP, and the Rural Development component in particular, to be realised – given the continued presence of these self-same constraints which have overwhelmed the planned reforms and development efforts of the past? Or, doesn’t consistency between ends and means matter, so long as a Plan document can serve other, more cosmetic, purposes?

Why denigrate past programmes of the same variety, using the occasional rhetoric of radical populism, if nothing much more tangible is going to be presently undertaken? The following clue is suggestive: “But the basic condition for a fundamental change in the rural economy was missing... When the formulation and implementation of the development programmes remain centralised (the institutions) for local planning and co-ordination deteriorated due to leadership crisis, conflict among the agencies and absence of strong local governemnt” (p. IX–66). Only a few pages later, the “long awaited policy reform” of developing development administration to Upazila level is ushered in. It is this particular ‘panacea’, and the goods it is expected to deliver, which warrant examination.
The Upazila System

The TFYP component on 'Rural Development' does not actually tell us much about how things are to be made to improve – for example, to provide the rural poor with greater access to the ‘means of production’, e.g. land (p. IX-72). One turns with hope and trepidation to the pages on ‘Development of Upazilas’, which at least promise to bring the rural poor closer to the ‘means of administration’. The idea is dismally simple but as we shall see, not all that new.

Essentially, the argument is that the populace of each thana (‘upgraded’ and re-named Upazilas) elects its own Chairman and Council members who themselves are the approving authority for their own development projects. Further, they are also the implementing authority for their own, as well as ‘divisible’ components of national level, projects. ‘Staff Officers’ are delegated by various ‘line ministries’ to advise, but work under, the elected Chairmen. This set-up is expected to be free of the bureaucratic tentacles of the central government while also being directly accountable to its own local-level constituency.

Now, the history of such attempts at social and political engineering in this country does provide one invariant lesson despite variations in the nomenclature and the unit of local self-government – namely, that the mere procedure of electoral democracy, does not, by itself, prevent the class at the top of the landholding and power structures from dominating such bodies. Accountability to the masses means little when relationships of dependency divide subordinate classes into clientelist ‘vote banks’ on behalf of their respective patrons. Since the accountability of local-level functionaries to their line ministries has been superceded at Upazila level by accountability to the local Chairman, there is if anything greater discretionary power (and surplus funds for the bestowal of patronage) in the hands of these local-level ‘representatives of the people’. This is further combined with lesser real accountability to the people or anyone else. The Upazila parshads do not even have the ‘syndicist’ structure of the erstwhile Gram Sankars which, at least, allowed for nominal representatives from each of the disadvantaged groups of rural society and some degree of articulation of subordinate-class interests.

Further, if one reads the small print, the fuctioning of the Upazila administration is not likely to be as independent of the central government as it is made to appear. Quite apart from substantially controlling the purse-strings, ’the Deputy Commissioners have been given the responsibility for supervision of the development expenditures of Upazila Parshads...’ (p. VIII-4). This is reminiscent of the grooming of the erstwhile ‘Basic Democrats’ under the watchful eye of an administration concerned more with legitimising its own rule rather than rural development aimed at the emancipation of the poor. Not surprisingly, the TFYP allocation for the
surplus (capitalist profit; gross revenue less cost of production including wage fund) depends upon the efficiency of the labour process, the capitalist cannot be indifferent to the outcome of production and levels of productivity. As combined operator and surplus appropriator, he bears what may be termed operational accountability.

Under what conditions can such an economic system emerge from a pre-existing agrarian structure such as in Bangladesh? It is important to remember that what is involved is not the emergence of the individual 'gentlemen-farmer' (who may be frequently sighted in peri-urban belts such as Savar), i.e. not simply a matter of the transformation of individual (micro-) agents, but rather that of the macro-level relations of production in which they come together. In concrete terms, it is necessary to explain not only why a landlord or merchant-usurer becomes a capitalist, but also why the relationship capitalist-worker displaces those such as usurer-debtor, and does so on a social scale. In other words, capitalist development involves the transformation of the pre-existing class structure, subsuming the individuated relationships constituting the system as a whole.

How is such systematic transformation to be wrought? For one thing, agrarian Bangladesh is predominantly characterised by a fundamental disjunction between the structures of production and distribution – namely, that those who appropriate surplus as landlords, merchants, usurers and bureaucratic functionaries typically do not bear the costs and risks of production outcomes, i.e., operational accountability. This has a very important implication: since they do not have to invest in production costs, the occurrence of production losses, or even failures, do not necessarily drive them 'out of business'. Nor are they compelled to invest in productivity-raising innovation as is the case with the capitalists. It follows that mere revelation of technical inefficiency, and/or comparative un-profitability, does not necessarily undermine the reproduction of such surplus appropriators, nor compels them to become transformed into capitalists.

Further, land as a means of production has peculiar properties which impede capitalist transformation of agriculture. Since it constitutes a given stock, as is presently the case in Bangladesh, actual or potential capitalist farmers have to 'capture' such land from the pre-existing hierarchy of rights in land – unlike the industrial capitalist, who is not compelled to capture the tools of the artisan in order to enter productive activity.

Under such conditions, when a pre-existing class structure and property system occupies the 'production-space' of agriculture mere 'pumping in' of resources may have quite unintended consequences, e.g. high rates of default on agricultural credit, rather than a dynamic switch to then such a pre-existing class structure undergoes systematic change only if its conditions of reproduction are undermined. For example, if the TFY
surplus (capitalist profit: gross revenue less cost of production including wage fund) depends upon the efficiency of the labour process, the capitalist cannot be indifferent to the outcome of production and levels of productivity. As combined operator and surplus appropriator, he bears what may be termed operational accountability.

Under what conditions can such an economic system emerge from a pre-existing agrarian structure such as in Bangladesh? It is important to remember that what is involved is not the emergence of the individual 'gentlemen-farmer' (who may be frequently sighted in peri-urban belts such as Savar), i.e. not simply a matter of the transformation of individual (micro-) agents, but rather that of the macro-level relations of production in which they come together. In concrete terms, it is necessary to explain not only why a landlord or merchant-usurer becomes a capitalist, but also why the relationship capitalist-worker displaces those such as usurer-debtor, and does so on a social scale. In other words, capitalist development involves the transformation of the pre-existing class structure, subsuming the individuated relationships constituting the system as a whole.

How is such systematic transformation to be wrought? For one thing, agrarian Bangladesh is predominantly characterised by a fundamental disjunction between the structures of production and distribution – namely, that those who appropriate surplus as landlords, merchants, usurers and bureaucratic functionaries typically do not bear the costs and risks of production outcomes, i.e., operational accountability. This has a very important implication: since they do not have to invest in production costs, the occurrence of production losses, or even failures, do not necessarily drive them 'out of business'. Nor are they compelled to invest in productivity-raising innovation as is the case with the capitalists. It follows that mere revelation of technical inefficiency, and/or comparative un-profitability, does not necessarily undermine the reproduction of such surplus appropriators, nor compels them to become transformed into capitalists.

Further, land as a means of production has peculiar properties which impede capitalist transformation of agriculture. Since it constitutes a given stock, as is presently the case in Bangladesh, actual or potential capitalist farmers have to 'capture' such land from the pre-existing hierarchy of rights in land – unlike the industrial capitalist, who is not compelled to capture the tools of the artisan in order to enter productive activity.

Under such conditions, when a pre-existing class structure and property system occupies the 'production-space' of agriculture mere 'pumping in' of resources may have quite unintended consequences, e.g. high rates of default on agricultural credit, rather than a dynamic switch to then such a pre-existing class structure undergoes systematic change only if its conditions of reproduction are undermined. For example, if the TFY
really meant business in respect of capitalist development, than one would be forced to conclude that its policies do not go far enough. To really bring about capitalist transformation, the state machinery would have to put its entire weight upon making life difficult for parasitic exploiters who extracted agricultural surplus without assuming accountability of production outcomes. For example, rich peasant defaulters of agricultural credit would have to be taken to court to compel debt repayment, while the reforms in sharecropping terms proposed in this SFYP, reducing (or completely banning) the share of the product accruing to idle rentiers, would have to be scrupulously implemented. Indeed such actions would also have to be implemented in the industrial sector against credit defaulters and bogus firms siphoning off 'surplus' from the banking system without adding to output or productivity levels. Capitalist transformation of agriculture cannot even be conceived of in Bangladesh without the emergence of a dynamic industrial sector providing incremental employment opportunities to the masses of poor peasants and the landless. Otherwise, such class must perform continue to remain subservient to the rural power structure in order to ensure their very survival.

Why have such changes not been possible to date? The answer must be sought in the limitations of the current regime and its international mentors in enforcing such policies without undermining their very legitimacy to rule and control state power. For it is these very parasitic classes which provide 'vote-banks' and ensure 'law and order' at grass-roots level where the state apparatus cannot always be present in strength. Indeed, since such classes are the principal beneficiaries of aid and other development funds, current state policies in effect contribute to their resilience and persistence, rather than their eventual demise.

It is, however, possible that the impetus for capitalist development can arise from below, rather than being imposed from above. For life can also be made difficult for landlords,uers and corrupt officials by organised movements of agricultural workers, sharecroppers and poor peasants. To the extent that such movements are able to bring down the rates of rent, usury or bribes, or raise real wages, the class redistribution of income will adversely affect the conditions of reproduction of surplus appropriating classes. It can be noted that such changes in 'macro' prices are the result of collective bargaining and/or struggles between social classes, rather than being parameters emerging from the interaction of individual agents in pricemaking markets. This would be even more true of 'administered' prices currently figuring in the controversy over input and output pricing policies. As avenues of surplus appropriation detached from production are made to shrink, the 'unrealised' option of appropriating surplus and reproducing through the act of organising production itself may become increasingly unavoidable. It is possible to discern here a systematic necessity, backed by social imperatives, compelling individual agents to make adaptive changes.
Hypothetically speaking, such a structure of causation, embodying a 'chain reaction' of adaptive changes by individual members of the pre-existing classes, may bring about the transition to capitalism in agriculture.

This scenario is, however, both unstable and unlikely. It is unstable because capitalism, having once emerged, will lead to further polarisation amongst capitalist producers in competition and the overall concentration of capital. Correspondingly, small operators such as poor peasants and sharecroppers who might have initially triggered off the process by their struggles, are likely to eventually lose out and join the ranks of the proletarian in agriculture and industry. Any perception of such future outcomes is likely to dampen their enthusiasm for current struggles against existing forms of exploitation.

The scenario is also unlikely because the vagaries of international capital flows is likely to endanger such nascent capitalist development. Late entrants to capitalism in Europe and Latin America have faced stiff resistance from existing advanced capitalist economies. The current disarray of the garments industry in Bangladesh is indicative of the extraordinary fragility of nascent capitalist development. Consider, for example, what would happen in a hypothetical capitalist agriculture in Bangladesh if it were to be thrown open to the competition of the international grain market?

In any case, this scenario is unlikely to be on the cards in Bangladesh. The subordinate classes are too unorganised and divided amongst themselves in atomistic struggles of survival, to be able to initiate such change. 'Modernisers' in the planning and policymaking bodies do not even have the political will and ability to enforce the fairly mild land reforms which are already on the books. The very dilemma posed by their conditions of reproduction is likely to make such a regime 'invest' in massive unproductive expenditure on maintaining social control and enhancing its legitimacy rather than in confronting the rural power structure, as does presently appear to be the case.

Re-vitalised Peasant Production

If classic capitalist development is unlikely to be realised, then it is necessary to look at other possible scenarios. Suppose that instead of the drastic class actions of the previous case; certain 'reformist' changes were determinedly undertaken by the state, and/or achieved through collective bargaining processes initiated by the subordinate classes. Put simply, it would mean that policies such as those proposed in the TFYP were actually implemented, e.g. poorer and more productive sections of the peasantry were given real access to input and output incentives. For example, the whole programme of reducing and eventually withdrawing input subsidies might have to be reversed. If Osmani and Quasem's analysis is valid, then this should result in greater output and productivity levels even under the
existing agrarian regime. (For example, merchants would be at best able to
appropriate a smallish fraction of input subsidies as scarcity margin, but not
its entirety). Under such conditions, even food self-sufficiency and a limited
degree of absorption of the incremental labour force in agriculture may
become realisable without any drastic re-ordering of the existing class
relations.

This option, would have the merit of being more feasible under current
socio-political realities than classic capitalism. It could, however, be only a
transitional phase, providing some breathing space before other
contradictions and imperatives made themselves felt. For one thing, the
conditions of reproduction of even market-oriented peasant production
would not approach the stringency of those impinging upon the capitalist
producer. There would always be the possibility to retreat into semi-autarkic
production for subsistence, providing one residual ‘degree of freedom’
under conditions where the capitalist would be compelled to ‘go out of
business’. It also follows that the macro-level market interaction of such
producers would be less intense compared to those between capitalists and
consequently, there would be a lesser compulsion to continuously innovate
in order to ensure mere survival ‘on the market’. In short, there could be
some induced innovation but perhaps not much of an endogenous dynamic
of technical progress resulting in incessant increases in land and labour
productivity.

Secondly, even a re-vitalized and market-oriented system of peasant
production in Bangladesh cannot last for very long given the current trends
of the demographic dynamic, in conjunction with the prevailing system of
partible inheritance of landed property. Unless the existing level of
population can be brought down significantly in absolute terms – a most
unlikely possibility – the combination of population growth and cumulative
partible inheritance will eventually undermine even the most thriving and
viable of ‘family’ farms operating today. This socio-demographic ‘parametric
shift’ is likely to be irreversible in the short as well as the medium run.

Essentially, familial units of peasant farming are doomed to become
progressively non-viable with time. Adaptations in the system of property
and inheritance – such as a shift to rules of primogeniture – will only
postpone such a crisis, but not put it off eventually. At the state when the
proportion of functionally landless rural households approaches the order of
90% or so – if not earlier – the very social and economic fabric of rural
Bangladesh is likely to become highly unstable.

Such an outcome may be headed off in the event of the remote possibility
of successful industrialisation within the near future, say the year 2000.
This again seems most unlikely, given the problems of successful
industrialisation by ‘late entrants’ indicated above, as well as the disarray
currently prevailing in the industrial sector of Bangladesh.
The Socialist Option

At the juncture indicated above, private property in land will cease to be viable, given the preponderance of miniscule holdings. The path of collective survival will perform require the drastic reorganisation of land and water resources, and the organisation of production under forms of social or state property. The precondition for successful transformation on these lines is the generation of adequate political will and organisation to mobilise the massive numbers of the landless and landpoor peasantry. Even with such organisation of production based upon some form of collective property in land, the problem of designing appropriate pricing policies to make the system work, and generate the endogenous technological dynamic required for survival, will continue to remain. However, such problems are, in principle, not insoluble. As Lange and other have shown, a system of public enterprises operating under conditions of parametric pricing can lead to allocation of resources which is no ‘less optimal’ than that obtaining under a regime of competitive and price-linked markets. Indeed, not only simulated markets, but real markets, may be retained in the framework of overall central planning.

It does not matter what name is given to this scenario, though it is likely to be labelled some variant of socialism. What matters is its substantive content. Not all of that can be determined by economic considerations alone. Political and social imperatives, as well as value judgements, will figure in trade-offs between moral and material incentives, or administrative and market-based resource allocation. It is, however, clear that such transition to ‘socialism’ cannot come about simply through the free play of market forces. In other words, the blueprint for any such model is unlikely to be available in planning documents of the TFYP variety.

An overview

The alternative scenarios sketched out above are admittedly speculative, but may be seen as stylised heuristic devices for clarifying our thought in planning for the future.

I would like to end with two final comments on the prospects of agrarian transition in Bangladesh. Firstly, the classic Marxist schema involving sequential transitions from peasant/precapitalist production (P) to capitalism (K) and then from capitalism to socialism (S), i.e., P→K→S, is unlikely to be on the cards for Bangladesh, whether in agriculture or in the economy as a whole. Rather, if re-vitalised peasant production is seen as a short-term palliative, leading to the eventual reorganisation of production on socialist lines, the alternative historical trajectory indicated by P→S may merit serious consideration. It can be noted here that despite certain ‘Marxist’ beliefs to the contrary, Marx himself was no advocate of blind historical determinism and seriously considered the possibility of a direct
transition to socialism in peasant-dominated nineteenth century Russia. Indeed, if anything, Marx’s analysis makes sense only if conscious human intervention is accorded a creative non-deterministic role in bringing about historical transformation.

Secondly, if as seems likely, the drastic reorganisation of agricultural production in Bangladesh involving the replacement of private by collective property seems inevitable, then there is little point in attempting to reverse what are probably almost irrevocable trends beyond the point of ‘no return’. Thus it makes little sense to thrust ‘privatisation’ policies from ‘above’ in an attempt to shore up nascent private capitalism if, in the end, it cannot possibly develop into the mature form of fully-fledged capitalism. For one thing, the consolidation of any such class interest will create even greater difficulties for the eventual shift towards socialist production. It is in this sense that the more ideologically motivated programmes and policies espoused by the TFYP are likely to be counterproductive, rather than conducive, to the eventual resolution of agrarian transition in Bangladesh. For, it may then lead to that apocalyptic scenario, not discussed above, in which existing peasant production is increasingly run down without, however, the capitalist dynamic being successfully activated. The explosive potential of such a scenario defies planning imagination – but it may well become an actuality in a couple of decades if collective sanity cannot prevail in efforts at planned development today.
Policy Responses to Food Shortages

BY KAS MURSHID *

Introduction

Adjustments to foodgrain shortages impose a heavy burden on poor developing economies like Bangladesh involving considerable pressure on the budget and the balance of payments. However a coherent set of policies to deal with periodic food-shortages does not appear to have evolved in Bangladesh. Our objective in this paper is to examine alternative policy responses to shortages, in an attempt to assess the scope of, and limitations to, public intervention in this area. We argue that in the longer-run interest of generating stable growth, some of the burden of short-run adjustment must be deliberately passed on to the consumers. This need not be unduly disruptive, given a more rational supply distribution policy.

Alternative Supply Policies

It may be noted that for a country like Bangladesh, the concept of shortage is somewhat unusual, there being a need to distinguish between ‘normal’ and emergency deficits. Normal deficits, it may be assumed, are met and financed in the ‘normal’ way and do not cause widespread disruption. It is the emergency deficits that have to be specially planned for, particularly in the short and medium run.

The first step towards planning for emergency deficits requires an estimate of the magnitude and frequency of such situations. In other words, an estimate of the size of reserve stocks is required and steps have to be taken to procure these stocks. Once the supply problems are sorted out (i.e. sources, quantities), appropriate distribution policies have to be looked into. Alternative supply distribution arrangements or mechanisms have to be evaluated in terms of the objective of safeguarding consumption levels in a way that will minimise the burden on the foreign exchanges, the budget and the costs of management.

There are several ways in which shortages (and therefore emergency requirements) arising out of domestic production fluctuations can be estimated.

The simplest way of course is to wait for the harvest of each crop to materialise. Once the size of the harvest is known (especially of the largest Aman crop), the likely ‘surplus’ or ‘deficit’ can be estimated. In the event of a deficit, the government can take suitable action to procure and distribute the

* Research Fellow, BIDS.
For grains. The advantage of this procedure, and one that probably best approximates official response, is that the actual size of a deficit can be 'accurately' estimated and supplies can be made available accordingly. The disadvantages however, are the following:

(a) The time lag between placing import orders, and arrangements for their delivery and distribution, can take up to four months. Without reserves which can be drawn upon in the meantime, such action could prove to be disastrous.

(b) Apart from the question of the time-lag, there is the added question of the availability of the relevant harvest data. Estimates are normally available well after harvest leading to further delays in responding to a possible deficit.

(c) In practice however, the price-signal is often the best available indicator of an impending shortage - although it is difficult to estimate its magnitude in this manner. Further, since excessive price rises can occur in anticipation of a deficit, fuelled by speculative action, the size of the actual deficit may not matter. Stemming such price rises, is much more likely to depend on availability of stocks, or on the level of confidence in the government.

(d) Large food imports scheduled to arrive within a relatively short period, leads to disruption and dislocation of other imports (due to constrained port-handling and storage facilities).

An alternative procedure for estimating the size of security stocks is exemplified by a recent World Bank study. The underlying principle used is the well-known one of adequate provision of supplies towards the end of a crop season (i.e. to cover 'lean' season requirements). Two hypothetical production scenarios are used to derive the volume of security stocks required. The experience of the 1979 drought in Bangladesh, is also drawn.

The first scenario (Case A) presents an extreme case in which up to 15m. people would be severely affected by a major calamity, and their entire consumption needs would have to be met for a period of 75-90 days (presumably imports or the next harvest will meet supply requirements after this period). At a per-capita consumption of between 14-16 Oz a day, a stock requirement of around 0.55m. to 0.63m. tons is suggested.

The second scenario is based on a drop in Aman production (the major cereal crop) of 20% from the (1980/1) trend level of 7.5 million tons (gross). Net available production would therefore be 30% of 7.5m. tons (including 10% for seed; feed Aman constitutes more than 50% of total production, it ought to meet at least six months supply requirement- which at 15 Oz a day is about 6.8m. tons. The total deficit of 1.4m. tons also includes a 'normal' deficit of 0.9m. tons (average distribution through the PFDS in 1980/1 was
0.15m. tons per month, which for six months is 0.9m. tons. A security stock level of around 0.5m. tons is therefore indicated.

The experience of 1979 is considered to be equivalent to a major Aman shortfall, in which two successive crop failures occurred in the minor crops (Boro, Aus). The security stock requirement in this case would be the same as in the case depicted above.

The first case is extremely arbitrary in character. The size of the security stock is very sensitive to the figures on population affected, per-capita requirements, as well as the duration in which the affected population will have to be maintained from emergency supplies. Even slight variations in each of these parameters, can result in widely different estimates.

The second case has implicitly assumed that substantial adjustment would occur through lower consumption or through additional imports, without clarifying how consumption - adjustment is to occur, how it should be distributed or how imports are to be financed. Thus if we consider a net normal Aman output of 6.75m. tons, out of which 0.4m. tons are put into the PFDS (through the procurement programme), and if 0.9m. tons of grains are distributed in six months, then total consumption during this period would amount to 7.25m. tons- as opposed to 6.8m. tons envisaged in this scenario. Exactly how this deficit of 0.45m. tons is to be met is left unanswered.

A naive approach of this type of security stock planning is full of hazards, for it begs the question of how and when these stocks are to be built up, how and to whom foodgrains are to be distributed and, given the stochastic nature of the production process, what is the probability of success of holding a given level of security stock (say of 0.6m. tons). Further, are these stocks to be used only in the event of “extreme” emergencies, or would they be used for less serious shortages? If an extreme outcome is very rare (e.g. say once in twenty years) the cost of holding such reserves would be prohibitive. In the even that stocks are used up more frequently, how are these proposed to be replenished afterwards? Perhaps it has been assumed that food-aid and cash imports would be forthcoming to meet supply requirements. The former is unpredictable and uncertain, and the latter difficult to achieve, especially on a ‘regular’ basis.

The most commonly used method in estimating the size of a security stock is to compute the probable size of a deficit in a given year. The deficit is usually measured from the trend level of output, and is given by the (absolute) standard-error of the trend estimate multiplied by the appropriate ‘t’ value. Thus, a stock level of twice the standard-error, will safeguard against 95% of all possible shortages that might occur in a given year, which is roughly 1.4m. tons for Bangladesh. Alternatively, a security level of 00% implies an emergency stock of 2m. tons in any given year. This method of estimating security requirements is likely to be much more reliable,
providing an indication of the associated probability of success. However, the question of how these stocks are to be built up or reconstituted after depletion, has still to be solved.

Under the assumption that in a situation of acute foreign exchange shortage, it would be desirable to rebuild stocks whenever possible, from own production, a 'stock and allocation' policy has been suggested. The basic principle of such a policy is to procure a part or the whole of the 'surplus' (defined as positive deviations from trend) to satisfy a part or the entire deficit during a shortage. Such a policy is usually planned on a medium-term basis (of 5 to 10 years) and should be associated with a certain guarantee of success. Success in this context, implies that during the life of a scheme, the reserve stock will never be negative (there will always be enough quantity in stock to cover the committed part of the deficit).

A pre-requisite for the success of a stock and allocation policy, is an effective method of procuring the planned surplus, which in turn requires a knowledge of the likely size of the surplus (deficit) in a given year. A further complication could arise from the additional objective of using (surplus) procurement from domestic production, to provide farm price-support. For instance, if the policy is to procure only 50% of the surplus, this may prove to be inadequate to provide price support. Additional preconditions for the success of a stock-and-allocation policy, are efficient storage facilities to cover a run of good years.

Objectives of a stock and allocation policy can be of the following types, the ones chosen depending on political, practical and economic considerations:

(a) to completely or partially satisfy a deficit in a shortage year;

(b) to reduce or eliminate price variations due to supply fluctuations;

(c) to enable stocks to be constituted from scratch, or to replenish them.

The first type of objective recognises that in a surplus year actual consumption will tend to be higher than the theoretical (trend) demand, so that the entire surplus cannot be put into stock. Similarly in deficit years, consumption will be below the expected demand, so that the entire deficit need not be met. In this type of policy therefore, the quantity put into stock and the quantity taken out of stock, will be a fixed fraction of the surplus or deficit, as the case may be, though not necessarily, the same fraction.

In the second type of objective, price variations are sought to be confined within a fixed range, so that a decision would have to be taken on the acceptable range of price variations and hence the degree of intervention by the stock agency. Thus if the surplus or deficit in a given year is say 0.3m.
tons, it may be decided that the associated impact on prices are within tolerable limits and consequently, no action would be taken by the stock authority. If a deficit or surplus is above the acceptable limit, then the following course of action is warranted: in the event of a deficit, the difference between the acceptable limit and the deficit is supplied from stock. Conversely, in a situation of surplus, the difference between the acceptable limit and the total surplus is placed into stock.

In a situation where stocks have to be replenished or built up, the third type of policy is suggested. Such a policy would mean that in situations of both a surplus or a deficit, the total supply would be kept below that actually demanded. However, whether such a policy is practicable needs to be considered - especially whether in a deficit it would be possible to depress demand further, particularly if distributive influences on prices and consumption are to be avoided. In a situation of a low level of consumption, this would be very difficult to achieve.

Before embarking on a particular type of policy, some notion of its probability of success needs to be ascertained. This depends on supply-demand behaviour, growth rates of production and magnitude of instability. Thus, given an initial stock, the exact policy to be implemented, and the above mentioned parameter-values, the associated probability can be estimated. A stock and allocation policy that would provide a reasonable level of success, needs to be evaluated in the light of certain characteristics of the Bangladesh situation.

Domestic food production in Bangladesh has been increasing very slowly (at just under 2% over 1970/1 - 1979/80) - although foodgrain output has picked up after 1975/6.

At the same time, population growth has been of the order of around 2.8% - significantly above that of long-term production. Economic demand, which is likely to be related to income and population growth, would tend to grow slowly if the large agricultural sector continues to grow slowly. Thus a situation of low output levels and inadequate effective demand, contributes to the increasingly meaningless policy of equating supply and demand, especially if widespread under-consumption and even famine is to be avoided. In this case, the concept of demand would have to give way to 'need' - or what is the same thing, steps would have to be taken to raise the demand of groups and individuals. The longer run implication of stagnating production is that trend deficits (normal deficits) would widen out, so that policies would have to take account of fluctuations as well as trend deficits. Historically, 'normal deficits' have been met by food-aid. In the short and medium run, food aid may continue to fulfil this role. In the longer run, trend deficits would have to be narrowed or eliminated.

The shorter-run consideration or the precise stock and allocation rule to be followed (i.e. extent or price-variation to be allowed, amount of surplus to
be stored and size of the deficit to be met from stock) depends crucially on an understanding of the ‘tolerable’ limit of price-variations and the degree of under-consumption sustainable. Practical considerations such as the ability of the relevant agency to extract the required surplus, and the associated costs, also need to be considered. It is apparent that manipulation of supplies and prices through reserve policies of this type has significant implications, not only for the ‘welfare’ of consumers and producers, but also of the private food-trading sector. Such effects may not be limited only to the short-run.

Before setting out to discuss some of these implications more fully, it may be of interest to examine some illustrative examples of alternative stock policies (of the type discussed above). These examples approximate the Bangladesh case quite closely and provide an indication of broad orders of magnitude involved.

Three specific stock and allocation policies are considered:

(i) all the excess production over demand is put into stock, and all the deficit met from stock;

(ii) one-half of the excess production is put into stock and one-half of the deficit is met from stock;

(iii) half the excess production is put into stock but all of the deficit is made up from stock.

In these illustrations, the following assumptions are made: the production growth rate is 2.5% (a .025), demand increases alternatively by 2.0%, 2.5% and 3%. Three alternative cases are examined, in which (a) production rises as fast as demand, (b) it lags behind demand, and (c) it rises faster than demand.

Each scheme is expected to operate for 5 or 10 years. At the start of a scheme mean production and demand are taken to be equal, this being 10 million tons. Variability of production is assumed to be 8%.

Recent performance in the foodgrains production sector has been poor in Bangladesh, with the rate of growth remaining slightly under 2% (between 1960-1980) and under 3% between 1973-83. The growth rate, assumed here thus, not very different from the historical rates achieved (although much smaller than that proposed in the Second and 3rd Five Year Plans).

Estimates of demand are more difficult to come by. A recent study used a figure of around 3%. This is likely to be an over-estimate, despite high population growth rates (around 2.8%), due to overall economic stagnation and increasing inequality and poverty. However, a 3% growth rate in demand is certainly the minimum level required to maintain per capita consumption barely at existing levels.
Net production levels in the early 80s, has usually been around 11 million tons and net supply inclusive of aid and imports, have tended to vary between 12-13 million tons. Despite significant increases in output in the last few years (net production in 1983/4 = 13.9m. tons), imports have remained high at over 2m. tons. Production variability in Bangladesh has historically been around 7%. It would seem therefore, that the actual value of the parameters for Bangladesh are roughly approximated by the values used in the illustrative examples, and provides a reasonable description of conditions prevalent during the initial years of the 2FYP.

An indication of the size of initial stocks required, and the probability of success of a given stock and allocation policy is provided in tables 1 and 2. Thus to achieve a reasonable degree of success in a policy in which only half the surplus is procured and half of the deficit is met, an initial stock of 1.6m. tons is required for a 5-year scheme, and 2.7m. tons, for a 10-year scheme. If a policy of meeting the entire deficit is adopted, an initial stock of 3.2 to 3.8m. tons would be required for a 5-year scheme, and between 5.4 to 7.8m. tons for a 10-year scheme.

The assumption of an identical growth rate in production and demand (of 2.5%) is of crucial importance to the outcome, as the remaining examples will show. This equivalence, it may be argued, is unrealistic, since in practice, there has been a tendency for production to lag behind requirements and for ‘normal’ deficits to widen over time.

Table 1

<table>
<thead>
<tr>
<th>Duration of Scheme (Years)</th>
<th>Probability of Success</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Policy I</td>
</tr>
<tr>
<td>5</td>
<td>.75</td>
</tr>
<tr>
<td>10</td>
<td>.60</td>
</tr>
</tbody>
</table>

Source and Notes: Slamaika (1974). Mean production = Mean Demand = 10m. tons. Standard deviation (o) = 0.8m. tons. Production growth rate (a) 2.5%. Demand growth rate (c) = 2.5% Initial stock (2) = 106m. tons ‘Policy’ refers to the proportion of the surplus (deficit) to put into (to take out of) stock see text.
### Table 2
Opening Stock Required for 95% Probability of Success (a=c)

<table>
<thead>
<tr>
<th>Duration of Scheme (years)</th>
<th>Policy i</th>
<th>Policy ii</th>
<th>Policy iii</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>3.2</td>
<td>1.6</td>
<td>3.8</td>
</tr>
<tr>
<td>10</td>
<td>5.4</td>
<td>2.7</td>
<td>7.8</td>
</tr>
</tbody>
</table>

Source and Notes: Slamaika (1974). Figures are in million tons.

If however, it is assumed that demand rises faster than production (there is little doubt that physiological 'demand' and production in Bangladesh has been of this nature) the probability of success of a given initial stock falls dramatically (or alternatively, the required size of the initial stock rises sharply).

Thus, in a situation where demand rises faster than production (or if normal deficits are not financed by aid or cash imports), the probability of success of a given initial stock is very much reduced. (Table 3) If production growth is faster than demand, then the probability of success would improve significantly (Table 4).

### Table 3
Probability of Success of a Stock and Allocation Policy (a/c)

<table>
<thead>
<tr>
<th>Duration of Scheme</th>
<th>Policy i</th>
<th>Policy ii</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>.53</td>
<td>.82</td>
</tr>
<tr>
<td>10</td>
<td>.28</td>
<td>.44</td>
</tr>
</tbody>
</table>

Source and Notes: Slamaika (1974). Production growth rate (a) = 2.5\% demand growth rate (c) = (3\%). For definition of 'policy' and other assumptions see text and table 2.

### Table 4
Probability of Success of Opening Stock of 26 (a/c)

<table>
<thead>
<tr>
<th>Duration of Scheme (years)</th>
<th>Policy i</th>
<th>Policy ii</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>.75</td>
<td>.95</td>
</tr>
<tr>
<td>10</td>
<td>.67</td>
<td>.88</td>
</tr>
</tbody>
</table>

Notes: a = 0.025 C=0.020. Also see Note to Table 2.
It may be observed that even under the much more optimistic assumption
given in table 1, an initial stock of 1.6m. tons would be required to meet a
rather modest objective—namely satisfying half of a deficit by procuring half
the surplus, in a five-year period. This initial stock would be in addition to
normal working stocks (1.5-2.0m. tons) required by the PFDS.

Whether the PFDS can, even if stocks are available, operate and hold up to
3.6-40m. tons of foodgrains, is in serious doubt. Existing handling and
storage facilities would need to be greatly expanded, to be able to do so. Two
further problems may have to be considered: The way in which initial stocks
are to be built up, and the possible effect on donor generosity, in the
presence of a large initial stock. There are thus, significant problems
associated with the realisation of even a modest stock policy, in which only
half a deficit is covered. Initially, smaller emergency stocks would have to be
held, and imports relied upon to meet additional deficits. It has been
suggested that a mixture of domestic reserves and imports presents a lower
cost alternative, than an exclusive reliance on domestic stock. However,
greater the foreign exchange constraint faced by an economy, greater will
be the desire to build up or replenish stocks from domestic production.

A reasonable stock policy, will still require substantial adjustment, by
consumers, the government budget, the balance of payments and the
structure of imports. This is likely to be especially true if the structure and
orientation of existing institutional arrangements for distribution, are not
modified.

Alternative Distribution Policies

It may be noted at the outset that distribution and supply policies are
inter-related: if a distribution system cannot distinguish between different
socio-economic strata, then the benefits derived by the weaker,
disadvantaged groups, are likely to be small. Even small deficits can lead to
great deprivation for these groups, and a reserve stock policy in which only
e.g. 50% of the deficit is planned to be met, would clearly by inadequate. On
the other hand, a distribution system which can direct itself to the needs of
the poorest, implies that a given reduction in total availability (supply) would
be much less worrying; and less likely to provoke a crisis. In other words, if a
part of the adjustment to a given deficit is to occur through lower than
average consumption, this would be feasible only if such lowering of
consumption did not affect the poorest groups, who are least able to bear it.

A given system of distribution may operate through the market, through
extra-market arrangements (e.g., like the PFDS) which also effects the
formal market sector, or through non-market channels (e.g., free
distribution, works programmes or 'food for work' programmes). Crucial
decisions that must be made are (a) how much to be distributed, (b) to whom
and (c) at what price.
A deficit associated with a crop-failure results in loss of income not only for producers directly affected, but also for those who derive a part of their income from the production, processing and trading of foodgrains. At the macro-level, other sectors of the economy could be affected, resulting in reduced overall economic activity. Thus, merely making up a physical deficit (through stock depletion or imports) does not imply that reduction in incomes are automatically made up.

A distinction should however be made, between the different groups in society and the differing impact of deficits on them. Foodgrain producers (large or small), agricultural workers and those engaged in post-harvest operations, are directly affected. Other rural groups (artisans, traders, etc.) who depend on a rural clientele are affected indirectly, through changes in demand. Urban groups (normal sector employees, service sector workers, etc.) whose incomes do not depend significantly on the rural/foodgrain sector, are affected through price changes resulting from changes in the marketed surplus. Thus, if prices are stabilised, the urban groups referred to above, would not be affected. This is of course, not true for the rural groups, whose consumption would be affected, even if prices were stable. With price increases occurring simultaneously, the consumption of the rural groups, and especially of the weaker sections therein, will be hit the hardest.

The question of how much is to be distributed is really a practical problem which has been discussed in the preceding section. It would appear that only a fraction of a given deficit (especially when deficits are large) can usually be met.

The question of how such distribution is to be made (i.e., to whom and at what price) is complicated and clearly depends on our objectives. If these objectives are (a) to prevent disruptive under-consumption and (b) to minimise the effect on the government budget, then the task of the distribution system would be to channel foodgrains to the poorest groups (both urban and rural) and to eliminate subsidies. There is thus a possible contradiction between these objectives.

The ‘urban bias’ of the PFDS has been widely noted. A policy that benefits all sections by lowering market prices through e.g. ‘open market sales’ would therefore be an improvement over the existing system. In this case, all participants in the market would be benefited. At the same time, this type of policy will also be able to reduce or eliminate subsidies, minimising the effect on the government budget.

Although the above policy would be an improvement, it is unlikely to be able to protect the consumption of the poorest groups, particularly in the rural areas. There are two reasons for this: a policy of meeting even half of the deficit would still leave prices quite high and secondly, the loss of purchasing power by the disadvantaged groups and their inability to obtain credit, would tend to keep them estranged from the market. It would
therefore be necessary to develop a mechanism to make foodgrains accessible to these 'target' groups.

Reaching specific 'target' groups in developing countries is very difficult, whether it is credit, inputs or aid that is being sought to be targeted. It would therefore be difficult to do the same for foodgrains, especially during a shortage. There are however two measures which can be potentially very effective: changing the foodgrain mix of the PFDS and use of FFW programmes.

Changing the foodgrain mix essentially involves switching increasingly to coarse-grains instead of rice and wheat. By doing so, it is possible to ensure that only the poorer groups would derive the benefits. An experiment carried out to test this hypothesis was conducted in Bangladesh where sorghum (a coarse grain) was distributed through the usual channels. The success of this experiment suggests that this can indeed be an effective way of targeting foodgrain distribution.

Another effective method is the use of 'food for work' projects which have a long history in Bangladesh. The problems associated with such projects usually tend to be administrative in nature. Further, FFW projects are very seasonal and cannot be conducted in certain weather-conditions (e.g. floods, rainy-season).

Free distribution, although sometimes warranted, can only remain an extreme option. This form of distribution is expensive, inefficient and demeaning with charges of corruption being frequently associated with its operation. A revised distribution policy intended to reduce subsidies and protect the consumption of the poorest groups, would therefore involve the following broad elements:

(i) Large open-market sales of food-grains (principally rice and wheat) to stabilise market prices, and the reduction of subsidies to enable all groups to be benefited.

(ii) Restriction of the 'rationing' component of the PFDS, to channel coarse-grains—mainly sorghum, millet and wheat. Use of low quality (broken) rice can also be tried.

(iii) A better organised and expanded FFW programme, not only to ensure consumption but also to create physical infrastructures, such as embankments and drainage canals that will help stabilise yields.

In the case of (ii) above, some subsidies will still be involved. However, the lower price of coarse grains is likely to reduce these subsidies. In the case of (iii) expenditures incurred on FFW schemes should probably be viewed as labour intensive investments in infrastructure-oriented projects, which at least potentially, can yield substantial benefits.

On the other hand, the larger the level of open market sale, the less will be the amount of subsidies incurred. A balance would therefore have to be
stuck between the affordable level of subsidies and the level of protection provided to poor consumers. It needs to be borne in mind that even after all the above modifications are adopted significant adjustments would still have to be made. These consumption adjustments would have to be made by the participants in the ‘open market’.

The exact volume of foodgrains to be channelled through each of the above categories depends on the seriousness of the shortage and the extent to which (a) market prices are influenced by open-market sales, (b) the ability of PFDS to execute the ‘new’ policy, and (c) the feasibility of expanding FFWS schemes. While (c) is an ‘empirical’ matter, (b) and (c) are purely administrative and organisational in nature.

**Conclusion**

Shortage management is likely to remain an important policy area in the medium run. As longer run measures to reduce food insecurity begin to come into effect, its significance would tend to diminish, not only because of lower instability, but also because of higher growth.

The most important effect of a shortage is of course on consumption. The effect on related variables, both macro and micro, depends on how much of the burden of adjustments is borne by the consumers themselves (through lower consumption) and how much is borne by the government (i.e., its foodgrain stocks, budget, foreign-exchanges, etc.). There is thus a trade-off between the micro and macro variables, so that under a given situation of shortage, each can be insulated only at the expense of the other. In the longer-run interest of generating stable growth, it is necessary to pass on the burden of short-run adjustment to the consumers themselves, in order to protect the ability of the government to finance investment for development.

Given the widespread prevalence of malnutrition and hunger even under normal circumstances, the suggestion of further consumption adjustment to a shortage, is likely to appear unrealistic. Nevertheless, substantial scope for such adjustments would appear to exist under a more “rational” distribution policy, serving to reduce import and reserve requirements.

It is surprising that in a country like Bangladesh, where adjustments to shortages are very disruptive, a separate emergency reserve stock does not exist, often leading to panic imports of foodgrains at short notice.

The size of the emergency stock is of course an important determinant of its feasibility. In any given year, the size of such a stock is likely to be in the region of 1.2m to 1.4m tons. Even if a more ‘rational’ consumption-distribution policy can be carried out, the size of the stock would still remain large, perhaps around 0.8m to 1.0m tons. It would be difficult to build up this level of stocks from domestic production alone, so that imports would have to be made.
A very large reserve stock, whether built up from imports or domestic production, involves a huge cost, which rises with the time that such stocks are held. On the other hand, imports in response to a shortage will not involve storage costs or spoilage, so that it would make sense to hold small reserves and rely on imports. This particularly makes sense if imports are made anyway, to build up the reserve stocks in the first place.

A minimum stock-level would have to be maintained within the country, to allow sufficient time for imports to be channelled. A normal time-lag of around four months for imports to arrive after an order is placed, implies an in-country reserve stock of about 0.4m. tons—a significant proportion of which can be built up from domestic production.

For large shortages, imports would be required, implying that sufficient foreign-exchange has to be reserved to finance imports of 0.4 m. to 0.8 m. tons, in any given year. With the implementation of the Cereal Import Facility of the IMF, the amount of foreign-exchange that is needed to be held, could be much smaller. If indeed this facility is easily accessible, then reliance on imports to meet shortages becomes a much more attractive proposition than holding large domestic reserves—even when such reserves could be built up entirely from domestic production.

REFERENCES

Water Management Strategy and the Third Five Year Plan of Bangladesh

BY M. A. HAMID*

1. Preliminary

"Have they not seen how We lead the water to the barren land and therewith bring forth crops whereof their cattle eat, and they themselves?" (Al-Quran 32:27)

"There is no significant areas of virgin land to be opened up, so that increased production that is needed to make the country self-sufficient as well as to produce export surpluses must come from further intensification of cropping and introduction of high yielding varieties (HYV), possible mainly by providing irrigation ....." [9; XII-75]

Although the establishments of such once-known white-elephant bodies as BWDB (Bangladesh Water Development Board) or BADC (Bangladesh Agricultural Development Corporation) and of such dragon-like creature as MPO (Master Plan Organization) to help the PC (Planning Commission) in preparing national water plan, do (in a sense) indicate the seriousness attached by the GOB (Government of Bangladesh) to such divine and earthly messages, the final output—measured in terms of self-sufficiency in food, reduction of unemployment, and promotion of equity—so far obtained is anything but discouraging. The reasons are not too far to seek. The paper argues that we as the advisers, or as the policy-makers, or even as the planners have either consciously or unconsciously, failed to adequately recognise the full implications of the concept 'water resources development' or, more technically, 'water management strategy.' There are two basic objectives of the paper:

i) To notewoth the main points relating to the water management (WM) strategy as proposed to be pursued during the Third Five Year Plan (TFYP-1985-90); and

ii) To examine their efficacy with particular reference to the conditions obtaining in the country.

* Department of Economics, University of Rajshahi

1. For the purpose of the present paper, the terms 'water management' and irrigation management would be used interchangeably.
Additionally, through these an attempt would be made to search for an integrated approach to WM strategy in Bangladesh.

2. The Third Five Year Plan

In order to review the WM strategy as envisaged in the country’s TFYP, it will be necessary to have some idea about the objectives, targets and policies aimed to be pursued in the water sector. These are shown thus.

Objectives: The primary objective is “to accelerate the process of technological transformation of agriculture in order to reach higher level of agricultural production, particularly foodgrain”. [8; IX-38]. The specific objectives are quoted as follows:

i) To provide timely and dependable supply of irrigation water for increased foodgrain production of 20.7 million tons;

ii) To regulate and control floods and drainage, salinity, tidal water inundation and river erosion to avert crop and other material damages and human sufferings;

iii) To generate productive employment opportunities for rural people in order to ensure equitable distribution of benefits of development; and

iv) To promote efficient use of water resources in respect of time and geographical area through inter basin water balances and optimal cropping pattern.

Targets: The important targets expressed in terms of percentages over the benchmark period, 1984-85 are:

<table>
<thead>
<tr>
<th>Water Source</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gravity flow</td>
<td>25.6%</td>
</tr>
<tr>
<td>Low Lift Pump (LLP)</td>
<td>2.8%</td>
</tr>
<tr>
<td>Shallow tubewell (STW)</td>
<td>5.4%</td>
</tr>
<tr>
<td>Deep tubewell (DTW)</td>
<td>12.0%</td>
</tr>
<tr>
<td>Hand tubewell (HTW)</td>
<td>8.4%</td>
</tr>
<tr>
<td>+ others</td>
<td></td>
</tr>
<tr>
<td>Total/Average</td>
<td>9.5%</td>
</tr>
</tbody>
</table>

Strategies: In order to achieve the objectives and targets, the TFYP aims at pursuing the following (stated in slightly different languages) strategies:

i) Maximum utilisation of the existing facilities and improvement of productivity in the area already covered by irrigation facilities; command area development, efficient water distribution, improvement of crop-soil-water management practices will also be encouraged;
ii) Completion of all incomplete projects as speedily as possible;

iii) Focus on new irrigation projects having short gestation, cost-effective and labour-intensive character;

iv) Decomposition of big projects into independent/self-sufficient units for implementation in phases; and

v) Encouraging participation of local people as beneficiaries of drainage and irrigation programmes from their planning to implementation and managements.

The above are termed as short-term strategies. The Plan also stresses some important long-term strategies including the use of main rivers, basin-wise development of surface and ground water, Teesta Barrage and soil conservation and afforestation.

Policy measures: Four policy measures are dealt with in the Planning Document under review. These are (i) rationalisation of subsidy over all methods of irrigation; (ii) standardisation of irrigation equipment so as to facilitate operation and maintenance services; (iii) effective co-ordination among the equipment-supplying agencies like BWDB, BADC, BRDB (Bangladesh Rural Development Board) and BKB (Bangladesh Krishi Bank), and (iv) framing of an appropriate water legislation so as to ensure sufficient control over surface and ground water utilisation in the country.

3. Review of Strategies

Before we go on to review the strategies of WM in the TFYP, some points are in order.

First, at the very outset it should be clearly recognised that the term ‘water management’ does not necessarily involve the management of water leading to (say) ensuring its dependability, nor is its connotation fully grasped by such fashionable words/phrases as ‘crop-soil-water management’ practices. Its arena at least begins from procurement of water and goes through its dependability, delivery and uses. Again, until and unless this thread is linked up with human benefits measured in terms of (as stated above) increase in output, reduction of unemployment and promotion of equity, the whole edifice of WM may crumble to ground. It can very well be thought of as a tree with water technologies as its roots and production, employment and equity as its fruits, the dependability, delivery and uses of water being nothing but as its branches at different stages of its growth. Second, as pointed out above, strategies, objectives and policies are highly correlated, and hence the first one (strategy) cannot meaningfully be discussed in isolation from the rest. Third, if the proposed strategies are determined without any or very little reference to the realities of the situations, it will either be difficult to implement them in practice, or, if implemented, will in all probability, produce frustrating results.
With these preliminary observations, we now pass on to examine the WM strategies of the TFYP with particular reference to the different elements, as noted above. For descriptions of the relevant situation, the evaluation-results as gathered from various field investigations will be used.

3.1 Procurement of water

Procurement of water is the first crucial element of the WM strategy and the root of the WM tree as conceived above. In Bangladesh, various types of water technologies (i.e., irrigation devices) with diverse characters are used to tap water both from surface and from underground sources through multifarious institutional arrangements. The immediate objective here is to supply water during the dry season and supplementary irrigation during the rainy season.

What should be the strategy or strategies for achieving this objective? For this is needed a description of prevailing situations. First, although it is much cheaper to lift surface water than ground water at any given level of technology, the scope for withdrawing surface water during the dry season is limited because excessive lifting of water not only affects navigation and fish culture but also causes salt water intrusion from the sea. It is now widely believed that Bangladesh has already come nearer to this limit, in spite of the fact that it is a riverine country and also has innumerable number of ponds, tanks, khals, beels, haors and baors with an estimated monsoon flow of 5m cusec water during monsoon flow. A manifestation of this scarcity is found in the Government’s recent emphasis on ground water development. The PC has proposed to increase the area irrigated by ground water devices from 30.35 lakh ac to 44.35 lakh ac during the plan period. The fact reminds that the underground water potential is still unexplored. The observers (other than of course MPO) have already started casting doubts about the possibility, and more importantly, rationality, of exploiting so much ground water during the next 5 years. We in NW Bangladesh have not forgotten the severe crisis of underground water in the recent past and the prediction that this region may turn into complete desert in the near future. It is also not a palatable news that even in the Barind Tract an additional 1,000 DTWs are going to be installed in the first instance under a would-be body named Barind Tract Authority.

Secondly, modern irrigation was initiated with large scale gravity schemes (like GK Project and D-N-D Project) and DTW schemes and later HTW schemes. The major emphasis now appears to have been put on somewhat medium scale technology namely STW. This technology was found to be suitable for our socio-economic conditions (unequal distribution of subdivided and fragmented holdings) and physical environments (substantial supplies of surface and also unexplored ground water with macro-topography). “PDB and BADC”. [1-XIV]

Thirdly, the procurement of water is also affected by the nature of institutional arrangements. The BWDB is responsible for gravity flow
Irrigation—big or small—and also to some extent DTW irrigation (Thakurgaon Project, for example). For minor irrigation (DTW, STW, LLP etc.), formerly only BADC, recently BRDB, BKB and BB (Bangladesh Bank), and most recently private firms mainly responsible. Strictly speaking, these institutions as suppliers of water are not comparable. However, if the performance is measured in terms of area irrigated vs-a-vis projected command area, then the position of BWDB becomes substantially poorer [1,17] than other institutions. Again, in the case of minor irrigation, if the performance is judged on the basis of the sale/distribution of irrigation equipment, then the recently introduced institutions like BRDB or banks appear to be substantially better. In a sense, the progress of sale under privatisation programme has probably exceeded all the previous records [4,5]. This performance is of course explained by the provision of full credit and other factors attached to the programme.

It is also possible to go a step further and enquire about the field performance of say sales (private) and rental (BADC) programmes. The Hamid et al 1984 study concludes: If the national objectives are to achieve food self-sufficiency and to ensure utilisation of pumps by smaller farm households, then rental programme is better than sales programmes but if the national objectives are to derive maximum economic and financial benefits per unit of pump and to create non-farm employment opportunities, then the opposite is true. [4:XX]

Fourthly, one irrigation policy of the GOB can be noted here. This relates to subsidy. The policy as it now stands is the larger the scheme/technology, the higher the rate of subsidy and vice-versa with zero in the case of traditional ones. For example, in the case of BWDB-managed schemes, the rate of water charges is very nominal and the rate of subsidy is 25 pc for LLP and 75 pc for DTW (TFYP). For STW and HTW, there is no subsidy. It may be added that although even traditional methods contribute some 30 pc of the surface water irrigation, no attempt has yet been made to subsidize the use of these technologies.

One can go on listing many other relevant experiences, but we stop here with a remark as made by Bottrall with respect to the pace of irrigation development. "In Bangladesh, there are many pressing reasons for expanding irrigation rapidly. However, it has become almost universal axiom that the rapid expansion of irrigation facilities is in itself a major enemy of good system performance and management." [1,XX1]

With this rather limited background experiences we now pass on to say a few words about the efficacy of the WM strategies as proposed by the planners. In order to procure water enough to irrigate 86.44 lakh ac in 1989-90 (base year figure is 61.20 lakh ac), the Plan proposes to pursue such strategies as maximum utilisation of existing facilities, completion of all incomplete projects, focus on short gestation, cost-effective and labour-intensive new water projects, and emphasis on small scale food protection.
and drainage projects. These short term strategies, when read with the long term ones such as water conservation and use of main rivers, become a well-thought-out bundle of strategies one can expect from the PC. One can, however, raise questions regarding its practicability since the past results are not encouraging, although almost similar bundle of WM strategies were followed (or were supposed to be followed) during the SFYP (Second Five Year Plan). There must be some explanations behind this.

Some explanations have, in fact, been given by the planners themselves in their planning document. One of these explanations is what they call "increased rental and sales price". To deal with this, the Plan suggested that "subsidy element will be rationalised over all methods of irrigation" [X - 44]. This is in a sense a vague suggestion. What does "rationalisation" mean? Does it mean that all subsidies will be made equal over all methods of irrigation? Or does it mean that all subsidies will be withdrawn? Time has now come on the part of the PC to say specifically, what actually is its suggestion. Because with this suggestion is related not only the expansion of irrigation facilities, but also the repayment of credit and above all the question of promotion of equity. "Free sale of LLP resulting in diversion to alternative use and reduced access of poor farmers for lack of credit" is another explanation given in the planning document. No specific policy suggestion is given, unfortunately, in the Plan. My own suggestion is to continue the rental programme side by side the sales one.

In line with the strategy of "short gestation, cost effective and labour intensive water projects," the Plan has rightly emphasised very small projects covering maximum 1,000 ac for irrigation and 2,500 ac for drainage and flood control to be implemented by the Union Parishads. The planners believe that this would ensure "participation of local people." But when this expectation is read with the observation of the planners i.e. during the SFYP, the "appreciation of peoples' participation in planning, implementation and management was seriously lacking," the readers become disappointed because the TFYP does not contain anything about the way out. Moreover, it is not understood why the farmers would participate in irrigation activities, as individuals or as members of groups, unless they believe that their participation will benefit them. For ensuring general peoples' (including landless ones) access to irrigation facilities, at least the land reform measures as announced by the GOB should be put into practice.

In the Plan, the highest priority appears to have been given to what is called "maximum utilisation of the existing facilities", but no clear analysis has been given as to the meaning of the term "existing facilities". If by this phrase, we mean the utilisation of existing structure or the utilisation of the already installed/fielded minor irrigation devices, we can argue that we have already got enough of it. What is now needed is the creation of "extra facilities" in terms of excavation and re-excavation of ponds, tanks, canals, haors, beors and others. Similarly, the strategy for the "completion of all incomplete projects" can also be subject to question. What are these
incomplete projects? How were they undertaken in the first instance? Are they really socio-technically viable from “our” viewpoint? Would it not be wiser to go in for new projects in new areas rather than to complete these incomplete ones? In the womb of the answers of those types of issues are included the reasons for the unsatisfactory results of the past.

3.2 Ensuring dependability of the supplied water

Mere distribution of irrigation equipment (or the construction of canals) or their installation is not enough for the purpose of production. Supply of water should be in right quality, in right quantity and in right time. More specifically the supply of water should be dependable. This can also be ensured through an effective repair and maintenance services. For canal irrigation this means the up keep of structures and embankments and removal of silt and vegetation from canals and channels. For mechanical irrigation, this refers to keeping the machine in such conditions as to supply water whenever needed. Determination of strategies in this particular aspect of WM should consider the scenarios such as the one illustrated for mechanical irrigation below.

Dearth of prompt and efficient repair facilities causes many of the irrigation facilities remain idle. For details of the nature and extent of this problem, the readers are referred to [4]. What follows are some relevant statements for illustration. The study shows that the number of breakdowns per engine continuously increased from 1.52 times per season in 1980-81 to 2.38 times in 1983-84. Of the major 41 breakdowns (in a selected number of schemes), 16 caused loss of yields, 19 caused increase in cost of operation (and hence production) and 6 caused both.

Formerly, BADC had the sole responsibility of providing repair and maintenance facilities and also of what is called “after sale services”. These services are now increasingly being transferred to the private sector. For efficacy of the private sector in handling the irrigation services, reference can be made to Hamid et al 1986 or Hemid 1986 (forthcoming). However, the basic findings of all these studies indicate the following results: (a) The number of mechanics is not adequate to handle all the irrigation equipment; (b) the available mechanics are largely inefficient (this is particularly so in the case of private mechanics; (c) adequate spares are not easily available; (d) most of the available spares are of bad quality and also very costly; (e) both the private and BADC workshops are too weak and inefficient to manufacture the right number and the right quality of spares required for the efficient operation of the devices; (f) no effective programme has yet been made by the GDB to establish workshops at the district level (not to speak of at the Upazila level) either in the government sector or in the private sector; (g) the training programme meant for the mechanics is too inadequate and slow to meet the growing demand; (h) there are too many models of engines causing the maintenance services difficult. There are also problems associated with the supply of POL (power, oil and lubricant) in right time, in right quality and in right price.
Against this background, if somebody wants to examine the strategies as proposed by the TFYP, he gets greatly relieved, because very little specific has been said by the planners in this connection. The only relevant point that can be digged out from the planning document is the phrase “standardisation of irrigation equipment” mentioned in the policy-issue section (but in that too the real policy suggestion is still in default). This ignorance (conscious or unconscious) of the PC should explain, at least to some extent, the unsatisfactory performance of the irrigation sector in the past.

However, if the strategy for WM is to be related to ensuring the dependability of the supply of water, then these strategies and policies, among others should be considered. (a) Emphasis should be given on the manufacturing of not only the needed spare parts but also the irrigation devices themselves; This would not only ensure the supply of the required number and quality of spares but would also help “accelerate the process of technological transformation of agriculture” as the planners have so carefully put in their objective-section. The reduction of dependence on the donor-countries would of course be a bonus; (b) Both the private and BADC workshops should be developed side by side. In a sense, it would be wiser if BADC takes the lead and demonstrate the feasibility and profitability of establishing workshop at the local level. (c) Mechanical training programme, particularly for private persons (e.g. local youths and school-college drop-outs) should be intensified. (d) The number of makes and models of engines should be brought to a minimum (say 3 or 4).

3.3 Water delivery

Closely connected with the supply of water and ensuring its dependability is what is called delivery of water. The issue is that the water will have to be delivered to different plots of land under command area. This is deliberately treated as a separate and distinct issue because of the fact that in Bangladesh, although water is a precious good, normally 25 to 40 pc of the supplied water get lost through seepage. Therefore the basic objective of the water delivery element is to deliver water with minimum losses.

In the hands of non-social scientists, this is purely a technical issue relating to the nature of the design and construction of canals and channels. This is partially true since not more than 10 pc of the total field channels are pucca causing wastage of water on the way. But the socio-economic or organisational factors are equally important. Some illustrations will make this assertion clear. If the delivery of water is made through formal groups, the system loss will be certainly less than when it is done by an individual. This system performance is also greatly affected by the method of water charge collection. For instance, if the water charge is collected through sharing of output (say 25 pc as is usually found in many parts of Bangladesh), the owner-manager of the irrigation equipment takes particular care in delivering the right quantity of water in right time. The
water loss is likely to be lower here in comparison to the payment of water charges in cash. Again if water charge is collected on what is popularly called (in NW Bangladesh) the TJPT (Tal Jar Pani Tar— he who gives the oil gets the water) principle, the wastage of water through seepage becomes enormous [2].

Against this background, the PC has done practically nothing except mentioning such phrases (without any analysis whatsoever) as “command area development” and “efficient water distribution”. The suggestions that can be made in this regard should include: (a) Water users should be encouraged to gradually make their field channels pucca particularly in those areas where there is sandy soil. (b) Food for Works Programme or Rural Works Programme can be effectuated for the construction of pucca channels in those cases where there are formal co-operative systems. (c) BRDB (in the first instance) should be motivated to go in for trying real grass-root level irrigation groups rather than continuing with making the usual one-man co-operatives.

3.4 Water use

Delivery of dependable supply of adequate water to the fields is not an end in itself. The water will have to be used for the maximum human benefits measured (in a limited sense) in terms of productivity. The immediate objective is to maximise production per unit of water delivered in the field. This entails a number of very crucial considerations such as the ones as described below.

The point is that water alone is a meaningless input for the purpose we are aiming at. This input will have to be properly combined with a number of other critical ones such as seeds, fertilisers, insecticides and credit. There are varieties of crops such as IRRI or BRRI which are very water-thirsty. Wheat comparatively requires much less water but can provide the same amount of nutrients per unit of land. Therefore, choice of crop is an important consideration. MPO shows that with full development of groundwater (for example), it is possible to increase irrigated area from 31 pc to 46 pc if the emphasis is gradually shifted from rice (100%) to wheat-and-rice (40%+60%, respectively). Similarly, availability and quality of chemical fertilisers and insecticides are very crucial. Now the responsibility of distribution of these inputs have been given to the private sector. The results are not encouraging, to say, the least. The distribution as previously made by BADC was not satisfactory either. Still critics are of the view that both these systems should be run simultaneously so as to enhance human welfare. Prices of these inputs have significant impact on the use of water for the increase in agricultural productivity. Research results suggest that the subsidy policy of the GOB needs careful scrutiny. Distribution of irrigation equipment on credit is also causing maldistribution of rural resources.
Given the background, what strategies should we follow during the TFYP? In this case too the planners have stated almost nothing. The strategies and policies that need emphasis are: (a) Cropping pattern will have to be adjusted to the availability of water; wheat and vegetables will have to be encouraged wherever possible. This can be executed by regulating the prices of wheat and rice in such a way that the former becomes somewhat more attractive than the latter. (b) We agree with the PC that at the local and national level appropriate water legislation should be framed so as to enable sufficient control over surface and ground water utilisation. (c) A balanced input–output price ratio will have to be persuaded.

3.5 WM Seed

In the literature, consideration of the different elements of WM strategy is driven at best up to maximisation of physical output per unit of land or water or irrigation equipment. But this is in a sense again a partial view of WM. If the contribution of water is to be sustaining in nature, then the produced output must be economically attractive to the users, otherwise they would lose all incentive to continue their venture in the subsequent years. This economically attractive output is termed as “WM seed” with which to produce further output.

Because of obvious reason, the TFYP has said nothing about this element of WM strategy and hence no comment is necessary or applicable. However, because of the importance it deserves, some strategies and policies are mentioned below:

(a) The procurement policy of the GOB will have to be made more effective and constructive so as to provide incentive price to the real producers.
(b) Price of output should be fixed so as to leave a reasonable surplus over the cost of production.

4. Concluding Remark

The paper shows that the whole WM strategy can be segregated into 5 components i.e., procurement of water, ensuring dependability of the supplied water, delivery of water, uses of water and the last one is termed as WM-seed. This is visualised as a tree with water technologies as its roots and increased output, employment, etc are its fruits, the different components constituting different parts of its body. It is argued that unless and until those component functions are executed in an integrated way, the results are bound to be repetitions of the past.

The objectives and strategies are propounded by the country’s TFYP are praiseworthy to the extent they are exhibited. It is, however, possible to find out several inadequacies of the Plan from the viewpoints as described in the text. The Plan suffers from the underlying assumption that there is a straight-line and one-step relationship between the supply of water, on the one hand, and the increase in food output (to 20.7m tons), on the other.
This is an over-simplification of the real situation, to say the least. Most of the strategies as noted in the planning document centre around the supply of water or its sources. The use of such phrases/words in the strategy—basket as “improvement of productivity”, “efficient water distribution” and “improvement of crop-soil-water management practices” have become bottomless baskets, because they have neither been derived from any analysis nor have they been driven to imply any policy conclusions.

In order to derive the desired results out of the water input, my own suggestion (as I have done several times) would be to follow integrated approach. This has several facets. First, the five component-functions will have to be linked in one chain. Second, there should be vertical integration at different levels of WM i.e. at the farm level, at the local level, at the national level and even at the international level. Third, very urgently, the institutions associated with the WM such as BADC, BWDB, BRDB, BKB, BB, etc. will have to be integrated. Fourth, in the PC itself, there should be an integration of different experts coming from different disciplines such as socio-economists, irrigation engineers, agronomists, soil scientists and generalists. Finally, there is also a need for the integration of the functions of the researchers, planners and policy-makers. If these ideas are to be fully reflected in the planning document, the whole Water Resource Section will have to be rewritten. It would be too much to expect that the PC would be able to do this because it has neither the resource nor even the time (6 months have already elapsed) necessary for doing this. Therefore we should be prepared to see the past result repeated during the TFYP.

REFERENCES
A Review of the Planning Experience with respect to Fishery Sector of Bangladesh

By ALI AHMED RUSHDI*

I Introduction

Fishery sector contributes about 5 percent to the GDP of Bangladesh and fish exports constitute about 4 percent of the export earnings of the country. Fishery provides livelihood to about 8 percent population of Bangladesh. About 12 lakh people are directly engaged in commercial fishing (see table 1) and the number of mechanised fishing crafts exceeded 2600 in 1983-84. In view of the large coastal area and a vast fishing zone available in Bangladesh, the number of mechanised fishing crafts can be increased manifold and thereby employment opportunities can be created for a large number of people in the coastal area who have necessary courage and willingness to go into the sea for their livelihood. In this paper we present a brief review of the performance of the fishery sector in Section One and discussed the prospect for future development of this sector in Section Two. Finally, we present a summary and conclusions in Section Three.

II A Review

Table I represents the number of fishermen involved in inland and marine fishing in Bangladesh over the years. It also shows the number of mechanised fishing crafts engaged in coastal fishing in Bangladesh. It appears from the table that the number of fisherman engaged in inland fishing is overwhelmingly larger than those engaged in marine fishing. The inland production of fish is also predominant which represents about 79 percent of the total fish supply in Bangladesh (see table 2).

Fish has been the main source of animal protein to the people of Bangladesh. It is estimated that about 80 percent of animal protein comes from fish alone. However, there are indications that consumption of fish has been declining over the years. It can be seen from table 2 that

* Associate Professor, Department of Economics, University of Dhaka.
the total quantity of fresh fish caught in Bangladesh has reduced from 8,24,000 metric tons in 1971-72 to 6,40,000 metric tons in 1975-76. The major source of this decline was the reduction in inland catch. The volume of production in the inland area was 7,29,000 metric tons in 1971-72, it declined to 5,45,000 metric tons in 1975-76. The decline in the inland catch can be attributed to a combination of factors manmade and natural. Overfishing due to high population growth, lack of any organised pisciculture and insufficient facilities for large scale production of fish fry and fingerlings are the major causes of decline in fish production. In addition, indiscriminate use of pesticides, increasing use of pond and tank water for irrigation, construction of coastal embankment and estuary enclosures interrupting natural breedings and causing discontinuity in the life cycle of fish, large-scale reclamation of haors, and bills etc. are also responsible for general deterioration of inland fishing. Since 1975-76, the inland fish production continued to decline until 1979-80. Although an upward trend is in sight since 1980-81, the production in 1983-84 was only 80 percent of that in 1974-75. As against this, marine fish production has been on the rise since 1968-69 but its increase has been less than sufficient to compensate for the loss in inland production. Total production of fish has increased from 6,40,000 metric tons in 1975-76 to 7,53,000 metric tons in 1983-84 but it was still far below the 1974-75 level.

The total production of fish (753 thousand metric tons) in 1983-84 was far below the minimum requirement. Average per capita per day consumption of fish has declined from 36 grams in 1965-66 to 21 grams in 1983-84. While population has been increasing over time fish production has been declining. Thus, per capita availability of fish has been declining at a faster rate than the rate of decline in production. The recent increase in fish export has also contributed to the reduction in per capita consumption of this high protein food. The inevitable outcome of this fall in supply has been an abnormal rise in fish prices. Table 3 represents changes in the average wholesale price of rohu fish in Dhaka as well as in Bangladesh as a whole. It appears from the table that the wholesale price of rohu fish has doubled from 1974-75 to 1976-80 and thereafter rose by more than 50 per cent up to 1983-84. As may be seen from table 4, prices of other fishes rose even more sharply. There is no denying of the fact that a group of consumers can in fact, afford to pay this high price. But they are the customers who do not need fish protein as much as their less advantaged counterparts the poorer sections of the society. Whereas the former class can afford to buy meet eggs and other protein foods, the main source of protein to the latter class had been fish alone, until the abnormally high price of this source of protein coupled with high degree of unemployment and landlessness pushed this section
gradually out of the fish market. Not surprisingly, therefore, the number of blindness and the frequency of diseases that have their roots in the lack of protein food are increasing day by day. It is therefore, the time that government takes appropriate measures to increase fish production in the country and thereby increase the availability of more protein to the relatively lower income group of the country. Needless to emphasise that the increase in fish production also means increase in employment opportunities and income generation to the poorer sections of the community.

Table-1
Number of Fishermen and Fishing Crafts by Type

<table>
<thead>
<tr>
<th>Years</th>
<th>Fishermen</th>
<th></th>
<th></th>
<th>Number of fishing crafts</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Inland</td>
<td>Marine</td>
<td>Total</td>
<td>Trawler</td>
<td>Launches</td>
</tr>
<tr>
<td>1964</td>
<td>5,60,000</td>
<td>1,81,414</td>
<td>7,41,414</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>1965</td>
<td>5,67,597</td>
<td>1,78,686</td>
<td>7,46,282</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>1966</td>
<td>5,67,597</td>
<td>1,78,685</td>
<td>7,46,282</td>
<td>—</td>
<td>285</td>
</tr>
<tr>
<td>1967</td>
<td>5,67,597</td>
<td>1,79,578</td>
<td>7,47,175</td>
<td>2</td>
<td>285</td>
</tr>
<tr>
<td>1968</td>
<td>5,67,597</td>
<td>1,81,374</td>
<td>7,48,971</td>
<td>2</td>
<td>285</td>
</tr>
<tr>
<td>1969</td>
<td>5,78,948</td>
<td>1,92,597</td>
<td>7,71,545</td>
<td>2</td>
<td>285</td>
</tr>
<tr>
<td>1970-71</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
<td>2</td>
<td>—</td>
</tr>
<tr>
<td>1971-72</td>
<td>6,00,000</td>
<td>2,00,000</td>
<td>8,00,000</td>
<td>10</td>
<td>—</td>
</tr>
<tr>
<td>1972-73</td>
<td>6,50,000</td>
<td>2,10,000</td>
<td>8,60,000</td>
<td>10</td>
<td>200</td>
</tr>
<tr>
<td>1973-74</td>
<td>6,60,000</td>
<td>2,20,000</td>
<td>8,80,000</td>
<td>21</td>
<td>276</td>
</tr>
<tr>
<td>1974-75</td>
<td>6,00,000</td>
<td>2,00,000</td>
<td>8,00,000</td>
<td>21</td>
<td>1,000</td>
</tr>
<tr>
<td>1975-76</td>
<td>6,00,000</td>
<td>2,00,000</td>
<td>8,00,000</td>
<td>26</td>
<td>1,000</td>
</tr>
<tr>
<td>1976-77</td>
<td>6,18,000</td>
<td>2,06,000</td>
<td>8,24,000</td>
<td>26</td>
<td>1,050</td>
</tr>
<tr>
<td>1977-78</td>
<td>7,09,000</td>
<td>2,90,060</td>
<td>9,99,060</td>
<td>26</td>
<td>1,100</td>
</tr>
<tr>
<td>1978-79</td>
<td>7,16,970</td>
<td>3,12,000</td>
<td>10,28,970</td>
<td>26</td>
<td>1,200</td>
</tr>
<tr>
<td>1979-80</td>
<td>7,23,781</td>
<td>3,34,000</td>
<td>10,57,781</td>
<td>26</td>
<td>1,300</td>
</tr>
<tr>
<td>1980-81</td>
<td>6,95,000</td>
<td>4,11,995</td>
<td>11,06,995</td>
<td>24</td>
<td>2,000</td>
</tr>
<tr>
<td>1981-82</td>
<td>7,00,500</td>
<td>4,39,669</td>
<td>11,40,169</td>
<td>36</td>
<td>2,050</td>
</tr>
<tr>
<td>1982-83</td>
<td>7,05,950</td>
<td>4,56,950</td>
<td>11,62,900</td>
<td>53</td>
<td>2,100</td>
</tr>
<tr>
<td>1983-84</td>
<td>7,28,472</td>
<td>4,71,528</td>
<td>12,00,000</td>
<td>84</td>
<td>2,550</td>
</tr>
</tbody>
</table>

Notes: From 1964 to 1969 data have been shown of calender year basis and from 1970-71 July-June basis.

n.a. = Not applicable.

Sources: (1) B.B.S.
(2) Directorate of Fisheries.
(3) Bangladesh Fisheries Development Corporation.
(4) Department of Industries.
### Table - 2
Quantity of Fresh Fish Caught by Type (thousand metric tons)

<table>
<thead>
<tr>
<th>Years</th>
<th>Inland</th>
<th>Marine</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1965-66</td>
<td>720</td>
<td>81</td>
<td>801</td>
</tr>
<tr>
<td>1966-67</td>
<td>721</td>
<td>81</td>
<td>802</td>
</tr>
<tr>
<td>1967-68</td>
<td>723</td>
<td>81</td>
<td>804</td>
</tr>
<tr>
<td>1968-69</td>
<td>726</td>
<td>82</td>
<td>808</td>
</tr>
<tr>
<td>1969-70</td>
<td>727</td>
<td>83</td>
<td>810</td>
</tr>
<tr>
<td>1970-71</td>
<td>729</td>
<td>85</td>
<td>814</td>
</tr>
<tr>
<td>1971-72</td>
<td>729</td>
<td>95</td>
<td>824</td>
</tr>
<tr>
<td>1972-73</td>
<td>713</td>
<td>87</td>
<td>818</td>
</tr>
<tr>
<td>1973-74</td>
<td>732</td>
<td>88</td>
<td>820</td>
</tr>
<tr>
<td>1974-75</td>
<td>733</td>
<td>89</td>
<td>822</td>
</tr>
<tr>
<td>1975-76</td>
<td>545</td>
<td>95</td>
<td>640</td>
</tr>
<tr>
<td>1976-77</td>
<td>541</td>
<td>100</td>
<td>641</td>
</tr>
<tr>
<td>1977-78</td>
<td>533</td>
<td>110</td>
<td>643</td>
</tr>
<tr>
<td>1978-79</td>
<td>527</td>
<td>113</td>
<td>645</td>
</tr>
<tr>
<td>1979-80</td>
<td>524</td>
<td>122</td>
<td>646</td>
</tr>
<tr>
<td>1980-81</td>
<td>525</td>
<td>125</td>
<td>650</td>
</tr>
<tr>
<td>1981-82</td>
<td>556</td>
<td>130</td>
<td>686</td>
</tr>
<tr>
<td>1982-83</td>
<td>583</td>
<td>141</td>
<td>724</td>
</tr>
<tr>
<td>1983-84</td>
<td>593</td>
<td>160</td>
<td>753(P)</td>
</tr>
</tbody>
</table>

Source: Directorate of Fisheries.

### Table - 3
Average Wholesale Price of Ruhu Fish in Bangladesh

<table>
<thead>
<tr>
<th>Years</th>
<th>Ruhu Fish Wholesale Bangladesh</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Taka/Maund</td>
</tr>
<tr>
<td>1974</td>
<td></td>
</tr>
<tr>
<td>1975</td>
<td>412</td>
</tr>
<tr>
<td>1976</td>
<td>454</td>
</tr>
<tr>
<td>1977</td>
<td>545</td>
</tr>
<tr>
<td>1978</td>
<td>597</td>
</tr>
<tr>
<td>1979</td>
<td>750</td>
</tr>
<tr>
<td>1980</td>
<td>825</td>
</tr>
<tr>
<td>1981</td>
<td>962</td>
</tr>
<tr>
<td>1982</td>
<td>1037</td>
</tr>
<tr>
<td>1983</td>
<td>1097</td>
</tr>
<tr>
<td>1984</td>
<td>1273</td>
</tr>
</tbody>
</table>

Source: Bangladesh Bureau of Statistics.
### Table 4
Yearwise Wholesale Rates/Kg. of the Commercial Fisheries of Bangladesh Fisheries Development Corporation at Chittagong and Cox’s Bazar Market

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Chittagong</td>
<td>Cox’s Bazar</td>
<td>Chittagong</td>
<td>Cox’s Bazar</td>
<td>Chittagong</td>
</tr>
<tr>
<td>1. Silver Pomfret</td>
<td>12.92</td>
<td>12.00</td>
<td>8.00</td>
<td>15.24</td>
<td>22.00</td>
</tr>
<tr>
<td>2. Black Pomfret</td>
<td>8.00</td>
<td>5.50</td>
<td>10.50</td>
<td>6.50</td>
<td>12.00</td>
</tr>
<tr>
<td>3. Hilsha (Rivershad)</td>
<td>20.00</td>
<td>16.00</td>
<td>22.00</td>
<td>18.00</td>
<td>22.00</td>
</tr>
<tr>
<td>4. Hilsha (Seashad)</td>
<td>8.00</td>
<td>6.66</td>
<td>12.00</td>
<td>8.00</td>
<td>14.00</td>
</tr>
<tr>
<td>5. Indian Mackerel</td>
<td>2.00</td>
<td>2.00</td>
<td>2.50</td>
<td>2.50</td>
<td>3.50</td>
</tr>
<tr>
<td>6. Spanish Mackerel</td>
<td>5.00</td>
<td>1.60</td>
<td>5.50</td>
<td>2.00</td>
<td>7.00</td>
</tr>
<tr>
<td>7. Jew Fish</td>
<td>4.53</td>
<td>4.00</td>
<td>5.71</td>
<td>5.50</td>
<td>8.00</td>
</tr>
<tr>
<td>8. Cat Fish</td>
<td>2.74</td>
<td>2.00</td>
<td>3.74</td>
<td>4.00</td>
<td>4.00</td>
</tr>
<tr>
<td>9. Shark</td>
<td>1.25</td>
<td>1.50</td>
<td>1.80</td>
<td>2.00</td>
<td>2.00</td>
</tr>
<tr>
<td>10. Indian Salmon</td>
<td>11.65</td>
<td>10.00</td>
<td>12.85</td>
<td>12.00</td>
<td>15.00</td>
</tr>
</tbody>
</table>

Source: Bangladesh Fisheries Development Corporation.
Fishery in the National Plans

As stated earlier, fisheries contributes about 5 percent to the GDP of Bangladesh and provides livelihood to about 8 percent people in Bangladesh. This speak about the very significant place of fishery in the national economy and as such one would expect that this importance is reflected in the national plans. In the First Five Year Plan (FFYP) fishery sector was allocated an amount of Tk. 48.5 crores which was subsequently reduced to Tk. 37 crores in the hardcore plan. This was less than one percent of the total financial outlay of the plan. Compared to its contribution to the GDP and the huge potential contribution that fishery can make to the national economy in terms of provision of protein, employment, income, eradication of poverty and earning of foreign exchange, the allocation was totally inadequate. But even this scanty allocation could not be utilised due to:

i. inadequate preparation and processing of projects;
ii. inadequate fund allocation and availability;
iii. inadequate availability of technical manpower;
iv. non-delivery of water areas from the Land Administration Agencies; and
v. lack of servicing facilities of the mechanised fishing crafts.

The actual expenditure in this sector during the FFYP period was only 19 crores taka in current price which was about Tk. 1 crores only in terms of 1972-73 price. Thus, the actual achievement of the fishery sector during FFYP was only 24 percent compared to about 52 percent for the economy as a whole.

The production target and achievement in the Two Year Plan (TYP) was as follows:

Table 5
Target and Achievement of Fish Production during Twin Year Plan
(In '000 metric tons)

<table>
<thead>
<tr>
<th></th>
<th>Actual production in 1975-77</th>
<th>Target in 1975-76</th>
<th>Achievement 1976-77</th>
<th>Achievement as % of target</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inland</td>
<td>541</td>
<td>553</td>
<td>525</td>
<td>80</td>
</tr>
<tr>
<td>Marine</td>
<td>100</td>
<td>155</td>
<td>122</td>
<td>79</td>
</tr>
<tr>
<td>Total</td>
<td>641</td>
<td>708</td>
<td>647</td>
<td>80</td>
</tr>
</tbody>
</table>

Source: Adapted from TYP 'PP' 100-101 and SFYP, pp. 152-153.
During SFYP, a total of Tk. 174.3 crores has been allocated to the fishery sector and a yearly production target was fixed at 10 lakh metric tons of fish by 1984-85. During 1983-84, total production of fish was 7,53,000 metric
tons which is far below the target. The major obstacles in the way of break through in this sector remained as strong as they were on the eve of the FFYP.

Although views differ as to the causes of the very poor performance of the fishery sector, there seems to exist a consensus that the major problems lie in the multiplicity of controlling agencies, lack of preservation, processing and quick transportation facilities. Most often, the lease of fishing areas are sanctioned to non-fishermen and to the fake co-operatives who do not have any interest in development of the fish land and marketing facilities. In addition, poor socio-economic conditions of the fishermen, multiple ownership of the private ponds and delays in the release of required fund are also responsible for unsatisfactory achievement in production and development of fisheries.

II Prospects for Future Development of Fishery in Bangladesh

Whereas it is true that a substantial improvement in fish production can be achieved through recressing the above mentioned problems, it is important to note, at the same time, that the increase in inland fish catch along will not be sufficient to meet the increasing requirement of fish.

As stated earlier, a sizeable area of natural fish habitats has already been lost due to the withdrawal of water for irrigation purposes. Increasing level of irrigation is being emphasised in the national plans for food sufficiency in the country. It is expected that the upward trend in the use of surface water for irrigation purposes will continue for obvious reasons. This will limit the expansion programme that can be taken for the inland fishery development. Thus, the major thrust for fish production should be rapid improvement in the marine fishing.

Marine fishery development activities during 1970s were directed at modernising the fishing fleets accounting for about 90 percent of the marine catch. The offshore fishery started in 1972 when BFDC received a fleet of ten trawlers as grant from USSR. Five more trawlers were subsequently procured by BFDC. But most of these vessels are today not in operation as a result of inefficient maintenance and management. Nevertheless, the number and the capacity of fishing trawlers have been on the increase since 1973-74. A list of trawlers registered with the mercantile Marine Department is provided at Annex. B.

There are widespread reports that a very large quantity of Bangladesh fish worth of more than Tk. 1,000 million per year are captured by unauthorised foreign trawlers and taken away to foreign markets. It speaks about the vast potentials that can be harnessed for improvement of our own economy.

Mechanised Boat Fishing

The dominant part of the marine catch originates from in-shore and coastal boats numbering over 10,000. Marine fishing with motorised boats
was practically unknown in this country before 1958 when the Marine Fisheries Department took up the mechanisation of fishing boats in collaboration with FAO experts. Thereafter, mechanisation programme of fishing boats was taken up through co-operative sector and Bangladesh Fisheries Development Corporation. After liberation of the country, mechanisation of fishing boats continued rapidly. BFDC distributed about 1,000 engines fitted to the boat or separately on cash payment/hire purchase basis through the assistance of DANIDA. Co-operative and some Social Organisation such as CARITAS also helped mechanisation.

During 1982–83, a number of 2,643 mechanised boats were registered with Marine Mercantile Department, Ministry of Shipping. A large number of mechanised boats are known to operate without registration. According to the Marine Fisheries Department, about 3,300 mechanised boats are operating in the Marine sector.

In a study undertaken by the Studies on Rural Industries Development [2] a comparison has been made between economic benefits accruable from non–mechanised and mechanised boats. It appeared that the yearly profit and value added obtained from a mechanised boat is much more higher than from a non–mechanised boat. The value added per worker in the former is about 1.7 times more than that in the latter. But fixed capital required per worker for a mechanised boat is more than 10 times higher than for a non–mechanised boat.

<table>
<thead>
<tr>
<th>Table-6</th>
<th>A comparison between Mechanised and Non-Mechanised Boat</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mechanised Boat (22 H.P.)</td>
</tr>
<tr>
<td>1. Fixed capital excluding land and structure</td>
<td>4,45,000</td>
</tr>
<tr>
<td>2. Fixed capital per worker</td>
<td>44,500</td>
</tr>
<tr>
<td>3. Value added</td>
<td>4,16,000</td>
</tr>
<tr>
<td>4. Value added per worker</td>
<td>41,600</td>
</tr>
<tr>
<td>5. Profit</td>
<td>2,13,786</td>
</tr>
<tr>
<td>6. Rate of profit</td>
<td>48%</td>
</tr>
</tbody>
</table>

In fact, it may appear that one would make a potential loss opting for a mechanised boat in preference to about 31 non–mechanised which could not be obtained at the cost of one mechanised boat. From the view point of employment generation also, non–mechanised boats will appear more attractive than the mechanised ones. But since the fish resources in the
inland rivers are limited and declining year after year, large scale increase in the number of inland fishing boats is sure to have adverse impact on the profitability of the existing as well as the incoming enterprises. Alternatively, if investment is encouraged for more mechanised boats, not only that its commercial profitability is about four times higher than the prevailing rate of interest charged for industrial/commercial involvement in the rural areas, but also it will save lot of time wasted by the existing non-mechanised boats in sailing to and from the marketing centres. The mechanised boats either through co-operative or by private arrangement can collect fish from the large number of non-mechanised boats operating in the inland river area. For this purpose, they do not need to loose their fishing days, since they can do so either on their spare days on rotatory basis or on their way to the marketing centres. The economic value of this potential saving of time and fish that get wasted every year is incomparable with the commercial profitability. It is therefore, recommended that all facilities should be made available for increasing investment in mechanised boats. The B/C ratio of a 22 H.P. mechanised boat at 20 percent discount rate and 12 years of life works out to be 2.84 and IRR 85.2 percent. These indicate that compared to the reference rate of return on ICB units (i.e. 15%), the rate of return obtainable from investment in mechanised fishing is substantially higher and therefore more funds should be made available towards development of this sector. Moreover, this sector deserves priority treatment since the beneficiary of its development will be the relatively poorer section of the community.

IV Summary and Conclusions

In this paper, we have presented a review of the performance of the fishery sector in Bangladesh and then we discussed the prospect of contribution of this sector to the development of the national economy. It has been observed that in the past, the performance of this sector was not satisfactory and the allocation of development fund to this sector was far less than it deserves on the ground of standard economic criteria. Based on information gathered from knowledgeable persons and owners a 22 H.P. mechanised boat, it has been estimated that the IRR and B/C ratio obtainable from a mechanised boat is far above the national average rate of returns on any investment. It has, therefore, been suggested that in the interest of the national economy, more fund should be allocated to this sector.

REFERENCES
Table A.1

Production of Inland and Marine Fresh Fish by Main Varieties

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Inland:</td>
<td>541</td>
<td>533</td>
<td>527</td>
<td>624</td>
<td>626</td>
<td>656</td>
</tr>
<tr>
<td>(total of which)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Hilsa</td>
<td>283</td>
<td>279</td>
<td>276</td>
<td>274</td>
<td>276</td>
<td>291</td>
</tr>
<tr>
<td>2. Ruii and other carp family</td>
<td>64</td>
<td>63</td>
<td>62</td>
<td>62</td>
<td>62</td>
<td>58</td>
</tr>
<tr>
<td>3. Roal, pangas and Arial</td>
<td>52</td>
<td>52</td>
<td>51</td>
<td>51</td>
<td>51</td>
<td>54</td>
</tr>
<tr>
<td>4. Prawn (Chingri)</td>
<td>18</td>
<td>17</td>
<td>17</td>
<td>17</td>
<td>17</td>
<td>18</td>
</tr>
<tr>
<td>5. Koi, Megur shinghi</td>
<td>23</td>
<td>22</td>
<td>22</td>
<td>22</td>
<td>22</td>
<td>23</td>
</tr>
<tr>
<td>6. Other</td>
<td>101</td>
<td>100</td>
<td>99</td>
<td>98</td>
<td>98</td>
<td>104</td>
</tr>
<tr>
<td>Marine (total)</td>
<td>100</td>
<td>110</td>
<td>118</td>
<td>122</td>
<td>125</td>
<td>130</td>
</tr>
<tr>
<td>Grand Total</td>
<td>641</td>
<td>643</td>
<td>645</td>
<td>646</td>
<td>650</td>
<td>686</td>
</tr>
</tbody>
</table>

Source: (1) B.B.S.
(2) Directorate of Fisheries

Table A.2

Value Added from Fisheries at Current Market Prices (Million Taka)

<table>
<thead>
<tr>
<th>Years</th>
<th>Bangladesh</th>
</tr>
</thead>
<tbody>
<tr>
<td>1972-73</td>
<td>3421</td>
</tr>
<tr>
<td>1973-74</td>
<td>4774</td>
</tr>
<tr>
<td>1975-76</td>
<td>6799</td>
</tr>
<tr>
<td>1976-77</td>
<td>6833</td>
</tr>
<tr>
<td>1977-78</td>
<td>6916</td>
</tr>
<tr>
<td>1978-79</td>
<td>6886</td>
</tr>
<tr>
<td>1979-80</td>
<td>6998</td>
</tr>
<tr>
<td>1980-81</td>
<td>7022</td>
</tr>
<tr>
<td>1981-82</td>
<td>7675</td>
</tr>
<tr>
<td>1982-83</td>
<td>8008</td>
</tr>
<tr>
<td>1983-84</td>
<td>8400</td>
</tr>
</tbody>
</table>

### Table A.3
Export of SCA Food from Bangladesh during 1977-1984 (Up to March)

(Values in Million Taka)

<table>
<thead>
<tr>
<th>Name of Species</th>
<th>1977</th>
<th>1978</th>
<th>1979-80</th>
<th>1980-81</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Quantity (M. T.)</td>
<td>Value</td>
<td>Quantity (M. T.)</td>
<td>Value</td>
</tr>
<tr>
<td>Shrimp</td>
<td>335</td>
<td>253.00</td>
<td>4718</td>
<td>446.24</td>
</tr>
<tr>
<td>(Frozen)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fish</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Frozen)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Frog leg</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Processed fish and fish products including shark fin</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>300</td>
<td>590</td>
<td>7810.00</td>
<td>762.099</td>
</tr>
</tbody>
</table>

### Table A.4

<table>
<thead>
<tr>
<th>Name of Species</th>
<th>1981-82</th>
<th>1982-83</th>
<th>1983-84</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Quantity (M. T.)</td>
<td>Value</td>
<td>Quantity (M. T.)</td>
</tr>
<tr>
<td>Shrimp</td>
<td>6837.65</td>
<td>904.396</td>
<td>9114.33</td>
</tr>
<tr>
<td>(Frozen)</td>
<td>702.78</td>
<td>418.30</td>
<td>1294.45</td>
</tr>
<tr>
<td>Fish</td>
<td>1589.19</td>
<td>112.104</td>
<td>2027.70</td>
</tr>
<tr>
<td>(Frozen)</td>
<td>334.72</td>
<td>29.515</td>
<td>435.21</td>
</tr>
<tr>
<td>Frog leg</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Processed fish and fish products including shark fin</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>9464.34</td>
<td>1087.845</td>
<td>1287.69</td>
</tr>
</tbody>
</table>

Source: Fisheries Resources Survey and Planning Commission
ECONOMIC SYSTEMS AND INDUSTRIALISATION STRATEGY

Role of Public Enterprise in a Post-Colonial Society

BY MUZAFFER AHMAD*

In a recent monograph on the role of public enterprise, Pavie Sicheli [1] has attempted to distinguish between theoretical, normative and actual role of public enterprises with the implication that certain differences amongst them are to be expected. In another publication Praxy Ferrandes and Pavie Sicheli [2] have attempted to examine the personality of public enterprise in terms of public dimension involving public interest, public ownership, public control, public management and public accountability as well as in terms of enterprise dimension involving organisation and decision making, production function, making of output, investment and return on investment and commercial accounting for evaluation. It is to be noted these personality dimensions do not refer to the specific role of public enterprise as such and therefore fail to picture the proper personality of these enterprises.

On the other hand Leroy Jones[3] inputing economic rational personality to the government suggests that the nature, role and structure of public enterprises are defined by costs and benefits of public enterprises vis-à-vis alternative modes of government interventions in a situation of market failure inclusive of entrepreneurial failures. Leroy Jones however fails to recognise that political rationality may not be synonymous with economic rationality. While agreeing with the idea that public enterprises are a manifestation of public policy, Muzaffer Ahmad [4] considered economic rationality to be a restrictive criterion for understanding the role, size, structure, operation and performance of public enterprises. Ahmad contends that government represents a coalition of dominant social forces and government controls directly or indirectly mobilisation, allocation, utilisation and generation of resources. This is primarily done in the interest of dominant forces for maximising benefits from and continuation of such control. Hence enterprises represent manifestation of such control and use of resources in the interest of dominating social forces. Therefore role of public enterprises is directly related to the nature of the state as has also been articulated by Rehmen Sobhan[5:23-40]. Whether political forces

* Professor, IBA, University of Dhaka.
determine the nature of economics or economic forces creates the basis of politics is difficult to resolve, but to assume away either set of forces seem to be unrealistic. Whenever we do so we get a limited and partial view of public enterprises.

It is also important to understand the nature of less developed countries (LDC). This is indeed a term not beyond the pale of controversy. The commonly used criteria is income per capita, while it is conceded that high income does not necessarily mean high state of development, as is seen in the case of some oil exporting countries. The converse is also true. World Development reports also indicate certain other characteristics of less developed countries defined in terms of low income. The structure of production of low income countries indicate predominance of agriculture, while upper middle income countries and industrial market economies are characterised by greater predominance of service sector. The structure of consumption however does not show great diversity amongst these group of countries, the private consumption in low income countries was 54% of GDP in 1984 and in industrial market economies about 62%, the government consumption being 13 and 17 percents respectively. The differences in respect of gross domestic investment and gross domestic savings for these two sets of countries measured in terms of percentage of GDP indicate similar magnitude of small divergence; though within the groups there are wider divergences to be noted. In manufacturing the developed industrial market economies indicate preponderance of “other manufacturing” and “capital goods industries” While the low income countries are producers of consumption goods and basic need products like food and textiles. The structure of merchandise exports reflect the structure of production, while that of imports does not exactly correspond to the converse; for example imports of “other manufactures” seem to dominate all categories of countries. But the generalised statement in terms of export of primary commodities by low income countries and their dependence on imports for capital goods and the converse for high income countries can be easily made. Energy consumption per capita is high in developed economies and low in less developed economies. The structure of government expenditure of industrial market economies show great importance of housing amenities, social securities, welfare, defence and economic services. While for the low income countries economic services and defense seem to be most important.

If development is accepted as a legitimate objective of governmental function, than it may be indicated that transformation of production, consumption, trade and expenditure from the current state to the ‘desired’ level and state becomes an obligation on the part of the government of the less developed countries. However, development is much easier said than done; even the perception of development is varied and different. As the development process depends on socio-cultural factors, political factors and economic factors; their interaction can be in varied forms and degrees. Karl
Marx had in his discourses ably pointed out the importance of social relation in the determination of the nature, direction and pattern of economic changes [7]. Development Economists today explicitly recognise the importance of social transformation in initiating and accelerating economic transformation, even though theories of economic growth rarely incorporate non-economic factors in their deliberations. If development is a governmental concern in less developed countries, then social transformation as a co-requisite of economic transformation becomes an area of explicit concern.

However many may be the criticisms that are advanced against Marxian theories, there has been no rejection of the Marxian conclusions about the history of capitalistic growth in Europe. Marxian’s view capitalism or for that matter any other economic system as a socio-economic system involving relations between social classes and in the forms and organisation of production. But the spectacular economic progress of capitalist countries seems to have greatly influenced development theorists and policy advocates as they tend to envisage that economic development is only possible if the social relations of underdeveloped countries are reformed so as to resemble those of Western Capitalist Countries [8]. This is the goal that has been pursued by the donors and willingly or unwillingly by the recipients. Thus the development vendors have a firm notion of what a developed country is like, and they observe what a less developed country is; this difference between the two provides the development programme. Such an approach to development which only grudgingly accepts the role of the government as an entrepreneur, wishes to minimise the role of the government as a planner and advocate limitations of governmental activities to provision of social overhead (e.g., maintenance of law and order, supply of social welfare facilities, some provision of education and health etc.), provision of economic overhead (e.g., transport, public utilities, central banking etc.) and application of direct and indirect levies and controls (e.g., tax privileges, tariffs, subsidies, credit facilities, price controls) etc. But, it is not clear how such a role could rapidly reproduce the social relations of western countries. The basic intent of creating a national bourgeoisie class and their elevation to the position of leading social class is clear but that an enforced policy and programme with such an intent in a less developed country may not transform the basic social relation and more importantly may not transform values from ascription, particularism and functional diffuseness as seen in the less developed countries to achievement, universalism and functional specificity as observed in western capitalist countries[9] is hardly recognised despite many failures of such ventures in the developing countries.

The questions implied in the above paragraph are many. What are the mechanism which transform a less developed country into a developed country? Is there only one path of transformation or are there many paths? Is
the transformation process implantable? Induced by external stimuli? Linear? Continuous? What relationships are there between the form and nature of transformation and the relative emphasis on different factors that affect social structure and activate or change the social relation? Despite deep concern of national and international communities and experiences over three decades in development management, we do not have a generalisable theoretic construct as such.

In terms of Marxian analysis of capitalism, it is quite clear that economic development has to be associated with a series of social transformation which demonstrates linear quality with minor deviations. This is the product of historical determinism. The underdeveloped countries are entirely pre-capitalist or have adopted features of incipient capitalism. The extension of capitalist imperialist dominance creates a class of native bourgeoisie who tread the path of middle-class reformist approach, as this accentuates their dominance. Expropriation of masses and imposition of barriers to the rising middle class give birth to liberation leftist movement and or rationalisation after liberation, however exploitation of native poor continues. This makes the social situation in developing countries highly unstable and should ultimately result in the overthrow of the imperialist linkages for unfettered development of productive forces under a mass-based regime. It is however unclear whether all countries have to pass through a phase of bourgeois capitalism or it can be substituted by state capitalism, it is also unclear whether social revolutions have to be proletarian revolutions or not. These are problems of strategy but they have important implications for governments as an entrepreneur.

In contrast to the Marxian theory of social and economic transformation, there is a theory of social deviance, largely influenced by Schumpeter’s analysis of the role of innovating entrepreneur in the economic transformation of country. An entrepreneur in an innovator and can only perform in a social environment where such activities are tolerated and preferably rewarded. This tolerance is important as an innovator, to be classified as deviant, display forms of behaviour which don’t conform to existing social values (e.g., financial entrepreneurs in the middle ages). Unless the initial deviant behaviour is eventually transformed into de facto approved behaviour, the entrepreneurial role cannot be performed with its full gusto. How can this transition from deviance to acceptance occur through a process of social change? Here also we do not have clear answers from the comparative statics of social and economic development. In this context the social marginality of persons who become innovators and entrepreneurs have been stressed [10]; but here again no definitive conclusions seem to emerge.

Huclitz contends that the explanation of social transformation on the basis of social deviance has to be supplemented by such factors as man-resource ratio and political structure of a country[8]. The first determines whether the
economic transition will have to be intrinsic (e.g., Japan) or expansionist (e.g., USA) or both (e.g., U.K.). There are significant implications of the nature of economic transition on the social structures. Amongst the western countries, those experiencing expansionist economic transition seem to have demonstrated more autonomous development with diffused locus of economically relevant decisions as a consequence of open social structure and significant social mobility. But no generalisation is possible as USSR with expansionist development did not demonstrate the same nor did Switzerland where autonomous development occurred under a rigid social system but democratic political structure. Only possible conclusion is that man-resource ratio and centralisation of decision-making processes are unrelated variables. But a democratic form of government seem to be more conducive to social transformation at a certain stage of development than authoritarian one, while latter may contribute to such transformation in the early stages of development with resource and time constraint.

A truly democratic political structure can only be effectively built in a system of open social structure and not sizeable inequality between various classes made possible through equality of access to education and economic opportunity as well as social and economic mobility. When these conditions are fulfilled then locus of economic decision can be meaningfully decentralised. It will be noted that capitalist growth in the west did not require truly democratic set of government, nor is it possible for it to produce one. But what capitalist transformation required is broadening the base of entrepreneurial opportunities and legal protection for such an endeavour as well as emphasis on attainment and possession of material goods. The quest for equity and equality came later as a humanising and reformist process. We still see the ghost of this in the debate on growth and equity.

If capitalist transformation is necessary or desired, then the Marxian approach or Schumpeterian approach suggests that the role of public sector should be entrepreneurial promotion and public enterprise should logically work towards that end. Such an approach also conforms with the donor's approach. Even here, Schumpeterian approach would beg the question whether entrepreneurs are made or born. The role of public sector would be to identify useful deviant behaviour, patronise it and ultimately make it acceptable through entrepreneurial support. It is to be noted that even entrepreneurial substitution is not called for, such substitution has its logic derived from micro-economics and welfare maximisation ideas. But if we discard the assumption/assertion that capitalist development is necessary before the socialist transformation, the role and function of the government immediately changes.

We should however note that there is no general theory of transition to socialism between social systems. The theorists in this matter tend to agree to the fact that each attempt at such transition is historically specific and in that sense unique. Given this, we can fall back upon socialist objectives which
should define strategy for socialist transition. Economic growth objectives in terms of income and quality of life are same or similar between capitalists and socialist transformation, it is the development objectives with stress on societal and organisational objectives that are radically different.

Historically, idea of socialism has grown largely as a reaction to capitalism. The socialist objectives are, therefore, defined in relation to capitalism. The basic objective of socialism is to reverse the “contradictions and evils” of capitalism inherent in its basic character which is that “it treats people as means to the expansion of capital”. What does it mean? The socialist theorists contend that people should take over and organize means of production in a manner so as to satisfy human needs and enrich human lives collectively. The strategy for achieving such ends include abolition of private ownership of means of production and institution of social ownership in its place so that tyranny of inequality due to income from property is made impossible. The strategy requires pursuit of social and economic equality so that the tyranny of power (including ultimately that of the state) is avoided. Most importantly it requires, at least in the early years of transition, allocation of productive resources through plan to hasten the pace of transition and abolish undesirable distinctions (e.g., mental and manual labour, city and country.) Socialism will be achieved only if money and commodity relations which defined largely by market forces, are replaced by direct human relations.

How does public enterprise fit into this strategy of socialist transition? Public enterprises are seen basic negation of private ownership. Thus all socialist governments ab initio proceeded to take over most, if not all, private enterprises, establish state owned enterprises and expand/promote collectively owned ones. But can public enterprise system automatically ensure desired changes in production relation, and correct its subjection to external pressures and domination? The answer largely depends on the ability to plan, implement and control through a strong leadership supported by a committed cadre.

Even more, for a plan to become the instrument of the development of the people, it has to be formulated and implemented on the basis of experiences and expectations as well as the initiative and consequences of the people who are the producers. Such a plan not only requires consideration of technical, economic and objective possibilities but on organisations from lowest tier to the top for meaningful and “equal” participation. If the public enterprises fail to meet these conditions, they do not necessarily help transition to socialism. This is substantiated by the fact that public enterprises in less developed economies, even in those countries which proclaim socialism as state ideal, have been concerned mainly with enterprise efficiency, production and profit but not with restructuring rational economy in the interest of the people, alleviation of contradiction in the production system, protecting the interest of “producers” in the face of world market structures and planned efficiency of the entire system. Most of
the less developed market economies trend to deal with complications arising out of world and indigenous market system at the superstructural level. As Gramsci pointed out the problem of relationship between structure and superstructure must be continuously posed analysed and resolved for transition to socialism [12]. This has rarely been done.

In the absence of this, merely setting up of public enterprises does not create conditions for gaining control over productive forces and may even result in loss of direction. Thus public ownership of enterprises is a necessary condition for transition to socialism at the superstructure level but not at the plane of the people. It is not and should not be regarded as a sufficient condition, because fundamentally transition to socialism requires increasing domination by the immediate producers over their means of production and their products. [13]. This however assumes existence of a sizable organised element that can play the role ascribed to proletariat in the classical Marxian theory. But the experience suggests that the rise of substitute proletariat except through prolonged liberation struggle, is not feasible and thus the probability is that the public enterprises would ultimately result in, at least in the immediate stage, consolidation of power by (military) bureaucratic regime in conjunction with petty bourgeois politics and businessmen who collectively constitute the intermediate regime.

Thus post-colonial states politically professing socialism and unwilling or failing to create conditions for proper transition, use public enterprises as means for consolidation of power through a patronage and brokerage system that allow dissipation of public enterprise surplus into hands of the groups that constitute the upper and middle echelon of the intermediate regime. For them public enterprises are the bastion of political and economic power [14]. It may thus be concluded that states professing socialism would pursue a policy of entrepreneurial substitution even though it may not create conditions for transition to socialism.

II

The role of public enterprises can be and should be discussed from many points of view. In the less developed countries with mixed economies, such role is often considered in the context of its relation with private enterprises. Such relation can be considered to be pro, neutral and anti private enterprises and these are obviously reflections of government policies. The role of public enterprises are considered extremely anti private enterprise when it is an instrument of supplantation or substitution; and generally anti private enterprise when it is an instrument of discrimination against them, even though that may be justified by general or partial welfare considerations. The role of public enterprises are considered to be pro private enterprises when it works for rescue, support and/or promotion of public enterprises. The neutral is one which does neither. It is however difficult to find one to be conceptually so in a market economy e.g., even minting money can be done through private contract, defense
establishment can be well supplied with military artifact through contract in private sector. Thus neutral sector can be conceived to be those in which private sector is not currently interested and from which positive or negative externalities are minimal and which are considered necessary for governmental operations. But even the government is not neutral in respect of private enterprises. Thus our discussion will be related to the other two categories only.

Etymologically supplant is a combination of two parts i.e., sub meaning under and planta meaning the sole of the foot; the word gives the connotation of putting under the shoe i.e. uprooting in order to replace. This is a strong action some states like Algeria, Vietnam, Cuba have used public enterprises for such purposes. It is to be noted that these are socialist regimes emerging from long armed struggle against colonial powers and national comprador groups for freedom with consolidated mass following. Substitution is a much softer word meaning to put instead of; there is no explicit urge to uproot permanently. Hence such an action has occurred in many market economies due to presence of market distortions, strategic reasons, entrepreneurial failures of private enterprise or for social policy reasons. Nationalisation and taking over of management by public sector are commonforms of such actions. Rescue of private enterprise, at times leading to at least temporary substitution, refers to re (meaning again) ex (implying off) and quater (meaning to shake). This implies deliverance from restraint or danger. Even developed countries have undertaken such action. Support, a combination of sub and portre means to carry near, implying to uphold by aid. Such action by public enterprises have been of many form e.g., subsidised credit, land, material, inputs, services, protection through inter-linkages as well as risk sharing (i.e., joint ventures) or risk minimisation.

In respect of such varied private-enterprise nexus raises the question as to when and where which relationship exists. First, such diverse relation may coexist in a mixed economy in different sectors, even in the same sector. However, it may be said in general that a socialist planned economy would opt for supplantation and substitution, in major sectors, while mixed market economy might exhibit the entire range of action. This simplified general statement does leave many more questions unanswered.

In order to be able to answer more meaningfully, Sobhan[15] and Ahmad[16] separately developed similar paradigms based on experiences of eight Asian country studies in the case of the first and additional country studies of Africa and Latin America in the case of the second. They have used two determining variables: Nature of decolonising process i.e. whether it happened through a peaceful process or through armed struggle and class-base of the ruling group after independence. The first is very specific in nature but hidden in this is the question of the coalition of social forces and their ideological predilection. The second in fact consists of two parts: the first concerns absence—presence and strength—weaknesses of the
bourgeoisie and the second part relates to the nature of polity and mass-base of the ruling party of coalition.

The basic hypothesis of this analysis can be expressed in terms of a two-dimensional plane showing duration of armed liberation struggle along one axis and depth of mass-base of the ruling coalition along the other, where in we plot public enterprises for both width and depth in terms of number and sectors covered and importance in terms of production, employment and developmental linkages. In such a plane with a bourgeois dominant ruling coalition in a country liberated without armed struggle, the position of PE will be in the South east corner with a sign indicating its minor presence. On the other hand with a mass-based ruling coalition in a country liberated through prolonged armed struggle, the position will be in the North west corner with a sign indicating its overwhelming presence. This graphical presentation indicates two interesting positions. First, a bourgeois-led armed struggle would place PE high in north-east corner and mass-based ruling coalition with no armed coalition would place it at south-west corner. Both are transitory phases, as these are inconsistent with emerging nature of the states.

**Figure 1**

```
+-----------+-----------+
|           |           |
|           |           |
| NE        | NW        |
|           |           |
|           |           |
| SE        | SW        |
|           |           |
+-----------+-----------+
```

Mass-base

However, to elaborate the hypothesis, we need to bring in the role of the foreign (multinational) enterprises at the time of independence and attitude of national bourgeoisie towards them.

Let us first consider the case where independence has been won generally through peaceful constitutional means and power has been handed over to a national bourgeoisie party. The presence of sizable national bourgeoisie indicates presence of a group that have experience of establishing and
running enterprises. Thus entrepreneurial promotion through public enterprises became a function required for acceleration of development, regional dispersal or even for broadening the class-base on the pretext of equity. The main function of public enterprises under such a situation becomes entrepreneurial support in terms of supply of subsidised inputs or protected market. The main principle is to limit activities of PEs in high-risk areas and areas where externalities for private sector is large. The emphasis is on regulation, direction etc. for control of deviance in private sector. However, in this case the national bourgeoisie proceeds to limit the activities of foreign enterprises as an expression of nationalism till they find confidence for accommodation. The second case is a variant of the first. The difference lies in a bourgeoisie-led war of liberation. In today’s developing countries, such an event is likely to result in at least initial nationalisation of foreign enterprises. If the length of liberation war is prolonged and a broader coalition emerges in the national scene, then such nationalisation would have greater chance of permanency. However, recreation of linkages with international capital has great chance of effecting a reversal.

As a third case, we shall discuss the other extreme. Here an organized mass-based political party waged a successful war of liberation. The immediate consequence is taking over of foreign enterprises. It is obvious that there exists no significant national enterprises if we assumed absence of national bourgeoisie class. Here the government has to assume great entrepreneurial role for development in a planned manner. This extends across all sectors and may even encompass all sizes except very small ones. Small local enterprises may assume the form of producers collectives, cooperatives or commune activities. The national enterprises have to produce interlinkages for input supply and output absorption as well as support through infrastructural enterprises. The enterprises in the foreign trade sector are operated in the public sector. As surplus mobilisation for development is an important necessity, all enterprises with such revenue potential are so operated. Public enterprises for surplus generation becomes a great prime mover for the government which manages such enterprises through an organised cadre. The basic purpose of all these is to organise a socialist mode of production ab initio and public enterprises are an instrument for this.

A fourth case is one where independence is won through peaceful transfer and there is total absence of a national bourgeoisie. Such transfer of power essentially makes the tribal chief or community head who have strong base with the people the decision maker. The concept of mass-based organised political organisation is absent. In such case the strategic or otherwise importance of such a state becomes an important determinant. If it is so important, then foreign enterprises make their presence felt. But the process involves expansion of public enterprise may be as a joint venture with foreign companies, as a process of development which may also help emergence of national bourgeoisie. In case, by accident or otherwise, such a
### Chart 1: Foreign, Public, and Private Enterprise, Nexus

<table>
<thead>
<tr>
<th>National Bourgeois Dominant</th>
<th>Peaceful Transfer of Power</th>
<th>Liberation Through War</th>
</tr>
</thead>
<tbody>
<tr>
<td>No immediate nationalisation of FE</td>
<td>PE expands for support and PrE expansion</td>
<td>PE Expands due FE nationalisation for creation of PrE support base for acceleration of development</td>
</tr>
<tr>
<td>Intermediate Regime</td>
<td>No immediate nationalisation of FE; may even invite FE for collaboration; PE role expands for development assuming entrepreneurial, supplementary and support role</td>
<td>PE expands due nationalisation of FE and large PrE for acceleration of development for creation of a political support base</td>
</tr>
<tr>
<td>Mass-based Organisation Dominant</td>
<td>FE remains and FE invited; Expansion of PE for organising production</td>
<td>PE Expands through nationalisation supplantive action; assumes entrepreneurial role for development and mobilisation of resources</td>
</tr>
</tbody>
</table>

Note: FE = foreign enterprise, PrE = Private enterprise, PE = Public enterprise.
state gets drawn into the orbit of the socialist countries, then foreign
government enterprises make appearance and help organise and manage
national government enterprises. Here the pace of change has to be slow
and depends greatly on the pace of development of local capabilities.

We now come to the more realistic cases of the third world. Most of them do
not have large powerful bourgeoisie. Even a bourgeois party has to depend on
the active support of petty bourgeoisie—surplus farmers, small businessmen,
wide variety of first generation literates who become bureaucrats or military
officers. There exists political organisations. In case of peaceful transfer of
power through constitutional means, nationalisation of foreign enterprises
do not take place nor there is withdrawal of such capital. Indeed such capital
continue to play important economic, commercial and at times political role.
However the spirit of nationalism and growing national aspiration creates
the compulsion of expansion of public enterprise sector. This becomes the
engine of bourgeois capitalist growth. They extend over all sectors, primarily
infrastructural sector. These are required to perform entrepreneurial
promotion function through assumption of initial risk, continuation of
risk-sharing, supply of favourably priced inputs and providing protected
market. Public enterprises grow to provide entrepreneurial support through
such action as equity fund, preferential pricing etc. which supplements
rules and regulations which keep price of capital and labour cheap. In quest
of revenue government indeed set up or take over some monopolies
however, as national bourgeoisie consolidates its position over time, there
might arise occasions for limiting or shifting operation for foreign enterprise.
But once they gain confidence and foreign enterprises find it politic they may
cooperate in expansion of economic activities. However the substantial
presence of foreign enterprise, even in collaboration with national
enterprises, remains a threat to national economic and political sovereignty
which is accentuated by the degree of aid—dependence [17].

The sixth case refers to such an intermediate regime that emerges out of a
war of liberation where the petty-bourgeois political party had to build a
coalition of social forces including the peasants, labour and such other
counting of the mass. After or during the liberation, the foreign
enterprises tend to withdraw or are taken over at the conclusion of the war.
At the initial stage, as the radical elements tend to dominate, political
commitment of petty bourgeois party catch up with them and the new
coalition of power proceed to nationalise all or some important enterprises
which were possibly set up with the help of public enterprise anyway. Thus
there is an expansion of public enterprise sector which has to assume in the
absence of foreign capital and national bourgeois capital, a very dominant
developmental role similar to those seen in the case of mass-based regime
emerging through a war of liberation. But the seeds of contradiction remain
potent. The outcome depends on how the coalition of social forces in power
develops. A capital starved country without a committed cadre in the
mass-based political organisations soon restricts the public sector through
the operation of donor dialectics and petty bourgeois subversion through military-bureaucratic take over[14]. As soon as the petty bourgeois consolidates its position through a process of surplus appropriation and as they establish linkages with international capital allowed through non-public sector commercial activities, the reversal starts through privatisation which cannot be halted as the leadership of so-called mass-based organisation comes from and aligns with the emerging national bourgeois[8].

Thus in this section we have tried to argue that role of public sector in general and public enterprises in particular depend on the historical and political factors manifested in the coalition of social forces in power[4,14,15].

III

The above discussion should underscore the point that public policies are carriers of the intent and purpose of the coalition of ruling powers that be. Hence the same public enterprise can play different roles in different socio-political context, through its operational, organisational and management policies. Hence existence of public enterprise in the same sector in two countries does not necessarily indicate equivalent or even comparable roles being played by them.

In the chart given below we have attempted to classify the role of public enterprise into three categories viz. primarily economic, primarily social and primarily political. Further we have attempted to cross-classify them in terms of intended impact on private sector viz. supplant, substitute, supplement and support. However, the list is not a complete one and has attempted to accommodate most of the roles public enterprises play as argued in the literature and/or found in practice. Further, there are grey areas of classification where subjective judgment based on historical experience of third world countries have been reflected. For example, believers in the superior power of free market economy would consider promotion of private sector an economic policy function; but in reality it is the other extreme of building socialism which is considered by them to be a political policy decision. Similarly income redistribution may be part of economic policy package but is dictated by social desirability and necessity.

The chart clearly shows the only economic justification for operating pure public enterprises has been related to natural monopoly where private enterprise, guided by their profit maximisation policy, would always operate at less than perfect market optimum which is conceded to be the desired social optimum. This argument is reinforced if the national monopoly concerns basic need goods or even goods of consumer necessity. From this the argument has been extended to cases of market imperfection where government regulation or policy intervention fail to correct the market failure[3] and to partial operation of public enterprises in competition with private enterprises.
## Chart - 2: Classification of the Role of Public Enterprises

<table>
<thead>
<tr>
<th>ROLE</th>
<th>INTENDED IMPACT</th>
<th>SUPPLEMENT</th>
<th>PRIVATE SECTOR</th>
<th>SUPPORT</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ECONOMIC</strong></td>
<td>SUPPLANT</td>
<td>BUILD HIGH COST</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- TAKE OVER NATURAL MONOPOLY</td>
<td>LONG GESTATION, HIGH CAPITAL INTENSITY AND/OR INITIALLY LOW RETURN UNIT FOR GREAT EXTERNALITY</td>
<td>SUPPORT</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- INCLUDING REVENUE MONOPOLY</td>
<td>- FACILITATE TRANSFER OF TECHNOLOGY</td>
<td>- LINKAGES WITH SMALL AND COTTAGE INDUSTRY</td>
<td></td>
</tr>
<tr>
<td><strong>SOCIAL</strong></td>
<td>TAKE OVER OF Pollutant Enterprise for adequate prevention</td>
<td>PREVENT LIQUIDATION OF PRIVATE UNITS</td>
<td>INCOME REDISTRIBUTION</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- PREVENT LIQUIDATION</td>
<td>PROVIDE BASIC NEED GOODS AT COST</td>
<td>- TRAINING</td>
<td></td>
</tr>
<tr>
<td></td>
<td>OF PRIVATE UNITS</td>
<td>- EMPLOYMENT CREATION</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>POLITICAL</strong></td>
<td>BUILD SOCIALISM</td>
<td>BREAK UP DOMESTIC ECONOMIC POWER</td>
<td>REGIONAL DISPERSAL</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- PROTECTION OF DEFENCE SENSITIVE UNITS</td>
<td>- LIMIT MULTINATIONAL OPERATION</td>
<td>- PROMOTE PRIVATE SECTOR</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- PREVENTION OF FOREIGN DOMINATION</td>
<td></td>
<td>- SUPPLIER OF SUBSIDIES</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- ABSORBER OF HIGH COST</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- OUTPUTS</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- RISK SHARING/ MINIMISING</td>
<td></td>
</tr>
</tbody>
</table>
A related argument has been couched in terms of revenue need or resource mobilisation points of view. Here the public enterprises operate in the same fashion as the private enterprises in a monopoly sector in order to maximise revenue for the government. This is an alternative to taxation at 100% of net profit which would naturally discourage private sector operation.

The chart records an economic argument for substituting private enterprises in case of trading with centrally planned economies, generally under better arrangements. Since such economies do not prefer to go through normal market operations, and since such exchanges may involve diverse unrelated areas of operation (e.g., petroleum and jute) and further there is an advantage in operating on one-to-one basis, the private enterprises have found it difficult or unfeasible to conduct such exchange operations. The institutional arrangements on the part of centrally planned economies thus necessitate a public sector operation[19]

The third economic role that public enterprises play has been generally classified as a developmental role and considered by many as a necessity in non-mature economies. Here the private sector is small, oriented towards quick-return, capital-shy, and incapable of undertaking large operations with significant externalities. Under such circumstances, public enterprises are considered as appropriate vehicle to assume the responsibility of establishing such enterprises with high capital intensity, long gestation period, initial low returns to investments and/or great externalities [20,21,22]. A recent extension of this argument has been in terms of transfer of technology as public enterprises tend to appear in new technology and/or technology-intensive sectors in many developing countries. The fourth economic argument is phrased in terms of externalities of a sizeable indivisible unit which for dispersal of benefits and maximising employment opportunities can create inter-industry linkages with small and cottage industries. The basic argument is based on the experience of Japan where small and medium sector units have played an important role in the industrial transformation of that country. The only difference for developing countries is caused by large investment requirement in the mother plant which experiences of developing countries suggest can be built in the public sector with attendant risk of finance. Process disaggregation of technology coupled with mini-intermediate product or finishing plant has made such a proposition an attractive one for partnership between public and private enterprises.

In the political plane, the goal of building a socialist society have prompted the public enterprises to play a supplantive role vis-a-vis private enterprise. Social ownership of means of production have been considered by regimes committed to socialism, despite differing objective conditions, a necessary condition for building a socialist society. A more directed but restrictive role that public enterprises may be required to play in the absence of a vibrant private sector in a post-colonial society is to supplant foreign enterprises in a
quasi to prevent continued foreign domination and a need to assert national sovereignty.[23,24] This generally extends to key sectors of the economy. However, a more common role in supplantation are nationalisation of so-called defense industries or reserving such areas to public sector for security reasons. The second political role, similar to those mentioned in the preceding paragraph, but less severe are limiting multinational operations and breaking up of domestic economic power. Here the public enterprises play a substitutive role.

The third role in this context is the regional dispersal of enterprises in order to effectively implement a national integration policy. The private enterprises, seeking most optimal location, tend to concentrate near markets, near sources of raw material supply and near ports or transport centres. This gives rise to localisation of benefits despite the wave theories and multiplier linkage theories of benefit dispersal. In developing countries, where social, economic and regional mobility of population may be restricted, this concentration of enterprises results in regional inequities which can become a serious threat to national survival particularly in divided society. The public enterprises are required to play the role of geographical dispersal, often at great economic cost but seldom appreciated by profit minded evaluators.

However the most significant political role that public enterprises are made to play in a market economy LDC is promoting private enterprises as suppliers of credit, raw materials, inputs, electricity, transport services, gas at below marginal even average cost. Similarly public enterprises may assume the role of users of high cost private sector product through a preferential pricing policy as after all government is the biggest social enterprise in a developing economy. Promotion of private sector has been most commonly done through risk-minimisation as enumerated above or through risk-sharing e.g., joint ventures.

In respect of social motives, supplantive role relates to such actions as taking over of polluting enterprises, substitutive role relates to prevention of liquidation/closure of private enterprises as was done in case of Indian Textile units; supplemental role relates to production of basic need goods for distribution at fair price, creation of employment in public enterprises through deliberate action, and income redistribution directly through pricing and wages-requisite policy in public enterprises, and finally supportive role related to provision of training in public enterprises or absorption of training cost by public enterprises is also evidenced in the mix economic LDSs.

IV

Going back to the roots, in an effort to find some direction, structure etymologically is derived from Latin structuro which means to keep together and a derived meaning is to arrange. Hence in the discussion of structure of public enterprises, one need to ask is there any theory of the arrangement and interrelation including the manner of organisation about public
enterprise. To the best of my knowledge no such theory exists. Our discussion in the previous sections should amply indicate that any attempt to build it on pure questions of efficiency of governmental entrepreneurial intervention over other forms of intervention in the face of market failure and/or existence of unexploited externalities under free market conditions provide only a partial segmented view of the entire edifice. Alternately, any descriptive structure in terms of sector where public enterprises operate is less than helpful as we need a large cross-section of such information overtime in order to build a theory of PE structure. There are no organization which monitor and publish such information at present.

However, one thing is clear that structure is directly related to the role of PE and need be considered in that perspective. The role and structure of public enterprises is defined by ideology of the state, nature of ruling coalition, existence and effectiveness of entrepreneurial class, current state of development, potentials of development, strategy and priorities of development and nature of external relation including nature of donor dialectics. The ideology of the state and nature of the ruling coalition define political need and boundaries of the PE structure. The state of development, potentials and priorities along with capacity of local entrepreneurial class maps out the economically desirable structure of PE. Finally the nature of external relation including the extent and nature of donor dependence modifies the structure so mapped.

Current level of knowledge and deductions do not permit us to pronounce any hypothesis which is non-trivial. It is possible to say that a pro-private sector regime would develop a PE structure which would displace concentration in infrastructure, utilities and commanding high areas; on the other hand a pro-public sector regime would display greater dispersal into industrial and commercial enterprises. The concept advanced by Larry Jones and Edward Mason in terms of costs and benefits of intervention to determine the structure of the public sector in less developed economies apply to defect pro-private sector market regimes only.[3,4]

Jones and Mason contends that pro and anti public sector regimes nearly determine the level of public enterprise measured by total share of PE is sector total GDP but structure of public sector measured by share of PE in sectoral value added display similar ranking. There is some truth in it in the sense that agriculture is less prone to public enterprise operation than say utilities. But it is not corroborated by ranking of public ownership of finance in India and that in Japan or even mining in Bangladesh and India or for that matter trade in Yugoslavia and Saudi Arabia. Prayor's[25] conclusion regarding structure hold in many cases but not in all cases, exceptions are too many to pursue any generalisations beyond a range. It needs much more inddepth studies to arrive at a generalisable conclusions. The conclusion that seem plausible is that in mixed economy LDCs ranking seem to have a wide ranging similarity.
Performance refers to accomplishment of a task or a promise or a command. Thus any discussion of performance would lead us back to the objectives or the role of public enterprises. We have tried to emphasise that objectives of public enterprises are diverse, at times not clearly articulated and not as centred around the idea of return to investment as is generally the case with private enterprises.

In Chart–3, attempt has been made to articulate what performance of public enterprises mean vis-a-vis roles and impact on private enterprises. When the role is to take over natural monopoly performance of public enterprise would mean operation of the unit at the competitive level. This would reduce return on investment but level of output and competitive profitability remains the prime indicators of quality of performance of public enterprises. But in case of revenue monopoly, the indicators collapses to optimum revenue only. In case of public sector trading houses operating for exchange with centrally planned economies the performance would mean optimisation of terms of exchange which might mean minimisation of lassor maximisation (optimisation) of gain, or both. In case of commanding height, PEs the performance indicator would be minimising loss and optimising gain overtime. In case of PEs for creating linkages the indicator would reduce to minimising cost at PE level and maximising gain at the link sector level.

In case of social role of PE; when the impact is supplantive the performance indicator would become minimisation of social diseconomies. Where it is substitutive performance is indicated by minimisation of cost of rehabilitation. Where the role of PE is income redistribution the performance indicators are social benefit and economic cost, where it is provision of basic needs, the indicator is minimum cost ensuring survival of such operation overtime; where it is employment creation it is minimisation of cost overtime. Where the social role of PE is supportive it is optimisation of benefit at minimum cost.
<table>
<thead>
<tr>
<th></th>
<th>SUPPLANT</th>
<th>SUBSTITUTE</th>
<th>SUPPLEMENT</th>
<th>SUPPORT</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECONOMIC</td>
<td>* Operational Efficiency at the level of competitive output</td>
<td>* Managerial Efficiency to get the best terms to exchange optimisation of gain/minimisation of loss</td>
<td>* Minimise loss overtime</td>
<td>* Optimise linkages at minimum cost</td>
</tr>
<tr>
<td></td>
<td>* Revenue optimisation &amp; Operational Efficiency at the level of Monopoly</td>
<td></td>
<td></td>
<td>* Optimise benefit overtime</td>
</tr>
<tr>
<td>SOCIAL</td>
<td>* Minimise social cost/diseconomies</td>
<td>* Planning and implementing efficiency for optimal intervention to keep production and employment going</td>
<td>* Maximise social benefit at minimum economic cost</td>
<td>* Optimise benefit at minimum cost</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>* Minimise cost ensuring survival of operation in the longrun</td>
<td>* Optimise benefit overtime</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POLITICAL</td>
<td>* No immediate cost or profit consideration</td>
<td>* Optimise benefit in the longrun and minimise cost of break-up</td>
<td>* Minimise cost and maximise socio-political gain</td>
<td>* Minimise cost and maximise private sector benefit keeping survival of the units in view</td>
</tr>
<tr>
<td></td>
<td>* Minimise cost</td>
<td>* No immediate cost consideration; minimise socio-political cost</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: See Chart 2 for corresponding role of PE.
In the political plane, the supplative role for building socialism may be without any immediate cost or profit consideration. Performance is to be judged by efficiency and extensity of such supplantation. By assumption, it has a long-term benefit for the mass. In case of defense industry, the criteria is to minimise cost, though most often it is not adhered to and budgetary allocation depends on political perception of the need and general economic power to mobilise resources for such purposes. In case of PE that eliminates/reduces/minimise foreign economic control of key sectors, the performance is to be judged in terms of minimisation of cost. In respect of substitutive operation, break up of domestic economic power through PE can be judged only in terms of long-term benefit and cost of break-up. For limiting multinational operation through substitution the performance is to be seen in the light of minimum socio-political cost. In respect of supplative political role, the performance can be judged in terms of cost and socio-political gain. In case of supportive role for private sector, the performance criterion is minimisation of cost and maximisation of private sector benefit (so called external economies). From the run-down of the paradigm given above it is clear that most often public enterprises should be judged for their performances in terms of minimisation of cost and not on the basis of financial returns to investment.

REFERENCES


6. IBRD: World Development Reports, Various years.


24. Kadir Abdul H. Deriye : The Role of the Public Sector in Developing Countries, Somalia, ICPE, Ljubljana, 1983.
An Industrial Policy for the TFYP
Role of the Private Sector
BY S.H. KABIR

Introduction

Having seen how we have managed the affairs of the nation since 1972 one cannot put up a defence against the scathing remarks. If these be the characteristics of our nation we cannot expect much from the TFYP.

Is it possible that in the terminal year of the TFYP we will find that the number of people living below poverty level has increased and so has the level of unemployment and under-employment? Yes. Will the economy become more dependent on external aid without bringing benefits to the majority of the people? Yes. Will the Gini coefficient maintain its inexorable march upwards? Yes.

If we extrapolate the experience of the past to the terminal year of the TFYP such predictions can be made without the benefit of a crystal ball or the brilliance of an analytical mind.

Plans and policies were and are being created and implemented by an oligarchy of military, bureaucracy, landed gentry, businessmen and industrialists, organised professional bodies, organised labour, organised student bodies and intellectuals. They serve the interest of the constituent member-groups. If they help the hungry, the jobless, the people without hope then they happen outside the fundamental intent of the plans and policies. Our economic woes are direct results of such plans and policies implemented over the past decades.

Rabindranath Tagore:
Current State of the Economy and Some Conclusions Therefrom

1. 75% of our people live below poverty level and 33% of them are desperately poor. 20 years ago 50% lived below poverty level.

Conclusions:
(a) Policies adopted and implemented in the last 20 years have impoverished a growing percentage of people. Such policies were, therefore, ineffective and have to be rejected.
(b) Further growth of impoverishment can lead to radical change in the societal structure, probably through a revolutionary process. In order to avoid being confronted with such a situation, a consensus has to be reached among those who opt for an evolutionary process that all economic policies, including the industrial policy, must halt, if not, reverse the rate of impoverishment during the TFYP. This would need direct intervention by the government on behalf of the disadvantaged until they themselves become a formally empowered group. Also needed, will be an effort to speed up the growth of the economy. Instinct for self preservation should inevitably lead our thoughts to this direction.

II. According to available statistics we will have one million new entrants into the job market each year through the end of the century, and that too if we achieve the bold target set by the government for decelerating the rate of growth in population.

Conclusions:
(a) Generating new productive employment must have the highest priority in the TFYP.
(b) New employment has to be generated at a rate faster than any country in the world.
(c) All investment proposals must be carefully screened to ensure that new investments do not have negative impact on current and potential employment.
(d) Industries which generate more employment per unit of investment of the nations wealth must receive priority over others.
(e) There must be stronger bias towards creating more employment than paying more to those who are already employed.

III. The economy is heavily dependent upon loans and grants and this dependence will continue through the end of the TFYP and beyond. It must be recognised that ours is a very poor nation and the economy managed accordingly.
Conclusions:

(a) Investment in producing or importing goods which are not essential must be drastically cut down.

(b) Existing capacity must be fully utilised before creating new capacity. Policy impediments to using industrial capacity must be removed.

(c) Exportable surplus must be produced from existing capacity and new capacity must be created to increase export.

(d) Investment proposals must be screened to ensure that the most cost-effective technology is being used. Obviously, the concept of cost-effectiveness will be different for industries with different bias, namely, employment generation, import substitution or export.

(e) Faster the pace of industrialisation greater will be the need for external assistance, not only for setting up new industries but also for importing raw materials and spare parts. Accepting this inevitability, all economic policies, including the industrial policy, must ensure that external assistance directly benefit a broader base of the population.

IV. Policy and bureaucratic impediments placed on the way of potential investors are well nigh close to insurmountable and the institutions needed for channelising investments to nationally productive goals are either non-existent or inefficient.

Conclusions:

(a) Attitude of the government should be to promote industries and attract people towards investment.

(b) Rate of planned growth of industries should have close parallel with availability of infrastructure and resources to support them. Industries have been set up without timely availability of electricity, gas, telephone connections, foreign exchange for import of raw materials and spare parts, cash-credit limits etc and therefore, wealth of the nation has been much less than optimally utilised. Inter-ministerial and departmental co-ordinations have to be improved.

(c) A nation which has just begun the process of industrialisation needs productivity improvement, design-creation, export-promotion and other support system from the government. They are either non-existent or the support systems are grossly inadequate. Government has to be a partner in progress rather than builders of mountain of hindrances.
(d) Surplus available for investment is small in comparison to our needs. All governments have been unsuccessful in mopping up this surplus as a result of this untaxed money is available in the hands of a class of people. They will invest only if the source of their fund is not questioned—therefore, source of fund for investment must not be questioned.

The things I have said regarding the current state of our economy and the conclusions I have drawn from them are oft-repeated statements of obvious. A broad consensus has to be reached so that what is obvious does in fact happen.

We have seen that in the most glorious phases of our history the leadership has discerned the urgent aspirations of the middle and lower-middle class who in turn has mobilised the general mass. Through broad consensus this has to happen once again so that the mistake of the past is not repeated in the future.

Private Sector in Bangladesh

Involvement of the private sector in industry, trade and commerce has had three distinct behavioural pattern in response to the policy parameters given by the Awami League, BNP and the present government. Initially, in 1972 and 1973 strong signals were sent out to the private sector to stay out of industry and over time this has changed and now it is being asked to play a dominant role. During none of the three phases, however, making money through legal, quasi-legal and illegal means was a serious problem for a growing number of people. As a result during the last 14 years a class of people has emerged who have wealth but the quantum of this wealth bears little relationship with goods provided or services rendered. They are products of patronage.

Making money through access to patrons and making money the hard way—by providing goods and services—are two different things. When I speak of the private sector, I do so with contempt about the seekers of patrons and with pride for those who make money the hard way.

Objectives of Industrialisation

Industries can be classified in two ways. When they are classified by size they are conventionally categorised as cottage, small, medium-sized and large industry. Industries can also be classified by the predominant economic function they perform. When this is done they are categorised as employment generating, export-stimulating and import-substitution industries.

In developing a structure for an industrial policy we have to make statements of objective for industrialisation which should emerge from the conclusions given under the discussion of the Current State of The Economy. Size of the industries and their functional categories will then need to be
examined to determine which industrial categories help in attaining the objectives. The industrial policy should then be formulated to promote the desired industrial categories.

Let me then list the objectives of industrial policy in order of priority which clearly emerge from the discussion on current state of the economy:

(a) Employment generation at least cost.

(b) Production of exportable surplus.

(c) Utilisation of existing industrial capacity.

(d) Establishing import substitution industries.

Given the fact that we will have one million new entrants into the job market every year creating new employment must be by far the most important objective; and given the extent of our external dependence the second most important objective will be to produce for export. Import substitution medium-sized industries have received substantial financial support through DFS and have considerable surplus capacity in many sectors. Therefore, policy promotion to this area should have the lowest priority.

With these objectives in mind let us now examine the categories of industries and functional types to assess what role they can play in attaining these objectives.

Cottage Industry: This industry is user of old technology and therefore it generates employment at least cost. There are numerous cottage industries and they have received little institutional support from the government. Their need for capital is small. If this small need can be met by the government by providing them with loan-capital new employment can be generated at least cost. Grameen Bank experiment has been conducted on a large enough scale to suggest that its experience is nationally replicable. Hitherto no government has shown tangible will to support cottage industries. Is the time not over-due for a government to demonstrate its will? 1000 crore taka should be allocated during the TFYP to provide loan-capital to the cottage industry.

During the TFYP the government should undertake a massive effort to create an infrastructure to support cottage industry. The objective of this infrastructure should be, among others, to identify products which can be made by the cottage industry, develop the knowledge to design products, create market for them both at home and abroad and develop project profiles. Institution for providing support to cottage industry should be independent of the one for small industry. Almost the whole of the TFYP will probably go by to create this infrastructure. 100 crore taka should be allocated in the TFYP for creating this infrastructure. Its worth will be proved in the fourth FYP.
Small Industry: Industrialisation, in modern terms, begins with small industry. This industry generates employment at comparatively low cost. Its output can substitute imports and, given the institutional support, is also exportable. Massive investment is required during the TFYP to promote this sector.

Small industry, as it exists today, can be classified into two categories. (a) Those which have been set-up and are being operated without any institutional support. They probably constitute 95% of all the country’s small industries. The owners of these industries do not form a part of the ruling oligarchy, and therefore, have so far not been able to get any direct access to the nation’s wealth. This is a pity because they are the people with truly entrepreneurial spirit and the small industry has a large pool of craftsmen and technicians of the country. (b) The other category in small industry belongs to that group which have set-up industries in the areas developed by BSCIC. They are small in number and have access to some institutional support.

Small industry should receive the largest policy and institutional support in the Industrial Policy for the TFYP. There are many reasons for this: (a) It can generate employment at low cost; (b) it is capable of producing both import substitution and exportable products; (c) people with entrepreneurial skill along with technical and/or management and marketing skill will have an option – do I become a servant or a self-employed person?

Risk-capital for investment is not available in the hands of those who have the potential for owning and managing small industries because such people are engineers with a few years experience, competent but uneducated mechanics, electricians, welders with many years of experience, middle-level managers of public sector corporations or private enterprises, retired military officials, bureaucrats and their children and the vast pool of educated youth with the zeal for becoming their masters of their destiny. If they cannot industrialise the country then nobody can. They have to be empowered.

To generate employment at low cost and to tap the entrepreneurial potential of the nation for industrialisation vast number of newly empowered people have to be inducted into small industries. But they do not have the risk capital. A new strategy will have to be developed for one do not believe that anywhere is available for us and therefore, the largest portion of allocation to industry must come to this sector in the TFYP.

The strategy for achieving this will involve massive government participation. The concept is simple. It will be necessary for the government to build factory premises throughout the country where roads, waterways, electricity, gas and telephone connections are available. Bearing in mind that most small industries require between 1000 sq.ft. to 5000 sq.ft. of space each, large factory premises will be partitioned off and rented to those who wish to set-up small industries. Machinery and equipment will be
available on lease on the basis of monthly rental. When a project is approved
government will make available not only the factory premises and
equipment on rental but also the initial cash-credit facility and, if necessary,
import entitlement. Rental rates will be fixed in a manner so that the
government makes a profit out of its investment. Should the private sector
wish to set-up such infrastructure then they too should be allowed to do so
and their sources of fund should not be questioned. An institution, separate
from the one for cottage industry, will have to be set-up for promoting small
industry. Besides building the huge infrastructure for the purpose which I
have just stated, this institution will have the task of exploring the
international market for our products, promoting our goods abroad,
designing products, producing project profiles and providing technical and
management support.

The large number of small industries which already exist can increase
their production and thus their employment generating capabilities, and
productivity if they are provided with some working capital, engineering
and management support. The institutional set-up for promoting small
industry should be able to satisfy these requirements.

Medium-Sized Industries: Most of the financial support from 1965 to
1970 and 1975 to date has gone to this sector. This sector has had some
success stories and many failures. Ship-breaking, export of frozen fish,
finished leather, garment and pharmaceutical industry provide stories of
different degrees of success. Since the debates have generally dwelt upon
failures let me talk, briefly, on this subject.

The owners of these industries are important members of the ruling
oligarchy and, therefore, have comparatively easy access to the wealth of
the nation. It will not be right to assume that because they have had easy
access to wealth, they have an easy life. Their uneasiness emerges from the
love-hate relationship with the bureaucracy, banker's military and
politicians. Power relationships have not, as yet stabilised. Until the conflict
centering around sharing of power within the oligarchy is resolved, policies
will remain unstable and as long as policies remain unstable impediments
will be placed on the way of efficient operation of industry. Money-making
through access to patronage will remain easy but, strangely enough,
impediments, will be put on the way of making it the hard way—by providing
goods and services. This is the factor which is central to failure of many
industries. Relationship among the powerful members-grows is not quite as
cosy as it would appear on the surface.

The process of industrialisation began with policy-decision that the
country has to industrialise and industrialise at great speed and that had to
be done through the private sector. This policy decision gave birth to a
relationship between entrepreneurs who had little capital and not much
experience in industry and development funding institutions which did not
have much knowledge of development and rudiments of institutionalisation
but a reasonable amount of fund. There was a third party - the World Bank and other donor agencies who knew it all except our country and our people. Entrepreneurs put up investment proposals which, generally, were not realistic and DFI’s drew-up terms of loan which were extremely stringent and almost impossible to live by. Project proposals were approved by the DFI’s and World Bank and funded and the entrepreneurs accepted the unrealistic terms of lending. Factories were put up. Electricity was not available when needed nor was the import license or cash-credit limit. The stage was set for the drama which is now being played out.

Was the policy-decision for industrialisation a failure? No, because 90% of those who took money have, in fact, put up industries. Then was the policy a success? No, because most people who have borrowed is unable to pay back. While retaining the success can the failure be reversed to a large extent? Yes. A combined and intense effort have to be made by the borrowers, DFI’s and the donor agencies to mount a rescue operation so that the capacity utilisation and profit-performance of the industries improve, they are able to pay back what they have borrowed and the country benefits from efficient operation of industries on which it has made major investment.

The industrial policy for the TFYP should focus more on rescue operation of the medium-sized import-substitution industry than building of new ones.

Export oriented medium-sized industries should be promoted to a much greater extent than what has been done hitherto. Policies must clearly push and support people with money towards this direction.

Large Industries: Large industries in the private sector are few. I will make brief reference to two sectors - jute and textile.

Jute: The outline of the TFYP puts great emphasis on the growth of the jute industry. I know little about this industry but observations made by the people involved with it are discouraging. The more optimistic among them feel that they will be able to hold ground and the pessimistic, or may be realistic among them, are already planning to move out of jute. There is a vast gap between the thinking of the planners and those involved in the industry. If there has been any serious discussion to bridge this gap, I have missed them. Livelihood of great many people depend upon it and bridging the gap has great urgency.

Textile: We have a textile industry and at this very time months of stocks are lying unsold. Why is it that other developing countries are able to export their textile goods and we not even though we have 20 years experience in this industry? The textile mills which will be approved during the TFYP should have clearly defined export objectives.
General Remarks and Conclusions

Any economic policy, and industrial policy is no exception, must emerge from a review of the current state of the economy. Rather than creating the outline of an industrial policy in vacuum without clearly defined objectives that is what I have attempted to do. This has led me inevitably to the conclusion that during the TFYP massive support should be provided to the cottage and small industry and a massive rescue operation has to be undertaken to make the medium-sized industry productive and profitable. The private sector is dominant in these areas of industry and must continue to be so. The government must play a much more active and supportive, enabling and promotional role.

For all the things to happen that I have said should happen, we neither need nor do we need to create, a Superman. But what we do need are a great many empowered groups who promote their own causes, and humbling, stumbling, hesitating, pushing and pulling all the groups together move towards a common goal— reversing the impoverishment of the majority of our people. We need democracy, guided only by the people.
Strategy of Rural Industrialisation in Bangladesh

By NUIMUDDIN CHOWDHURI *

I. Introduction

Bangladesh has, like many other countries in the Third World, experienced rapid rates of urbanisation for the last three decades. It remains, nevertheless, a primarily rural country, a preponderant proportion of its population still living outside urban areas. It also remains a primarily agricultural economy, with as much as 55% of the GDP being derived from agriculture. Bangladesh agriculture presents a peculiarly disturbing specimen of farming duo-culture, in the sense that rice and jute crop, between them account for about two-thirds or more of agricultural value added. Growth in the economy at large is materially dependent on the performance of agriculture and, ipso facto, on the performance of the rice and jute crops. The latter factor is inextricably linked up with a natural factor the climate. It is not in jest, therefore, that it is frequently said that the engine of growth of the Bangladesh economy is not run by man. Adversification of the traditional basis of the Bangladesh economy has been frequently advocated. It is not just the uncertainty of agriculture that has caused the case for diversification. There is also the more disturbing fact about an appalling discrepancy between the rate of increase of agricultural labour force and the rate at which farm labour demand is likely to increase over the foreseeable future. Strategies for such diversification have frequently been based on the development of non-farm enterprises in rural areas in general, and rural industrialisation in particular.

This paper is about rural industrialisation in Bangladesh. The paper raises the following questions. What role has one to envisage for the future of rural industrialisation in Bangladesh if she has to achieve a reasonably satisfactory degree of economic development within the constraints imposed by her peculiar resource endowment? What is the role, if any, that industrial policy to date in Bangladesh has in fact accorded to rural industrialisation? What explains the absolute size of rural industries in Bangladesh? What strategic options does one have in order to stimulate the growth of rural industries.

* Senior Research Fellow, BIDS.
Rural industries are mainly composed of cottage level activities, carried out in the yard of the homestead of the proprietors with the help basically of family labour. They are also composed of enterprises which are by way of small factories. The Rural Industries Study Project (RISP) conducted by BIDS in 1978 found out that, while most of the cottage industries are located in villages, the rural small-scale industries (SSIs) and repairing services are located in market places and upazila centres. Before we can launch into the substantive issues of strategy and policy, we need an orientation about the quantitative significance of the SCIs in the country and, by implication, of its rural segment. This is done by presenting some information about the trends of growth or decline of various product groupings of SCI, about its significance within the industrial economy of the country, about some structural changes taking place within the SCIs, etc. This is the concern of the next section.

II. A Profile of SCIs in Bangladesh

It has been observed that over long periods of industrialisation process, employment in household manufacturing, and in small workshops and factories, far outweighs that which is (or could be) provided by large industry, notwithstanding the huge concentration of investment and of supporting services on the latter over the past twenty to thirty years (2.63). Bangladesh lends credence to this generalisation. In terms of their contribution to employment, SCIs have dwarfed large and medium scale industry. While in 1961, employment in all large and medium scale industries taken together in Bangladesh was about 350 thousand, the combined employment in SCIs in that year was 1.51 million – about five times as large (Table 1 and 2). The relativity was roughly the same in the last years of the 1970s. A critical ingredient of development policy in Bangladesh has to do with the promotion and remunerativeness of employment on a broad basis. Rural SCIs in particular promise such policy a worthwhile focal point.

Table 1 and 2 show several things. For one, Table 1 shows that the basis of cottage industries in Bangladesh really lies in processing forestry and food crops, textile products and products made from clay. These four categories of industries account for 81.5% of the enterprises, and 84.9% of the employment of the cottage industries in 1980. This reflects perhaps that rural industry products are almost wholly consumed by rural consumers, the bulk of whom have relatively low average incomes, thus keeping their demand confined to food, clothing, simple household effects (e.g. mats, earthen utensils, and the like). This further reflects the fact of the great importance of favourable agricultural performance as conditioning the demand for rural industry products. In contrast, Table 2, in presenting the structure of the employment of the SSI, shows that this sector has had a measure of diversification away from food processing, and towards metal-cutting, metal-machining, and printing, etc. Processing food accounts for only 63.9% of the employment of SSI, while brick-making, metal-cutting,
and machining, soap-making account for another 11.6% of the employment. It is reasonable to posit that, while consumption of the rural population, three-fifths of whom may be seen to be involved in absolute poverty, constitute the predominant market for the products of the cottage industry, the SSI of Bangladesh, a good deal of it, for example the rice and saw mill, being rurally located, subsumes within it facilities to cater not just consumption needs but the demand for intermediate and investment goods. It may be reasonably speculated that while the output of cottage industry would, on the demand side and in part, be conditioned by average incomes because most of such output meets consumption demand, the availability of surplus in rural economy and/or of real credit would be an additional conditioning factor, again from the demand side, as far as the SSI is concerned.

### Table 1

Growth and Decline in the Size of Major Cottage Industries in Bangladesh, 1961-1980

<table>
<thead>
<tr>
<th>Type of cottage industries</th>
<th>No. of units (OOOs)</th>
<th>Total employment (OOOs)</th>
<th>Annual rate of growth (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1  Agricultural food processing</td>
<td>51.5</td>
<td>24.7</td>
<td>-3.8</td>
</tr>
<tr>
<td>2  Forestry product processing</td>
<td>74.1</td>
<td>94.5</td>
<td>1.3</td>
</tr>
<tr>
<td>3  Handlooms</td>
<td>137.3</td>
<td>205.9</td>
<td>2.1</td>
</tr>
<tr>
<td>4  Other textiles</td>
<td>28.5</td>
<td>66.6</td>
<td>4.5</td>
</tr>
<tr>
<td>5  Pottery</td>
<td>24.3</td>
<td>16.5</td>
<td>-2.0</td>
</tr>
<tr>
<td>6  Blacksmithy</td>
<td>12.0</td>
<td>10.6</td>
<td>-0.7</td>
</tr>
<tr>
<td>7  Goldsmithy</td>
<td>10.2</td>
<td>12.3</td>
<td>1.0</td>
</tr>
<tr>
<td>8  (1)–(7) total</td>
<td>337.9</td>
<td>430.1</td>
<td>1.3</td>
</tr>
<tr>
<td>9  All cottage industries</td>
<td>354.3</td>
<td>499.5</td>
<td>1.8</td>
</tr>
</tbody>
</table>

Source: Adapted from Hossain, 1985, Table 2.1. Row 1 aggregates figures for dairy products, oil pressing and gur making; row 2 aggregates bamboo products, mat making, carpentry and coir rope making; row 4, fish net making and tailoring.
Table 2
Growth and Decline in the Size of Major Small Scale Industries in Bangladesh, 1961—78

<table>
<thead>
<tr>
<th>Type of small scale industries</th>
<th>No. of units (OOOs)</th>
<th>Total employment (OOOs)</th>
<th>Rate of growth (%)</th>
<th>Rate of growth (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Agricultural food processing</td>
<td>5346</td>
<td>15724</td>
<td>6.6</td>
<td>30.7</td>
</tr>
<tr>
<td>2. Forestry product processing</td>
<td>575</td>
<td>835</td>
<td>2.2</td>
<td>8.1</td>
</tr>
<tr>
<td>3. Bricks, tiles</td>
<td>392</td>
<td>167</td>
<td>-4.9</td>
<td>20.7</td>
</tr>
<tr>
<td>4. Printing</td>
<td>693</td>
<td>995</td>
<td>2.1</td>
<td>6.6</td>
</tr>
<tr>
<td>5. Metal-cutting, metal-making</td>
<td>529</td>
<td>1608</td>
<td>6.3</td>
<td>6.4</td>
</tr>
<tr>
<td>6. Soap making</td>
<td>166</td>
<td>143</td>
<td>-1.0</td>
<td>1.5</td>
</tr>
<tr>
<td>7. Hosiery</td>
<td>632</td>
<td>732</td>
<td>0.9</td>
<td>5.4</td>
</tr>
<tr>
<td>8. (1)—(7) total</td>
<td>9333</td>
<td>20204</td>
<td>3.3</td>
<td>77.6</td>
</tr>
<tr>
<td>9. All small-scale industries</td>
<td>16331</td>
<td>24005</td>
<td>2.3</td>
<td>144.7</td>
</tr>
</tbody>
</table>

Source: Adapted from Hossain, 1985, Table 2.2. Row 1 aggregates data for rice mills, flour mills and bakeries; row 2, saw mills and wooden furniture; row 5, engineering and other metal products.

Table 1 presents a view of the pattern of growth and decline of cottage industries of Bangladesh over two decades. It is sufficient for present purposes to look at the growth or otherwise of employment by sector, in col (7). Textiles and forestry product processing have accounted for the overall expansion of the employment of the cottage industry of Bangladesh. An absolute decline has been the lot of the other four major categories of cottage industries.

1. Oil pressing and gur making, in the fact of their decline, are attesting to the ruthless efficacy of competition from mill-pressing and imports, frequently championed by large industrial enterprises and by government policy. Hossain has argued that the rapid decline in mat and rope making found by BSCIC Cottage Industries Survey, 1983— the basic source of Table 1— was implausible and derivative of a possible under-estimation of enterprises, for example in our rope making. Despite such possible underestimation in 1980, the total employment in forestry product processing has grown, vide Table 1. If Hossain is right, as he probably is, then the fact of the growth of this particular sector would be further strengthened.
The story of the SSI is one characterised by markedly better growth, the overall rate of growth of employment having been a 4.8%, as compared with 2.1% for the cottage industries. The highest growth rate is observed in agricultural and food processing. Both rice and flour milling have witnessed major expansion in activity. Increases in rice milling capacity were necessitated by notable expansion in rice output between the early 60's and the late 70's (Table 3). Increases in wheat-crushing capacity were necessitated by major expansion in the import of wheat and, more lately, in domestic wheat production (Table 3). Rice output has grown at a rate of 1.4% annually between 1960/1 through 1979-80, while the corresponding rate of increase of the wheat distribution has been 12.5%. Besides the availability of the staple raw material, i.e., paddy and wheat, rice and wheat milling have also received considerable fillip on the supply side by the expansion of all-weather road mileage and electrification of the economy.

Row 1, Table 1 on the one hand, and row 1, Table 2 together with and Table 4 between them bring to the fore one of the tensions of development policy as it pertains to rural industrialisation. Table 1 leads one to believe that agricultural food processing have declined within the cottage industry sector. Dhenki-work is not included by BSCIC as one of the rural industries. RISP had, correctly in our judgement, treated dhenki-work as a rural industry. Had dhenki-work been included as a rural industry in this table, the negative rate of growth of employment in this category would perhaps have been higher, because, as Table 4 shows between the late 1960's and the late 1970's, the share of the paddy crop husked by dhenki fell by about 20% or so. A 20% loss of market share in 1979/80 implied 2.26 million long tons of rice. A dhenki can process 1.5 md. of paddy in 8 hours with two women working. That works out at slightly over 1 md. of rice per dhenki-day. Let's say, it is 1.05 md. of rice per dhenki-day. Now 2.26 million tons amounts to the loss of some 58.1 million dhenki-days or about 0.19 million dhenki-days. That means a loss of 0.38 million person-years. The picture of apparently bountiful growth conveyed by row 1, Table 2 involving SSI is invisibly accommodated by what may be called economic disenfranchisement by myriad of helpless rural people, for the most part poor women who would otherwise have wrung out from dhenki work an indispensable living. Such recompense may well be by way of a pittance, but still worthwhile because its absence may frequently mean severe malnutrition. This is the classic tension that any country seeking to modernise its capital stock must face. This is a tension between the desideratum of promoting the adoption of production techniques that can handle large volumes of paddy coming on to the market within commercial cost and delivery schedules, and the equally compulsive need to prevent any precipitate and massive disruption of the socio-economic basis of rural areas entailed by loss of employment opportunities. It may be emphasised that the estimated number of person-years lost in dhenki-work accounts for a full 30% or so of the total employment of cottage industries in Bangladesh.
Table 3
Rice Output, Wheat Output and Distribution, 1960/1—1979/80 (000 long tons)

<table>
<thead>
<tr>
<th>Year</th>
<th>Rice</th>
<th>Wheat</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Net production</td>
<td>Internal procurement</td>
</tr>
<tr>
<td>1960/1</td>
<td>8.57</td>
<td>24</td>
</tr>
<tr>
<td>1964/5</td>
<td>9.30</td>
<td>13</td>
</tr>
<tr>
<td>1969/70</td>
<td>10.54</td>
<td>20</td>
</tr>
<tr>
<td>1972/3</td>
<td>8.94</td>
<td>10</td>
</tr>
<tr>
<td>1975/6</td>
<td>11.3</td>
<td>413</td>
</tr>
<tr>
<td>1979/80</td>
<td>11.3</td>
<td>226</td>
</tr>
</tbody>
</table>

Note: Col. 2 is million long tons. The rest are 000 long tons.
Source: (Chowdhury, draft forthcoming)

Table 4
Mechanisation in Rice Milling, 1967—1981

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Crop husked in rural mills (%)</td>
<td>17</td>
<td>20-25</td>
<td>25-30</td>
</tr>
<tr>
<td>No. of rural mills (000)</td>
<td>6.5</td>
<td>7.5</td>
<td>10.5</td>
</tr>
<tr>
<td>Crop husked in commercial mills (%)</td>
<td>—</td>
<td>5-10</td>
<td>10</td>
</tr>
<tr>
<td>Crop husked by dhenki (%)</td>
<td>83</td>
<td>65-75</td>
<td>60-65</td>
</tr>
</tbody>
</table>

Note: The percentages are approximations, based on expert opinions.
Source: (World Bank, 1983, Table 3.1).

As for the other important findings of Table 2, we may note that small-scale activities producing mainly investment goods (e.g. tiles and brick-making, light engineering, other metal-using things) and also saw-milling have registered reasonable growth rates. It is reasonable to posit that investment demand derives out of either the accumulation of some economic surplus or its deliberate mobilisation by deficit units via expansion of real volume of credit. The latter in turn corresponds to the generation of surplus by surplus economic units. Either way, the diversification of the basis of SSI in Bangladesh suggest the existence of economic surplus
among private households such that it has fomented a measure of investment demand for the products of SSIP.

It is with this bit of a back-ground that we now wish to raise the question of what role one has to envisage for rural industries in Bangladesh, developmentally speaking. There can perhaps at least three different positions on this question. One could say, for example, that the presently industrialised countries are developed and rich not because they have small and cottage industries but because they have modern industrial facilities, highly mechanised production techniques, a diversified industrial base composed by mainly large-scale enterprises. Such a view would tend to identify economic development with industrialisation, the latter with industrial mechanisation and large-scale enterprise. Such a view would result in SCLs in underdeveloped countries as being treated as a necessary evil, which has to be phased out sooner or later and whose elimination had better be as painless, socially speaking, as possible. Let us call such an attitude to SCI in economic development as step-motherly. It will be immediately realised by sensitive readers that the above step-motherly stance is sustained by extreme naivete or by extreme cynicism. It will, further, be futile to expect that anyone in, or prescribing about a labour-surplus developing country would betray such extreme position openly. Hence, such cynical attitudes have sometimes been coated in specious arguments about the utter inefficiency of SCLs. It has been argued, for example, that cottage industries even involve absolute inefficiency as compared with competing large-scale production techniques, in the sense that the former use both more labour and capital. Such apparently scientific tradition provided sufficiently cogent cover to a policy prescription brazenly committing the public and private investment preferences in favour of the latest and best-practice techniques and to large forms of enterprise.

Secondly, there could be a sobering view-point that SCLs in general, and rural industrialisation in particular, have to be seen as the basis for ensuring reasonable diversification of the economy. The case for de-emphasising large-scale industries so as to promote a diversification of its industrial basis is best put in terms of the realities in the labour market of developing countries. The point is that a manufacturing sector, employing 10% of the

---

2. This is not to imply all the output of brick or tile industry, or the engineering industries are by way of investment goods. But it may be reasonable that most of such output are investment goods.

3. Evidence which strengthened such position was frequently reported in the early days of the famous debate on the locational technique in cotton textile industry in India. It is not disputed that traditional techniques may frequently use more labour per unit of output. The problem with [3] and some other work is that in their measurement of capital costs, substantial capital subsidies as well as the effects on such costs of massive public investment of a nature that permits externalisation of private capital costs were not adequately accounted for. The result of absolute inefficiency was in part a derivative of faulty methodology, not a reflection of any inherent technological attribute of the technique involved.
country’s labour force would have to grow employment at 7.5% a yearly merely to absorb the increment in a total workforce growing at 3% a year. The required increase in the output of such a manufacturing sector is greater than 7.5% if account is taken of increase in labour productivity. Between 1962/3 and 1978/9, average daily employment in large and medium-scale industries in Bangladesh grew on an annual compound basis at about 4.4%. It has to be noted that a considerable part of the expansion of employment in Bangladesh large industries has been in public sector where overmanning has, certainly for a part of the 1970’s in the time period cited, been common. Hence all of that expansion of employment cannot be seen as depicting normal economic behaviour. The point therefore is that employment induced compulsions of development policy reduce large-scale manufacturing sector into a position of somewhat limited significance. This is part of the argument for fostering SCIs in that the latter are relatively more congruous with the factor endowments of a country like, Bangladesh. SCIs have relatively low capital-labour ratios, have short gestation period of investment, economise on scarce administrative input, and can stimulate effective entrepreneurship that otherwise would not only be atrophied but become a basis for seeking un - or anti-social incomes for basically capable people feeling left out of development. In short, promotion of SCI is not only compatible with the resource endowment but has the further merit of making development more participatory and therefore less conflict and tension-ridden.

The set of rational which can arguably sustain the case for rural industrialisation via the spread of SCIs may therefore contain the following: (a) that rural SCIs promote employment creation, (b) that they stimulate more even regional development and thus promote a greater equality in incomes and opportunity distribution; (c) that they draw out latent reserves of scarce resources, especially entrepreneurship; and (d) that they have certain social and political advantages (in that they are favourable to continuity of social harmony. Let us call this perspective one of championing participatory diversification of industrialisation."

The third perspective that one may encounter seeks to go beyond looking at SCIs in general and rural SCIs in particular at an useful but still mainly complementary adjustments to industrial development in labour surplus countries like Bangladesh. The distinctive flavour of this possible standpoint is the emphasis it puts on the assertion that SCIs, potentially, can perform as major contributors to economic growth. This view suggests an industrial, paradigm where large-scale industries and SCIs are not mutually exclusive options in general (although there may well have to be careful co-ordination of the activities especially of the large industry in specific cases where major

---

4. We note here that a concurrent alternative theme has as its focal point, the stimulation of rural nonfarm activities. Later in this section, we make an attempt to relate our concept of participatory diversification of the industrial basis with the concept of the diffusion of rural non-farm employment.
segments of small and cottage industry) but are co-existing and reinforcing growth poles. International experience of economic development has isolated Japan, in both its pre-and post War record, as the locus classicus of what SSI can achieve as a concurrent growth centre [13]. More recently, the experience of both Communist China and Taiwan in fomenting fast-growing and innovative SCIs concurrently with rapid industrial modernisation deserves to be noted in the same breath [20, 12]. Let us call this growing on both legs, mimicking the famous Chinese connexion.

It is our opinion that the diversification and growing on both legs are not independent and timeless categories. Diversification cannot, if it has been timely and vigorous, be a self-resolving process, without any follow-through or sequel. The end result of a really balanced industrial basis simply cannot be a nonentity for, in the life-cycles of working economics as in science, to every action there is a reaction. Surety, a truly diversified industrial base has, after a time, to lead on to something more lasting than itself. The point is that diversification would likely shade off into the emergence of SCIs as a concurrent growth centre, alongside large industry. Successful development of the SCIs at least in Asian conditions of the 1960s and 1970s, has presented itself as predicated on the necessary conditions of (i) basically industrious, intelligent, healthy, bold and trained population, (ii) effective land distribution, and or staunch commitment of the political leadership to access to land (in the case of the two China and India) and (iii) an integrated programme of assistance including strong support to infrastructural development, to the SCIs. What starts, given these necessary conditions, as a process of participatory diversification, triggers off and, in a historical perspective is perceived as an integral part of a nation’s growing on both legs. Of course, countries frequently will differ in their specific historical and contextual factors. SCI is many phenomena, not one. This should call for great caution in pronouncing a generalisation. But it is our view that SCIs have beyond all reasonable doubt played a significant role in economic development in a historical perspective and that, whenever or wherever they had contributed, this had been because the process of industrial diversification, as opposed to concentration was making its influence felt.

There can, therefore, only be two perspectives on the role of SCIs in the economic development of agrarian countries of Asia, like Bangladesh: the step-motherly and the participatory industrial diversification. We shall readily pin our own colour on the second mast.

Before going any further, two important clarifications have to be offered. The first has to do with one important means of how industrial

5. We are using as an abstraction the notion of a truly diversified industrial base. Diversification is an objective condition of an economy with certain attributes relating to property relations, the nature of state power and exchange, the state of competition, etc. We shall seek to elaborate upon it further below.
diversification can better be made participatory. The point is that such an economic environment has to be created which, on a broad basis, raises people's confidence about reaping for their own good the fruits of their own economic enterprise, expands the ownership and/or control of individuals over material resources like land, credit, equipment etc, and creates favourable conditions of demand and marketing of the produce of rural industries. In mainly agrarian economies, where land constitutes the single largest items of national wealth, the distribution of the ownership or effective access to the fruits of land is a critical factor conditioning the level and composition of the demand of rural households. The more equally is the income from land distributed (at any given average level of income), the higher will be the level of demand for nonfood goods and services. If, at low level of average rural income, the distribution of incomes from land is equal, which is likely to be the case when access to land is equalised whether through an effective land reform, or tenancy reform or cooperatisation on government-leased land, then the ensuing structure of demand is likely to be weighted toward simple type of nonfood final consumption goods and simple types of inputs and services to agriculture. Manufacture of simple types of consumption and investment goods is likely to be within the capability of rural industry. Hence a fundamental commitment to the reasonable equalisation of the income from the land is bound to be a sine qua non of promoting participation in diversified industrialisation.

Redistribution of land or land income is also likely to impact on participatory industrialisation. It may of course be true that immediately in the wake of such redistribution of income, there may be an increase in aggregate rural consumption, as an attempt to compensate for sustained past deprivation on the part of the beneficiaries of the programme gathers ground. This spurt of primitive consumption is bound to taper off as the now economically possessive class of beneficiaries are surely likely to appreciate the value of their improved asset position in the contest of the need for future security. Tendencies to save in small bits are bound to arise in those circumstances. For a time, such savings are likely to find their way into farm modernisation and improvement. But, after a while, recognition is likely to be taken of the advantages of a diversified economic basis in the household. Such diversification may consist of a combination of farming and household industry.

Such duo-culture offers at least two advantages. Farming in Asian conditions is invariably a seasonal occupation. There is evidence that the seasonality of employment in agriculture on the one hand, and employment in those segments of rural industries not dependent on agricultural inputs (e.g. textiles, footwear, pottery, construction materials etc, but not food processing) move in the opposite direction so that seasonality in aggregate employment is reduced when households combine in their productive roles.
both farming and non-farming activities. Such an advantage is likely to fasten itself quite readily on the calculation of the beneficiary of land or land income redistribution programme. Hence a part of his small bits of saving may eventually find its way into rural industrialisation. A second advantage is that risks are spread better when households’ assets are diversified. Uncertainties are considerable in farming, and asset portfolios which lower overall risks are likely to be preferred.

We have dilated on what we consider to be one of the indispensable preconditions of having a participatory industrial diversification. Both Communist China and the Nationalist China, and Japan have had very successful land reform early on in their respective initiation of coordinated rural development. In both Chinas, such reforms were successful for reasons of singular political commitment arising out of ideological contexts. In both Chinas, the masses were confident, given the nature of their own states, that their economic endeavours were or were not going to deliver goods depending on how hard and imaginatively they worked on them. Economic exchanges were no longer under the same shadows of interpersonal exploitation that existed in a class-ridden economy. Forces of demand were favourably harnessed by land reform and the egalitarian distribution of the cognate resources. Conditions of marketing of product and inputs were also favourably affected by unprecedented improvement of rural infrastructure— which, as is well-known, provides ready access in all these three countries to rural labour market, materials, and services while permitting large-urban and foreign markets to be reached. In short, the locus of a self-sustaining diversification of the industrial basis in the Asian context has lain in conscious intervention in property and/or income relations, thereby making the market place more responsive to the economic needs of the masses, and also more accommodating of their productive potentialities, in mobilising the resources of the state at improving the accessibility of input and product markets to new producers, in establishing correct price signals for capital and foreign exchange for both SCL and their competitors, and, finally, in instituting an integrated package of “non-marketable” specialisation resources and services, e.g. marketing, information, technical advice, etc. We would likely say that a fundamental commitment to promote participation of the people industrial activities through conscious non-market and market interventions is one of the distinctive traits of this paradigm. The role of participation in all this is therefore critical. Participation in this context is not one thing; it is many-faceted. There is the participation of the politicians and policy-makers in the conscious process of sharing a common, umbilical destiny with the plebians, undaunted by the prospects, if any, that such common destiny

6. Muqteda and Alam [16] for example, has shown that seasonality of non-farming employment move in the opposite direction. Norman [17] showed, too, that farm and nonfarm employment varied countercyclically in a study of employment in mixed households in Northern Nigeria.
may, for a time, mean the sharing of relative poverty, relative, that is, to what their situation would have been were they to see their own destinies as separate from and superior to those of the common people. This type of participation presupposes a high degree of personal discipline and moral rectitude among the leaders, for it demands significant degrees of self-denial. There is, in addition, the participation that we have already talked about.

A second preliminary is about what the relationship is, if any, between the strategy of participatory diversification with that of merely fostering nonfarm employment. We are talking about rural industrialization. The limits of the rural industrial activities are clearly somewhat narrower than those of the activities constituting non-farm employment category. Again, depending on how they are defined, rural areas may be more inclusive than non-farm areas. For both reasons, we are obviously speaking about something which has extensive overlap with the preserve of non-farm activities. It is not possible nor warranted in the least to claim superiority of one way of speaking about the problem to the other. There are some similarities between the agenda of policy interventions specific to those two approaches. The critical distinction, to our view, lies in the emphasis that we have laid on the concept of broad-based participation, both of the leaders as also of the led, in the process of effecting major changes in human values and morale, in the character of the state, economic institutions and the markets, in the character and consequences of allocation of resources, especially investment resources. There is a dictum that the whole is more than the sum of the parts. The policies that are meant to sustain stimulation of non-farm employment in Asian agrarian economies may inexorably add up to something, but unless a genuine commitment by the power elites to participate in the process of motivational and industrial change is their lifeblood and guiding light, they may not add up to the desired whole.

There is a final word of caution. In making a case for conscious interventions of far reaching socio-political proportions, we are not also making a case for centralised planning, nor a suppression of the market.

---

7. The definition of “rural” is very important. National census definitions of rural—urban boundaries (which are the basis of UN estimates) tend to be formulated in terms of urbanisation characteristics (grid pattern of streets, population densities, government administrative functions, etc.) rather than a minimum size criterion. The result is a very restrictive definition of the rural population, in which rural settlements of only a few thousand are characterised as rural. A broader definition of rural areas is of course possible. Small and medium-size towns whose economic roles and functions are closely and directly linked to agriculture and needs of the rural population. We are employing this wider definition of rural areas in this paper. Although some authors have tended to identify non-farm and rural industry employment whether rural areas are defined according to the narrower or the wider definition, there is, in our opinion, the case for distinction between non-farm and rural industrial employment when the wider definition of rural area is being adopted.
mechanism. For we believe that centralised planning is as much of a “idealised” state as that of “free competition”. Participatory diversification of the industrialisation will soon become inefficient and stunted against the competition arising out of the modern industry. Competition has to exist so as to good both large industry and SCIs into efforts to improve product quality, reduce costs, lower shortages. Competitive advantages that derive from some mainly non—reproducible factors have accounted for the survival and growth of SCIs even in the heartland of developed capitalism, like the US. The types of SCIs which are likely to survive the industrialisation process are enterprises that obtain competitive advantages either from locational influences, from the characteristics of the manufacturing process in which they engage, from the localised (frequently deliberately segmented) markets they serve [21]. Competitive SCIs are likely to exist with even greater probability of success in developing countries where the challenge from large—scale industry is likely to be relatively low—keyed.

What the participatory approach to development policy does to the context of competition in industrialisation is that it breathes greater equality and democracy into the economic system. What then ensure is a competition among equals, or nearly so.

III. Nature of Policy-Making for Rural Industrialisation in Bangladesh.

We have aired a possibly contentious view on an exacting perspective that may condition societal and policy—making values and convictions relating to rural SCIs. It is now time to put to that test the prevailing course of policy—making for rural SCI. We should not, however, launch into a discussion of the specific technical details of the adequacy or otherwise of public policy concerning RSCI without first examining some of the overall trends of the economy. After all, one possible measuring rod for evaluation of policy is whether the output per capita of RSCI has or has not in fact grown. Even given the best of policy on the supply side, the RSCI may yet have not very respectable growth, due to stagnation of demand. Demand for RSCI products is basically a question of the growth of agricultural output per capita. The domain of public policy has therefore to be defined broadly such that it can impact upon not only supply but demand side of the situation as well. The record on the demand aspects of policy is quite dismal. The Bangladesh economy has been all but stagnant for a long period of time, mainly because of disappointing performance of the agricultural sector, the largest one in the economy. The rate of growth of agricultural output has lagged behind the growth rate of population between 1951 and 1985 [14]. Of course, the period since 1975 has witnessed a more vigorous agricultural output performance, in that value added there grew at 3.7% per year as compared with population growth rate of 2.5%. Massive rural poverty has nonetheless persisted. Recent research put the poverty ratio at between two—thirds and three—fourths. Such gloomy poverty estimates are disturbingly underlain by gloomier trends
regarding landlessness and land marginalisation. About 50% of rural households in Bangladesh are landless and do not gain directly from land-based development programmes. Population pressure is continuing to mount, thus leading to fragmentation of already unviable units, to still further landlessness.

One may wish to ask what was happening to the distribution of income in rural areas. It is possible in principle that, while poverty ratios were dismally high, redistribution of incomes was still, taking place. No relief on this score however is forth-coming from the information presented in Table 5. We find that the distribution of income has been quite significantly fluctuating from one year to the next. But there is no indication whatever of its declining over the period examined. If anything the rural income distribution was probably getting more unequal during this period.

It is small wonder therefore that recent research into the determinants of demand for rural industry products has established that such demand is severely limited by the current low levels of income itself [19]. This study also has shown that, as far as rural population is concerned, rural industry products are invariably not inferior goods and even that, in general, rural industry products have an edge over substitute products in terms of either elasticity, or marginal budget share, or both. To quote elaborately from this important paper: Thus it is likely that demand will expand considerably with rising income levels of income - at least up to the highest levels of income currently observed in the rural areas. Handloom products have a high elasticity of demand; and although the substitutes have an even higher elasticity, the marginal budget share of handloom products is very much larger even at very high income levels, so that any threat from substitutes is still very far off along the income scale [19; 34]. The problem of the stimulation of rural industrialisation is now seen to be thoroughly bound up with the wider problem of a transformation of Bangladesh's agriculture. Given that 50% of rural population are landless, while the top 8.7% own nearly half the land, transforming the growth performance of Bangladesh agriculture appears predicated on two organisationally difficult problems: the expansion of the area under the seed-water-technology, and how to improve the distribution of access to land and its benefits. Without rapid progress on these two scores, the future of rural industrialisation appears to be one of a slow, fitful passage through time and absolute backwardness. We may therefore say that public policy

8. This may only rarely be observed in reality. Suppose the government were creaming off from the incomes of households in the top deciles and redistributing such incomes directly to the households in the lowest deciles, income distribution would improve without, at least for a time, lowering poverty ratios. Improvement of the distribution of incomes would likely stimulate demand for rural industry products at any given level of income.
concerned with broad-based growth in incomes and demand in general for rural industry products has largely failed.\footnote{There remains the category of stimulation of demand for RSCI products via product modernisation. This is part of policy on the supply side, which is taken up next.}

The Ministry of Industries is ultimately responsible for making of small industries policies. The ministry, however, has its operating arm in this area in the Bangladesh Small and Cottage Industries Corporation (BSCIC), an autonomous body originally set up in 1957. One of the cardinal principles conditioning policy framework for SCIs in Bangladesh has been the proposition that it is more appropriate to seek to stimulate their viability via improvement of services than in terms of differential incentives for the units in that sector. Another has been the proposition that there had better be a division of labour as between the BSCIC and the banks in the following sense. While the banks would play a focal role in terms of financing SCIs— in other words, they would appraise, monitor and supervise loans — within selected sectors, the BSCIC would mainly play a support role in terms of establishment of common service facilities, accommodation of clients on utility — inclusive project sites, etc. A third principle of policy in this specific

\begin{table}
\centering
\begin{tabular}{|l|c|c|c|c|c|}
\hline
\hline
1 & 2 & 3 & 4 & 5 \\
\hline
Bottom 20\% & 12.2 & 9.2 & 12.1 & 9.6 \\
3rd & 4th decile & 15.8 & 10.7 & 14.1 & 11.5 \\
5th & 6th decile & 17.9 & 12.3 & 16.1 & 13.5 \\
7th & 8th decile & 20.9 & 14.6 & 19.1 & 18.6 \\
Top 20\% & 33.2 & 53.1 & 38.4 & 46.6 \\
Top 10\% & 20.4 & 42.9 & 26.3 & 36.7 \\
\hline
Gini coefficient & 0.20 & 0.40 & 0.25 & 0.36 \\
\hline
\end{tabular}
\caption{Distribution of Real Rural Income Per Capita in Various Years}
\end{table}

Note: Expenditure size categories were the basis for computations of decile shares in per capita income in real terms. In order to deflate average incomes in various years, general consumer price index for rural households with 1973/4 as the basis, published by Bangladesh Bureau of Statistics from 1976/7 onwards were interpolated for 1976/7 and 1977/8. The need to deflate nominal average incomes arose because we wished to use expenditure size classes as the basis for depicting the distribution of real average incomes. The exercise of the interpolation of the rural consumer price index, done for five group of commodities and for the general index, was originally motivated by a study of behaviour of real savings of rural and urban households [5]. Gini coefficient computed using real incomes has been found to be lower than when nominal incomes are used [10, Table 3 and 4].
area has been that, while the development of physical infrastructure, e.g., industrial estates etc., by the BSCIC forms an integral part of its domain, an equally vital part of the same lies in the function of gathering and then publicising information pertaining to the prospects of investment in various SCI sub-sectors, in order for investment by private sponsors to be channelised thereinto. A fourth category of forces, albeit never made explicit, that has nevertheless palpably conditioned policy framework embracing the prioritisation of SCIs relates to the political economy of policy-making. In particular, one has here to take conscious heed of the fact that policies in contemporary Bangladesh, as indeed elsewhere, are made in the context provided by the presence of vested interest groups and the material interests associated with them. It is indubitable that economic power is heavily concentrated in the reach of those actors associated with the large industry and the trade and finance that is functionally cognate to it, and that large-scale enterprises have been the focal point of the material interests of the economic elites of Bangladesh. These elites form a reasonably homogeneous group, much of which is locationally concentrated within the major cities. These have close access to the nerve centres of industrial policy-making. They often have similar cultural roots as those of the top economic policy-makers of the country. Again, in matters of the material interests, there is frequently essential compatibility as between indigenous industrial and financial entrepreneurs on the one hand, and the representatives of the major oligopolies abroad which manufacture plant machinery and other hardware of technology, on the other. As it turns out, the pressure point for this sizeable axis is the aspect of policy-making concerning the financing of large-scale industry. A very considerable part of the scarce administrative, entrepreneurial and managerial resources available within the government, industry and trade in Bangladesh get invariably bound up with the allocation of resources into, and the division of fruits from, large-scale industry.

The result of this morphology of policy-making is that the cause of the rest of the industrial sector, namely small and cottage industries goes by default. Occasional rhetoric rather than systematic pursuit of well-defined goals, passive redressels of princious consequences of imbalances engendered by over-enthusiastic policies pursued for competing large-scale industries rather than an active and creative championing of the cause of SCIs as a device for transforming Bangladesh’s vast countryside has become the chief characteristics of policy-making for

10. The Third Plan document quite candidly report, “Small and Cottage Industries contribute about 50% of the value added in manufacturing but they remain largely unattended”. And then, in a vein that is suggestive of step-motherly indifference, the report goes on to add, “There sheer number and dispersal pattern make their continuous monitoring difficult, costly and their needs indeterminate”. The last statement about dispersal pattern needs to be qualified in that major cottage industries tend to be heavily concentrated, locationally. [14]
SCIs in Bangladesh. Policies for them are made with the same apathy as the stigma that attaches to the manual work associated with the ownership of some of the most intensive rural SCIs. Aply has it been said, not in an altogether unrelated context: small and cottage industry has been the step-child of economic policy in Bangladesh.

The above presents a fair description of the basic axioms and forces which shape the overall policy framework. This is not the place for an assessment of the consequences of this policy paradigm in very specific terms. We can only hope to present in quite broad terms some of the more well-established conclusions that have been made by other researchers in this area.

It has been argued that the duality of function as between the BSCIC and the banks leaves something to be desired in two senses. First, the leaving of the financing of SCIs to the profit-maximising instincts of commercial banks, whether nationalised or not; has most likely resulted in a pattern of lending which is not so much "production-oriented", as it ought to be; as "security-oriented" [1]. Banking considerations which give pre-eminence to collateral also play into the hands of the rural rich which, while being a good thing in itself, is nevertheless undesirable from the viewpoint of income distribution and, at a further remove, that of the composition of demand in relation to the possibilities of production within the SCIs. Secondly, the division of labour as between the BSCIC and the bank creates an on-going and self-justifying basis for keeping the BSCIC on a relatively subsidiary position of being an institutional advisor of sorts, while the banks enjoy a powerful mandate over allocation of resources for the not very persuasive reason that they happen to have the resources to lend at their disposal.

The result is that there is no mechanism in this divided system for an attempt to devsell and mesh priorities, and so coordinate the two broad types of action—viz. the financial and the extension—which are necessitated by the stimulation of SCIs. There is therefore no built-in incentive nor necessity to appraise the action of both sets of actors on this stage; namely BSCIC and the banks; on the basis of consistent criteria. As a result, banks can go on funneling loans into "credit-worthy ventures" without much reference to the imperatives before a meaningful development of SCIs. On the other hand, the BSCIC can go on developing land for proposed industrial estates and preparing feasibility studies both to be essentially divorced from the provision of the requisite complementary financial input in favour of the private sponsors. It is of course true that BSCIC has in the recent past had a relatively modest credit line; called Special Credit Programme, for disbursements according to its own rules of screening. But this is peanuts compared with the amounts that the commercial banks have been disbursing under the aegis of several donor agencies, e.g. the IDA, NORAD, DANIDA, IFAD; etc. We would like to recommend that BSCIC's access to loanable resources for on-lending to certain selected sectors be enhanced.
But this has to be coupled with appropriate changes involving recruitment and training, and with a more specific sectoral prioritisation about the scope and nature of the involvement of BSCIC within the promotion of BSCICs.

It has been foreshadowed in the above observations that BSCIC’s activities have largely been of a general variety, and lacked a sectoral orientation. Even more to the point for the purposes of this paper, they have lacked a focus on the requirements of the improvement of consumer reception relating to specific products of RSCIs. For example, there is very little in the otherwise impressive list of the functions of BSCIC to suggest the presence of any serious effort bearing on the upgrading of products or the introduction of new products with a view to stimulating the demand prospects for them. It is true of course that BSCIC has been instrumental in selling up several common facilities centres (CFCs), particularly within the more important of the country’s handloom concentrations. In fairness to BSCIC, it may be claimed with some justification that the establishment of these CFCs was premised upon a recognition that product quality was important, and that centralisation of some design-related aspects of production was seen as one of the ways of attending to the needs of improvement of product quality. There are, however, two qualifications to this line of reasoning. First, activities relating to the CFCs have to be seen as a fairly minor item within the context of BSCIC operative priorities. Secondly, it can be argued that the establishment of the CFCs was premised not so much upon a desire to improve the quality of a specified type of product of SCIs as upon a desire to augment, generically speaking, the available capacity of a defined geographical area for supplying a certain type of commodity. Although it is virtually impossible to establish this beyond doubt, the burden of what is known about the basic thrust of this organisation leaves us in no doubt that a concern for ensuring a comprehensive support networks rather than a specific concern with the problems of demand was responsible for the creation of the CFCs.

It is the BSCIC-UNDP-LO and the BSCIC-DANIDA projects which, in stressing the brief for the promotion of viable types of RSCIs, have in more recent years brought the question of product quality and design on to their deserved prominence in discussing programme contents and thrust. For example, product development is the thrust of the second phase of the on-going ILO-BSCIC project on cottage industries development. This project focuses on two categories of products for possible development: (a) handicrafts and cottage industries products for the local market; (b) handicrafts for the export market. In the first category, the following broad groups have been included:

i) Fibres and textiles, like low priced garments, cloth for house furnishing etc.

ii) Cane and bamboo products, like furniture and other home decorative pieces.
iii) Clay products

iv) Leather and leather goods

v) Metal products

vi) Wood products

vii) Food processing

viii) Medicinal herbs and plants

The items included for attempted development in the second category may include the following:

i) Jute carpets and tapestries

ii) Basketry

iii) Decorative wooden products including wood carving and wood inlay

iv) Embroidered textile items including nakshikantha

v) Cane and bamboo products

vi) Ceramics products

vii) Leather products

viii) Traditional dolls

Within the framework of the project, which has involved four districts of the country namely Rangpur, Dinajpur, Comilla and Noakhali, the expertise of three expatriate consultants and some expatriate master-craftsmen are envisaged to be made available over approximately two-year period ending on the end of June 1985 to selected clusters of craftsmen in these four districts. The selection of product grouping within the possible scope for development would appear to be a quite sensible one, in view of the prevailing pattern of cottage industry capabilities, as also the prospects of where the winners of tomorrow may be sold with relative ease.

That the above list is a comprehensive is also suggested by the fact that all four of the areas which the DANIDA-BSUIC project is largely woven around are subsumed within it. In Feni, the DANIDA has undertaken or is about to undertake product development in the following categories:

i) Clay products, ceramics

ii) Coir fibre processing

iii) Cane-bamboo products

iv) Leather processing, vegetable tanning, including leather goods
The whole point being made here is about the importance accorded recently to the considerations of market viability and substitution possibilities in consumption in formulating programme steps. It is too early to seek to appraise the successes of these projects; in fact, in this paper, we have assiduously avoided anything by way of appraising any aspects of the activities of the RSCIC-ILO project. This was done because the overall project has just completed its course. This project has thus to its credit that it represents a watershed in the history of public policy towards RSCIs in its very explicit recognition of the central importance of product development/upgradation in programme formulation.

In sum, then; we may say that product development or upgradation has become an active ingredient of the contents of some selected public-sector projects undertaken within the RSCIs. However, the effort is still at an elementary level, organisationally speaking. Artisans within certain craft-clusters have just been trained in the requisite skills. Use of improved tools has also been imparted. The potential of these improved skills and tools, in terms of possibilities of increased earnings has also been seized by participants while in training. A favourable climate as regards adoption may have indeed been created. However, all of these does not warrant the assertion that all or many among those trained have stuck to the production of upgraded products. The acquisition of improved tools; however simple, still requires some cash. Even some cash may still elude the reach of many very impoverished artisans in ways that many urban people may be unable to readily appreciate. During our field enquiries, on several occasions artisans admitted to have received the training but then to having practically abandoned the improved method, whether due to high transaction costs of obtaining accommodation by the banks or due to inability to sustain initial losses arising from slow customer reception. Product upgradation, like development of new product or new processes is bound to be a slow process, by no means immune from reverses. The process; once put on, thus deserves to be followed through in terms of appropriate field-level contact and re-motivation. The frustrated artisans in the pottery sector we had met at Bijayanagar, Comilla, who had reverted to traditional pottery in exclusion to glazed pottery typify this class of problem. The abortive adoption of an improved practice arose due not so much to lack of training or the tools as from a shortage of working capital accommodation. This highlights the fact that successful product upgradation is not a matter of technology or skills alone; it is also a matter of creatively allocation credit, and of maintaining close field level follow through. All we may say is that the modest beginnings of concerted public policy leading towards product upgradation have been made. Time will soon come for conducting objective impact studies bearing upon the target clusters as compared with non-target clusters.

A further fact of policy-making in matters of RSCIs is about the multi-layered institutional framework. Of course we have attention to BSCIC, but there are quite a number of other institutions dealing with the stimulation of rural SCIs.
The Bangladesh Handloom Board is exclusively entrusted with the handloom industry, whether urban or rural. Bangladesh Sericulture Board is likewise changed with the development of seri-and eri-culture. Besides, several other government and semi-government agencies are concerned with the development of rural industries. In this regard, mention may be made of (a) the Deptt. of Social Welfare, under the Ministry of Labour; (b) the Ministry of Women Affairs; (c) the Integrated Rural Development Programme (IRDP), works which, beside its primary function, also in the handloom sector through the media of the cooperative societies; (d) the 'Self-reliance' programme under the 'Swanirvar' division of the ministry of Rural development. Most of the efforts taking place under (a), (c) and (d) are now concentrated in rural areas. Quite naturally, a not inconsiderable sum of money is being spent annually on these activities. The problem however is that given the multiplicity of the sources of initiative, efforts arising from different sources are not well-coordinated, as there is no really effective superior forum that can coordinate policy and functions of the different ministries. As must be already apparent, while the Handloom Board was created in 1978 to be specifically accountable for the handlooms, the IRDP has at the same time been involved in the same area by its own head quarter. It is almost certain that there are overlaps in what both are doing while some other equally pressing needs may be going unattended.

It is beyond the scope of this paper to present a full blown evaluation of public policy towards rural SCIs. Some recent work has sought to evaluation one or two components of small and cottage industry programmes, especially financial assistance [1, 22]. These researches have identified most of the major supply-side problem areas for RSCI. These may be listed as follows: (i) lack of accommodation with institutional sources of credit; (ii) unequal economic exchange in raw material markets; (iii) lack of technological modernisation embodied in the stock of capital; (iv) lack of exposure to technical and market-related information; (v) product design and finishing deficiencies; (vi) highly seasonal nature of occupation; (vii) lack of centralised processing facilities; (viii) informal nature of management; (ix) unfavourable situation in marketing of the output. What we plan to do now is present a framework of analysis in a quantitative tradition in order to isolate certain explanatory variables which can impact upon the absolute size of RSCI, as also to establish some ordering among those variables in terms of the extent of their influence. This is the task on our hands in the next section. Before proceed any further, let us note that the dependent variable is real output per capita of SCIs of districts in Bangladesh during 1977/8 through 1981/2. It will be quite safe to assume that the greater portion of the output of SCIs in fact originates in the rural areas.

IV. Factors Influencing The RSCIs in Bangladesh.

This is a casual framework. We assume that per capita output of RSCIs depends on the demand side on per capita district product. Instead of looking at the effect of total district product, it may be more insightful to
examine the individual effects of sectoral district products. We do in fact distinguish between (i) agricultural product (ii) product of large scale industry and (iii) value added arising from trade, construction and utilities sub-sector. Why we are interested in the effects of farm product should be self-evident. We are interested in looking at the effect of the output of the large industry so as to form a notion whether there is any trade off between expansion of the output of large versus small industries. We are interested in the effect of the value added of the trade construction and utilities sector because the labour-intensities prevailing in these sectors, with the exception of the generation of electricity, have been understood to be higher than those in large-scale manufacturing. It will obviously be of some interest to look at the relative coefficients on RSCI functions corresponding to these three components of the district economy. A look at comparative elasticities of RSCI output with respect to these three income concepts would yield the desired comparisons.

So much for the demand side variables. On the supply side, we have real institutional credit per capita. We expect a significant positive coefficient here. There is a subtle methodological point of considerable importance here. There is a duality involved in the nature of rural advances at hand. Agricultural production and non-agricultural advances are both involved. In fact, in the period we are concerned with, non-agricultural production advances were the dominant part of advances. Such advances went mainly to financing of trade in agricultural commodities, rural SCIS, and rural infrastructure financing. The agriculture advances are directed to farming operations. Now the effect of an increase in real volume of credit may, in the short and medium run, raise the level of output where the availability of working capital may constrain output level. In doing so, it, on the one hand increases the demand for RSCI products via demand expansion and, on the other, increases the volume of production of the RSCI. \(11\) Availability of real volume of credit thus is simultaneously a demand - as also a supply side influence.

We have noted that improvement of infrastructure has in other countries had important supply-side effects on the existence and viability of SCIs. We have used the extent of rural electrification at the district level as a supply variable. This variable is measured by the percentage of the villages in a district with electricity. The second infrastructural variable has been measured by the percentage of villages in the district having primary markets. Finally, we have sought to embrace possible cultural variation.

\(11\) Where profit and loss sharing or Islamic banking is prevalent and Bangladesh now has an Islamic Bank that has courageously set out to operate on Islamic principles-interest-bearing credit would have to be replaced by profit-seeking equity participation; courageously because it is a pioneering effort. The effect being talked about is the same whether it is interest-seeking credit or profit-seeking equity.
among districts. This is measured by adult literacy rate. Educational level is presumably a major influence on the level of training and the availability of managerial and technical skills. Ideally, this ought to have been measured by average educational accomplishment. Unfortunately, the relevant data is not as yet available. We have used district level literacy rate as a proxy for that preferred variable.

We expect positive coefficient on income variables, except on the large industry variable. The latter variable may have a negative coefficient if large industry and SCIs are mutually exclusive. (That incidently is very unlikely to happen). We expect a positive coefficient on the real credit variable. Rural electrification may have a negative coefficient if access to electricity leads, for example, to the proliferation of electrified large-scale rice milling facilities which throws out of action small scale steel hullers. Or if, as has happened more conspicuously, it leads to setting up of oil mills which force closure upon ghanis.

So far we have described the independent variables and the possible direction of their causation relative to the dependent variable. One quick word about methodology. The variables have, whenever necessary been converted into real categories by using suitable district level price indices. Now the results Table 6 through 8 present the estimated regression coefficients when linear models were used. Table 9 presents the estimated elasticities. While, in the first set of tables, the quinquennium is segmented into two periods, Table 9 is presented for the whole period. The point of using two periods in the first set of table is to probe for any noticeable break in the pattern or the strength of the causality observed. We shall mainly comment on the overall relationship in Table 8 and then briefly return to Tables 6 and 7.

The first thing we note is that the income variable offering by itself the best explanation of the output of RSCI is the value added in trade, utility construction sector of the economy. This variable has the highest $R^2$ in the entire table. An increase of Tk. 1 in its average output results in an increase of Tk. 0.32 in the RSCI output. The next best singular explanation is provided by the agricultural product variable. But coefficient is much smaller, 0.08 Tk. per unit increase. A pleasantly surprising finding is about the strong complementarity between the output of large and small scale industry. This is surprising because it was not discovered before: it is intuitively very plausible. After all, there are some major linkages between large industry and the RSCIs, of which handloom activity, light engineering workshops, bakery and sweetmeat making, sawing and tailoring are apt specimens. And, equally aptly, there is income-inducing linkages operating through the demand side as well.

On our supply-side variables, the availability of real volume of credit is quantitatively a large influence of the RSCI output. Educational levels positively affect RSCIs. A bit queerly, both infrastructural variables have
negative coefficients, none of them significant, however. (This electrification variable neutralises these surprises when we take up Table 9).

When we compare Tables 6 and 7, we note just two differences. The first is that while electrification variable has a significant and negative coefficient wherever it appears with the farm product variable in the first three years, the coefficient becomes positive in the last two years. The moral, if any, should only be conservatively drawn, namely that rural electrification has an indeterminate absolute effect. The second difference has to do with the magnitudes of the coefficients and the strength of the relationship. Note that in all the equation estimated, the coefficients estimated for the first three years were, with the exception of electrification and primary market variable, higher than in the second subperiod. Another aspect to this difference is that the strength of the relationship \( R^2 \) has improved in the second period wherever agricultural product is an independent variable, while the strength of the relationship \( R^2 \) has deteriorated in the second period wherever the other two components of district income had appeared. We do not know what this really means. We can only offer a speculation.

Table 10 presents year-on-year rate of change in the sectoral product. Out of three years, two of the first periods were below average farming years. Besides, 1978/9 was the year of an unprecedented drought. In contrast, the last two years have witnessed a new plateau of the level of farm production, due to the record rice crop performance of 1980/1. There is hence a notable improvement of agricultural performance in the second subperiod. In contrast, construction, utilities and trade sector had grown very rapidly during the first subperiod while they have lagged relatively in the second. It can be said with some justification perhaps that while in the first subperiod, the growth of the RSCI was largely induced by favourable growth performance of the large industry and services sector. We have already seen that income expansion in two types of activities, absolutely, stimulate greater expansion of RSCI output. Hence the larger individual coefficients and the respectable \( R^2 \) on these categories in the first subperiod. In the second subperiod, however, the greater burden of inducing growth RSCI has devolved on agricultural growth. But because of the heterogeneous nature of the agriculture output, its income linkages with RSCIs, absolutely, is not all that great. Hence perhaps the fall in the coefficients of the second subperiod.
Table 6
Regressing Per Capita Small-Scale Industry Output at District Level, Bangladesh, 1977-8-1979-80

<table>
<thead>
<tr>
<th>Sl. No</th>
<th>Const. term</th>
<th>Per capita real agricultural output</th>
<th>Per capita real output from large industry</th>
<th>Per capita real value added in power, trade and construction</th>
<th>Rural electrification</th>
<th>Depth of primary market system</th>
<th>Adult literacy rate</th>
<th>Real advances per capita</th>
<th>R²</th>
<th>Sl. No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>-37.9</td>
<td>+0.11</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.43</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(6.3)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>-31.0</td>
<td>+0.13</td>
<td></td>
<td></td>
<td>-2.33</td>
<td>(30)</td>
<td></td>
<td></td>
<td></td>
<td>0.50</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(7.3)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>9.51</td>
<td></td>
<td>+0.36</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.31</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(7.8)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>-14.8</td>
<td></td>
<td>+0.43</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.86</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(19.4)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>-14.4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.80</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(15.5)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>-57.9</td>
<td>+0.13</td>
<td></td>
<td></td>
<td>-2.31</td>
<td>-0.54</td>
<td>+1.53</td>
<td></td>
<td></td>
<td>0.49</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(7.8)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sl. No</td>
<td>Constant term</td>
<td>Per capita real agricultural output</td>
<td>Per capita real output from large industry</td>
<td>Per capita real value added in power, trade and construction</td>
<td>Rural electrification</td>
<td>Depth of primary market system</td>
<td>Adult literacy rate</td>
<td>Real rural advance per capita</td>
<td>R²</td>
<td>Sl No</td>
</tr>
<tr>
<td>-------</td>
<td>---------------</td>
<td>-----------------------------------</td>
<td>------------------------------------------</td>
<td>----------------------------------------------------------</td>
<td>---------------------</td>
<td>----------------------------</td>
<td>-----------------</td>
<td>----------------------------</td>
<td>-----</td>
<td>-------</td>
</tr>
<tr>
<td>1</td>
<td>6.62</td>
<td>+ 0.054</td>
<td></td>
<td></td>
<td>+ 1.38</td>
<td>(1.4)</td>
<td></td>
<td></td>
<td>0.52</td>
<td>1.</td>
</tr>
<tr>
<td>2</td>
<td>-5.1</td>
<td>+ 0.056</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.63</td>
<td>2.</td>
</tr>
<tr>
<td>3</td>
<td>19.6</td>
<td>- 0.37</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.40</td>
<td>3.</td>
</tr>
<tr>
<td>4</td>
<td>5.6</td>
<td></td>
<td></td>
<td></td>
<td>+ 0.20</td>
<td>(5.2)</td>
<td></td>
<td></td>
<td>0.56</td>
<td>4.</td>
</tr>
<tr>
<td>5</td>
<td>23.1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.56</td>
<td>5.</td>
</tr>
<tr>
<td>6</td>
<td>-20.9</td>
<td>+ 0.056</td>
<td></td>
<td></td>
<td>+ 1.64</td>
<td>(10.2)</td>
<td></td>
<td></td>
<td>0.63</td>
<td>6.</td>
</tr>
</tbody>
</table>

Note: For methodology, see text. R values are in parentheses.
Source: BBS, District Statistics for various districts, for district-level economic product data and information on sale, (6) through (8). Figures in col. 9 were obtained from Bangladesh Bank, Scheduled Bank Statistics, Various Issues. This also applies to Table 6 and 8 as well.
<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Constant term</th>
<th>Per capita real farm product</th>
<th>Per capita real large industry output</th>
<th>Per capita real value added of trade, construction</th>
<th>Rural electrification</th>
<th>Depth of primary market system</th>
<th>Adult literacy rate</th>
<th>Per capita rural advances</th>
<th>R²</th>
<th>Sl. No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>-9.9</td>
<td>+0.08</td>
<td></td>
<td></td>
<td>-1.04</td>
<td></td>
<td></td>
<td></td>
<td>0.41</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>-3.3</td>
<td>+0.078</td>
<td></td>
<td></td>
<td>-1.04</td>
<td></td>
<td></td>
<td></td>
<td>0.42</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>14.1</td>
<td></td>
<td>+0.74</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.32</td>
<td>3</td>
</tr>
<tr>
<td>4</td>
<td>-6.0</td>
<td></td>
<td>0.32</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.72</td>
<td>4</td>
</tr>
<tr>
<td>5</td>
<td>24.8</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.32</td>
<td>5</td>
</tr>
<tr>
<td>6</td>
<td>-19.4</td>
<td>+0.078</td>
<td></td>
<td></td>
<td>-0.98</td>
<td>-0.79</td>
<td>1.17</td>
<td></td>
<td>0.42</td>
<td>6</td>
</tr>
</tbody>
</table>

Table 8
Explaining Per Capita Real Small-scale Industry Output, Bangladesh, 1977/8 - 1981/2
<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Constant term</th>
<th>Real agricultural product per capita</th>
<th>Real industry output per capita</th>
<th>Real output in trade and services per capita</th>
<th>Rural population density</th>
<th>Rural adult literacy</th>
<th>Total adult literacy</th>
<th>Urban density</th>
<th>Total adult literacy</th>
<th>Total adult literacy</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>-3.12</td>
<td>0.57</td>
<td>-1.38</td>
<td>+0.28</td>
<td>0.34</td>
<td>0.37</td>
<td>0.42</td>
<td>0.54</td>
<td>0.44</td>
<td>0.41</td>
</tr>
<tr>
<td>2</td>
<td>-3.77</td>
<td>1.13</td>
<td>+0.52</td>
<td>0.50</td>
<td>0.54</td>
<td>0.44</td>
<td>0.41</td>
<td>0.53</td>
<td>0.44</td>
<td>0.41</td>
</tr>
<tr>
<td>3</td>
<td>1.82</td>
<td>-1.77</td>
<td>0.57</td>
<td>+0.97</td>
<td>(0.85)</td>
<td>(0.9)</td>
<td>(0.9)</td>
<td>(0.8)</td>
<td>(0.9)</td>
<td>(0.9)</td>
</tr>
<tr>
<td>4</td>
<td>-1.53</td>
<td>0.74</td>
<td>+0.15</td>
<td>-0.41</td>
<td>(2.8)</td>
<td>(2.6)</td>
<td>(2.0)</td>
<td>(2.8)</td>
<td>(2.6)</td>
<td>(2.6)</td>
</tr>
<tr>
<td>5</td>
<td>-5.70</td>
<td>1.06</td>
<td>-1.05</td>
<td>+0.88</td>
<td>(1.6)</td>
<td>(1.6)</td>
<td>(1.6)</td>
<td>(1.6)</td>
<td>(1.6)</td>
<td>(1.6)</td>
</tr>
<tr>
<td>6</td>
<td>-5.70</td>
<td>1.06</td>
<td>-1.05</td>
<td>+0.88</td>
<td>(1.6)</td>
<td>(1.6)</td>
<td>(1.6)</td>
<td>(1.6)</td>
<td>(1.6)</td>
<td>(1.6)</td>
</tr>
</tbody>
</table>
Table 10
Year-on-year Rate of Change of Real Sectoral Output (All Bangladesh)
(Constant 1972/3 prices)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>over</td>
<td>over</td>
<td>over</td>
<td>over</td>
</tr>
<tr>
<td></td>
<td>1977/8</td>
<td>1978/9</td>
<td>1979/80</td>
<td>1980/1</td>
</tr>
<tr>
<td>Agriculture</td>
<td>-0.4</td>
<td>0.1</td>
<td>5.5</td>
<td>-0.7</td>
</tr>
<tr>
<td>Large industry</td>
<td>6.0</td>
<td>0.2</td>
<td>8.2</td>
<td>0.3</td>
</tr>
<tr>
<td>Construction, trade</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>utilities, transport</td>
<td>13.0</td>
<td>11.6</td>
<td>2.4</td>
<td>4.1</td>
</tr>
</tbody>
</table>


Whatever may be the effects of various income categories in absolute terms (Tables 6-8), the picture about elasticities re-establishes the conventional wisdom. We now find what agricultural growth in the most conducive to RSCI development because the elasticity is the highest with respect to the agricultural income. Construction and trade incomes, too, have a similar elasticity. Both electrification and educational levels have returned significant positive elasticities.

What can we say about the strategy of rural industrialisation in Bangladesh? For one thing, growth of incomes especially in the agricultural and construction/trade sector offers significant promise as contributors to the expansion of RSCI output. At this point, the problem of the development of the RSCI shades off into the wider strategy of securing an agricultural transformation. Improvement in access to the ownership of operation of land are, therefore, among great strategic significance in this context. One realises of course how difficult are problems of political will and effective post-reform organisation raised by efficacious land reform. But surely reforms in the tenancy market, improving small and marginal farmer’s access to the product and input markets as well the terms of exchange prevailing therein, etc. are still possible. Again, for landless workers, giving land—augmenting technology, especially the area under modern irrigation and HYV greater ground amount to income redistribution via the generation of employment. Again, it may be necessary to support the incomes of especially poor rural households by stimulating investment in social forestry, communal fishery projects, as also through the mobilisation of unemployed labour time in short–gestation income generating activities that do not require elaborate facilities, like back–yard poultry–raising, kitchen garden, inhouse horticulture and things of that sort. In short, the strategy for stimulating the agricultural income generation must involve, measures that expand productive employment in crop and non–crop agriculture, and measures that enliven the productive role within crop
and non-crop agriculture of small and marginal farmers, as also a firm dedication to poverty alleviation.

On the supply side, we would like to make one negative observation at the very outset. There is a particular type of policy instrument that ostensibly purports to beneficially affect rural industrialisation but has had, to all intent and purposes, doubtful results. We have in mind here the various incentives which have been allowed so as to encourage geographical dispersal of industries. The incentives to promote investments in the less developed areas are frequently having perverse effects. New units are being set up in locations close to Dhaka, and yet sufficiently far away so as still to qualify for incentives for investment in less developed areas. Again, machinery imported under concessory terms are resold in the market. Why such harmful effects flow from presumably well-meaning policies is quite understandable, remembering that average costs of operating far away from the major industrial centres (enjoying benefits of industrial agglomeration, for example) are much higher, despite possibly lower wages in those areas of dispersal, than would be within those major centres. For many industries, it is going to take many years of investment in physical infrastructure, things like reliable power supply, transport and communication, before the gap between Dhaka, Chittagong and Khulna on the one hand, and the mofussil areas can be bridged. The motive behind the incentives is that eliminating the trade taxes on imported plant and machinery more than offsets the higher unit costs associated with location in un-industrialised sites including higher costs of raw materials, for example. The policy has not therefore paid off. Although a good deal of imports of plant and machinery, especially in the Wage Earner Scheme market, have gotten into the country on payment of concessory rates of duty due to location in backward areas, it is common knowledge that they have led to little, if any, rural industrialisation. Plants and equipments have frequently been sold at profitable prices. This policy should be very carefully evaluated before long.

Our own results have of course highlighted the availability of real volume of finance as major contributor to the growth of RSCI. Considering, for the moment, what kind of new investment in RSCI should equity and credit be funneled into, the important question is to ask what industrial activities are naturally suitable for organisation on cottage or small basis and yet can very sensibly be located in rural areas? The industries that are sensibly located in rural areas are those which serve local markets, and/or those that exploit local raw material resources which preferably have to be processed close to where they are produced or extracted. The more improved are rural transport system ensuring ready and low cost communication at desired parts of the year, the greater is the likelihood of having powered rural industry, within rural towns or market places. The greater perhaps is the possibility of having rural industry turning out its output at lower costs, and of having a market larger than the local.
Processing of food, fruits, fish, vegetables comes to the mind immediately as the types which satisfy the criteria stated just now about the raw material rationale about selection of rural industries. These, too, are the commodities which any reasonable agricultural transformation in the country is likely to expand supply of on a broad basis. Allocation of equity or credit to the RSCI should start to give priority to these sectors. Another industry which is labour- and skill-intensive, easily locatable in rural areas, and can produce products of extensive rural markets are light engineering workshops. These workshops are defined so that they have metal cutting as well as machining facilities. These will enable those enterprises to attend to a large range of manufacturing and repair jobs, and their presence is crucial if the level of technology prevailing within rural areas has to increase. Engineering workshops have, in historical perspective, been the cradle of many technology breakthroughs. A rigorous small-scale rural engineering and the presence within it of competent, trained workforce and managers is essential if the traditional technologies of RSCI have to be indigenously improved.

Our results suggest that electrification and education are two factors positively impacting on the state of RSCIs. As for the latter, although we have used literacy rate as an educational proxy, what is important is the spread of functional education, including literacy and numeracy.

REFERENCES

POPULATION, MANPOWER AND HEALTH

The Treatment of Employment in the Third Five Year Plan Model Results and Current Activities*

By SALAHUDDIN AHMAD BOHUSLAV HERMAN WILLEM VAN DER GEEST MUSTAFA K. MUJERI

Introduction

The paper discusses methodology and results of the analysis of employment made with the applied general equilibrium model for the Third Five Year Plan of Bangladesh (1986-1990). For the first time a comprehensive labour demand estimate was prepared which covers 42 sectors (17 in agriculture, forestry, livestock and fishery, 14 in industry and 11 in construction, energy and services). If observations were available changes of labour productivity over time (if any) were introduced in the projections. Due to paucity of data and absence of longitudinal studies labour demand has been assumed constant with respect to value added (construction and services) or acreage under a specific crop (agriculture) in more cases than desirable. However, a fixed demand for labour in terms of man-years to produce a certain value of production or cultivate a certain acreage does not necessarily imply a fixed number of jobs; managerial efficiency could reduce underemployment prevailing in the country.

In a general equilibrium model solutions are derived through clearance, within each period, of product and factor markets, treating products and factors under the same organizing principle (market clearance through equating supply and demand). To treat the labour market as a "clearing"*

* The paper was prepared under a Technical Assistance Agreement between the Planning Commission and United Nations Department of Technical Cooperation for Development (UNDPTC). Constructive criticism by Dr. A.H. Suhail Ullah, Member, General Economics Division, Planning Commission and Dr. M. Kivser, General Consultant UNDPTC, are gratefully acknowledged. Valuable assistance has been provided by Mr. M.A. Rob (Assistant Chief) and Mr. Kabir Chowdhury (Research Officer) of the Planning Commission. The authors thank Mr. Sadeque Ahmed for typing the manuscript.
market in the context of Bangladesh would result in an 'equilibrium' wage for labour below the actual wage rates prevailing in the economy. It is precisely the characteristic of the labour surplus economy that actual wage levels (esp. for lowly skilled people) are very low (for large sections of the population at the barest minimum); however even at those low levels a large number of persons are without employment (however informal). The labour surplus is at the root of many of the social problems of the country and it is imperative to the model builder to analyse this and indicate the direction of changes taking place.

The first section of the paper outlines in a non-technical fashion how the applied general equilibrium model developed for the Third Five Year Plan (TFYP)[2] arrives at estimates of GDP for the medium term. The second and third sections discuss the related demand for labour (in man-years) derived with the TFYP model. Section 4 illustrates the labour market balances at aggregate level and section 5 presents the methodology which is presently being developed and expected to lead to a more refined analysis of the labour market.

I. The General Features of the TFYP Model

If the labour market is treated separately as a ‘factor market’ with surplus and deficits for different types of labourers (defined by different skill-levels), the general equilibrium model may be solved sequentially with respect to the labour market. In this way it is possible to treat the labour market through a separate model or ‘module’ which derives its solutions on the basis of sectoral production data supplied to it by the ‘main’ model. The outcomes of the labour market process themselves may constitute data with which the results of the production and distribution processes arrived at earlier can be reassessed.2

The first question which must be addressed is therefore how the applied general equilibrium (AGE) model endogenously derives sectoral production estimates. The main features of the AGE model specifically developed for the Third Five Year Plan of Bangladesh are that

(1) supply and demand functions are derived for all sectors and commodity prices are endogenously calculated,

(2) the agriculture and manufacturing sectors are treated as ‘non-10’ sectors; supply is determined by existing capacity and capacity bounds are exogenously set. For construction, services and energy the supply is—within certain bounds—determined by the level of effective demand. These

---

1 Such disequilibrium will lead to restriction of access to employment on the one hand and involution of distribution processes on the other. The first can, in the case of lowly skilled workers, not draw on differences in educational background and may to a large extent be arrived at through ‘ascribed’ criteria such as family-relationship, membership of particular organisations etc. The distribution processes within the family, within the village etc. may have strong ‘charity’ features and be characterised by extreme dependency of those at the receiving end. See also [1].

2 See section 5 for a discussion of an alternative approach.
sectors (labelled 10-sectors) adjust supply in response to Keynesian demand-management where as non-10 sectors respond through price adjustment [2,3].

(3) Commodity balances and budget constraints for each of the social classes (ten in total) and government are imposed for each period.

(4) Prices of imports and exports are exogenous and substitution of domestic products by imported ones (and vice versa) will only take place if domestic prices are above (below) those of imported goods (inclusive of taxes and trade and transport margins).

(5) The long-run constraints to the economy, determining the set of feasible growth rates, are the availability of land, qualified labour and investible resources. For the short and medium-run constraints may take another empirical form: the land constraint may be shown through the cost and gestation periods for irrigation and flood control whereas the investment constraint may appear as foreign exchange shortage and inelastic demand for export goods. Section 5 of this paper discusses how in the short and medium-term skilled labor may be constraining production possibilities.

Following the main factors we can arrive at a non-technical description of the working of the model. Agricultural supply is principally constrained by availability of land and depending on the net revenue per acre of a certain crop relative to the major competing crop scarce land gets allocated to crops. After calculation of the yields per acre (depending on input-intensities and initial achievements) it is possible to calculate production volumes. Non-agricultural supply (for non-10 sectors) depends on the utilisation of the existing capacity, the expansion of capacity undertaken with public and private investment (with appropriate gestation lags) and the depreciation of the capital stock.

The demand side is estimated in an "Almost Ideal Demand System" which specifies that demand for a commodity depends on the income position of the socio-economic class and the relative price of the commodity [2; Appendix iv. 5; 312-325]. With supply and demand functions separately specified the calculation of endogenous prices for all commodities can be made. Additional restrictions can be imposed to represent government price policy (e.g., ration prices as a percentage of open market prices etc.) or quantity constraints in the economy (i.e., capacity).

The treatment of foreign trade is such that substitution of domestic for foreign goods (or vice versa) may take place only if the price of domestic

---

3 The model distinguishes 17 agricultural and 25 non-agricultural sectors, 39 commodities, 11 sectors, three growing seasons and 6 land categories. Full description is in [2].

4 This is principally different from the analysis of the Second Five Year Plan which treats agricultural production with fixed 10 coefficients and without land constraint. See [4].
commodity is below that of the imported one. The price formation fully accounts for taxes and trade margins reflecting scarcity premia and supply restrictions. Thus prices of the domestic production have an upper-bound (competitive import level) and a lower-bound (competitive export level) within which domestic price formation can adjust. Given a set of international prices of all tradable commodities it is possible to demonstrate in which 'price-regime' the markets are. Changes of for example the domestic cost functions, the import price or taxation may lead to price variation and 'regime-switches' may occur. Given prices domestic demand and supply can be determined and excess of demand or supply lead to imports or exports. The model finds a set of prices which does not violate any constraints imposed on the model and clears all product markets.

The model requires a complete set of accounts incorporating expenditures and receipts by all social classes and government. The Social Accounting Matrix (SAM) prepared for 1976/77[8] provided these and an update was performed to incorporate recent data up to 1984/85 in as far as available. The SAM constitutes the basis for maintaining consistency in the income and expenditure accounts by socio-economic class. The explicit description of all the constituent elements of incomes allows budget constraints to be imposed (within each period).[9]

Government policy-instruments are exogenous to the model and reflect the intervention in the economy influencing incomes (i.e., through taxation and rationing), prices (i.e., tariffs, excise taxes) and thus consumption and production. The TFYP model is especially designed to simulate the outcomes of different scenarios which represents various (political) choices of government and to assess their feasibility and consistency.

A unique solution for all endogenous variables will be arrived at provided that a 'sufficient' number of government policies are set exogenously.[6] These include a balance of payments constraints, a public consumption target, a priority ranking for adjustments in government instruments, direct and indirect tax rates for sector and social classes, committed and flexible retaining volumes, transfer payments to various social classes and priorities.

5. On the expenditure side these are consumption, savings and taxes. On the income side these are from the production activities (for each sector) and transfers from government and abroad. The SAM was initially constructed for 1976/77 so for this year an independently observed Household Expenditure Survey, Agricultural Census and Input-Output Table were available and subsequently updated to 1980/81. After that the model takes over, calibrated against 1984/85 data for production, prices and balance of payments and other available data.

6. Uniqueness can be guaranteed through the rule that the default value for policy-parameters is its base-year value (unchanged policies).

7. Either direct through a maximum debt service ratio or indirect through the cost of interest and amortisation on foreign borrowing which are to be met within the government's budget constraint.
in land development. In addition to that exogenous parameters are set for population growth, aid and loan (in) flows and a large number of structural features of the economy such as the input-output structure, the capital composition matrix, the share of sectoral value added accruing to a particular social class etc. The resulting sectoral rates of growth constitute the starting point for the analysis of the labour market.

II. Estimates of Labour Coefficients and Employment

In this section, an attempt has been made to indicate how individual labour coefficients and employment in each sector of the economy are calculated. The section is divided into three parts, dealing with the agricultural, manufacturing and construction and services sectors respectively.

II. 1 Agricultural Sectors

Estimates of employment in the agricultural sectors are based on the following methodology. Quantitative estimates of labour requirements for crop production are essentially based on crop-wise information on labour-coefficients and acreages. The labour coefficients based on cross-section observations are expressed in terms of man-day equivalents of labour required per acre of cultivated land. They are taken as crop-specific and are assumed constant over time. The crop-specific vector of labour requirements are calculated on the basis of the following simple equation:

\[ L_{1t} = L_{1i} A_{1it} \quad (1) \]

Where \( L_{1t} \) refers to the total labour required in the cultivation of crop \( i \) in period \( t \), \( L_{1i} \) is labour coefficient for crop \( i \) and \( A_{1it} \) is the total area under crop \( i \) in period \( t \).

The area cultivated under various crops (along with local and high-yielding varieties of rice and wheat) over the plan period are generated by the model itself (see above). The labour coefficients for specific crops (including irrigation) are taken from the Planning Commission[7]. For aggregated sectors (e.g., coarse grains, vegetables, oilseeds, fruits etc.), weighted labour coefficients are calculated with area under specific crops used as weights. The figures are then transformed into man-years on the assumption that a standard man-year is equivalent to 300 man-days. It is to be recognised here that the total labour requirements for crop production, thus calculated, are sensitive to the particular labour coefficients adopted. However, these are treated here as the norm, while variations may be observed with respect to land quality, farm size and such other agronomic and socio-economic variables. Further, one may criticise the assumption of constancy of labour coefficients of individual crops over time. But given the low employment elasticities with respect to output and low growth rates of yields for certain important crops, employment variations due to yield effects are likely to be insignificant [8,9]. However, these coefficients can only be applied for short and medium term analysis.

\[ \text{See section 3 for variations in labour requirements over farm size.} \]
In the case of fisheries, estimates of employment are worked out separately for marine and inland fisheries based on Bangladesh Bureau of Statistics figures [10]. In the livestock sectors (beef and sheep, poultry and eggs, dairy products and hides), note has been taken of both cows and buffaloes on the one side and other livestock like sheep, goat etc. on the other. Separate estimates are made for cows/buffaloes in milk and working animals. The total employment in the livestock sectors is adapted from the BBS and these are appropriately distributed over individual sectors. The above estimates of employment do not include labour employment in milk processing etc. since such activities are included in the food processing sectors. Finally, employment estimates during the plan period are based on sector-specific employment-value added ratios for the above sectors along with employment estimates by BBS are taken [11,12]. This is adjusted for employment of service type, especially for public sector service to avoid double counting with services sector employment, and the secondary employment on account of activities which process the various forest products since these are part of the manufacturing sector. The estimates of employment during the plan period are based on the employment-value added ratio for the base-year.

II.2 Manufacturing Sectors

There are 14 manufacturing sectors in the model virtually all of which include large-scale and small-and cottage-scale activities. For the scales of activity and for sectors, the sources of data and the nature of assumptions required for employment estimates naturally are different. The data on employment and output are available as a time series for large-scale industries through the Census of Manufacturing Industries (CMI) by the BBS. Information on small and cottage industries are available for certain broad sectors through the Cottage Industries Survey (1983) and the Survey Report on Small Industries of Bangladesh (1982) by the BSCIC. Further, information on sectoral value added and employment are also available from the various studies conducted by the Planning Commission for the preparation of the Third Five Year Plan. Data, collected from all these sources and properly scrutinised, are used to arrive at the output and employment figures to derive the labour coefficients [13]. Wherever necessary, the labour input figures are corrected for varying levels of intensities of work in the different categories of the workers in the small and cottage industries sectors, e.g. self-employment workers, hired workers, working part-time and so on. This is done in order to arrive at a total of employment on a standard man-year basis. Finally, the sectoral labour coefficients (value added per man-year) are calculated on the basis of adjusted figures.

The labour coefficients for the large-scale manufacturing industries are adjusted for changes in labour productivity, technological improvements etc. in the following manner. The data on employment in the large-scale industries are available for some 20 industrial groups in time-series. After
correcting the gross value of output for yearly changes in prices on the basis of sectoral price deflators, the labour coefficients are calculated at constant prices over the 1973/74 — 1981/82 period. Various modes of trend analysis are undertaken to obtain relationships of the labour coefficients over time. Though the period of observation is not long, many regression equations do provide good fit. For example, the exponential growth curve fits well in many sectors examined e.g. food manufacturing, chemical products, basic metal industries, machineries except electrical transport equipment while the double-log equation fits well in the leather and leather products sectors. The best fits are utilised for adjusting the labour coefficients for the above sectors after proper correspondence with the model sector classification. For the remaining sectors, the coefficients describing productivity increase are not significant and hence no adjustments for such changes are made and constant value added/employment ratios are used.

The employment estimates for the small- and cottage-scales of activity in each sector are based on the following methodology. First, the share of small—and cottage industries in total sectoral output is observed and variations over time studied in order to derive estimates of output of such industries in each sector. The labour coefficients are computed for each sector based on data on output and labour utilised as indicated in various sources mentioned above. The base year (1984/85) employment for the small and cottage industries for various sectors are then calculated based on the estimates of sectoral gross value of output and the labour coefficients. The corresponding employment figures for the large-scale industries are based on projections of labour coefficients to 1984/85 based on the trend analysis mentioned above, and the estimates of gross value of output in such industries. The small and large scale employment figures are finally combined to give estimates for each of the 14 sectors.

The estimates of employment for the large and the small and cottage industries at the sectoral level are worked out during the plan period using the same methodology as described above.

II.3 Construction and Services Sector

In addition to the agricultural and manufacturing sectors, there are 11 construction and services sectors in the model. There are certain sectors which are largely unorganised (e.g. rural housebuilding) and there exist no regular time series data on many of these sectors. Therefore, data from various studies undertaken by the Planning Commission as well as Census and other data by the BBS and other sources have been utilised to the fullest possible extent. The sectors for which relatively more reliable data are available include electricity, gas, health and education services ad public administration. The sectors for which such data are missing include construction, certain activities in the transport and trade and other services sectors. The data gaps in these areas have been filled in with the available information after detailed checking.
In case of these sectors, after checking from the past series of data and other information, it is found that simple proportional relationship between employment and value added would be relatively stable. Hence labour coefficients are calculated after adjustments for price changes between 1976/77 and 1984/85 base year. The labour coefficients during the Plan period are then projected on the assumption that there would be no change in technology or productivity.

As one can expect, the detailed methodology for these 11 sectors differs widely among sectors and adjustments based on various related sources of data are made in each sector differently [13]. One can hardly argue that existing data on employment are adequate to generate a comprehensive scenario of employment in the country and hence estimates of employment in many cases, especially in the unorganised sectors, are based on judgements of the situations in various sectors. However, in the absence of a detailed Census to make precise estimates about employment, the figures calculated here are expected to provide a first approximation to examine the employment levels during the plan period.

Based on the above calculations, the estimates of employment for the base year 1984/85 and the terminal year 1989/90 are presented below for broad sectoral classifications (Table I). The employment and output figures by individual sectors are presented in Appendix I. It should be mentioned that the estimates of employment presented here are based on a scenario constructed for the TFYP model which assumes major efficiency increase in the economy and is characterised by an overall annual rate of growth of GDP of 5.0%. A different rate of growth will directly affect the employment estimates.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture 9</td>
<td>11.64</td>
<td>14.15</td>
<td>3.98</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>1.89</td>
<td>2.73</td>
<td>7.52</td>
</tr>
<tr>
<td>Construction</td>
<td>0.57</td>
<td>0.74</td>
<td>4.35</td>
</tr>
<tr>
<td>Others</td>
<td>5.19</td>
<td>6.69</td>
<td>5.21</td>
</tr>
<tr>
<td>TOTAL</td>
<td>19.29</td>
<td>24.30</td>
<td>4.73</td>
</tr>
</tbody>
</table>

III. Employment by Socio-Economic Class

In the previous section labour demand has been estimated for each sector. In this section sectoral labour demand will be differentiated by socio-economic classes9.

9. Includes forestry, fisheries and livestock
Labour Demand in Agriculture

Labour demand in the crop sector, by each socio-economic class is determined on the basis of the following formula:

\[ L_{ij} = L_{ij} A_{ij} \]  \hspace{1cm} (2)

\( L_{ij} \) = labour demanded by the \( j \)th class for the cultivation of \( i \)th crop.

\( A_{ij} \) = is the total area under crop \( i \) by class \( j \).

\( L_{ij} \) = the labour coefficient for crop \( i \) specific for class \( j \) where labour employed included both own and hired labour.

In the previous section an average labour coefficient (for each crop) for all socio-economic classes was estimated. But there are empirical evidences to show that labour application is higher for the smaller farm than the larger farms.[14] Some of the studies in this area gives the differences in labour intensity for major groups. The average labour coefficient estimated in the last section has been disaggregated to reflect the differences in the labour intensities between different sizes of farm groups. This adjustments have been made in conformity with the results in the studies mentioned above.

The \( L_{ij} \)'s calculated from equation (2) in fact represents labour required by the \( j \)-th class for cultivating a certain amount of crop \( i \). This labour include both own labour supplied by \( j \)-th class to its own field plus labour hired in from other classes. It is quite evident from this that a particular class supplies labour not only to its own fields but also to others. In order to calculate the man-years of employment for individuals belonging to a particular class, the following adjustment was made.

The labour demand for each socio-economic class computed by equation (2) is further differented into hired and family labour. Thus, the amount of labour rented in (RI) is

\[ RI_j = \alpha_j \sum L_{ij} \]  \hspace{1cm} (3)

where \[ \alpha_j = \frac{\text{Total amount of labour rented in by jth class}}{\text{Total labour demand by jth class}} \]

Taking account of the fact that the total amount of labour rented in is equal to total labour rented out (RO) by all classed we have (assuming intra group renting is insignificant)

\[ \sum_{j} RI_j = \sum_{j} RO_j \]  \hspace{1cm} (4)

Certain classes supply this hired labour, thus amount of labour rented out by a social-economic class who supplies the labour is

\[ R_{0j} = \beta_j \sum R_{0j} \]  \hspace{1cm} (5)

where \( \beta_j \) = Amount of labour hired out by jth class

Thus, total employment by each class in crop sector is

\[ E_j = \sum L_{ij} - RI_j + R_{0j} \]  \hspace{1cm} (6) \hspace{1cm} j = 1 \ldots 6, 7, 9

In our empirical calculations we have proceeded with the assumptions that:

- \( R_{0j} = 0 \) for groups 3, 4, 5, 6 and
- \( RI_j = 0 \) for groups 1, 2

The crop acreage distribution, for the initial year 1976/77, over different socio-economic classes is obtained from the Social Accounting Matrix and subsequently from the TFYP model results. The \( j \) and \( j \) are obtained from the supply component of the Bangladesh Agricultural Model (BAM) has calculated these by referring to various micro studies.

**Employment in Non-crop Sectors in Agriculture by Social Classes**

Employment in non-crop sectors such as Beef and Sheep, Poultry and Eggs. Dairy products and Hides are assumed to be proportional to various assets such as cattle, sheep, goat and poultry owned by each class. The employment generated in Fisheries and Forestry is assumed to be proportional to value added by classes. The labour demand estimate by classes, thus arrived at is then adjusted for renting in/out.

**Employment in Non-agricultural Sectors by Classes**

The demand for labour from urban and rural formal and informal classes is not yet established at all. Even a first approximation as we make here involves assumptions and correspondences as direct observation through a survey is not available. The only source was found in the supply analysis of BAM as mentioned above which gives information about the structure of non-agricultural labour use for the four non-farm groups in 1976/77.

According to this study, the proportion of total employment, generated in non-agricultural sectors for different socio-economic classes expressed as percentage of total non-agricultural employment are:

- Rural informal: 32.5%
- Rural formal: 38.8%
- Urban informal: 10.8%
- Urban formal: 17.9%

For the calculations these proportions are assumed constant over time. The employment per socio-economic class calculated on the above basis is presented in the following table:
Table II
Employment Per Socio-Economic Class

(in million man-years)

<table>
<thead>
<tr>
<th>Socio-economic Class</th>
<th>Agriculture</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Landless</td>
<td>2.957</td>
<td>3.497</td>
<td>3.058</td>
<td>3.502</td>
</tr>
<tr>
<td>Small farmer</td>
<td>1.556</td>
<td>1.989</td>
<td>1.615</td>
<td>1.992</td>
</tr>
<tr>
<td>Medium farmer tenant</td>
<td>2.205</td>
<td>2.522</td>
<td>2.287</td>
<td>2.526</td>
</tr>
<tr>
<td>Medium farmer owner</td>
<td>1.407</td>
<td>1.564</td>
<td>1.460</td>
<td>2.066</td>
</tr>
<tr>
<td>Large farmer</td>
<td>1.344</td>
<td>1.689</td>
<td>1.395</td>
<td>1.892</td>
</tr>
<tr>
<td>Largest farmer</td>
<td>0.892</td>
<td>1.251</td>
<td>0.925</td>
<td>1.253</td>
</tr>
<tr>
<td>Rural informal</td>
<td>0.724</td>
<td>0.911</td>
<td>3.300</td>
<td>4.059</td>
</tr>
<tr>
<td>Rural formal</td>
<td>0.268</td>
<td>0.325</td>
<td>2.180</td>
<td>2.800</td>
</tr>
<tr>
<td>Urban informal</td>
<td>0.287</td>
<td>0.402</td>
<td>1.900</td>
<td>2.750</td>
</tr>
<tr>
<td>Urban formal</td>
<td>—</td>
<td>—</td>
<td>1.160</td>
<td>1.860</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>11.640</strong></td>
<td><strong>14.150</strong></td>
<td><strong>19.290</strong></td>
<td><strong>24.300</strong></td>
</tr>
</tbody>
</table>

IV. Labour Supply and Labour Market Balance: an Illustration

It is possible to calculate supply in the labour market if an independent analysis of labour supply is available. At present, only some indicative figures on the labour participation rate are available from BBS.

In order to derive the balance in the labour market, labour supply by each of the 10 classes could be derived by the following simple way accepting participation rates prepared by BBS.

Total labour supply by each class is given by

\[ TLS_j = MLS_j + FLS_j \]

where \( MLS_j \) = Male Labour Supply by class \( j \)

\( FLS_j \) = Female Labour Supply by class \( j \).

\[ MLS_j = P_m \times S_m \times POP_j \]

where \( P_m \) = Participation rate for male

\( P_m \) = Proportion of male in total population

\( POP_j \) = Population in class \( j \)

\[ FLS_j = P_f (1 - S_m) \times POP_j \]

where \( P_f \) = Participation rate for female.
Table III
Population in 1984/85 by Social Class

<table>
<thead>
<tr>
<th>Social Class</th>
<th>m</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lendless</td>
<td>20.13</td>
<td></td>
</tr>
<tr>
<td>Small farmer</td>
<td>11.55</td>
<td></td>
</tr>
<tr>
<td>Medium farmer tenant</td>
<td>11.99</td>
<td></td>
</tr>
<tr>
<td>Medium farmer owner</td>
<td>13.04</td>
<td></td>
</tr>
<tr>
<td>Large farmer</td>
<td>10.22</td>
<td></td>
</tr>
<tr>
<td>Largest farmer</td>
<td>4.21</td>
<td></td>
</tr>
<tr>
<td>Rural informal</td>
<td>10.55</td>
<td></td>
</tr>
<tr>
<td>Rural formal</td>
<td>7.04</td>
<td></td>
</tr>
<tr>
<td>Urban informal</td>
<td>7.02</td>
<td></td>
</tr>
<tr>
<td>Urban formal</td>
<td>4.66</td>
<td></td>
</tr>
<tr>
<td>Total:</td>
<td>100.41</td>
<td></td>
</tr>
</tbody>
</table>

The macro model calculates on the basis of exogenous parameters population by each socio-economic class. The Population Census provides the male female proportion by urban rural breakdown. The BBS also provides male female labour participation rate by urban rural breakdown. But such participation rates are not based on adequate research. If we take these participation rates, then the results show a very substantial excess supply in the labour market. Comparing the labour demand with labour supply by socio-economic classes we find that the excess supply as share of total supply for different groups during plan period would be the following:

Table IV
Average Excess Supply as Percentage of Total Supply Over the Plan Period

<table>
<thead>
<tr>
<th>Social Class</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lendless</td>
<td>62%</td>
</tr>
<tr>
<td>Small farmer</td>
<td>63%</td>
</tr>
<tr>
<td>Medium farmer tenant</td>
<td>53%</td>
</tr>
<tr>
<td>Medium farmer owner</td>
<td>69%</td>
</tr>
<tr>
<td>Large farmer</td>
<td>65%</td>
</tr>
<tr>
<td>Largest farmer</td>
<td>40%</td>
</tr>
<tr>
<td>Rural informal</td>
<td>22%</td>
</tr>
<tr>
<td>Rural formal</td>
<td>21%</td>
</tr>
<tr>
<td>Urban informal</td>
<td>24%</td>
</tr>
<tr>
<td>Urban formal</td>
<td>26%</td>
</tr>
</tbody>
</table>
V. Towards Manpower Planning

In general development planning exercises in many countries fails to make a simultaneous treatment of the human resource development issue and production planning. In such a case employment is not set at the core of the development process and the questions “Production, to be carried out by whom?” and “Education, for whom and to do what?” remain unanswered. The human resources development issue raises not only questions about production, labour and education but also concerning housing, nutrition, health and demography and other dimensions of social development [16,17,18]. In the Planning Commission an attempt is currently being made towards social development modelling. Three phases may be distinguished, first the construction of a labour market impact model to monitor the effects on labour—and educational markets, second the construction of a comprehensive planning model will be attempted, integrating the labour market impact model and the TFYP model. The final phase may deal with a socio-economic development model characterised by being long-term with a multi-dimensional structure.

V.1 Description of the instrument for monitoring the labour market during the TFYP

Given that the Planning Commission has used a model as basis for the formulation of the TFYP, the construction of the labour market impact (LMI) model abided by such constraint. This implies that one has to go for a system where the TFYP model solves the production side and delivers sectoral value added figures and the LMI-model solves the manpower-cum-educational aspects and delivers the implications of those sectoral value added figures on the labour market.

This procedure means that, at the outset, the choice is made for multiple, scenario-type solutions rather than aiming at any sort of optimal clearance of the labour market (See below, section V.2).

The LMI model has a simple dichotomic structure, the production and educational system’s demand for labour is obtained independently from the demographical and educational capabilities of the system to supply labour. The model distinguishes between production sectors, educational levels and occupational classes. Demand for labour is defined as the sum of the demand exerted by the production sectors plus the demand exerted by the educational sectors (demand for teachers, for short). Demand for labour per sector and occupational class, is uniquely tied to the (exogenously provided) sectoral value added figures. Demand for teachers is related to enrolments per educational level, taking as given the matrix of education-versus-occupation transformers as well as the teacher/student ratios.

---

11 This section draws heavily on [19].
12 The educational levels distinguished are not only the formal ones; non-education level as well as an informal education level (or training on the job) are also considered.
The asymmetric treatment given to both demand components is merely due to the fact that, for the time being, there is no choice but to take enrolments as exogenous. This is so because the TFYP model delivers the size of the production sectors but the educational sectors are not adequately treated. The manpower model will deliver the required information on size concerning both types of sectors. That will enable us to determine both types of labour demands in a symmetric way by relating enrolments per educational level to the size of each educational level. Hence, in the LMI model, neither the financial resources available per school type nor the teacher/student ratio per school type can be endogenously determined. This is clearly a very serious shortcoming since the distribution of financial resources between production and educational purposes in one of the main questions one aims at answering and because the teacher/student ratio cannot theoretically be exogenous, these deficiencies point towards the necessity of undertaking the construction of the manpower model envisaged as subject for the second phase of our current work. In the meanwhile, exogenously given enrolments per educational level will be used to feed a series of forward and backward interactions between the TFYP and the LMI models which will allow to reconsider the originally imposed vectors of enrolments and of teacher/student ratios, both being, intrinsically endogenous [see below, section V.2].

The model's supply side delivers manpower supplies per occupational class implying, hence, an unrestricted sectoral mobility of labour. In order to arrive at these results, first the flow of the various cohorts through the various educational levels and courses thereof must be described imposing a set of balance equations for enrolments and new entrants, both current and lagged. Graduation and drop-out rates, per educational level and its classes as well as survival rates per cohort are taken as minimum description of the underlying structure. Having taken the current enrolments as exogenous, these, together with the predetermined lagged enrolments and lagged new entrants will permit to obtain the balancing numbers of current new entrants, namely, those not entering into the labour market but pursuing further training.

This information, together with the lagged stocks of manpower per occupational class and with information on births which took place ten years earlier\textsuperscript{13} permit to obtain, through the working of the sub-system, the stocks of manpower supplies per occupational class. This sub-system is described mainly by the following matrices of parameters: the delivery rates of graduates and drop-outs from each educational level to each occupational class and to higher educational levels, the active participation rates of persons graduating or dropping-out from the educational system, and entering the labour market at each educational level and the productivity indices of graduates or drop-outs from each educational level.

\textsuperscript{13}It is assumed that children younger than 10 years old do not enter into the labour market.
active in each occupational class, relative to the average productivity in the respective occupation.

Besides being simple and transparent, this modelling of the reality enjoys the characteristic of being very flexible. Both the supply and the demand sub-systems offer ample possibilities for calibration since there is no single most important parameter (or set of parameters) determining the quantification of the variables.

V.2 Clearing the labour market imbalances

Having calculated labour demands and supplies independently of each other, it would be unlikely that the labour market clears. By means of over-determining the model (e.g., adding as many equations as occupational classes linking labour demand to supplies), two extreme pictures may be drawn, each one depicting a specific scenario.

A "culture-prone" scenario may be obtained letting only the supply side of the LMI model work, calculating the corresponding labour demands by means of the extra set of equations. Conversely a production scenario can be the result of letting only the demand side of the LMI model work, computing afterwards the implied supplies.

In the first case, the country’s educational system is considered to be the overriding factor when determining labour supplies, these will impose, then, the necessary adjustments on the production sectors which will be brought down to size according to the labour availabilities. The model will thus have to revise its results concerning investments, consumption, balance of payments and/or any other final demand component.

In the second case, the overriding factor determining labour demands is the production structure described by the macro-models in order to satisfy these demands, adjustments will be required at the educational system’s end. Modification of enrolments and teacher/student ratios may ensue; evidently, the whole educational system will be subject to that pressure resulting changes in the graduation and drop-out rates, and in the delivery rates the participation rates and the productivity indices.

The culture-prone scenario may give an idea about the production possibilities of the nation given its educational and cultural structure. The production scenario, on its turn, may indicate the necessary changes of the educational structure to abide by production targets deemed desirable. It must be emphasised that between these two extremes mixed scenarios can be built for instance, abiding by the production system only while considering some of the model supply constraints as binding.

It must also be said that changes in the structure of the educational system are only possible in the long run, given that educating a cohort is a time-consuming operation. These structural changes are beyond the LMI model possibilities which it should be remembered, merely
pretends to monitor the impact of a short- medium-term production plan on the labour market.

V.3 Operationalisation

Currently, the LMI model is being installed in the micro-computer available within the Planning Commission premises.

Data collection for parameter estimation is forthcoming. For the time being, it seems that the common denominator for disaggregation which satisfies all types of data readily available in published sources, will point towards distinguishing nine production sectors, seven educational levels and, also, seven occupational classes.

These readily available data will permit to run, expeditiously, the model in the near future, allowing thus for the necessary calibration. The availability, moreover, of a consistent frame for data manipulation will promote and guide the efforts at further disaggregation, specially of the production structure (to abide by, e.g., the 42 sectors disaggregation of the macro-model), but also of the sectoral occupation-profiles as well as of the occupational education-profiles.

VI. Conclusion

The paper has described the treatment of employment in the TFYP model and some of the activities which are currently being pursued in order to create the analytical framework necessary to carry out manpower planning in its proper perspective. This is a difficult task, especially in view of the limited availability of consistent and adequate information on many aspects of employment and the labour market in the country. Nevertheless, it is expected that an operational model can be built with readily available data and, in the process, it will be possible to indicate priority areas of future research.
### APPENDIX I

Sectoral Estimates of Employment and Output, 1984/85 and 1989/90

<table>
<thead>
<tr>
<th>Sector</th>
<th>Employment</th>
<th>Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wheat</td>
<td>0.35</td>
<td>0.54</td>
</tr>
<tr>
<td>Rice</td>
<td>8.38</td>
<td>7.60</td>
</tr>
<tr>
<td>Coarse grains</td>
<td>0.02</td>
<td>0.03</td>
</tr>
<tr>
<td>Fats and oils</td>
<td>0.10</td>
<td>0.12</td>
</tr>
<tr>
<td>Sugarcane</td>
<td>0.16</td>
<td>0.22</td>
</tr>
<tr>
<td>Beef and Sheep</td>
<td>0.22</td>
<td>0.24</td>
</tr>
<tr>
<td>Poultry and eggs</td>
<td>0.37</td>
<td>0.47</td>
</tr>
<tr>
<td>Dairy products</td>
<td>0.77</td>
<td>0.89</td>
</tr>
<tr>
<td>Vegetables</td>
<td>0.69</td>
<td>0.70</td>
</tr>
<tr>
<td>Fruits</td>
<td>0.04</td>
<td>0.04</td>
</tr>
<tr>
<td>Fish</td>
<td>1.36</td>
<td>1.74</td>
</tr>
<tr>
<td>Tea</td>
<td>0.02</td>
<td>0.03</td>
</tr>
<tr>
<td>Cotton and Wool</td>
<td>0.05</td>
<td>0.05</td>
</tr>
<tr>
<td>Hides</td>
<td>0.20</td>
<td>0.22</td>
</tr>
<tr>
<td>Jute</td>
<td>0.57</td>
<td>0.69</td>
</tr>
<tr>
<td>Tobacco and Betel leaf</td>
<td>0.17</td>
<td>0.21</td>
</tr>
<tr>
<td>Forestry</td>
<td>0.27</td>
<td>0.36</td>
</tr>
<tr>
<td>Cotton yarn</td>
<td>0.05</td>
<td>0.06</td>
</tr>
<tr>
<td>Cloth millmade</td>
<td>0.02</td>
<td>0.04</td>
</tr>
<tr>
<td>Cloth handloom</td>
<td>0.89</td>
<td>1.28</td>
</tr>
<tr>
<td>Jute textile</td>
<td>0.17</td>
<td>0.21</td>
</tr>
<tr>
<td>Paper and pulp</td>
<td>0.01</td>
<td>0.01</td>
</tr>
<tr>
<td>Leather and leather products</td>
<td>0.03</td>
<td>0.05</td>
</tr>
<tr>
<td>Fertiliser</td>
<td>0.01</td>
<td>0.02</td>
</tr>
<tr>
<td>Pharmaceutical, Chemicals &amp; Petroleum Products</td>
<td>0.03</td>
<td>0.04</td>
</tr>
<tr>
<td>Cement, limestone &amp; klinker</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Steel and Basic Metals</td>
<td>0.01</td>
<td>0.01</td>
</tr>
<tr>
<td>Metal products and Machineries</td>
<td>0.03</td>
<td>0.04</td>
</tr>
<tr>
<td>Wood and other industries</td>
<td>0.64</td>
<td>0.97</td>
</tr>
<tr>
<td>Urban housebuilding</td>
<td>0.07</td>
<td>0.09</td>
</tr>
<tr>
<td>Rural housebuilding</td>
<td>0.06</td>
<td>0.07</td>
</tr>
<tr>
<td>Other building and construction</td>
<td>0.44</td>
<td>0.58</td>
</tr>
<tr>
<td>Electricity and Gas</td>
<td>0.04</td>
<td>0.06</td>
</tr>
<tr>
<td>Transport</td>
<td>1.71</td>
<td>2.00</td>
</tr>
<tr>
<td>Health Service</td>
<td>0.05</td>
<td>0.06</td>
</tr>
<tr>
<td>Education Service</td>
<td>1.06</td>
<td>1.39</td>
</tr>
<tr>
<td>Public Administration</td>
<td>0.92</td>
<td>1.13</td>
</tr>
<tr>
<td>Trade and other services</td>
<td>1.41</td>
<td>2.05</td>
</tr>
</tbody>
</table>

Note: Employment in million man-years and output in terms of value added (billion Taka at 1984/85 prices).

REFERENCES
10. BBS: Statistical Year Book (Various Issues).
11. BBS: Statistical Pocket Book of Bangladesh (Various Issues).
Population Policy under the Third Five Year Plan of Bangladesh
How Realistic

By BARKAT-E-KHUDA*
SUSHIL RANJAN HOWLADER**

I. Introduction

Bangladesh is the eighth largest country in the world with an estimated population of 100.5 million people and an annual rate of population growth of 2.4 percent. It has the highest population density in the world, excepting some island countries. During the period 1901-1951 the area now constituting Bangladesh experienced a low rate of population growth, of about one percent per annum, but since 1951 higher rates of population growth have been recorded. The rise in growth rate has resulted from considerable decline in mortality in the absence of any sharp decline in fertility.1

Bangladesh, characterised by low level of development—low per capita income; low level of literacy; low land-man ratio; heavy dependence on agriculture, marked by primitive methods of cultivation involving the use of family labour, including the use of child labour—suffers from severe population pressure. During the past three decades the development efforts in the country have been frustrated by the alarming rate of population growth. In fact, the problem has acquired such dimensions that politicians, planners and academics have been concerned about its serious consequences. As a result, various measures—socio-economic and population control—have been undertaken to tackle the problem.

---

*Professor, Department of Economics, University of Dhaka
**Assistant Professor, Department of Economics, University of Dhaka

1 For the first half of the 1900s, the crude birth rate (CBR) was consistently above 50 per 1000 population. It dropped to the level of the mid-40s in the 1970s and, today, stands at 39 per 1000 population. On the other hand, the crude death rate (CDR), which remained within the 40 per 1000 range till the 1950s, has declined appreciably and now stands at 15 per 1000 population.
The first national family planning programme began during the 1960-65 period, followed by the government expanded family planning programme during 1965-70. The First Five-Year Plan of Bangladesh (1973-78) marked the beginning of a multisectoral and broad-based population control and family planning programme soon after Independence (Govt. of Bangladesh, 1973). The Second Five-Year Plan (1980-85) aimed at substantially expanding and strengthening the IEM (information, education and motivation) activities and family planning service delivery to achieve a sufficiently drastic reduction in fertility to lower the NRR to one by 1990. The intermediate aim was to bring down the total fertility rate (TFR) from 5.2 to 4.1 and the corresponding crude birth rate (CBR) from 43.3 to 31.6 per 1000 population by 1985. That is, the birth rate must decline by slightly more than two points annually. The Plan projected an increase in the current rate of continuous users from 14 percent of eligible couples to 38 percent at the terminal year or in numerical terms, by one million annually during the Plan period [5].

As a matter of fact, neither the Second Plan nor the First Plan or any of the earlier government plans succeeded in achieving the demographic targets. For example, during the 1980-85 period, CBR has declined from 43.3 to 39 per 1000 population, although it was targeted to decline to 31.6 per 1000 population. Similarly, the projected rise in the current use rate remains a far cry. It was projected to rise from 14 per cent in 1980 to 38 per cent by mid-1985, although according to the Third Plan document it stands at 25 per cent.

In the light of the above, the present paper seeks to examine the demographic prospects contained in the Third Five Year Plan of Bangladesh. The paper begins by briefly identifying the demographic objectives of the Third Plan. Section 2 examines the prospects of realising the demographic objectives of the Third Plan and Section 3 puts forward some concluding remarks.

---

2. The family planning movement in Bangladesh, however, dates back to 1953 when the Family Planning Association was established by a group of dedicated social workers. Since then the family planning programme was carried out largely through voluntary activities, until the government became directly involved in it in 1980. A detailed discussion on the development and growth of the family planning programme in the country is contained in [9].

3. The Plan assumed a lower fertility level than what was prevailing during the period.

4. The Plan appears to have assumed a higher rate of current users. According to the 1979 Contraceptive Prevalence Survey (no data at the national level are available for 1980), the current use rate of any method was 11.2 percent and that of any effective method was 6.2 percent [8].

5. The Third Plan appears to have assumed a higher rate of current users. The 1983 CPS gives current use rates of modern methods and all methods respectively at 3.6 percent and 19.1 percent [14; 166, Table 7.4]. It seems unlikely that in the span of only two years i.e., 1983 to 1985, current use rate could rise to 25 percent.
II. Third Plan Demographic Objectives

A set of eight population projections for Bangladesh has been prepared by the Planning Commission, under varying assumptions ranging from assumed constant fertility and constant mortality to very rapid fertility and mortality declines. These projections give an annual rate of population growth, ranging between 1.8 per cent and 2.9 per cent during 1965—1990. In preparing the Third Plan, the Planning Commission has accepted the projection involving a very rapid fertility decline and a slow mortality decline designed to reach NRR = 1 by year 2000. This projection gives an annual rate of population growth of 1.8 percent.

Under the Third Plan the CBR is proposed to decline from the present level of 39.0 per 1000 population to 31 by 1990. The Plan projects an increase in the current use rate from 26 percent in 1985 to 40 percent in 1990, or in numerical terms, the number of eligible couples practising contraception will rise from 4.2 million in 1985 to 8.2 million in 1990. Interestingly enough, a comparison with the Second Plan shows that the demographic targets contained in the Third Plan are virtually the same as those contained in the Second Plan. For example, under the Second Plan the CBR was projected to decline to 31.6 per 1000 population by 1985 and the rate of current use at 38 percent at the terminal year. This comparison not only demonstrates that the Second Plan has miserably failed in realising its demographic objectives, but also raises important questions as to the feasibility of realising the demographic objectives contained in the Third Plan document (to be discussed in greater detail in the subsequent section).

In addition, the Third Plan proposes to bring down the CDR from 15.0 to 13.4 at the terminal year. Maternal mortality is projected to decline from 6 per 1000 live births to 4 in 1990, and infant mortality from 125 per 1000 live births to 100 in 1990.

Under the Third Plan, population control programme has two major dimensions: (i) provision of contraceptive services to meet the existing unmet latent demand, and (ii) creating further demand through health, social, economic and legal measures.

The Plan assumes the existence of a considerable amount of unmet demand for contraceptive services and, therefore, the major thrust of the population policy is to strengthen contraceptive service programme by way of expansion of coverage, improvement of the quality of services, strengthening of IEM programme, provision of a broader range of contraceptive methods and improvement of programme efficiency. The Plan also attaches importance to primary health care and maternal and child health (MCH) in order to bring down infant mortality. The Plan further stresses the importance of raising the education and literacy level, enhancing women’s status, increasing community participation and various social, economic, health and legal measures.
III. Prospects of realising the demographic objectives of the Third Plan

In examining the prospects of realising the demographic objectives of the Third Plan, we shall be primarily dealing with some of the basic issues identified in the Plan document to realise the objectives. These issues are: (i) contraceptive prevalence required to achieve the demographic targets, (ii) existence of a considerable amount of unmet demand for contraceptive services, (iii) sterilisation, (iv) IUD and injectables, (v) The fertility-depressing effect of education, and (vi) the increase in demand for family planning through health, social, economic and legal measures.

Contraceptive Prevalence

The Plan projected an increase in contraceptive use rate to rise from 25 per cent in 1985 to 40 per cent in 1990 to bring down the CBR from 39 per 1000 population in 1985 to 31 by 1990. The projected increase in contraceptive usage rate from 25 per cent in 1985 to 40 per cent in 1990 is built on the assumption that in each successive year during the plan period contraceptive usage rate will increase by 3 per cent per annum. Curiously enough, the trend in the current use rate during the period 1975-1983 shows that contraceptive use rate has been rising at around 1.5 per cent per annum. Still worse, the most recent trend (during 1981-1983) in the use rate gives an even lower rate of increase of 0.3 per cent per annum. Hence, if the trend is any guide for planning, the projected 3 per cent rise per annum in the current use rate obviously appears to have been highly overestimated.

Table 1: Contraceptive prevalence rates required to achieve the targeted decline in fertility under the Third Plan.

<table>
<thead>
<tr>
<th>Step</th>
<th>Assumptions</th>
<th>Contraceptive Prevalence required</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Modern methods</td>
</tr>
<tr>
<td>I</td>
<td>e(t) ≠ e(o)</td>
<td>.49</td>
</tr>
<tr>
<td>II</td>
<td>e(t) ≠ e(o)</td>
<td>.47</td>
</tr>
<tr>
<td>III</td>
<td>e(t) ≠ e(o), and K2 ≠ 1</td>
<td>.46</td>
</tr>
<tr>
<td>IV</td>
<td>e(t) ≠ e(o), and K1 ≠ 1</td>
<td>.44</td>
</tr>
<tr>
<td>V</td>
<td>e(t) ≠ e(o), K1 ≠ 1, and K2 ≠ 1</td>
<td>.43</td>
</tr>
</tbody>
</table>

Unmet contraceptive need refers to the potential demand for family planning, and is generally defined as the proportion of currently married women who said that they did not want anymore children and were not currently practising family planning.

Measurement of UCN has gained importance following the World Fertility Survey and the Contraceptive Prevalence Surveys. Khuda and Howlader developed eight measures [12, 6-10] of UCN, and using the 1983 CPS data calculated the extent of UCN, ranging from 26.8 percent to 37.0 percent. Thirty seven percent represents the “ceiling” measure, obtained using the simplest measure of UCN, i.e., the proportion of all currently married women under 50 years of age, irrespective of their current pregnancy status, who said that they wanted no more children and who were not currently practising family planning. 26.8 percent represents the “floor” measure, obtained using the most refined definition of UCN, i.e., the proportion of all currently married non-pregnant, non-breastfeeding and fecund women under 50 years of age who said that they wanted no more children and who were not currently practising any family planning method, plus those using only traditional methods of family planning. Thus, it appears from the above discussion that a considerable amount of UCN exists in Bangladesh.

However, in reality, such figures should not be accepted at face value because of some inherent weaknesses in the definition of UCN. By and large, the concept of UCN is a western one and hence suffers from cultural problems when applied in the context of traditional societies such as Bangladesh. The question relating to desire for more children in future, which is the basis of the concept of UCN, is largely irrelevant and, to some extent, unintelligible to most illiterate, rural women.

The other component of the definition of UCN, i.e., not currently practising family planning is built on the assumption that a person may not be contracepting due to lack of availability of family planning services. As a matter of fact, a person may be both (i) not wanting any more children in future, and (ii) not contracepting, not because family planning services are not available but because of other constraints [7] such as the fear of side effects, religiosity, etc.

By and large, contraceptives are supplied free of cost to most users. Moreover, in the case of IUD and sterilisation, acceptors are given incentives, i.e., IUD and sterilisation are negatively priced. Despite this the current use rate remains at a low level in Bangladesh. This is indicative of the fact that the overall demand for contraceptives is low. Besides, one may argue that if the demand for contraceptives was so large as is assumed in the Plan document, contraceptive distribution would largely have been in the hands of private retail traders, to cater to the supposedly large unmet demand. The CPS, 1983, provides information on the sources of
supplies/services for current users of modern methods, which shows that only about 40 percent of the non-clinical family planning methods were distributed through commercial channels [14].

The market for family planning is further hindered by the strong demand for children among parents. Using the 1983 CPS Data, Howlader and Khuda found that those not currently contracepting reported that they did not do so, because they wanted additional children [7]. This proportion is 85 percent among the childless women and over 70 percent among women having one son or one daughter. Even among women having more than two sons plus two daughters, one third reported that they were not contracepting, because they wanted additional children.

The projected increase in the contraceptive prevalence rate obviously depends to a large extent on the size of the unmet contraceptive need. The foregoing clearly shows that the market for family planning is not as 'consiliorable' as is claimed in the Plan document. Thus, the prospect of raising the contraceptive prevalence to the level required to realise the demographic target seems largely unattainable.

**Sterilisation**

Of the various contraceptive methods, the Plan attaches the single most importance to sterilisation. It assumes that from 40 percent of users in 1984-85 the proportion will rise to 43 percent at the terminal year. The projected rise in percentage terms seems reasonable. However, when looked at in terms of absolute number, sterilisation acceptors will more than double, from 16,78,000 in 1984-85 to 34,59,000 in 1989-90. This absolute increase seems Unattainable.6

Even if the increase in absolute number is attained during the plan period, will it have the desired demographic impact? The 1983 CPS shows that the proportion sterilised was considerably higher among higher parity women and among women with a large number of living children. The results of another study carried out in Matlab show that the mean ages for vasectomy and tubectomy acceptors respectively were 49.3 and 34 years, and their mean number of living children were 5.2 and 5.0 respectively [15]. Hence, the demographic impact of sterilisation is only minimal.

Furthermore, sterilisation has largely attracted people from the lower socio-economic strata by offering them financial incentives. Most of them, who already have a large number of children, are motivated more by sheer financial considerations than by a genuine desire on their part to limit their fertility.

---

6. In fact, citing an official paper prepared for a recently held meeting of the local consultative group of donors on population control programme in Dhaka. The Bangladesh Observer in its November 11, 1985 issue reports that the sterilisation performance has declined in 1984-85 compared to the previous year — from 561, 167 in 1983-84 to 481,559 in 1984-85.
IUD and Injectables

The Plan attaches increasing importance to IUD and injectables in its population control programme. It projects that the proportion of IUD acceptors will rise from 4.6 percent in 1983-'84 to 14.0 percent in 1989-'90, or in numerical terms, from 252,000 to 1,128,000. Injectables are projected to rise from 1.0 percent in 1983-'84 to 2.5 percent in 1989-'90, or in numerical terms, from 42,000 to 101,000. The projected increase in percentage terms in respect of IUD and injectables does not conform to the trend observed during the period 1979-'83 [14]. Still worse, the projected increase in absolute number seems to be an impossibility, because once the number of acceptors of such methods rises to a relatively large level (i.e., the base becomes sufficiently large), it may be difficult for it to multiply.

Education

The Plan speaks of efforts to be made to promote education and literacy through education sector programmes, as means to further the process of fertility decline. The Plan, however, does not specify the level education has to be raised to, or does it spell out the proportion of the population that has to be brought to that level. Available studies carried out in Bangladesh show that women with primary schooling have higher fertility than those with no schooling [13]. In other words, education has to be raised beyond the primary level to have fertility depressing effects. Education beyond primary level will affect the two main proximate determinants of fertility, namely, age at marriage and contraceptive usage, and thereby affect fertility level.

But, what are the prospects of raising education beyond the primary level? As is well-known, the proportion of females attending primary school is low in Bangladesh, and the rate of drop-out is high even at the primary level, let alone going from primary to secondary level, is considerably high. In such a situation, it may not be realistic to assume that the proportion reaching secondary level will substantially increase within the Plan period. Furthermore, such a programme will entail huge financial (both capital and recurring costs) involvement. Haq and Fokeya calculated the cost of providing secondary level education at Taka 300 per year per pupil [8]. The authors further calculated the cost of educating all girls aged 0-4 years in 1980 to the SSC level by 1985 to be Tk. 15935.4 million. In fact, the amount will be even higher, when considering the capital costs involved.

Even conceding that a sufficiently large proportion of females may be brought to the secondary level during the Plan period, there will still be a considerable time lag, most likely stretching beyond the terminal year of the Plan period, before its fertility depressing effects become apparent. The above discussion cautions that the fertility depressing effects of education will not be fully realised within the Plan period.

7. This compares to the second plan figure of Tk. 2070 million is allocated for the entire education sector.
Health, social, economic and legal measures

The Plan talks of various health, social, economic and legal measures to be undertaken to help realise its demographic objectives. Ironically enough, some of the proposed measures such as ration card, consensual tax, overseas posting, appointment in government service, allotment of government housing, maternity benefits, charge for maternity services, income tax, etc. affect only a negligible proportion of the total population. Moreover, the fertility of a large number of those belonging to this privileged community is already considerably lower than the national level.

The Plan proposes to raise the present legal female age at marriage from 18 to 20 years. Does the Plan lead us to believe that the female age at marriage has already reached 18 years? Available empirical evidence, however, show that the mean female age at marriage still remains low, at less than 16 years. Thus, the Plan target of raising the female age at marriage to 20 years seems to be over optimistic.

The prospects of raising the female age at marriage largely depends on raising female education beyond primary level, and preferably beyond secondary level. As is already pointed out in Section 2.5 of the paper, the prospects of raising female education at the desired level is not bright.

IV. Concluding remarks

The demographic objectives set forth in the Third Plan document —— virtually the same as those contained in the Second Plan—— are highly ambitious and hence not fully realizable within the Plan period.

Contraceptive prevalence required to achieve the desired reduction in fertility has been underestimated in the Plan document. The extent of unmet contraceptive need is implicitly assumed at a high level. The projected increase in sterilisation, IUD and injectables does not conform to the existing trend, and appears to be overestimated.

The measures proposed in the Plan document in order to realise the demographic objectives are not clearly defined. In addition, priorities have not been clearly determined. The financial implications of the proposed measures as well as the time lag involved therein have not been spelled out.

One would have hoped that the planners would have learnt from the failures of the past, and use this experience accordingly to formulate the objectives and priorities in the Third Plan. Unfortunately, this does not appear to be the case. All through the past the planners have been setting targets so ambitious and perspective in nature that these have not been realised within the fixed plan periods. Is it not better to set realistic targets that are realisable within each Plan period, rather than formulate over-ambitious targets and then miserably fail?

---

8. A recent study jointly undertaken by the PDPU, Planning Commission and the Bangladesh Academy for Rural Development in twenty villages of Comilla—Koswali Thana shows that the mean age at female marriage was 14.9 years [10].
Given the present socio-economic conditions obtaining in the country as well as the trend in the rate of fertility decline, we believe, out of the eight alternative population projections prepared by the Planning Commission Model IV is realistic and Model VIII on which the Third Plan is based is highly ambitious. Under Model IV, CBR is projected to decline from 40.9 per 1000 population in 1985 to 38.4 in 1990, and CDR to decline from 15.1 per 100 population to 14.1 i.e., the rate of natural increase will decline from 2.8 per cent per annum in 1985 to 2.4 per cent per annum at the terminal year. Under Model IV, the projected rate of fertility decline, although low, will result in no mean achievement. It will result in 2.4 million births averted per year, or 12 million births during the Plan period (although under Model VIII 3.3 million births will be averted per year).

Using the Bongaarts model, we have calculated contraceptive prevalence required to achieve the fertility decline as projected in Model IV. Contraceptive prevalence required ranges from 21 percent to 29 percent (modern methods) and from 27 percent to 33 percent (all methods), under varying assumptions (11, Tab. 2.1). Compared to the prevalence level required under Model VIII, the prevalence level required under Model IV is about 40 percent lower. The existing trend in the rate of increase in contraceptive use suggests that the prevalence level required under Model IV is achievable.

The measures suggested in the Plan document to bring about the substantial fertility decline not only suffer from vagueness and lack of direction but also are of the type which cannot bring about such a rapid decline in a short span of five years. Such a rapid decline in fertility in so short a time cannot be achieved if those in the decision making are able to pursue a very bold line of actions. Why not declare 1986 as the no-marriage as well as no-baby year? This will have the laudable effect of employment opportunities in the formal sector can be created. Furthermore, if the existing maternal and child health services can be improved and substantially expanded to cover the entire eligible population, infant mortality will decline and mothers will enjoy better health. This will obviously have the effect of bringing about a considerable decline in fertility.

The measures suggested above for a drastic reduction in fertility as envisaged in the Plan document clearly call for a strong political commitment on the part of the government, and an active participation and meaningful involvement of the community in the process of development.

---

9. By no-baby year we mean the year in which women, not currently pregnant, will not conceive.
Method of Estimation of Bongaarts Model

The final equation of Bongaarts model to calculate the contraceptive prevalence required to achieve a desired reduction in fertility is:

\[ U(t) = \frac{1 - K \times (1 - PRF) \times (1 - 1.08 \times u(o) \times e(o))}{1.08 \times e(t)} \]

where \( u(o) \) = Contraceptive prevalence among married women of reproductive age; \( t = \) target year; \( O = \) base year; \( PRF = \) Proportional reduction in fertility; \( e = \) use—effectiveness of contraceptives;

and

\[ K = \frac{C_m(o) \times C_s(o)}{C_m(t) \times C_s(t)} \]

when

\[ C_m(o) = \text{index of marriage and} \]

\[ C_s(o) = \text{index of induced abortion} \]

In calculating the equation, we have assumed \( t = 1990 \) (the terminal year of the Third Plan), and \( O = 1983 \) (in the absence of any national level data for the year 1985). The value \( u(o) \) is \(.138\) for modern methods (14; 159, Table 7.9). The Third Plan projected that the total fertility rate (TFR) will decline from 5.5 in 1985 to 3.4 in 1990. Thus

\[ PRF = 1 - \frac{TFR(t)}{TFR(o)} = .38 \]

Given these values, we have estimated four sets of \( U(t) \) in five steps. In step I, use-effectiveness of contraceptives has been assumed to remain constant during 1985—1990, i. e., \( e(t) = e(o) \). In step II, we have assumed that use-effectiveness will increase, \( e(t) > e(o) \). In calculating \( K \) and \( K_1 \), we have extrapolated \( C_s(1990) \) and \( C_m(1990) \) based on the trend of these values during 1975—83. In step III, we have assumed that \( e(t) > e(o) \) and also that \( C_s \) will change (i. e., \( K_2 \neq 1 \)). In step IV, we have assumed that \( e(t) > e(o) \) and the index of induced abortion \( (C_s) \) will change during 1983—1990 (i. e., \( K_1 \neq 1 \)). In step V, \( e(t) > e(o) \) and \( K = K_1 \times K_3 \).
REFERENCES:
Manpower Planning in the Third Five Year Plan

By KAZI SALEH AHMED *

Introduction
Before the 1950’s, economists and planners were attributing the reasons for disparities in economic well being among different countries and different families within the country primarily to differences in the amount of capital possessed by them. The people having more physical capital had higher income[1]. In recent years various empirical studies have recognised that the growth of “human capital”, as reflected in the level of education of the labour force and therefore, in its productivity accounts for a substantial portion of additional output. The creation of employment as well as the mechanism of distribution of income are directly related to planning in general and population planning in particular. The less developed countries (LDC) have often been described to be trapped within a vicious circle of poverty. In these countries the vast human resources have remained under-utilised. General poverty hinders the growth of human capital and thus causes low productivity and inefficiency which, in turn, increase poverty and reinforce stagnation [2]. Two approaches which can be followed in overcoming the impasse are: (a) production approach, (b) human resource development approach. Given the available resources of Bangladesh the relevant question in this regard is whether it is justified to raise the productivity first to ensure a high growth rate or to use a substantial part of the available resources for the development of skill through imparting education and training, with the hope that the vast human resource will be transformed into viable productive resource.

Development of human resource is a matter of social planning where it is necessary to suggest methods by which a part of the population can be trained and gainfully employed, and also to develop mechanisms so as to ensure distributive justice. This implies that the problem of skill development (education and training), appropriate employment, production and distribution of income should be dealt with simultaneously.

Although the importance of skill development has been recognised, yet proper appreciation of some of the basic issues concerning manpower, educational and economic development of our country has been lacking.

*Professor, Department of Statistics, Jahangirnagar University
The inter-dependence of these three aspects of economic development is often ignored, so that the policy prescriptions formulated separately for educational and economic development are sometimes found to be inconsistent with one another.

It is to be borne in mind that the educational planning is an integral part of overall planning of the economy and that manpower planning (employment planning included) is an extension of educational planning through which the educational and the economic system of a country are inter-related. In this context, it is necessary to formulate a comprehensive plan for skill development and gainful employment of the available labour force. While preparing the comprehensive plan, effective measures must be accommodated to extend greater opportunity for socially disadvantaged groups with a view to minimising the existing gap in the income distribution.

But from the experience of our development process we observe that planning of the national economy deviated the right track. As a result the economy has created two classes:

(a) privileged group, the smallest minority
(b) deprived or exploited group, the vast majority

Educational, employment, housing, health and other opportunities are found to be limited mainly to the first group, while the latter group has little access to the opportunities. Since opportunities are limited to the elite class, not only the possibility of transforming the manpower into productive human capital has been limited, but a more but also has been serving as skewed distribution of income has resulted to mass poverty, malnutrition and illiteracy. To understand the seriousness of the problem one needs to recall the major characteristics of the Bangladeshi economy.

The economy of Bangladesh is characterized by a high population density (1808 per square mile in 1984) [3], high population growth rate (2.4 percent) [3] and high infant mortality (150 per thousand live birth) [4]. High dependency ratio due to high birth rates (46 percent of the population are of age below 15 years and 5 percent of the population are above age 60), high dependence on rural traditional sector (over 85 percent population living in the village) [5], more than 80 percent of her population are dependent on agriculture [4], more than 61 percent of the labour force are dependent on agriculture [3]; more than 50 percent of GDP originating from agriculture, only 9.5 percent in industry [3], high rate of landlessness (more than 33 percent of the total households) [4], the proportion of people below the poverty line has increased from 66 percent in 1964 to 80 percent in 1974 and nearly 90 percent in 1985 [3]; wide and increasing disparities in education, landholding and income (the Gini concentration coefficients are respectively 0.55, 0.53, 0.36) [6], poor health and sanitary conditions, acute shortage of properly educated and skilled manpower like doctors, engineers, technicians, top level managerial personnel and qualified teachers [7], huge surplus of unskilled manpower in both rural and urban areas (33 percent of
the labour force are unemployed and 12.9 percent of the total employed are children[3]. Low education level (literacy rate only 24 percent), unfavourable economic dependency ratio (nearly 2.48)[3]; low economic participation rate (41 percent [5]); lack of political determination, widespread corruption, absence of effective policy for promoting productive activities, failure to generate internal resources for development purposes (domestic saving rate 4.2 percent)[3]. The process of development is found to have been adversely affecting the general living condition of the people. The average per capita GDP is $126 [3]. Income disparity and the percent of people below the poverty line have been increasing over time. All these demonstrate that the vast majority of the population, rural people in particular, have been caught in the grip of increasing impoverishment.

It has been mentioned that the comprehensive manpower and educational planning involve a three-stage optimising procedure: (1) optimum levels of production of goods and services; (2) optimum level of production of various skills; and (3) optimum level of educational output[8]. The optimum level of production determines the total number of different categories of skilled, semi-skilled and unskilled manpower. It is therefore basically an employment-planning for the country as a whole. It considers both demand for and supply of all categories of human skills necessary to implement development plans. At any point of production the disproportionate supply of any one will create a serious imbalance by creating the surplus of one and shortage of the other. A rational combination is generally achieved through planning. In this paper an attempt has been made to examine both the supply of and demand for the manpower.

2. Imbalance in manpower and Educational Development as an Outcome of Past Development

It is a matter of serious regret that nothing much has been done to ensure consistent manpower and educational development. Since 1947, four different commissions were set up. Each commission produced learned documents and discussed at length some of the fundamental problems but unfortunately failed to emphasise a unified strategy for the development of skill as a factor of development of the economy. Different reports have come out in favour of different types of education without any particular reference to the ultimate need of the country in terms of the types of skill. It has been correctly stressed by many that disequilibrium between demand for and supply of education and inconsistency between different types of education have been a source of crisis and tension in the developing countries[9].

The increase in enrolment at all levels and rapid increase in higher education in the face of slow economic development meant that supply always superseded the demand and consequently a systematic increase in the number of inappropriately employed and unemployed graduates has been observed.
The problem of estimating various types of unemployment has been discussed in [7]. From various estimates presented in the book it is found that the rural unemployment rate was in the range of 28 percent to 36 percent in 1974. The urban employment rates were found to vary among the cities in 1974 (eg. 20 percent in Chittagong and 46 percent in Sylhet) [10].

The overall employment rate in Bangladesh over the period 1974 to 1985 seems to have been static at the level of 33 percent [3]. With regard to unemployment of the educated, fairly exhaustive estimates are available in planning commission documents [7]. The unemployment rate increased from 44 percent in 1973 to 48 percent in 1978 [7]. It is also seen that although there is an overall surplus of manpower in general and educated manpower in particular in Bangladesh, a deficit (as in 1978) exists in certain categories like teaching professionals, engineers, medical doctors etc [7]. The rate of surplus varies between different categories: the highest being 69 percent in case of generalists, the lowest being 13 percent in case of natural scientists.

The researchers and planners identified various reasons for under and unemployment in Bangladesh. Among them the following are important:
1. Rapid growth of the population and labour force
2. Slow growth of the economy
3. Low rate of domestic saving
4. Capital intensity in Bangladesh industries
5. Rural-urban migration
6. Unplanned educational and manpower development

3. Overseas Employment

This section presents an analysis of the migration of a part of the labour force to foreign countries in search of better employment and higher earning. In recent years, a substantial migration of the labour force has taken place from Bangladesh to the Middle East and some African countries.

The estimate provided by the draft SFYP shows that about 69,317 persons have been employed in the Middle East and in African countries up to December, 1979. The breakdown by level of education and level of skills are shown below:
Table 1

Number of Persons from Bangladesh Employed Abroad, Upto December, 1979

<table>
<thead>
<tr>
<th>Occupation</th>
<th>Number of persons</th>
<th>Percent of the total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Professionals:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Education: at least Bachelors degree</td>
<td>3887</td>
<td>5.6</td>
</tr>
<tr>
<td>2. Semi-professionals:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Education: above SSC but below Bachelors degree</td>
<td>3472</td>
<td>5.0</td>
</tr>
<tr>
<td>3. Skilled worker:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Education: below SSC level</td>
<td>21661</td>
<td>31.3</td>
</tr>
<tr>
<td>4. Semi-skilled:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Education: upto primary levels</td>
<td>10071</td>
<td>14.5</td>
</tr>
<tr>
<td>5. Unskilled: Education:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>below primary level</td>
<td>30226</td>
<td>43.6</td>
</tr>
<tr>
<td>Total</td>
<td>69317</td>
<td>100.0</td>
</tr>
</tbody>
</table>


The table indicates that the demand for highly educated manpower is much less than demand for the other categories. A World Bank study has provided information on the possible demand for labour abroad and share of Bangladeshi labour during the period 1980-85 [7]. According to this study the total number of persons likely to be recruited abroad for 6 years (1980-85) stands at 165351, which is 0.89 percent of the total demand for foreign labour. But other evidences show that the share may go up to the maximum level of 1 percent. But the share of professional and semi-skilled would not go beyond 8.7 percent of the total migrants. It is thus evident that persons having at least SSC degree will fill a very small quota of manpower export unless the orientation of higher education as to its type of specialisation and quality of training is suited to the needs of the labour market of the recruiting countries.

4. Manpower Planning in the Third Five Year Plan

The primary objective of the Third Plan is the alleviation of poverty. The plan recognises that poverty, unemployment, population growth, malnutrition and illiteracy are so interactive that they need to be addressed simultaneously. The plan, therefore, takes an integrated view of development in a long term perspective and has formulated 8 major objectives of which the first three are (1) Reduction of population growth, (2) Expansion of productive employment, (3) Universal primary education and human resource development.
The strategies of the third plan to achieve the major objectives are: (1) population control, (2) employment strategies, (3) development of education, (4) providing basic needs to common people, (5) employment and growth, and (6) self-reliance and resource mobilisation.

4.1. Population Control
The third plan envisages a stepped up family planning programme to bring down the population growth from 2.4 percent in 1965 to 1.8 percent in 1990. It has been observed that the growth rate has been declining; but several empirical studies indicate that it is still above 2.5 percent. Given the present socio-economic condition, it will be difficult to achieve the target of 1.8 percent by the end of 1990. If the population growth rate follows the trend as envisaged in the third plan, the size of the mid-year population (in millions) will be 100.5 in 1985, 102.9 in 1986, 105.2 in 1987, 107.4 in 1988, 109.5 in 1989 and 111.5 in 1990.

4.2. Universal Primary Education and Human Resource Development
Certain efforts were taken to remedy the imbalance in the education system. The SFYP made, for the first time, the commitment of universal primary education (UPE). SFYP accorded top priority to the introduction of UPE by 1985. But at the end of the plan period it has been observed that only 10 percent success of the plan target has been achieved. The achievement is really frustrating when we consider the amount of additional investment in primary education. An NFRHRD study reveals that mere investment in primary schools would be of little use unless the social bottlenecks are removed through improving socio-economic conditions of the guardians[6]. Table 2 gives target and achievement of enrolment during SFYP.

<table>
<thead>
<tr>
<th>Level of education</th>
<th>Enrolment in 1980</th>
<th>Target enrolment in 1985</th>
<th>Actual enrolment in 1985</th>
<th>Target enrolment in 1990</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary</td>
<td>8286</td>
<td>12990</td>
<td>8920</td>
<td>11600</td>
</tr>
<tr>
<td>Secondary</td>
<td>2000</td>
<td>2500</td>
<td>2483</td>
<td>2750</td>
</tr>
<tr>
<td>College</td>
<td>396</td>
<td>481</td>
<td>428</td>
<td>440</td>
</tr>
<tr>
<td>University</td>
<td>30</td>
<td>34</td>
<td>38.3</td>
<td>38.6</td>
</tr>
<tr>
<td>Technical</td>
<td>20.3</td>
<td>30.8</td>
<td>20.3</td>
<td>22.0</td>
</tr>
<tr>
<td>Commercial</td>
<td>2.7</td>
<td>10</td>
<td>3.3</td>
<td>3.6</td>
</tr>
</tbody>
</table>

Source: Third Five year Plan, page XIV-22.

a excluding University College and Islamic University
b excludes Agricultural University.
The table shows that the actual enrolment is less than the target enrolment in all levels except in University education. The past experience shows that along with primary education, the pressure on secondary and higher education is also increasing over time. As such the target envisaged in the TFYP appears to be realistic. But in case of primary schools, the plan envisages to achieve the target by bringing more primary schools under UPEP projects. But the study [11] reveals that the situation as obtained in UPEP areas is no better than other areas. If no dramatic changes do not occur in UPEP areas it will be difficult to bring 115 lakh children, 70 percent of all school age children to schools.

The plan put emphasis on the involvement of Upazila in taking appropriate measures to reduce illiteracy. The Government was to provide necessary funds for the purpose.

The plan points out that two new universities will be established, one in Khulna and the other in Sylhet during TFYP. The plan indicates that there is a possibility of creating one affiliating university for enforcing standard, providing guidance and conducting examinations of the degree colleges.

4.3. Employment, Human Resource Development and Technology

The general approach of the Third Plan to poverty alleviation is to provide productive employment to the unemployed labour force and inappropriately employed persons. To this end, the plan emphasizes the importance of efficient use of the two primary resources of the country, i.e. land and labour. The prime mover of planned development will be the improvement of productivity through technological and manpower development. Given its overall strategy, the plan seeks to raise growth through productive employment of its labour force and land.

The TFYP envisaged expanding employment opportunity as a means to reduce poverty and improve income distribution. But failure of its investment programmes led to an employment increase of only 3.00 million against the plan target of 6.4 million man years. The Two Year Plan (TYP) because of its interim nature, could not provide specific policy to absorb the additional labour force. As a result the employment situation at the end of 1979/80 was worse than it was in 1972/73. Although SFYP envisaged to create 3.7 million jobs, the actual employment was 3.2 million indicating further deterioration of unemployment situation [3]. According to the Manpower Survey, the 1980 the labour force is estimated to be 31.0 million in mid 1985 and 35 million in mid 1990. The planning commission estimates the unemployment rate in 1985 to be 22.0 percent of the labour force. The total number of people looking for employment will rise to 11 million.

In 1977, of the total hired labour force in agriculture only 8.9 percent was permanent and 18.3 percent was temporary workers and the remaining 72.2 percent was casual workers [3]. The plan document also mentions that there were 62.6 lakh farm holdings whereas the number of permanent
hired workers were 16.7 lakhs indicating a limited opportunity for permanent employment in agriculture. A second characteristic of rural problem is that a large percentage of school age children are involved in wage labour. According to the manpower survey, between 1980 and 1984 labour force participation of children aged 10 to 14 years increased from 33 percent to 39.7 percent among the male population and from 3.9 percent to 3.5 percent in case of females. The striking fact is that while participation rate of children shows increasing trend, the participation rate of people aged 15 to 64 shows a general decline. This indicates that the participation rate of school age children in employment is increasing, while more able-bodied individuals in the labour force have relatively less opportunity for employment. The participation rate shows increasing trend in case of lower wage rate and decreasing trend in case of higher wage rate. About 1.66 lakh children of age 5 to 9 years were included in the child labour category in 1983/84 when the total child labour of age 5 to 14 years was 10.0 lakhs. Another estimate shows that child labour constituted 12.9 percent of the total employment [3]. The sad conclusion is that children in the school age group now work more than before and the able-bodied labour force work less.

It has been mentioned that about 11 million persons will be job seekers at the end of the plan period. If the government fails to bring all school age children to schools, the number of children job seekers will be added to the above and the problem of unemployment will become even more disquieting.

For a country like Bangladesh it is really difficult to solve the unemployment problem. The TFYP target is to create 51 lakh new employment against various sectors as shown below:

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Agriculture</td>
<td>116.4</td>
<td>150.6</td>
<td>34.2</td>
<td>29.4</td>
</tr>
<tr>
<td>2. Industries</td>
<td>19.0</td>
<td>24.3</td>
<td>5.3</td>
<td>27.2</td>
</tr>
<tr>
<td>3. Public utilities</td>
<td>16.9</td>
<td>18.7</td>
<td>1.8</td>
<td>10.7</td>
</tr>
<tr>
<td>4. Construction</td>
<td>5.9</td>
<td>7.3</td>
<td>1.4</td>
<td>23.7</td>
</tr>
<tr>
<td>5. Public service</td>
<td>20.0</td>
<td>25.2</td>
<td>5.2</td>
<td>26.0</td>
</tr>
<tr>
<td>6. Trade and other</td>
<td>14.7</td>
<td>17.7</td>
<td>3.0</td>
<td>20.4</td>
</tr>
<tr>
<td>All sectors</td>
<td>192.9</td>
<td>243.8</td>
<td>50.9</td>
<td>26.4</td>
</tr>
</tbody>
</table>

If the target is achieved, the highest growth will be in agriculture followed by industries. The lowest growth will be in public utilities. Government wants to create additional job in agriculture through:
i. Increasing labour intensive seed-fertiliser –irrigation technology in food production,

ii. Changes in the tenancy arrangement and farm size.

The plan puts emphasis on the non-farm sector as a potential sector for absorbing additional job seekers. Along with the development of decaying rural cottage industries the plan puts emphasis on employment generation in fisheries and livestocks.

The TFYP, in a section on employment policy and human resource development, envisages an increase in the share of education for developing human resource. With this end, the plan allocation for education has been raised from 4.1 percent in SFYP to 4.5 percent in TFYP. In the past, education has been a neglected area. The increase in the allocation should have been more to bring about a tangible change in the underdeveloped human resource. The government agrees that manpower planning is essential for solving unemployment problem. It is mentioned in TFYP that the planning commission is developing a manpower plan based on a number of studies conducted by planning commission. To overcome the current imbalance it will be appreciated if the planning commission prepares the plan as early as possible.

5. Comments and Conclusion

The plan must locate and identify the activities which will be undertaken and also estimate the requirement of various skills so that supplying institutions can be geared to meet these requirements.

It is observed that target enrolment of various higher level education was a linear extrapolation of enrolment. The plan did not mention any relevance to the demand of the labour market. The target enrolment in primary education has been fixed to show the government’s eagerness to attain UPE. The target is hardly realistic. The situation in areas already covered by the UPE projects should have been studied before coming to such a high enrolment figure. The past experience shows that the plan target of creating new jobs fall far behind the actual achievement. The TFYP wants to create new jobs for 50 percent of job seekers at the end of the plan period primarily through creating jobs in rural areas in general and in agriculture in particular. The key to this would be the increase in the productivity of both land and human capital. In Bangladesh agriculture has long been characterised by low productivity of land and labour. The measures to be undertaken by the government are not study-based and as such not convincing to generate surplus for additional employment. The plan envisages to create 67 percent additional jobs in agriculture, 10 percent additional jobs in industry and 10 percent additional jobs in public service. The sectoral allocation shows that, of the total development budget, agriculture accounts for 30 percent and industry accounts for 15 percent. It appears that government discovered some areas in agriculture where employment is very elastic to development investment. In that case it is a
matter of regret that the planning commission could not locate these areas earlier to adopt necessary strategies in the earlier five year plans.

The Third Plan mentions that the prime objective of the plan is to alleviate poverty through increasing labour productivity. The creation of new jobs in agriculture would come as a result of increasing productivity through human resource development in the rural areas. The following table gives the per labour GDP for 1984/85 and 1989/90 for the 8 sectors of the national economy.

<table>
<thead>
<tr>
<th>Sectors</th>
<th>GDP per employed labour</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1984/85</td>
</tr>
<tr>
<td>Agriculture</td>
<td>1420</td>
</tr>
<tr>
<td>Industries</td>
<td>1644</td>
</tr>
<tr>
<td>Public services</td>
<td>1072</td>
</tr>
<tr>
<td>Construction</td>
<td>1290</td>
</tr>
<tr>
<td>Public utilities</td>
<td>1160</td>
</tr>
<tr>
<td>Trade and services</td>
<td>4979</td>
</tr>
<tr>
<td>Total (Taka)</td>
<td>1702.1</td>
</tr>
</tbody>
</table>

Source: Based on TFYP.

If the plan employment and production target are achieved the table shows that the overall productivity as measured by GDP per employed person will be increased by nearly 50 Taka. But the GDP share in agriculture and public services will be decreased. The plan envisaged creation of more jobs in those sectors where the productivity is already low. This contradicts the plans strategies to create more jobs by increasing productivity in agriculture.

Manpower export still remains an issue of national importance. This sector emerged as one of the highest foreign exchange earners for the country. In recent years a decline in both number of job-migrants and the remittances has been observed. In order to reverse the trend the plan attaches importance to the involvement of Bangladesh Mission abroad.

The employment opportunity in foreign countries is always uncertain and cannot be a permanent solution to the unemployment problem of the country. Bangladesh will have to find employment for its citizens within the country.

The TFYP ignores the factors responsible for the creation of two different economic classes in the country. It tries to make a radical improvement of the vast poor within the system in which they are the victims. The TFYP could not provide a comprehensive plan for growth employment and skill development.
REFERENCES

Health Care Strategy for the Third Five Year Plan (1985-90)

BY M.R. KHAN*

Like the Second Five Year Plan (1980-85), the health sector of the Third Five Year Plan (1985-90) was also developed under the long term objective of “Health for All by the Year 2000” with Primary Health Care as the key approach to attaining the objective.

Definition and background of “Health for All by the Year 2000”

The 30th World Health Assembly resolved in 1977 that: by the year 2000, all people in all countries should have a level of health that will permit them to lead a socially and economically productive life. This implies that the level of health of all people should be at least such that they are capable of working productively and of participating actively in the social life of the community in which they live[1; 31].

It may be noted that the target of “Health for all-2000” “is a product of awakening of international conscience” on the recognition that the “distribution of health resources throughout the world was “intolerably inadequate,” that health is a basic right and that it is essential to the satisfaction of basic human needs and for attaining quality of life, that “millions of people who are caught in the vicious circle of socio-economic poverty and ill-health” are denied of this basic right. For the betterment of their lot, it is envisaged that “by the year 2000, at least the essential health care should be accessible to all individuals and families in an acceptable and affordable way, and with their full involvement and participation [2; 10].

The international conference on primary health care which was organised jointly by WHO and UNICEF in Alma Ata in 1978, issued the Declaration of Alma Ata which stated that “primary health care is the key to attaining health for all”[1; 32] In 1979, the UN General Assembly endorsed the Declaration of Alma Ata and welcomed the efforts of WHO and UNICEF to attain health for all by the year 2000[1; 32-33].

The concept of Health for All was thus born out of the concern of the governments and people around the world for the health care needs of the millions of under-served and under-privileged and for reversing the earlier trends of resource allocations from urban to rural areas, from curative to preventive, promotive and rehabilitative services, and from centralised to

* Research Director and Chief, Population Division, Bangladesh Institute of Development Studies.
decentralised services with the involvement of the community, as enshrined in the concept and definition of primary health care.

**Definition and concept of primary health care**

It has already been noted that primary health care is the key to attaining health for all by the year 2000. The Declaration of Alma-Ata defined primary health care as “essential health care based on practical, scientifically sound and socially acceptable methods and technology made universally acceptable to individuals and families in the community through their full participation and at a cost that the community and country can afford to maintain at every stage of their development in the spirit of self-reliance and self-determination. It forms and integral part of both country’s health system, of which it is central function and main focus, and of the overall social and economic development of the community. It is the first level of contact of individuals, the family and community with the national health system bringing health care as close as possible to where people live and work, and constitutes the first element of a continuing health care process.”

The Declaration of Alma-Ata maintained that primary health care “addresses the main health problems in the community, providing promotive, preventive, curative and rehabilitative services accordingly,” and defined the essential elements of primary health care as “education concerning prevailing health problems and the methods of preventing and controlling them; promotion of food supply and proper nutrition; an adequate supply of safe water and basic sanitation; maternal and child health care, including family planning; immunization against major infectious diseases; prevention and control of locally endemic diseases; appropriate treatment of common illnesses and injuries; and provision of essential drugs.”

Though the definition and concept of primary healthcare encompasses a very wide field of activities, inbuilt in the definition and concept of primary health care is the spirit of social justice and community participation and self-reliance and self-determination. The concept is also based on intra and intersectoral linkages and dependence and calls for cooperation among all countries of the world and technical and financial support from developed countries and international agencies in support of the primary health care, particularly in the developing countries.

**Health status of the population**

Bangladesh is characterised by high infant and child death rate. According to a recent survey conducted by the BIDS, while the crude death rate is 17.4 per 1000 population, nearly 60% of all deaths are drawn from the age group under 10 (44.2% from the age group 0–4 and 15.4% from the age group 5–9). Respiratory diseases and other infectious diseases such as neonatal tetanus, diarrhoeal diseases and severe malnutrition contribute substantially to high proportion of deaths in infancy and childhood. Communicable diseases take a heavy toll from the entire population of all
Warning and sex. Malaria, tuberculosis, pertussis, diphtheria, tetanus, parasitic infections, nutritional disorders and leprosy are major concerns of public health. In Bangladesh mortality rate is also very high at the level of 16% of the total population. [4]

**Treatment pattern**

Table 1 shows treatment pattern, of those who died during the last one year, during one month before their death. It can be seen that 25% of those who died during the last one year were not treated at all during the time period of one month before their death. Another 6% of them were treated by tolka/spiritual healer. These two together account for nearly one third of the deceased who did not practically receive any treatment. Slightly over a fifth of the total deceased (i.e. 21.4%) received treatment from the government health centres and around a half of this figure (i.e. 11.5%) also received qualified allopathy treatment from private practice (mostly of the government employed doctors). Unqualified allopathy, i.e., village quacks treated a slightly higher proportion of cases (i.e. 23.1%) than those who were treated by government health centres, and homoeopathy/kabiraji/hakimi account for more than half (i.e. 13%) of those who were treated by government health centres.

**Performance during the Second Five Year Plan (1980-85)**

Targets for 1984/85 and achievements made by that year for some major health indicators are presented in Appendix A (column 4). It may be noted that the performance of the health sector during the Second Five Year Plan

<table>
<thead>
<tr>
<th>Treatment pattern, of those who died during the last one year, during one month before their death</th>
</tr>
</thead>
<tbody>
<tr>
<td>No treatment</td>
</tr>
<tr>
<td>Tolka/spiritual healer</td>
</tr>
<tr>
<td>Homeopathy/Kabiraji/Hakimi</td>
</tr>
<tr>
<td>Allopathy</td>
</tr>
<tr>
<td>Unqualified allopathy</td>
</tr>
<tr>
<td>Qualified allopathy</td>
</tr>
<tr>
<td>Govt. health centres</td>
</tr>
<tr>
<td>Private practice</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>

presents a very dismal picture in terms of practically all indicators under (a) health status, (b) health care delivery, (c) supportive services and (d) health personnel. To give some example, during the Second Five Year Plan, the number of hospital beds increased by only 0,490 as against the target of 12,500 representing a short fall of 48.0%. The number of Upazila Health Complexes (functional) increased by only 51 as against the target of 107, representing a short fall of 52.3%. The number of Union Health and Family Welfare Centres (functional) increased by only 556 as against the target of 2,610, representing a short fall of 77.8%. The performance of Expanded Programme on Immunization (EPI), control of diarrhoeal diseases, control of tuberculosis, delivery services by trained midwives/birth attendants, ante-natal care, blindness prevention and nutritional service is grossly inadequate in terms of their targets. Gross inadequacy exists also in the provision of health laboratory services, and health paramedics and technicians.

Health sector allocation and major health care programmes under the Third Five Year Plan (1985–90)

The revised allocation for the health sector under the Second Five Year Plan was Tk 288 crore (1979/80 prices) representing 2.6% of the public sector outlay. Under the Third Five Year Plan, a sum of Tk 550 crore (1984/85 prices), representing 2.2% of the public sector outlay, has been allocated for the health sector. Thus the allocation for the health sector in the TFYP has not only decreased in relation to total public outlay, it has also declined in absolute term (in constant 1984/85 prices) as compared to that in the SFYP.

Table 2 presents programmewise allocation in health sector under Third Five Year Plan. Though the total allocation for PHC ancillary and supportive programmes represents nearly 74% of total health sector allocation, it may be noted that a high proportion of the allocation under PHC supportive programmes for expansion and modernization of district hospitals does not really fall under the purview of primary health care. Contrastly, some proportion of the allocation under health manpower development, viz., those geared to training and development of PHC domiciliary workers, community health volunteers etc. should really be included under PHC. A short description of the major programmes under each head of Table 2 is as under.

Primary health care and ancillary services

Major programmes under this heading are the construction/upgradation of 56 UHCs and construction/upgradation of 2,171 UHFWCs so that by the end of TFYP there will one functional UHC in each upazila and one functional UHFWC in each union. In addition, the plan envisages

1. The allocation of Tk 288 crore in 1979/80 prices is equivalent to Tk 413 crore in current prices which, according to inflator used in the TFYP, corresponds to Tk 583 crore in 1984/85 prices.
construction of one health post in each upazila which is supposed to be operative through self-financing on the basis of community participation. Plan document also stipulates expansion of MCH services, technical service for the control of communicable diseases, strengthening of ORS production and distribution system, increasing the coverage under EPI, strengthening of nutrition programme, health education, malaria control programme and ensuring community participation.

Table 2

<table>
<thead>
<tr>
<th>Programme area</th>
<th>Allocation in crore of Taka (1984/85 prices)</th>
<th>% total allocation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. PHC and ancillary services</td>
<td>275.08</td>
<td>50.02</td>
</tr>
<tr>
<td>2. PHC supportive programmes</td>
<td>129.57</td>
<td>23.56</td>
</tr>
<tr>
<td>3. Health manpower development</td>
<td>55.83</td>
<td>10.15</td>
</tr>
<tr>
<td>4. Hospitals and clinics</td>
<td>80.43</td>
<td>14.62</td>
</tr>
<tr>
<td>5. Programmes of general nature</td>
<td>9.09</td>
<td>1.65</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>550.00</strong></td>
<td><strong>100.00</strong></td>
</tr>
</tbody>
</table>

**PHC supportive programme**

Major programmes under this head include expansion and modernisation of district hospitals to enable them to act as referral centres for PHC, strengthening production of essential drugs and vaccines for PHC, health care for industrial workers and strengthening of health information system.

**Health manpower development**

Under this head, the plan document calls for strengthening of in-service training for all cadres of the existing health manpower, improvement of training programmes for teachers and specialists, expansion of post-graduate training facilities, provision of in-service training of health administrators for increasing their administrative and management skills, expansion of basic training facilities of nurses and midwives, crash programme for training of paramedical personnel such as laboratory technicians, radiographers, pharmacists, dental technicians, radiotherapy technicians and physiotherapy technicians, continuous educational programme for the PHC domiciliary workers and their supervisors, training of community health workers and health volunteers.
Hospitals and clinics

Programmes under this head include further development of the existing eight medical colleges and other specialised hospitals, establishment of one 100-bed T.B. Chest Hospital, two 100-bed Children Hospital and increase of 9,873 hospital beds in the public sector.

Other general programmes

Programmes under this head include construction of a headquarters for the DG Health Services, construction of Nurses’ quarter attached to hospitals and rehabilitative/reconstruction/preparedness programmes for the cyclone affected areas.

Major problem with the strategy for the Third Five Year Plan (1986-90)

Like the earlier development plans in Bangladesh, the TFYP allocates a huge proportion of the plan outlay for the health sector in construction/upgrade of the UHCs and UHFWCs. Though development of health centre infrastructure in the rural areas is desirable, it is not necessary and sufficient condition for developing a health delivery system under the PHC approach. What is necessary under the PHC concept and strategy is to bring out a complete change in the approach and philosophy of health delivery from curative to preventive, promotive and rehabilitative services through the active involvement of the community. Massive educational programme could have been launched for raising the consciousness of the people with respect to, say, use of safe water and basic sanitation, nutrition and food values, necessity for immunisation and vaccinations on DPT, polio, measles. T.B., TT, and simple knowledge about the care and treatment of endemic diseases and the sick. As required under PHC, efforts should have been directed for involving the community and to ensure their fullest participation with respect to basic health care planning and delivery system. Mobile health care services could be introduced on a regular basis for the areas whose health centres are currently non-available. Unfortunately the services provided through the existing government health centres till today remain holly geared to curative services lacking any orientation to preventive services. Inspite of whatever good words have been said in favour of PHC in the plan documents.

With respect to health education and health manpower development again, in spite of many good words used in the plan document in favour of PHC, we have not yet been able to shake off the parochial approach of quality doctors trained for urban needs in favour of large scale production of paramedics and short-course medical professionals like MAs and FVWs who are more suitable to live in the villages and serve the rural communities. The curriculum for medical professions have not yet been adopted to cater to the new philosophy of preventive, promotive and rehabilitative services for the rural poor through the involvement of the rural communities as enshrined in the PHC. On the other hand, at this stage of
our development, the socio-economic realities of rural areas do not provide adequate incentive to the MOs and Specialists to live in the rural areas and serve the rural communities. It is, therefore, no wonder that most of the MOs posted in the UHFWCs are non-available in their places of postings. In terms of appropriate manpower development for PHC, the TFYP represents a set-back from the previous plan. For example from a total number of 19 Medical Assistant Training Schools (MATSs) planned and initiated earlier, only 8 of the MATSs have been retained in the TFYP, the out-turn of FWVs has been halved from an initial projected out-turn of 720 FWVs annually. Unfortunately also the programme for development and training of Palli Chikitsaks initiated earlier has been dropped in the TFYP. The ratio of nurses to doctors in Bangladesh is one of the worst of all countries in the world and Bangladesh is facing a critical shortage of other paramedics and technicians, and yet no concrete programmes have been developed for the speedy development of this vital supportive manpower for PHC. The onus lies with the government for making nurses/paramedics profession honourable and attractive.

It may also be maintained that (1) the performance of the unipurpose vertical programme — such as EPI, NORG, health education, health information, nutrition programmes, FWVTI programme etc. is rather poor as these have not been integrated with PHC and general health care system in practice; (2) till to date, no appropriate method for securing effective community participation has been developed in the context of Bangladesh which could be used for the expansion of PHC coverage; (3) financial constraints prevent expansion of PHC activities and supply of essential drugs and other medico-surgical requisities which are till to date have always been in short supply in the UHCs and UHFWCs. No effective system of cost-sharing of the government health services which are offered mostly free has yet been developed and institutionalised. Neither the expertise available in the public sector has properly been tapped for effective sharing of responsibilities for PHC; (4) the performance of the grass roots level functionaries is highly unsatisfactory; (5) though the Planning Commission recognises that because of the anomalies of functional integration between health and family planning, “the services at the grass root level including vital PHC like MCH care suffered badly” it has failed to prescribe any solution to this problem. Till to date, a referral system with clearly defined linkage and communication has not yet been established within the health sector, and there are other serious problems with respect to intrasectoral cooperation “within the health services itself between its preventive, curative, academic and administrative components; (6) XV-3 (8) adequate PHC for the urban poor has not yet been developed and above.

2. According to Planning Commission estimate, during the Second Five Year Plan only 20% of the health budget was spent on drugs and other MSR which did not meet even 25% of the requirements.
all; (7) till todate, operational mechanism for achieving intersectoral coordination, as required under the concept of PHC, is non-existent.

There is a close similarity in the content and approach of the health sector plan under the Second Five Year Plan and that under the Third Five Year Plan, and if the experience of the SFYP can provide any guidance, we can safely maintain that a large gap between plans and implementation of the Third Five Year Plan will persist and the attainment of "Health for All by the Year 2000" i.e. providing at least a basic or minimum or essential health care to all individuals and families of the country, specially the under-served, will remain an absurd proposition. Though there are financial constraints, the major problem appears to be administrative and organisational in the Ministry of Health and Population Control itself, and lack of leadership in the vital area of primary health care.

REFERENCES

2. WHO : Strategies for Health for All by the Year 2000, Regional Office for South East Asia, New Delhi, January 1983.
### APPENDIX

Some major health indicators and targets

<table>
<thead>
<tr>
<th>Indicators</th>
<th>Unit</th>
<th>1979/80</th>
<th>1984/85</th>
<th>1989/90</th>
<th>94/95'</th>
<th>99/00</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) Health Status</td>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>1. Infant mortality rate</td>
<td>Per 1000 live births</td>
<td>140</td>
<td>100</td>
<td>75</td>
<td>60</td>
<td>50</td>
</tr>
<tr>
<td>2. Crude birth rate</td>
<td>Per 1000 population</td>
<td>43.25</td>
<td>31.68</td>
<td>19.30</td>
<td>21.00</td>
<td>20.70</td>
</tr>
<tr>
<td>3. Crude death rate</td>
<td>Per 1000 population</td>
<td>16.75</td>
<td>13.75</td>
<td>11.40</td>
<td>11.00</td>
<td>10.70</td>
</tr>
<tr>
<td>4. Population growth rate %</td>
<td>Per year</td>
<td>2.65</td>
<td>1.78</td>
<td>0.79</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>(b) Health care delivery</td>
<td></td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
<td>10</td>
</tr>
<tr>
<td>6. Hospital beds</td>
<td>cumulative number</td>
<td>20,500</td>
<td>33,000</td>
<td>42,000</td>
<td>52,000</td>
<td>60,000</td>
</tr>
<tr>
<td>7. Upazilla health complex</td>
<td>one in each rural</td>
<td>290</td>
<td>307</td>
<td>337</td>
<td>397</td>
<td>397</td>
</tr>
<tr>
<td>8. Union Health &amp; Family Welfare Centre (UHWC)</td>
<td>one in each union</td>
<td>1,990</td>
<td>4,500</td>
<td>4,500</td>
<td>4,500</td>
<td>4,500</td>
</tr>
<tr>
<td>9. Health posts for community based services (self-financing)</td>
<td></td>
<td>(1,773)</td>
<td>(2,329)</td>
<td>(4,500)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Immunisation against</td>
<td></td>
<td>(397)</td>
<td>(397)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(a) Tuberculosis</td>
<td>% under 15 years</td>
<td>50</td>
<td>60</td>
<td>90</td>
<td>95</td>
<td>95</td>
</tr>
<tr>
<td>(b) Diphtheria, whooping cough and tetanus</td>
<td>% under 2 years</td>
<td>1</td>
<td>30</td>
<td>55</td>
<td>65</td>
<td>75</td>
</tr>
<tr>
<td>(c) Measles</td>
<td>% coverage</td>
<td>5</td>
<td>30</td>
<td>30</td>
<td>40</td>
<td>50</td>
</tr>
<tr>
<td>(d) Polioimmunisation</td>
<td>% coverage</td>
<td>5</td>
<td>5</td>
<td>10</td>
<td>20</td>
<td>40</td>
</tr>
<tr>
<td>----------------------------------------</td>
<td>-------------------------------</td>
<td>---------</td>
<td>---------</td>
<td>---------</td>
<td>---------</td>
<td>---------</td>
</tr>
<tr>
<td>11. Control of diarrhoeal disease</td>
<td>% coverage of ORS</td>
<td>5</td>
<td>90</td>
<td>95</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>12. Control of tuberculosis</td>
<td>% case findings and treatment of aminosalicylic acid</td>
<td>10</td>
<td>25</td>
<td>50</td>
<td>70</td>
<td>90</td>
</tr>
<tr>
<td>13. Delivery by trained midwife/birth attendant</td>
<td>% deliveries attended</td>
<td>2</td>
<td>25</td>
<td>90</td>
<td>70</td>
<td>90</td>
</tr>
<tr>
<td>14. Antenatal care</td>
<td>% pregnant women given care at least once</td>
<td>—</td>
<td>20</td>
<td>90</td>
<td>70</td>
<td>90</td>
</tr>
<tr>
<td>15. Blindness prevention</td>
<td>% children under 6 receiving VTA capsule</td>
<td>60</td>
<td>30</td>
<td>50</td>
<td>70</td>
<td>90</td>
</tr>
<tr>
<td>*16. Gastro control</td>
<td>% covered for production</td>
<td>(10%)</td>
<td>(15%)</td>
<td>(50%)</td>
<td>(75%)</td>
<td>(90%)</td>
</tr>
<tr>
<td>17. Nutrition services</td>
<td>% of 2nd/3rd degree</td>
<td>5</td>
<td>25</td>
<td>50</td>
<td>70</td>
<td>90</td>
</tr>
<tr>
<td></td>
<td>malnutrition cases</td>
<td>(..)</td>
<td>(5)</td>
<td>(30)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>% of population</td>
<td>(25)</td>
<td>(30)</td>
<td>(85)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>*18. Coverage of population by primary health care service</td>
<td>availability of public health services (% of total requirement)</td>
<td>10</td>
<td>25</td>
<td>75</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>*19. Supportive services</td>
<td>% of coverage</td>
<td>(20)</td>
<td>(25)</td>
<td>(100)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20. Production of essential drug, vaccine, ORS &amp; I. V. fluids</td>
<td>% of coverage</td>
<td>(20)</td>
<td>(25)</td>
<td>(100)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>21. Health laboratory services</td>
<td>% of coverage</td>
<td>(20)</td>
<td>(25)</td>
<td>(100)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(a) Simpler clinical diagnostic lab. facilities at UHCs</td>
<td>% of coverage</td>
<td>(15)</td>
<td>(30)</td>
<td>(300)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(b) District laboratory facilities</td>
<td>% of coverage</td>
<td>(15)</td>
<td>(25)</td>
<td>(60)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(c) Simple tests in the UHFWC</td>
<td>% of coverage</td>
<td>(15)</td>
<td>(25)</td>
<td>(60)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Occupation</td>
<td>% of coverage</td>
<td>(10)</td>
<td>(20)</td>
<td>(50)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>----------------------------</td>
<td>---------------</td>
<td>------</td>
<td>------</td>
<td>------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>X-Ray facilities in the UHCs</td>
<td>cumulative number</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Blood transfusion services in District Hospitals</td>
<td>cumulative number</td>
<td>11,000</td>
<td>17,000</td>
<td>24,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Health Manpower</td>
<td>cumulative number</td>
<td>(0)</td>
<td>(20)</td>
<td>(50)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Graduated doctor</td>
<td>cumulative number</td>
<td>(631)</td>
<td>(1,050)</td>
<td>(2,100)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Post-graduate doctor</td>
<td>cumulative number</td>
<td>(460)</td>
<td>(1,800)</td>
<td>(4,800)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dentist</td>
<td>cumulative number</td>
<td>(130)</td>
<td>(350)</td>
<td>(700)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Basic Nurse/Midwife</td>
<td>cumulative number</td>
<td>(2,700)</td>
<td>(9,465)</td>
<td>(17,250)</td>
<td>(24,250)</td>
<td>(30,500)</td>
</tr>
<tr>
<td>Medical Assistant</td>
<td>cumulative number</td>
<td>(450)</td>
<td>(5,500)</td>
<td>(14,500)</td>
<td>(22,000)</td>
<td>(29,000)</td>
</tr>
<tr>
<td>Lab. Technical</td>
<td>cumulative number</td>
<td>(262)</td>
<td>(510)</td>
<td>(150)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Radiographer</td>
<td>cumulative number</td>
<td>(1,100)</td>
<td>(1,360)</td>
<td>(2,000)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pharmacist (Diploma)</td>
<td>cumulative number</td>
<td>(8,800)</td>
<td>(8,500)</td>
<td>(5,200)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Health Sanitary Inspector</td>
<td>cumulative number</td>
<td>(1,223)</td>
<td>(1,600)</td>
<td>(730)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Asst. Health Inspector</td>
<td>cumulative number</td>
<td>(930)</td>
<td>(1,260)</td>
<td>(1,500)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Health Assistant</td>
<td>cumulative number</td>
<td>(1,350)</td>
<td>(1,870)</td>
<td>(4,500)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Indicates new indicators and targets set under 3rd 5 Year Plan.

Note: Figures in parentheses represent revised base year figure for 1979/80, target achieved for 1984/85 and revised target for 1989/90.

Source: For original indicators and targets, i.e., figures without parenthesis, see Bangladesh Country Paper on Health for All by the Year 2000, paper presented by the Bangladesh Delegation at the Joint UNICEF/WHO meeting on Strategies for Health for All by the Year 2000, New Delhi June 1990. For revised base year figures, target achieved for 1984/85 and revised target for 1989/90 i.e., figures in parenthesis, see, Planning Commission, The Third Five Year Plan, 1986-90, Dhaka, November 1986.
WOMEN AND DEVELOPMENT
Planning for Increased Labour Force Participation by Women in Bangladesh

BY RUSHIDAN ISLAM RAHMAN*

I Introduction

It has long been recognised that a mere rise in per capita income is not the desired goal of economic development. Distributive justice is an integral part of economic development, which in simple terms means that the fruits of development should reach all people. This approach does not immediately lead to the recognition that women’s integration in the development process has to be treated as a distinct issue. Theories and programmes of development relied on the assumption that household is an unit of converging interest and can provide the basis for planning. But often the household members of the two sexes have opposing interest and the impact of a programme may be in different directions for them. So we have to address ourselves specifically to the issue of integration of women in development. Such integrations can be defined to consist of two broad components. Firstly, women should enjoy their share of the fruits of development. But this does not ensure that their human potential is fully developed and utilised. So the other component is that women should contribute to the development process. This is possible by contributing directly to the national product of the country, or in other words, by participating in productive activity. Remunerating these women for their participation in productive activity is also a desirable way of channeling the fruits of development to these women. Because it is believed that this method will create consciousness among women and give them control over decision making, these two components should not be seen independently but as complementary to each other.

In our country, given the existing social and economic situation, the ways of increasing women’s labour force participation, so that they contribute to the national product is not very straightforward. Women do not represent a homogeneous group but vary according to their present status regarding access to resources, current workload, qualifications, etc. So, while concrete programmes are formulated, it cannot be done for women as a whole. On the other hand, it becomes easier to determine the priority when we thinkabout

*Research Fellow, BIDS
one homogeneous group. Their interest will converge the approach and methodology to reach them will be similar.

Our first priority should be to come forward with programmes for the poorest women. This not only caters to the need for women's integration but can enhance distributive justice and poverty oriented development.

Bangladesh is not only characterised by an alarming proportion of population below the poverty level, but also is threatened by an increase in this proportion. It has also been shown that the burden of poverty falls more heavily on women. So strategies for alleviating poverty should attend to this group with top priority.

The general causes of poverty are identified as lack of land and productive assets and a consequent involvement in low productivity jobs and/or low paid jobs on the one hand, and on the other hand a low labour force participation ratio resulting in high dependency ratio and a high under-employment among those who actually participate. Among the poor women from landless households, all these causes work with greater intensity as compared to their male counterpart.

But the lack of access to productive assets is equally true for women from large land-owning group and among the asset-owning households in urban areas. So the interest of these women is likely to be different from their male earners. In this paper we shall discuss what can be done for women from various groups by way of giving them opportunity for participation in the labour force.

"Surplus Labour Theory and the Implications of Female Participation in the Labour Force"

When we consider the case for increased participation of women in the labour force, we should review its implications for the economy as a whole. The proponents of antiparticipation of women use one argument popularly: in countries with already rising magnitude of unemployment, female participation in the labour force would aggravate the situation. But the argument may not be such simplistically applicable. The argument is essentially static and does not take into account the heterogeneity in the labour market. Female participation in the labour force is not an issue relevant for potential female workers only, but should be seen in the context of the whole economy.

Let us, for example, look at the implication of female labour force participation for the so-called Lewisian model of dualistic development with unlimited supply of labour. The Lewisian model assumes a large volume of surplus labour in the traditional sector (agriculture) which can be drawn to the modern sector at a fixed wage rate which is higher than the conventional low wage in the traditional sector by a small mark up. This process continues till the more difficult phase of upward sloping supply curve of labour is initiated. This difficulty arises, among many factor, out of a rise in agricultural wage traceable to the removal of disguised unemployment.
In the context of Bangladesh, the theory of dualistic development can be criticised from different angles. Some of these criticisms, for example, relate to the non-existence of the capitalists and the misuse of the investible surplus. For our analysis, however, more relevant are the other set of factors related to the labour supply situation.

Though various micro studies have shown that in rural areas 35% to 40% of the labour supply remains unutilised, this may not form a removable surplus. This is because of two reasons: firstly, the larger farmers may remain voluntarily unemployed and may not opt for alternative employment. Secondly, among the landless labourers and marginal farmers who are potential migrants, the existence of removable surplus is being questioned. A large proportion of unemployment among them is seasonal and various studies have shown that among this group, unemployment in peak season may be insignificant. There is even a possible that a shortage of labour may exist in the peak season (Rahman 1981). In such case, the feasibility and desirability of shifting a part of the labour force may be questioned. It may be possible to withdraw some of these workers but it has to be done by offering a much higher wage. This in turn raises the question whether a fixed wage can be maintained in the capitalist sector. Trade union pressure is the commonly cited villain. But one of the factors behind such pressure is the rise in prices of agricultural product consequent of withdrawing labourers which are not really surplus.

Now let us examine what could be the role of female participation in this model of development. From our knowledge about women's activity in rural areas and the characteristics of female wage labour market, we know that they do not participate in field operations and are engaged in poorly paid post harvest activities.

When male labourers migrate to work in the capitalist sector, if the whole family accompanies them, the initial expenditure of resettlement may be higher but this will be compensated by less demand on wage bill to cover the expenses of regular visits to home. On the other hand the possibility of employing women labourers opens up a few advantages: Firstly, this will reduce the number of male agricultural workers that needs to be withdrawn. This will ease the labour constraint in peak season and reduce the upward pressure on agricultural wage and subsequently on industrial wage. (b) A further advantage of employing both husband and wife in the industrial sector is that the application of a concept of family wage (wage related to subsistence needs of the family) may reduce the per worker wage. (Of course we are not suggesting that wage should be fixed at such minimum). (c) Finally, if a real constraint is felt with such withdrawal of labourers from agriculture, female wage labourers may also be participating in field operations in agriculture. This will reduce the upward pressure on male agricultural wage as well as give better paid employment to women workers who used to work only in the post-harvest processing phase of the crop and get depressingly low wage.
All these will contribute to the process by extending the horizontal portion of the labour supply curve for the capitalist sector, and as the wage rate is depressed, the capitalists surplus will be higher. With these modifications, of course, other doubts about the working of the model still remain. Whether such a process of 'exploitative' structural change is desirable is the next question. But this analysis reveals that female employment may not mean growing unemployment for male workers. Because it is not a static question of filling in some existing vacancies either by male or by female job-seekers. It is a process where vacancies are also supposed to grow. Above all, this discussion illustrates how any development process may embrace the question of female labour force participation.

III The Current Situation of Female Labour Force Participation and Female Labour Market.

To assess the prospect of increased female participation we need to look at the current picture. Apart from the rate of participation it is relevant to understand the benefits and deprivations related to various modes of employment in the labour market.

The usual contention is that, because of the social norm of ascension and lack of employment opportunities, in underdeveloped countries female participation is much lower than in developed industrial countries. This view gets support in the traditional census data.

Table — 1
Crude Activity Rates by Sex and Residence Over the Last Two decades.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Bangladesh</td>
<td>Both Sex</td>
<td>34.3</td>
<td>28.7</td>
<td>31.1</td>
<td>27.1</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>56.2</td>
<td>53.1</td>
<td>55.2</td>
<td>49.9</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>10.8</td>
<td>2.6</td>
<td>3.8</td>
<td>2.8</td>
</tr>
<tr>
<td>Urban</td>
<td>Both Sex</td>
<td>34.6</td>
<td>31.7</td>
<td>31.4</td>
<td>30.7</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>56.3</td>
<td>54.3</td>
<td>52.6</td>
<td>52.1</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>9.1</td>
<td>3.7</td>
<td>5.8</td>
<td>3.7</td>
</tr>
<tr>
<td>Rural</td>
<td>Both Sex</td>
<td>34.2</td>
<td>28.4</td>
<td>31.0</td>
<td>26.5</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>56.0</td>
<td>52.8</td>
<td>55.5</td>
<td>49.6</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>11.1</td>
<td>2.5</td>
<td>3.6</td>
<td>2.7</td>
</tr>
</tbody>
</table>

Source: BBS: Statistical Year Book 1984; 114
The situation of female participation and its trend over the years is presented in Table 1. The female participation ratio is incredibly low and had shown a decline over the last 2 decades. But these low rates should not be as alarming as it appears on the first sight. A low rate offers the prospect that a substantial increases can be achieved. A more pertinent point is that these statistics may be of limited value for policy purposes. Let us elaborate on this.

The suspicion on the suitability of definition arises from the position taken by the census itself. 1971 and 1981 census attributes the decline of female participation rate to the definitional change. The stand was that in 1961 census many housewives were included in the labour force because they were involved in family farm activities. This brings us to the core of the debate about the definition and significance of female participation ratios.

In the census, the gainful workers and jobseekers are included in the labour force. “The gainful workers are those who report some economic activity as their major occupation. In Bangladesh and specially in rural areas, these definitions are totally inapplicable. Here housework and family farm production are so intertwined and because the housewifery role is seen as supreme, women will rarely report anything else than housewifery activity as the major occupation. Only those who are employed by others and are directly earning an income will be included in the labour force and women in this category are a small portion of actual workers. On the other hand, few women will be entered in the jobseekers or unemployed category because wage employment by women is not viewed with dignity and so it is usually kept secret if one is working in such a job or is looking for one. Only a few urban educated women who may be looking for white collar jobs will report their unemployment. This definition based on primary occupation will create another anomaly. For example a rich farmer performs a supervisory duty for 18 hours a week and is not involved in domestic work. He reports agriculture as the main occupation and is included in the labour force. His wife is involved in heavy crop processing work for 24 hours and is engaged in housework for 32 hours. She reports housewifery activity as her major and only occupation and is denied of the recognition of labour force participation. Such inconsistency makes the male-female comparison of census data impossible.

If this is the situation, we can use census data on female participation as an indicator of the extent of involvement in formal employment. So we have to look for other sources of data for women’s involvement in non-formal employment and their consequences.

Some Alternative Indicators on Women’s Involvement in Productive Work.

A review of studies on women’s involvement in productive activities reveals that most women are engaged in productive work for a few hours.
On the basis of seven hours of work per week, Khuda (1979) found labour force participation rate among women as 45%. In table 2 we compile the average hours spent on productive employment and domestic work by adult female in the respective sample of each study. Each of these studies point out that women work for longer hours than men. In addition, the following information may be useful for policy planning.

Landownership and the daily workload: It is well recognised that large landownership in rural areas confer status and prestige. It is also associated with larger family income which enables the family to employ hired labour. As a result, members of large landowning group are expected to work less than the smaller owners. We present the findings from various studies.

Male workers in household owning less than half an acre work for 9.29 hours per day (8.2 hours in productive activity) whereas male workers from household owning more than half an acre work for 7.71 hours a day of which 6.27 in productive activity. For female workers, the trend is opposite. Female workers from larger land groups work 8.50 hours a day (98% in income earning work) whereas women from smaller land group works for 8.03 hours (240% in income earning work). Khuda's finding shows similar pattern. His data is presented in the form of extent of unemployment. Unemployment rates are smaller for women from larger landholding group when the unemployment rate for males from larger land group is much higher than their female counterpart and the trend among male workers from various land groups is not clear. Unemployment rate among female workers from large land groups are shown to be negative meaning an overwork.
### Table 2

Average Hours Worked per Day by Adult Male Female Workers in Various Areas of Bangladesh.

<table>
<thead>
<tr>
<th>Period (year)</th>
<th>Place</th>
<th>District</th>
<th>Average hours worked by</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>1974</td>
<td>Azimpur</td>
<td>Dhaka</td>
<td>9.78</td>
<td>9.89</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Godnai</td>
<td>Narayanganj</td>
<td>9.74</td>
<td>11.54</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Jamelpur</td>
<td>Thakurgaon</td>
<td>9.33</td>
<td>10.20</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Belkuchi</td>
<td>Parna</td>
<td>10.71</td>
<td>10.62</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Amadi</td>
<td>Khulna</td>
<td>10.20</td>
<td>12.48</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Bara Pokoir</td>
<td>Sylhet</td>
<td>10.60</td>
<td>10.04</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Malichhari</td>
<td>Chittagong</td>
<td>10.22</td>
<td>11.21</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Hill tracts</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1976</td>
<td>Char gopalpur</td>
<td>Mymensingh</td>
<td>9.2</td>
<td>9.3</td>
<td></td>
</tr>
<tr>
<td>1977</td>
<td>Barkait</td>
<td>Comilla</td>
<td>6.5</td>
<td>8.4</td>
<td></td>
</tr>
<tr>
<td>1981</td>
<td>Sreepollopur</td>
<td>Comilla</td>
<td>6.7</td>
<td>9.1</td>
<td></td>
</tr>
<tr>
<td>1979</td>
<td>Four district combined sample</td>
<td>Bogra, Dhaka, Jessore, Noakhali</td>
<td>8.3</td>
<td>8.4</td>
<td></td>
</tr>
</tbody>
</table>

Source: Compiled by Chowdhury (1984)
Table 3
Underemployment Rate Among Sex and Landholding Groups.

<table>
<thead>
<tr>
<th>Landholding (acres)</th>
<th>% Underemployment Considering (a)</th>
<th>% Underemployment (b) for Total Work</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Busy season</td>
<td>Slack season</td>
</tr>
<tr>
<td>Landless</td>
<td>25.2</td>
<td>4.7</td>
</tr>
<tr>
<td>.01-1.0</td>
<td>-1.6</td>
<td>19.1</td>
</tr>
<tr>
<td>1.01-2.0</td>
<td>27.4</td>
<td>47.3</td>
</tr>
<tr>
<td>2.0+</td>
<td>17.7</td>
<td>39.2</td>
</tr>
<tr>
<td>Landless</td>
<td>35.5</td>
<td>69.9</td>
</tr>
<tr>
<td>.01-1.0</td>
<td>25.4</td>
<td>53.8</td>
</tr>
<tr>
<td>1.01-2.0</td>
<td>-3.5</td>
<td>26.3</td>
</tr>
<tr>
<td>2.0+</td>
<td>-4.7</td>
<td>43.1</td>
</tr>
</tbody>
</table>

Female Workers


(a) % Underemployment considering DPA only
\[ \text{time spent on DPA} \times 100 \]
\[ \text{time potentially available for DPA} \]

(b) % Underemployment for total work
\[ \text{time spent on total (productive+household) work} \times 100 \]
\[ \text{time available for total work} \]

This table can also be used to see how the burden of domestic and productive work fall on different groups in different seasons. For female workers from the largest group, the rates of unemployment are much lower when their household work is taken into account. Housework reduces male unemployment by some large percentage only for landless and small-owner and in the slack season only. The division of work among male and female workers is such that domestic work falls heavily in addition to her productive work. This is because she has to perform the essential domestic duties. On the other hand male workers can either shift or avoid their domestic work when productive work is at a peak.¹

These findings emphasize the fact that a mere increase in female labour force participation or increasing their volume of work is neither possible nor desirable in the present situation. And the situation is quite different for women from large land groups and for landless and marginal owners.

¹ The monthly pattern of domestic work and productive work for female workers varies in the same direction, whereas they move in the opposite direction for male workers, the rank correlation of these two being 0.28 for female workers and -0.36 for male workers.
Let us first deal with the situation of the richer women. Unless they are relieved of their domestic responsibilities it cannot be expected that they can engage in productive work for a longer time or in larger numbers. A tendency will always be there that more women from this group get rid of productive activity and help out the overburdened women. To impose more work on this group may even mean crucial domestic duties like childcare will be neglected which is by no means desirable.\(^2\)

A better equilibrium could be achieved within this system if more of landless women could be hired to do productive and/or domestic work for the richer women. Though this serves the interest of both the overburdened richer women and poor underemployed women, a few barriers work against this process. Firstly, from the demand side, the richer women do not have the same degree of autonomy as their male counterpart in hiring women workers. This is partly because of the lack control over the expenditure of their family income. It is also due to the fact that crop processing activities are seen as part of domestic work and as the responsibility of the families women.

To free these women for engaging in direct income earning activity, we have to break this vicious circle. This can be done only by raising the level of consciousness of both male and female members of these groups and motivating them to free themselves from the existing bondages. Though short term special emphasis on such conscientisation is possible, this has to be integrated with a longer run perspective. The long-run goal will be to raise the level of education among women which will both raise their consciousness and their ability to engage in more formal employment and organise directly productive activities themselves. It remains the task of programme organisers to plan for immediate action. Our main purpose is to make them aware about the problem.

Next we come to the case of women from poorer groups. It was observed that a large percentage of their time available for productive activity was unused. At the same time they are in need of cash income to supplement the small family earning. So to plan for an increase in participation in productive activity for this group should be a more straightforward and easier job.

To explore the possibilities for this group we examine the current status of this group. These women may engage in either wage employment or in activities organised by the family or by herself.

The Situation of Wage Labour Market for Rural Women and the Scope of Expansion of Such Employment

Studies on women wage workers in rural areas show that they come from extremely poor families where male workers income is barely sufficient or

\(^2\) The time spent by women on childcare is reduced by the pressure of time spent on productive work and home production and domestic activities.
from families which do not have male earners. So the earnings from women wage workers are crucial for the survival of these families. So it is more urgent to improve the conditions of this market. But the situation of this market in terms of employment pattern and wage rate is not very encouraging. We briefly note the findings of Rahman (1985) study which may be relevant for planning the expansion of this type of employment.

Table- 4
Activity-wise Wage Rate for Women Workers in Four Villages
Rate of Wage (taka) Per Standard (8 hour day)

<table>
<thead>
<tr>
<th>Activity</th>
<th>Baniara</th>
<th>Nardana</th>
<th>Kapurpur</th>
<th>Tulshighata</th>
<th>All Village</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cooking</td>
<td>9.60</td>
<td>10.72</td>
<td>11.28</td>
<td>8.20</td>
<td>10.16</td>
</tr>
<tr>
<td>Cooking and other activity combined</td>
<td>9.28</td>
<td>8.32</td>
<td>—</td>
<td>—</td>
<td>8.56</td>
</tr>
<tr>
<td>Paddy Husking</td>
<td>17.68</td>
<td>22.08</td>
<td>11.04</td>
<td>10.72</td>
<td>11.12</td>
</tr>
<tr>
<td>Paddy processing</td>
<td>10.08</td>
<td>—</td>
<td>9.42</td>
<td>9.20</td>
<td>9.60</td>
</tr>
<tr>
<td>Separating Jute fibre</td>
<td>—</td>
<td>—</td>
<td>9.28</td>
<td>9.84</td>
<td>9.52</td>
</tr>
<tr>
<td>Processing Rabi crops</td>
<td>7.92</td>
<td>4.64</td>
<td>12.40</td>
<td>10.96</td>
<td>10.06</td>
</tr>
<tr>
<td>Processing other crops</td>
<td>7.84</td>
<td>3.96</td>
<td>7.52</td>
<td>8.56</td>
<td>8.32</td>
</tr>
<tr>
<td>Earthcutting &amp; Construction</td>
<td>—</td>
<td>12.41</td>
<td>—</td>
<td>—</td>
<td>12.41</td>
</tr>
<tr>
<td>Net Weaving, sewing katha</td>
<td>4.96</td>
<td>9.36</td>
<td>6.40</td>
<td>4.08</td>
<td>5.36</td>
</tr>
<tr>
<td>Others</td>
<td>9.76</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>9.76</td>
</tr>
<tr>
<td>Total</td>
<td>8.17</td>
<td>9.44</td>
<td>10.75</td>
<td>10.52</td>
<td>10.27</td>
</tr>
</tbody>
</table>


Table-5
Rate of Wage for Male and Female Workers in Four Villages
Rate of Wage (taka) per Standard (8 hour) Day  
(including cash and the value of non-cash payment)

<table>
<thead>
<tr>
<th>Village</th>
<th>Female</th>
<th>Male</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baniara</td>
<td>8.17</td>
<td>28.00</td>
</tr>
<tr>
<td>Nardana</td>
<td>9.64</td>
<td>27.00</td>
</tr>
<tr>
<td>Kapurpur</td>
<td>10.19</td>
<td>25.50</td>
</tr>
<tr>
<td>Tuishighata</td>
<td>9.73</td>
<td>24.70</td>
</tr>
</tbody>
</table>

In these villages 8% to 20% households send women to work for wage. They come from landless households who do not cultivate any land. Among the landless households, 50% to 75% households have women wage workers. From an analysis of the factors influencing this percentage, it was revealed that demand side factors like percentage of area irrigated in a village, the proportion of large landowners are more important than the supply side factors like percentage of very poor households, percentage of households with no male workers etc. It indicates that a lack of demand may discourage many more women from seeking such employment. Those who are currently employed, are subject to large volume of involuntary underemployment. Such underemployment accounted for 37% to 70% of their time in the four areas of study. So an expansion of demand can also help to remove such underemployment. Such expansion of demand is also necessary to create pressure to raise wage rates. Currently these women are very poorly paid. Wage rates for women in various activities are given in table 5. Average daily wage of the women workers and for male workers are compared in table 6. These rates are incredibly low and we think that some of it can be explained by the lack of demand. These women face greater degree of underemployment than male workers. They are employed in activities which do not show any marked seasonal pressure of demand. With each employer, only one or two women work who cannot bargain strongly.

All these point to the necessity of expanding the opportunity of employment for those women. Most of these women expressed their willingness to work year round, if opportunities were available. Now the question is what opportunities can be expanded for them. We probed into this question. Though our objective was not to plan for concrete programme proposals, we explored some broad possibilities.

**Expanding Employment in Current Activities**

At present women are working mainly in two types of activities: domestic work including cooking and crop processing. A small amount of employment comes from earthcutting and home based contract work like not making etc.

The scope for increasing employment in domestic work is not bright. Such employment depends on the skewness of distribution of income because only the very rich households employ women to help the family workers in domestic employment. Moreover, it is desirable to introduce devices to reduce the burden of such work. So expansion of employment has to come from mainly crop activities. As it is desirable to keep the skewness of distribution of landownership as low as possible and prevent a deterioration of the present situation, we have to think of increasing the total level of crop activities to increase the demand for female workers. Our analysis shows that, the proportion of area irrigated in a village can increase the use of female labour. Apart from such absolute rise in demand from an increase
level of crop production, a more rapid expansion could be operations which are currently performed by men but do not require much physical effort, e.g. weeding. But this is not possible in the existing socio-cultural value system. We collected the opinion of employers and found that none of them will be willing to employ women in these activities. This is because they do not gain anything by breaking the traditional norms. Women who are employed, may not be too opposed to such work as we find that some of them are currently working in activities like earthcutting where their site of work is outdoor places. In this respect, we cannot expect any drastic change unless male workers are fully absorbed and an acute shortage of workers is felt.

It may be easier to plan for special non-agricultural programmes to absorb these women. Nearly 90% of women wage workers expressed their willingness to work in food-for-work road-building activity. Most of the women were eager to work in formal employment in industry/factories located in nearby towns. The attraction lies not only in higher wages but also in the regularity of employment and wage payment. So special programmes may be organised to proceed along this line. Special foodforworks is already operating in small number of places to employ women. This may be extended. Special rural or semi-urban industries may be set up with loans from special agencies with the additional clause that certain percentage of employees should be women. Some concessional terms may be applied to these loans.

In fact none of the women wage workers were satisfied with the terms of their present employment. They would prefer to resign from these jobs if the male members of the family earned enough or if they could make some earning from home based production. A logical policy option, which follows from this is to create opportunities for self employment. The strategy will be to provide them with loans to finance the requirement for capital. Grameen Bank has demonstrated some success in such endeavour. But the need for including more of such distressed women in their programme, improving the productivity of self-employment activities, increasing the control over the income generated in this process are some of the issues which need to be resolved.

Such a programme will not only draw the currently wage employed women and give them year round employment but will also encourage other poor women to undertake such activities.

Female labour force in formal urban employment:

Here we consider the case of skilled and unskilled workers separately. In our theoretical model we discussed the implications of employing women in unskilled industrial jobs. Here we point out the problems arising from their domestic and reproductive role.
The reasons pointed out by employers for not employing women is their frequent absence from duty arising from their domestic responsibility, less devotion to work, their need for maternity leave etc. But the truth of none of these complain are borne out undoubtedly by empirical findings. Rather many studies point to the contrary and/or a sacrifice of leisure time to carry out domestic responsibilities. Even in that case such employment may have long run implications for the employed women’s own health and the welfare of her family. So we would not propose an imposition of a double day on these women. Rather the rules of the game need to be changed in such a way that they suit women employees so that they can combine maximising family welfare and contribute directly to the national income. What change in the existing rules are required need to be investigated thoroughly through empirical and action research. This has to be done by collecting the opinion of already employed women on the required facilities and actual provision of facilities and estimating the cost and benefits of such provision. Some bread changes like provision of part-time employment arrangement for communal child care by women themselves by shift basis etc can be suggested as some first steps.

Such employment of women may have other long run beneficial impact like reduced fertility, better aspirations for children etc which cannot really be evaluated. Above all this means a feeling of participation of women in the development means a feeling of participation of women in the development process, a rise in her consciousness and step towards reculation of gender inequality.

The need for these changes are equally true for greater participation of skilled and educated women in professional jobs. The absorption of educated and skilled woman raises a few other issues. At present a large percentage of educated male and female are unemployed. So there is a direct competition between them for jobs. In this situation, the male employers may be inclined to select male candidates on the ground that they need the job more urgently because they have to maintain the family. So to ensure women’s right, the currently existing quota system should be better enforced. But such quota applies only to new recruitment at the initial rank. We agree that higher positions should go to efficient people. But promotion on the basis of seniority will mean that women, who entered late into the professions will not hold the higher positions in near future. To counteract this drawback, there should be measures to enhance the qualification of women. This is true for higher education of women in general. The difference in the rate of higher education of men and women is much greater than the difference in the rate of simple literacy. A larger attainment of higher education by women has other advantages as well. Unless the existing structure of having women employed only in the lower rank can be modified, the existing genderwise exploitation cannot come to an end.
IV Control over Resources, Production Organisation and the Role of Female Labour Force Participation

While we emphasise the role of increased female labour force participation by women for a progress towards their integration in development, mere employment, devoid of control over the production process cannot be seen as the most desirable situation. A control over the production process is closely linked with the ownership of the means of production.

In rural areas land is the most important asset for agricultural households. But a family's land is almost always owned by the male head of the household. Some is true for other agricultural equipments. According to Muslim law, women inherit a part of their father's land. But because of the patriarchal system of family, they move to husband's residence and cannot effectively use father's land even if claim their inheritance right. On the other hand, the women often do not claim their inheritance right. On the other hand, the women often do not claim their inheritance right. On the other hand, the women often do not claim their rights on land due to various social customs. Important among these are the provision of social security in case of widowhood etc and the scope of spending some days in the paternal house which is a form of vocation for the women.

Similarly, in non-agricultural occupation women either work in low productivity occupation, requiring meagre fixed capital. For example, bamboo work, net making etc.

Most women spend some of their time of the day looking after the livestock. But the ownership of these livestock rest with the male members even if they were purchased after the housewife came to the household and started contributing to family income.

So along with programmes to generate income for women and increasing employment among them, the programmes should be oriented in such a way as to enhance their control over productive assets. Their control over the production process and production organisation also requires a control over the marketing of products. Conventionally, marketing is the domain of male members only. So an overall rise in consciousness of the society is required for women to undertake such unconventional activities.

Such control over the production process via the ownership of productive assets and controlling of the marketing aspects is essentially for women if they are to retain control over the income earned by their labour. Otherwise the increased work input by women will lead to a greater exploitation of women rather than enhancing their status.

V. Planning Methodology and Women's Participation

Our discussion so far reveals that women's participation in the labour force is not an issue that can be settled by separating it from other aspects of
the whole economy. They can contribute to and also benefit from the rise in productivity and measures of enhancing equality in the distribution of gains of development.

In the formulation of development plans of the country this integrated approach should be recognized. The current practice of treating these as special programmes lead to the view that they are of secondary importance and the priority should be given to strategies of accelerating growth of agriculture and industry and reduction of poverty etc. This outlook is detrimental not only to the formulation of proper policies and judicious allocation but also may lead to slacks in the implementation of whatever programmes are taken. The reason behind such misconception is the lack of awareness among planners about the issues related to gender inequality and even a reluctance to educate oneself on these issues.

It remains for the planners to modify the planning methodology to cope with the issues of integrating women. To give one example, the employment generation during a plan period is measured by using labour coefficient for each sector. These labour coefficients are usually aggregates which consist mostly of male labour. If such coefficients are disaggregated for male and female labour, we could predict the impact of a given investment on female employment. A similar example may be given for plan strategies related to reduction of poverty. The draft Third Five Year Plan identifies a number of strata of people on whom the development programme may have different types of impact. The method suggested is to monitor the situation of these groups in terms of poverty as the development programmes are implemented. But a recognition of the fact that wage worker women or women from families without male workers suffer from the most severe poverty would require that they are identified as a distinct group whose situation needs to be monitored. Similarly the situation of male and female workers in the urban informal sector are likely to be very different. So the current approach may fail to achieve their very objective because of failure to recognize the gender aspect of poverty.

We do not want to multiply on these examples of required changes in the methodology and aggregative (sexwise) approach. Lack of data may be cited as the reason behind not to adopt the methodology. But an intention to do so could base itself on the first instance on an improvement of the database.

VI Concluding Comments and Summary of Observations

The major objective of this paper was not to give actual plans for expanding female employment. Apart from the reasons arising from research gap this cannot be done unless we have definite information on access to resources for this purpose and the possible institutional mechanism on which we can depend for the implementation of programmes. In our analysis we tried to synthesize the information which points towards the possible and desirable ways of increasing female labour force participation. The policies which they point towards, may not seem to be very different.
from the current practices. What we would like to emphasise is the efficient implementation of whatever programmes are undertaken.

Apart from existing programmes, the formulation of more effective new programmes should be based on a more accurate knowledge about the situation of women as depicted in various micro studies rather than on census data.

Existing programmes emphasise activities which are considered traditionally as the domain of women workers. These are related to handicraft and very small scale cottage industry or processing activity. Since these are outside the mainstream of economic activities the programmes are of small scale and cannot ensure the sense of integration of women in the overall development process. In fact the integration of women in the mainstream of development process will involve some basic changes in the planning methodology as well and the planners need to be prepared to accept such basic change.

Above all, a rise in consciousness of both men and women about the need for increased participation of women in directly productive work and the required changes is necessary. Programmes of education and employment expansion should incorporate means of generating such consciousness.
Expanding Economic Opportunities for Women in Bangladesh: Some Selected Issues

BY KHALEDA SALAHUDDIN

Introduction

In recent times, the global concern for issues related to women’s role and status in society has been reflected in the declaration of the year 1975 by the UN as the International Women’s Year and 1976–85 as the UN Decade for Women. It is now generally recognised that women have relatively low status economically (as well as socially and politically) and such a state of affairs is undesirable both on the grounds of human rights and optimal resource utilisation. Although women constitute about half the population of Bangladesh, their socio-economic situation presents a dismal picture. In this context, some of the critical issues are those related to women’s role and status in society such as their participation in decision making, their access to productive resources and consumption of goods and services, their employment opportunities (both wage and self-employment) and control over their own income, their wage rates relative to men engaged in similar activities, recognition and evaluation of their work in the household, and their legal status relating to inheritance of property.

In this paper, however, issues relating to expansion of economic opportunities for women in general and their employment (both wage and self-employment) in particular will be discussed. Female employment is not only a critical determinant of the role and status of women at home and society, it is also a crucial factor in enhancing the levels of living of the poor households. The entitlement to income which determines one’s access to basic needs and the level of living (in the absence of large scale transfers to benefit the poor directly) comes through employment. Recent micro studies reveal that rural and urban women contribute substantially towards maintaining/raising the level of income of the households particularly located at the bottom of the income scale [1:7-8]. These studies also reveal that the strategy of existence of the poor households with very little or no income generating assets is to mobilise all the available human resources irrespective of sex or age for earning or supplementing their meagre incomes. Female employment becomes all the more important when one
considers it in the context of female-headed households where women are the only able-bodied workers; the proportion of such households was found to be 5 percent in the sample villages of a micro study undertaken in 1977-78 [2]. Although reliable statistics are not available, all indications point to the fact that this kind of households is increasing in proportion in the recent times. In all these cases, levels of income, hence welfare of the household would crucially depend on the degree of female participation in income generating activities. In view of the stubborn persistence of poverty in Bangladesh, planned struggle for the attainment of a minimum income and alleviation of poverty has become the most important task of the nation. The expansion of productive employment for all in general and for women in particular in all the sectors of the economy has to be considered as a means to achieve this goal. Female employment generation would not only lead to a greater utilisation of idle human resources but also go a long way in the alleviation of poverty.

Data Source

Data on female employment have mostly been collected from secondary sources. In view of the limitations and inadequacy of available statistics on female employment in the various sectors of the economy, some relevant information have also been gathered through personal observation. For forming the data base of this paper, reports of the two population censuses (1974 and 1981), the Establishment Survey Reports, 1982 (Govt. of Bangladesh Manpower Planning Centre), Final report of Rural Industries Study Project (Bangladesh Institute of Development Studies, 1981), available annual reports of Grameen Bank, Shawkrir Banlashed and Bangladesh Rural Advancement Committee (BRAC) have been heavily drawn upon.

The paper is organised in the following manner. Section II provides an over all scenario of the female employment situation in Bangladesh.

Section III makes an attempt to identify the major constraints to the expansion of female employment.

Section IV examines the prospects of the expansion of female employment in various sectors.

Section V presents the conclusion as well as a few recommendations to overcome the constraints.

Situation of female employment in Bangladesh.

Before we proceed to discuss the situation of female employment in Bangladesh, an attempt should be made to define the term "employment". There are ambiguities with regard to the definition of employment. For instance, there are confusions over the minimum age to be considered for the calculation of employment rates, the types of activities (agricultural activities within the homestead, unpaid domestic help, the essential household tasks) to be included for such calculation as well as the reference
periods on which to base these calculations. Even the Bangladesh Population Census Report (1974) does not find “the tools for measuring employment” very satisfactory[3]. In view of the nature of work women, particularly rural women of Bangladesh perform, the tools used for measuring female employment seem to be all the more unsatisfactory. The Census Report (1974) therefore, rightly states that “a more accurate measure of female participation rate” in economic activities is necessary[3].

The term employment is usually applied to activities performed in exchange of wages/salaries in cash or kind. The term self-employment generally means subsistence/cash crop/non-crop agricultural as well as non-agricultural activities such as rural industries, trade and commerce, transport and services a person performs on his/her own to produce food grains, other commodities, goods and services for family consumption or for sale[4].

Now majority of our women, particularly rural women are kept out of the labour force by the census definition of economically active population as consisting of those (a) employed (as per definition given above) and (b) looking for work. From this definition of the labour force, it follows that women who are neither employed (in the above sense) nor offering themselves for wage employment would be excluded from the labour force, although they may be engaged in productive work (even if they are remunerative) within the household.

While some women belong to the civilian labour force as defined in the census, majority of them who are engaged in producing or processing activities within the homestead (such as threshing, drying, winnowing, parboiling, husking, storing grains, growing vegetables and fruits, raising cattle and poultry, preserving fish and fruits, sewing kanchas, collecting food, fodder and fuel, drawing water and preparing food, etc) or one performing other essential household tasks (such as washing, cleaning, rearing children, etc) are kept out of the civilian labour force. This is highly inappropriate as a large proportion of women are performing remunerative and expenditure-saving activities within the household. The concept of ‘civilian labour force’ as defined in the census is, therefore, too narrow in the context of the rural economy of Bangladesh.

The definition of female employment used in the 1974 and 1981 censuses includes only those women who fall in the categories of wage and self-employment. It is found (statistical pocket book of Bangladesh, 1983) that the refined labour force participation rate for men varied between 74 to 88 per cent over the periods of 1951, 1974 & 1981. But the refined female participation rate for 1981 shows only a marginal improvement (4.3 per cent) over that of 1974 (4.1 per cent). In 1961, however, the figure was much higher (17.2 per cent) stated to have resulted from a definitional ‘error’ which included a number of housewives as working women—a ‘forgivable error’ which, however the later censuses did not commit. Not
only have the 1974 and 1981 censuses excluded household productive activities, but even the wage and self-employment figures for women seem to be gross under-estimations. In recent times some micro studies such as the rural Industries Study Project—Final Report (BIDS, 1981), Socio-Economic Impact of Roads in Rural areas (Bangladesh Unnayan Parishad, 1984), A Socio—Economic Evaluation of the Chandipur II Irrigation Project (Bangladesh Unnayan Parishad, 1982) record female participation rates between 8—18 per cent. The World Bank puts it at 11 percent & projects it to rise to 25 percent by 2000 AD [see Table II APP II]. Another micro study shows that women on the average spend almost an equal amount of time as men on productive activities. As in the case of the conventional definition of “employment”, questions of inappropriateness/inapplicability of the concept of “looking for work” may also be raised for measuring female employment or unemployment. In view of the fact that female employment still does not enjoy social approval and is hardly considered prestigious especially in the rural society, rural women rarely reveal that they are looking for work or are actually engaged in wage employment. [5].

In rural Bangladesh, the question of whether within—homestead work, especially agricultural and essential household chores performed by women should be termed as productive has assumed great importance. Empirical evidence shows that women not only work longer hours than men, but their work, particularly in post—harvest grain processing, food storage and subsistence production, appears to be of fundamental importance to the rural production cycle. [6]. It is slowly but inevitably being realised that subsistence production is of fundamental importance and the commodities implied by it are largely substitutable for those available in the market and therefore logically these commodities should form part of the national output. Such output not only has the virtue of saving the cost of subsistence but has the potential of generating income for the household [7].

In cost—benefit analysis, investment projects of some categories, not so much income generating as cost saving, are also treated as productive. Therefore, expenditure saving activities for which women’s time is spent should be termed as productive and treated at par with the work performed for the market.

An early definition of home production included in its fold those household activities which “are carried on by and for the members, which activities might be replaced by market goods or paid services, if circumstances such as income, market conditions and personal inclinations permit the service to be delegated to someone outside the household group”. [7:18]. According to this definition, household work such as childcare, house keeping, and socialisation of children which may be delegated to someone outside the family group may be considered as part of active labour. Theoretically, therefore, there seems to be no bar in defining female employment to include almost all forms of activities that women perform.
Various practical problems of measuring women's non-market household work may, however, be resolved through determined efforts. Time used for such work may be a first approximation of their contributions.

While recognising these deficiencies, this paper will however, use 'employment' in the same term as is used in censuses.

Women's participation in conventionally defined economic activities

As mentioned earlier, the census definition of economically active population has kept many women, especially in the rural area, out of the labour force. As a result, while the refined male participation rate stood at about 74 percent in 1981, the corresponding rate for women was 4.3 percent. In the rural area, while the refined male participation rate was 73 percent in 1981, the corresponding figure for the female population was a mere 4.1 per cent. While the civilian labour force participation rate for the urban male population was 89.09 per cent (in 1981) the urban female participation rate was shown to be a mere 5 per cent.

Occupational distribution of employed women

Occupational distribution of employed women gives us an insight into the real status of women in the economic sphere as well as changes that have taken place.

The 1980 Manpower Survey shows that the employed women are largely engaged in agriculture, services, manufacturing, transport and related activities which together account for 90 per cent of them. While some 55 per cent of the rural employed women in the sample was found to be engaged in agriculture, followed by manufacturing, transport and related activities (28 per cent) and services (11.5 per cent) the majority of the urban employed women was engaged in services (74 per cent), clerical work (7.7 per cent) and sales (5.8 per cent) (Appendix I, Table I).

A comparison between the 1974 and 1981 censuses reveals that the non-agricultural sector employed about 30 per cent of employed women in 1974 rising to 72 percent in 1981 (Table II, Appendix-I). But this increase does not seem to be due to the "pull factor" induced by a developing manufacturing or business sector. BBS (1984) data show that the manufacturing sector claims only about 5.1% of the employed women while business sector absorbs 4.8 per cent. A great majority of employed women (62%) are employed in the "nameless sector" called "others" which seem to have included women in domestic service also.

Very few rural women have access to productive resources for self-employment either in the agricultural sector or in the non-agricultural sector as compared to rural men. And the demand for female labour in the rural non-agricultural labour market is very low indeed. The Manpower Survey (1980) shows that while 11.1 per cent of employed woman are in the agri-self employed category, the corresponding figure for employed rural men was 27.7 per cent. On the other hand 30.3 per cent of employed rural
female was agricultural wage labour while the corresponding figure for the employed rural male was 26.8%. 30 percent so called employed rural women were working as unpaid family helper while 20.8 per cent rural male were working in this category. Again very few women (4.2 per cent) were in the non-agricultural self employed category (corresponding figure for rural male in 7.9 per cent). Only 2.6% of employed rural women were in non-agricultural wage employment as compared to 9.8 per cent for men. A high percentage of employed rural women were found working as domestic servants (21.8 per cent), while only 5 per cent of men were in this category.

In the urban area, however, the percentage of women working as non-agricultural labourer was found to be higher (26.9 per cent). But the largest concentration of urban employed women was in domestic service (61.5 per cent) whereas the smallest group of urban employed male was in domestic service (2.4 per cent). The majority of employed women in these sectors seem to be in low-salaried, low-status employment and in a more disadvantageous position than men. (Appendix 1, Table III)

In other occupations such as professional and technical, administrative and managerial, the picture is not any brighter either. The Establishment Survey 1982 which shows the distribution of women employed in establishments (employing 10 persons and more) by skill (professional) category, reveals that the percentage of women employed in administrative and managerial category is only 2.3 per cent (of all the persons employed in these categories). They form only 1.0 per cent of the total women employed in all the categories. In the professional category such as doctors, engineers, agricultural scientists, teachers, etc. Women constitute about 6.8 percent forming about 2.00 per cent of all women employed in all categories.

The Establishment Survey (1982) clearly shows that although the diploma level female technical personnel account for 16.6 per cent of all the persons employed at this level, they lag far behind in the professional administrative and managerial cadres. It also points to the fact that female employees were mostly found at the lowest rung of the employment ladder (i.e. in the unskilled category) requiring very little education or skill implying that women own very little productive asset and have little access to educational or skill training facilities which compel them to accept jobs that require practically no skill and very little education.

Thus the employment pattern of women indicates that they are mostly employed in those sectors where (a) high levels of education and technical skill are not required, (b) work is in the unskilled category, and (c) segregation on the basis of sex is easy (i.e. teaching, medicine, nursing, etc).

A survey carried out in Dhaka (Chowdhury, 1976) among a cross section of 270 women found that next to household and domestic employment (sewing, private tuition, toy making, etc), teaching followed by medicine was considered to be the most suitable employment for women. The respondents felt that in these occupations women would be able to cater to
female clients and this would "avoid conversing with men and therefore preserve the chastity of women". Although teaching and medicine are the two highly respected and socially approved occupations for women, female participation in teaching is only 5.7 percent and in medicine 0.9 per cent of the total employees within these category [Establishment Survey 1982].

The government is by far the largest employer in the country and the participation of women at all levels of government service (especially at the decision making level) is necessary so that they may have a say in the formulation of government policies relating to women. But unfortunately the number of women in the highest administrative responsibility is very small. During the Pakistan regime, women were barred from entering civil service, foreign service, police service and most of the cadres in the defence services. In the post-independence period, the bar in the civil and foreign services was withdrawn and women are now allowed to enter these services through competitive examinations.

Women in the Wage labour market

Wage employment for women is of crucial importance as the majority of women entering the labour market comes from the poorest households where they are the principal income earners [12: 125–126] Manpower Survey (1980) shows that in Bangladesh a larger percentage of employed women are in wage employment (agricultural labour 26.5% and non-agricultural labour 6%) as compared to self employment (9.6% in agriculture and 4.0% in non-agricultural activities).

A recent BIDS Survey (conducted by the Rural Study Project Group) shows that wage employment for women constitutes a small portion of the total employment for men. This state of affairs seemed to be attributable both to the demand and supply constraints. Employed women were found to work only 40 to 60 days out of a 90-day period. The male unemployment rate worked out to be between 20 to 30 per cent while for women it varied between 17 to 38 percent between the areas [5:15–16].

Manpower Survey (1980) which defined under employment as less than 40 hours of work per week revealed that in agricultural self-employment about 83.4 percent of female and 23.1 per cent male workers were under-employed while in agricultural wage employment 41.7 per cent female and 21.9 per cent male labourers were found to be under employed. In non-agricultural wage employment the corresponding figures for female and male workers were 60 per cent and 21.3 per cent respectively. Again, the distribution of agricultural/rural workers by sex and hours worked at different periods as revealed by Bangladesh Bureau of Statistics (1982) shows seasonality in the employment and under-employment pattern. The percentage of severely under-employed (below 20 hours of work per week) rises to 51 per cent for women and 23 percent for men during the slack period. In the peak period, however, 66 per cent of employed males and 31 per cent of employed females work more than 60 hours per week.
Wage rate for Women

The Rural Study project Group (BIDS) found that the rate of wages was much lower for female workers in the rural/agricultural sector as compared to that of the male workers. Except for 3 cases where the wage rates for women was found to be 1.2 to 1.4 times higher than the rates for men, the male wage rate was found higher and in at least 10 cases it was found more than double the rate for women. The difference in male/female wage rate may be due to purely economic reasons such as the operation of the forces of demand and supply, differences in productivity or non-economic factors.

In the non-agricultural sector, the female wage rate does not compare favourably with that of men either. The RISP (Rural Industries Study Project—BIDS) data show that in rural industries adult women received only 70 per cent of the hourly wage rate received by adult men. This may be due partly to the fact that the level of education and skill of the women workers was lower than that of the male workers. The proportion of literate workers was found to be 54 per cent among men and 30 percent among women. But the other reason seems to be that employers are generally biased against women willing to take up any employment [5,28].

Technology and female employment

Of the rural industrial activities in which there has been some technological improvements, rice milling has important implications for female employment. Not only is the capital intensity 833 times and 36 times higher for automatic mill and rural mill as compared to Dhenki, the female labour displacement due to mechanisation of paddy processing, as revealed by some micro studies, is highly alarming. Studies show that a displacement of 815 women for the automatic mill and 312 women for the rural mills would displace (if all the mills were to run at full capacity for the whole year) about 5.4 million very poor and needy women belonging to the landless and near landless households who generally operate in this labour market [5,30].

Factors Affecting Expansion of Female Employment

Some General Constraints

Before we discuss the prospects of female employment expansion, an attempt should be made to identify the major constraints frustrating the efforts of all concerned to raise the female labour participation rate.

Male attitude

Male attitude towards female employment affects both the supply and the demand of female employment in Bangladesh. In a country where unemployment problem is acute, women's employment issue is not likely to receive any sympathetic consideration from the society. Men are viewed as the principal bread earner of the family and women's income is considered secondary and, therefore, employers are generally found biased against
women even if they have the same qualifications. Again women are considered suitable only for a few occupations like, teaching, medicine, etc. but not for administrative or managerial responsibility. Preconceived notions about women being inefficient, superficial and unable to apply their mind to office work, being burdened with home responsibilities, make their entry into any service difficult. A survey (Chowdhury, 1978) reveals that a large number of female job seekers felt that men are preferred to women.

Male attitude sometimes creates supply side problems also. Some male guardians consider an unmarried woman's work outside her home an obstacle to marriage. Again, some husbands do not view their wives' employment favourably as they fear that it may lead to greater independence for the wives which may result in their loss of control over them. [9] Hostile and critical attitude of the male colleagues sometimes acts as a disincentive to work.

However, in some areas social attitude to female employment is changing for the better. A survey (Unnayan Parishad 1980) on female workers in organised industries in and around Dhaka recorded that 82% of the husbands, 78% of the fathers-in-law and 77% of the mothers-in-law of the respondents approved of their taking up industrial employment. Another study (S. Alam, 1976) however, shows that although nursing attracted more women than men, it was still considered a low-prestige profession. Of the 53 female nurses from Dhaka Medical College 74 per cent felt that nursing was not favourably looked upon by the society. Micro survey findings reveal a positive change in women's attitude towards taking a job if opportunities are made available to them. According to a survey (Chowdhury 1976), a group of non-working women (548) of Dhaka city was asked if they would accept a job if made available to them, 72 percent expressed their willingness to accept the job - the reason being economic pressure.

Lack of productive asset is a formidable constraint against the expansion of female self-employment both in the agricultural and non-agricultural sectors.

In the rural sector, the remunerative work that women usually do is more or less sex-specific and when this type of work is in short supply, many female job seekers find themselves without employment. (Islam, 1978). In most cases women worked as domestic maids in rich households and their activities included the entire post-harvest operations (Islam, 1978). This explains the seasonal variation in employment for female heads, the coefficient of variation of which was found to be as high as 11.36 per cent (in case of male heads the corresponding figure was 5.58 per cent).

Low levels of education and skill possessed by women assumes greater importance in the context of technological improvements, which require acquiring of a minimum level of education and skill. Female workers are found unsuitable for those activities where improved technology is being used. This is responsible for the lack of demand for female labour in such activities.
Household responsibility which takes up a large proportion of the total time available for women is a constraint on the supply of woman days for remunerative jobs and self-employment. Non-availability of improved technology for domestic work which could reduce the total time needed for such work compels women to provide fewer hours for remunerative employment.

Lack of institutionalised child care facilities is another formidable constraint on the expansion of female employment. A survey (Chowdhury, 1976) revealed that only 0.26 percent of the working mothers could use such facilities. A majority of non-working women mentioned that lack of child care centres as one of the main reasons for their non-participation.

The Bangladesh Unnayan Parishad Survey (1980) also reveals that the lack of such facilities as separate toilets, rest rooms and in-service training arrangements for female employees act as disincentives to continue in employment. Transportation to and from the work place and accommodation, especially in big cities like Dhaka and Chittagong, is a serious problem. House-owners are found reluctant to rent out accommodation to single women. The few career women's hostels are inadequate in meeting the increasing demand from working women coming from outside.

Inadequate training facilities and technical institutions for women and lack of information, guidance and counselling facilities are other hurdles in the way of expansion of female employment.

Available evidences also show that inappropriate skill training given to unsuitable candidates or training which was not backed up by follow up action such as supply of credit or other necessary support services, in many cases, frustrate the efforts of some govt. and non-govt. organisations to involve women in economic activities.

Other factors that affect female employment include the uncertainty and irregularity of employment, the non-existence of any fixed term of contract and unsatisfactory method of wage payment both in the rural and urban informal sectors.

Prospects for the Expansion of Female Employment

Awareness of the need for improvement in the status of women and integrating them in national development began to gain momentum in Bangladesh from mid 1970s when the year 1975 was declared by UN as the International Women's Year and 1975–85 as UN Decade for Women. The elements of a national policy on female employment which could be discerned from the fragmentary information available relate both to the demand for and the supply of female labour. Policy measures for expanding women's education, raising their educational level, imparting different types of skill training to them, motivating them to take up income generating activities, improving their health and limiting their family size through family
planning and raising their age limit to 30 years for government service etc. are all designed to increase female labour force participation rate [4].

On the demand side, the policy measures include reservation of vacancies in all government and semi-government offices & organisations for women. The female quota in primary teaching has been fixed at 50 per cent [11]. Again, programmes for the promotion of income-generating activities for women through government and semi-government organisations such as Grameen Bank, Bangladesh Rural Development Board, Bangladesh Small and Cottage Industries Corporation, Bangladesh Academy for Rural Development (Comilla) and Rural Development Academy (Bogra), etc. have been designed to create a favourable impact on the demand for female labour. In addition, a large number of voluntary organisations such as Bangladesh Rural Advancement Committee (BRAC) and Shawkirr Banladesh are launching programmes for promoting women’s employment. Although lack of data on the total impact of relevant policies and programmes on women’s employment prevents one from coming to a firm conclusion, available evidence shows that Grammoon Bank and Shawkirr credit programmes for poor/landless/assetless rural women have produced good results [12].

The rural non-crop sector
In our tradition-bound rural society, cultivation seems to be almost out-of-bounds for women. However, fragmentary evidence from some micro studies indicates that the rural non-crop sector can play a very important role in generating employment for rural women. A survey (1979) of 11 villages of 10 thanas (now called upazilla) revealed that 66 per cent of the employed women were gainfully employed primarily in non-farm activities. It was noted in the survey (1979) that a much larger proportion (56.5 percent) of the economically active women were engaged in non-farm activities particularly in the cottage industries than that of the males (16.9 percent) [13]. The proportion of women among Grameen Bankローンees in various activities (as shown below) indicates that non-crop activities, if promoted, can play an important role in raising the female labour force participation rate substantially from the dismally low level of 4.3 per cent.

Proportion of women among GBPローンees in different activities

<table>
<thead>
<tr>
<th>Activity</th>
<th>Proportion</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Processing and manufacturing</td>
<td>56.2 percent</td>
</tr>
<tr>
<td>2. Agriculture and forestry</td>
<td>4.1</td>
</tr>
<tr>
<td>3. Livestock and fisheries</td>
<td>60.8</td>
</tr>
<tr>
<td>4. Trading</td>
<td>7.6</td>
</tr>
<tr>
<td>5. Peddling</td>
<td>38.9</td>
</tr>
<tr>
<td>6. Shop keeping</td>
<td>23.6</td>
</tr>
<tr>
<td>7. Transport</td>
<td>Nil</td>
</tr>
<tr>
<td>All activities</td>
<td>37.0</td>
</tr>
</tbody>
</table>

Factors determining female employment expansion in the non-crop sector

The most important among the factors influencing the demand and supply of the various activities in the non-crop sector are (a) level and distribution of income, (b) backward and forward production linkages, (c) quality of the product, (d) level of factor productivity, (e) choice of technology in agriculture and competitive non-agricultural products, (f) specialisation in agricultural and manufacturing production, and (g) savings and reinvestment rates for women engaged in these activities.

Processing and manufacturing

Processing and manufacturing is one of the main activities rural women are engaged in. According to the Grameen Bank Project Annual Report (1981), 56.2 per cent loans which were received for processing and manufacturing were women.

The demand for products of the rural processing and manufacturing sector is generated from (a) the income of the rural consumers; (b) linkages with the agricultural and organised industrial sectors, (c) income of the urban population, and (d) exports.

A large proportion of the products processed and manufactured by rural industries such as gur, rice, rice products, milk products, coarse cloth, utensils, furniture, etc. are consumed by rural people. A steady increase in the level of rural income and a continuous improvement in rural income distribution would, to a large extent, determine the expansion of employment in activities producing these goods. A recent study (RISP-Final Report, 1981, BIDS) reveals that the income elasticity of demand for most of the rural industrial products is more than unity. With an increase in the income of the rural people, the demand for the locally processed and manufactured goods is likely to increase more than proportionately. The wealthy section in the rural society may show some preference for goods produced in the urban industries. In that case, a deteriorating income distribution would have an adverse effect on the expansion of the rural processing and manufacturing sector.

Skill training facilities for rural women artisans would be needed to improve the quality and design, so that the rural industrial products can compete successfully with the urban goods. The rural manufacturing sector also produces intermediate and capital goods which are used in other activities both in rural and urban areas, such as baskets, earthenware containers, and fishing nets, ropes, etc. Women should also be trained and encouraged to make agricultural and non-agricultural metal implements, rural transport equipment (carts and boats), tools for handlooms etc so that the avenue for female employment widens. Female employment expansion through the growth of manufacturing activities would depend on the development of these activities which would use these intermediate products.
Demand for rural industrial products produced by women in the urban and foreign markets is still very insignificant. Only bamboo, bamboo and jute handicrafts, finer handloom clothes, finer quality mats etc. have urban market and only jute handicrafts have export markets. As the proportion of rural women engaged in the production of these goods is quite high, increase in the level of urban incomes may be an important determinant in the expansion of female employment in the rural industrial sector.

On the supply side, a major constraint to expansion of employment is said to be the low productivity of labour. RISP Final Report reveals that the labour productivity is very low in a large number of rural industrial activities, especially those which provide employment mainly to women (and the landless). For some products labour productivity is even lower than the agricultural wage rate. One of the main factors leading to this low productivity is said to be the use of traditional technology and in some activities only manual skills. But seasonal variation in input and product prices, lack of sustaining power of the poor artisans to reap benefits from price changes, lack of sufficient working capital and lack of marketing facilities may contribute to low productivity. Adoption of measures to relieve these constraints by helping these poor women to pay lower prices for necessary inputs and receive higher prices for these products may help raise the level of production even with the existing technology [14].

Choice of appropriate technology is another important factor on which expansion of employment depends. The use of modern but inappropriate technology used in paddy processing aided by the availability of cheap electricity in rural areas is producing adverse effect on husking by Dhenki. Since paddy processing by Dhenki is a sex-specific activity the recent increase in mechanised milling which is female labour displacing is producing a disastrous impact on female employment in the rural areas. However, an attempt to introduce some technical improvement on Dhenki to raise productivity and reduce husking cost keeping the investment required within the reach of poor women is likely to make Dhenki more competitively expand female employment in this area. Promotional measures to develop innovative work in this direction would go a long way in expanding female employment in this sector.

The RISP final report reveals that about 40 per cent of cottage industry contributions are made by women not only as helpers to male heads of household but as producers as well. BSCIC has identified a large number of cottage industries which are solely run by women. In the context of our existing socio-economic and cultural pattern, cottage industries are most suited to providing employment to poor assetless women. In our society, a woman basically bears the fully responsibility of a home; and whether she is an income earner or not, cannot shift her responsibilities as house-wife and mother. Cottage industries are suitable for women, because they are carried out on very small scales by family based enterprises and require small
amount of fixed and working capital. Appropriate policy measures which include ensuring regular supply of raw materials, access to cheap institutional credit and improving marketing facilities, and improving traditional technology would go a long way in expanding female employment in this sector. Alongside these measures, landless/assetless poor women should be organised, motivated, trained and encouraged to take up group activities on a larger scale so that they can own new technology and use it effectively.

Livestock and Poultry

Grameen Bank project annual report shows that over the period of 1980-83, of the total loans disbursed to female loanees, 43 percent was for livestock raising. The agricultural census report (1977) shows that out of 6.25 million agricultural households, 5.83 million owned cattle and 4.85 million owned poultry so that local demand for such products would be rather low. The demand for these products is expected to come from the urban areas and the expansion of this type of activities would depend on the increase in the level of urban incomes. On the supply side, the expansion of livestock raising and poultry rearing is constrained by the gradual reduction of grazing land and scarcity of fodder due to the spread of modern agricultural technology such as HYV rice and use of pesticides. Thus the prospect of female employment expansion in this sector is not very bright.

Trading and shop keeping

According to annual reports (1980-83) trading and shop keeping accounted for only about 16 per cent of the total loan taken by women, although in sectorwise distribution of loans shows a trend, towards more involvement of women in trading and shop keeping (as well as manufacturing and processing).

Trading may become counter productive unless it stimulates rural economy sufficiently. Grameen Bank experiences reveal that more than four fifths of the loan disbursed to the trade sector are taken for transacting products originating from the rural sector such as paddy and rice trading. The percent share of GB loans disbursed to female loanees for this activity increased from about 2 per cent in 1980-81 to about 4 per cent in 1983. If women are motivated and encouraged to get involved in trading rural cottage industry products as well, it may provide a strong backward linkage to the rural production sectors. The demand for rural trading activities may depend largely on the growth of agricultural and non-agricultural production and the extent of specialisation. The movement of the economy from purely subsistence orientation to specialisation stimulates trading activities. Specialisation, however, depends on availability of new highly productive technology, regional concentration in the development of irrigation facilities permitting application of new technology, locational concentration in producing industrial raw materials, availability of local skills for producing industrial goods, etc. To a small extent, availability of
these facilities have led to some specialisation in rural farm and non-farm production leading to an increase in trading activities. Credit programmes for poor rural women initiated by Grameen Bank, Shwanirvar Bangladesh, BRAC, etc. have resulted in an involvement of an ever-increasing number of women in trading activities.

In this connection mention should be made of the fact that in the absence of large scale organised commerce due to underdeveloped infra-structure, rural trading activities are carried on mini scales. In the absence of organised marketing channels, the producers themselves get involved in trading their own products. Women, sometimes, produce rice products such as muri, cheera etc. and get engaged in trading those products themselves. It should be ensured that with the gradual development of rural infra-structure, organised marketing channels and large scale commerce, those women traders are not thrown out of employment.

The Crop Sector

Women in Bangladesh have traditionally been kept out of cultivation. Except for some northern districts, in Garo hills and Chittagong Hill Tracts women generally do not work in the fields. Women may be motivated to work in the fields and opportunities may be provided to them by leasing ‘khas land’ to organised groups of poor rural women. Necessary credit facilities should be provided to these groups of women at a concessional rate of interest to promote such activities. Once agricultural field activities become popular among women and tradition gives way to desirable changes in this area, female wage employment in weeding, transplanting and harvesting may also expand during peak seasons.

Poverty focussed programmes for rural women and generation of female employment.

Credit programmes of Grameen Bank, Shwanirvar Bangladesh, Bangladesh Rural Advancement Committee and some other government and semi-government organisations are directed to landless/assetless poor rural women (and men). One of the main objectives of these programmes is to create self-employment opportunities for these helpless poor women by expanding supervised loans to them so that they are in a position to earn an income on their own and increase their family welfare by raising the levels of family incomes. The programme planners are of the opinion that credit is the most critical input, the availability of which can make the resourceless women economically self-reliant. Organising the target population in groups is one of the most powerful strategies they have adopted through which assistance can be reached to them successfully. Capital formation through obligatory savings is another strategy they have adopted to reduce the group members’ dependence on external finance.