

SME Development in Crops, Livestock and Fisheries in Bangladesh: Fundamentals, Reasons and Achievements

Dr. Md. Zakir Hossain

Professor, Department of Statistics, Shahjalal University of Science and Technology, Sylhet

Dr. Mohammad Mizanul Haque Kazal

Professor, Department of Development & Poverty Studies, Sher-e-Bangla Agricultural University, Dhaka

Dr. Jasim Uddin Ahmed

Associate Professor of Economics, North East University Bangladesh, Sylhet

ABSTRACT

Small and medium enterprise (SME) development in crops, fisheries and livestock is of utmost importance for sustainable and growing agricultural diversification to ensure nutritional food security and inclusive development. This paper is intended to explore the status of SME development in the aforesaid agricultural sub-sectors in terms of fundamentals of enterprises and entrepreneurs; reasons of establishment of enterprises; and achievements from the enterprises. This paper is an outcome of a study that has adopted both quantitative and qualitative approaches to gather the necessary data and information from the three districts under climate affected regions and two districts under environmentally normal areas on a statistically representative sample size. Several descriptive and inferential statistical tools and techniques including factor analysis have been used for analyzing the data.

According to the perceptive views of the entrepreneurs, the main reasons for establishing enterprises were high profit margin, creation of employment opportunity, increasing business opportunity, availability of internal funds, inspiration by friends/relatives, easy availability of raw materials, chief labour cost and access to climate adopted technology. The study has performed factor analysis to identify the major dimensions of reasons for establishing SMEs and it identifies five main factors as *sound politico-economic environment, finance and return potentials, labour and product market facilities, inspiration and local affinity, and easy access to intermediate goods and export market*. A vast majority of the entrepreneurs reported to have significant achievements from their enterprises through the expansion of their businesses and increased efficiency of manpower and more growth due to increased demand of the product. The factors responsible for significant achievements from the sampled enterprises were also found to vary according to the sectors. The analysis of the perceptions of the entrepreneurs regarding factors responsible for significant achievements according to the climatically affected and normal areas indicates a wide variation. Factor analysis has sorted out *hassle free government services; expansion of market demand and favourable investment climate; investment friendly fiscal policy; good investment opportunity; congenial public environment; and improved access to raw materials* as the major dimensional factors that can be broadly renamed **good governance and sound investment climate** for recent increase in investment.

1. Introduction

There is no denying that the development of Small and Medium Enterprises (SMEs) can be considered as a vital instrument for poverty alleviation and accelerating industrialization in the context of Bangladesh. The assessment of the status of SMEs in crops, livestock and fisheries is necessary from both micro and macro point of view. The assessment of the status of SMEs from micro perspective is necessary because of the contribution of SMEs in households' poverty reduction and making the household economy sustainable. On the other hand, the assessment of the status of SMEs (in crops, livestock and fisheries) from macro perspective is necessary because of the importance of these sectors in Bangladesh economy, particularly in terms of employment generation and provision of nutritious food components in the context of ever growing domestic demand for food.

It is documented that SMEs are relatively more predominant in the developing countries like Bangladesh because of enhancing employment and wealth creating opportunities for poverty alleviation, which yield significant social impacts in terms of reduction of income inequalities, promotion of social equalities etc. (Uddin, 2008). It is estimated from different sources that SMEs in Bangladesh would be observed to provide over 70 percent of industrial employment and 30 to 40 percent of industrial value added. Hence, the SMEs are regarded as the backbone of the Bangladesh economy and an effective instrument for generating work opportunities for the unemployed, youth and women (Ahmed, 2008).

There are an estimated 1.3 million fish ponds in the country, covering an area of 0.151 million ha, of which 55.30 percent is cultured, 28.52 percent is worth culturing and 16.18 percent is unusable. In 2002, the percentage of production and potential production from the above three systems was 72.09, 20.01 and 7.90 respectively (BBS, 2002). In general the size of fish ponds varies between 0.020 and 20 ha with an average of 0.30 ha. In Bangladesh, the highest number of ponds exists in the Barisal district (12.11percent), followed by Comilla (9.36 percent), Sylhet (9.10 percent), Chittagong (8.02 percent) and Noakhali (7.75 percent) (BBS, 2002). In a study, it is reported that the fisheries sector contributes 3.74% of the gross domestic product (GDP), 20.87% of agricultural resources and 4.04% of foreign exchange earning of Bangladesh (DoF, 2009). Total fish production in our country during the 2007-2008 was about 2.57 million metric

tons of which 2.065 million metric tons were produced from freshwater including culture fisheries and 0.04 million metric tons from marine water including shrimp (DoF, 2009).

The current contribution of livestock sub-sector to overall GDP is about 2.73% which is 17.15% of agricultural GDP. The export earnings from leather and leather goods is 4.31% of the total export; 20% of the population is directly and 50% is partly dependent on this sector. Livestock population in Bangladesh in 2007-08 was cattle 23 million, buffalo 1.3 million, goats 21.6 million, sheep 2.8 million, chicken 212.5 million and ducks 39.8 million. The per capita number of cattle was 0.16, goats 0.15, sheep 0.01, chicken 1.47 and ducks 0.27. Although an upward trend in the production of meat, milk and egg during 2001-2008 is evident, the per capita availability of meat was 20gm/day, milk- 51ml/day and 40 eggs/year in the year (2007-08, DLS). Total production in the years 2002-2008 was milk 1.82- 2.65 million ton at a growth rate of 145.6%, meat 0.91 – 1.04 million ton at a growth rate of 114.3%, and eggs 4770- 5653 million numbers at a growth rate of 118.5%. Demand and supply gap is more evidenced. As per FAO estimates there is a deficit of 80% in milk, 82% in meat and 63% in eggs.

It is utmost priority to reduce the poverty through employment creation in the rural economy of Bangladesh. The government is committed to reducing the number of unemployed people in the country from 28 to 24 million by 2013 and will further still to 15 million by 2021 (Karim *et al.*, 2010). The livestock and fisheries sectors offer the greatest potential for new employment opportunities. These sectors including crops are important for investment as huge numbers of smallholders are engaged.

Having reviewed the literature on SME development already in existence in Bangladesh, two points of lacuna have been identified. First, the existing literature focuses on only the manufacturing and trade sectors. The agriculture sector along with crops, livestock and fisheries sub-sectors is almost totally ignored in terms of survey-based research at micro-level from SME development perspective. Second, the climate affected areas remain completely unstudied in this context as a result of which the impact of climate vulnerability on SME development in the concerned fields is yet to be explored. The definition of SME for crops, fisheries and livestock is not available in the existing literature and the traditional definition for non-manufacturing activities is not suitable for these sectors, because these sectors are not purely manufacturing as

well as non-manufacturing, instead they occupy a mixed and in-between position. It is an urgent need to fix-up an operational definition of SME for each of these sectors to get the benefit from the government and the financial institutions to establish such enterprises. Having reviewed the existing definitions as well as stakeholders' consultation, the operational definition of SME for crops, fisheries and livestock has been finalized as: A venture is considered as an enterprise if (i) it is developed with commercial motive; (ii) its production is sustainable during more than 2 rounds of production cycle and (iii) it has contractual paid employees over a stipulated period of time.

Against this backdrop, this paper attempts to assess the status of the SME development in crops, livestock and fisheries from micro point of view. Categorically, it discusses the issues – fundamental features of the enterprise, reasons for SME development and major achievements of the enterprises including the key reasons for these achievements.

2. Methodology

The data for this study have been taken from the data collected under the research project “Small and Medium Enterprise (SME) Development in Crops, Livestock and Fisheries in the Climate Affected Zones of Bangladesh: Status, Problems and Potentials” sponsored by Program Support Unit of Planning Commission of Bangladesh. Under the project, the primary data have been collected from three climate vulnerable districts and two environmentally normal districts. Among three climate affected areas, one district has been selected from the drought region viz., Rajshahi (Drought prone), one from the Char land and river erosion region viz., Lalmonirhat (*Monga* prone) and another from flood plain region viz., Sunamganj (*Haor* region). In addition, two environmentally normal districts viz., Brahmanbaria and Naogaon have been selected as controls. The project has collected the quantitative information from 210 enterprises (SMEs in crops, livestock and fisheries) from 5 districts under Farm-level survey. The qualitative information has been collected from 50 stakeholders/entrepreneurs for Key Informant's Interview. In addition, 40 Participatory Rural Appraisal (PRAs) have been conducted to know the collective views of the participants and to train them on SME development in crops, livestock and fisheries sectors.

Analytical Techniques

The study has utilized several descriptive and inferential statistical tools and techniques including factor analysis for analyzing the data. Factor analysis has been used to find out the major dimensions of reasons for SME development in the proposed sectors and reasons for increasing investments during the last 2 years.

Factor Analysis

Factor analysis allows looking at groups of variables that tend to be correlated to one another and identify underlying dimensions that explain these correlations. In a sense, each of the observed variables is considered as a dependent variable that is a function of some underlying, latent, and hypothetical set of factors. Conversely, one can look at each factor as dependent variable that is a function of the observed variables.

If $\{X_1, X_2, \dots, X_n\}$ be a set of n observed variables and $\{F_1, F_2, \dots, F_m\}$ be a set of unobservable variables then the factor analysis model can be expressed as

$$\left. \begin{aligned} X_1 - \sim_1 &= l_{11} F_1 + l_{12} F_2 + \dots + l_{1m} F_m + v_1 \\ X_2 - \sim_2 &= l_{21} F_1 + l_{22} F_2 + \dots + l_{2m} F_m + v_2 \\ \dots & \\ X_n - \sim_n &= l_{n1} F_1 + l_{n2} F_2 + \dots + l_{nm} F_m + v_m \end{aligned} \right\} \text{----- (1)}$$

where \sim_i is mean of X_i , v_i is error or specific factor. The coefficient l_{ij} is the loading of i-th variable on the j-th factor. In matrix notation the factor analysis model can be expressed as

$$X - \sim = LF + v \text{ (2)}$$

where $L_{n \times m}$ is the matrix of factor loadings.

Several methods are available in literature to estimate factor loadings and factor scores. The study considers principal component method to estimate the factor loadings and communalities

$[h_i^2 = \sum_{j=1}^m l_{ij}^2]$, a measure of the variation of observed variables through factors. Several factor

rotation methods like ‘Varimax’, ‘Equamax’, ‘Quartimax’ are adopted to find better estimates of factor loadings.

3. Results and Discussion

The analyses of fundamentals of the sampled enterprises indicate that about 88% were found to be engaged in production and the rest were mainly engaged in processing. The operational nature of the enterprises was found to vary according to different sectors: about 97% enterprises of both livestock and fisheries sectors were found to be engaged in production, while the figure was about 70% for crop sector. About 84% sampled enterprises were found proprietorship (sole ownership) and the rest 16% were partnership. Three-quarters of the sampled enterprises were found to be established on owned premises, about 16% on rented premises and 6.6% on leased premises. The type of possession of enterprise premise was found to vary across the sectors considered in the study. Seven out of ten enterprises both livestock and fisheries sectors were found registered. However, about half of the enterprises were found registered in the crops sector and most of them were of processing category. Over half of the enterprises were found to have tax identification number (TIN). About 83% of the registered enterprises have the tax identification number and the registration status of the enterprise was found to have significantly and positively associated with the TIN. Over nine-in-ten enterprises, irrespective of sectors, reported to increase their investment during the two years prior to the survey.

The average age of the entrepreneurs was 44.0 years and about three-fifths of the entrepreneurs were found ageing 36-55 years. About 97% of the entrepreneurs were found male and about 93% married. The age distribution of the entrepreneurs indicates that people become entrepreneurs during the prime period of working span of life-cycle. The educational level of the entrepreneurs indicates that 10% had no education, 17% had primary education, 43% had secondary education and 30% were found to have at least higher secondary level of formal education. The sampled entrepreneurs belonging to the livestock sectors were found to have more education than those belonging to crops sector. Over 90% of the sampled entrepreneurs were Muslims and over three-fifths belonged to nuclear family.

About 7 out of 10 of the entrepreneurs were found to become the owner of the enterprise through self-initiative as they started their enterprises by themselves. The ownership of the enterprises by self-initiative was found positively linked with the level of education. The analysis of sources of motivation indicates that one-quarter of the entrepreneurs were motivated to start their

enterprises by reference group (friends and relatives). Nearly half of the entrepreneurs had no clear cut idea about SME though their venture is certainly being considered as an SME. Among the entrepreneurs who reported to have idea about SME, about one-quarter got idea from government agency, about 18% from NGO, about 21% from media and the rest from other sources mainly friends/family members/relatives/demonstration effect. About half of the sampled entrepreneurs had received training regarding their business from some sorts of government/non-government organizations.

Following sub-sections are categorically discussed the findings of the study in terms of financial status of the enterprise, reasons for SME development and major achievements of the enterprise.

3.1 Financial Status of the Enterprises

The financial status of the sampled enterprises has been assessed in terms of equity, loan, investment and profit. Table 1 shows the financial status of the sampled enterprises belonging to different sectors.

Amount of equity

The average present equity of the sampled enterprises is estimated at Tk.3276350.71. The average equity was found lowest in fisheries sector (Tk.2966571.41) and highest in crop sector (Tk.3618541.67), may be because of inclusion of rice mills in the crop sector. The initial equity of the sampled enterprises is estimated at Tk.1176131.45, which was found extremely lower than the present equity. The findings indicate that a huge amount of profit is reinvested as equity. It is also observed that the growth of equity during the last 2 years was found remarkably higher (about four-fold) in the fishers sector than the other sectors. This finding reveals that SME development in fisheries is more expanding.

Amount of loan

It is found that over half of the enterprises received loan to boost up their business, though only a quarter were found to receive loan at the initial stage of the enterprise. The average amount of present loan and initial loan is estimated at Tk.1423394.74 and Tk.711036.36 respectively for the enterprises received any sort of loan. This estimate reveals that average amount of loan has

doubled during initial to survey point of time. The average amount of present loan was found higher for the enterprises of livestock sector and lower for the enterprises of fisheries sector.

Table 1: Financial status of the sampled enterprise by sectors

	Sector of the enterprise			Overall
	Livestock	Fisheries	Crops	
Present equity in Taka (Mean \pm SD), (n)	3233550.72 \pm 7703026.77, (69)	2966571.43 \pm 3157290.57, (70)	3618541.67 \pm 8322499.26, (72)	3276350.71 \pm 6780832.17, (211)
Present Loan in Taka (Mean \pm SD), (n)	2229425.00 \pm 5281665.76, (40)	658235.29 \pm 661107.25, (34)	1267750.00 \pm 2380755.63, (40)	1423394.74 \pm 3482295.36, (114)
Initial equity in Taka (Mean \pm SD), (n)	1276328.57 \pm 368 7552.49, (70)	656214.28 \pm 100137 7.83, (70)	1578602.74 \pm 626 6112.05, (73)	1176131.45 \pm 4270303.51, (213)
Initial Loan in Taka (Mean \pm SD), (n)	730277.77 \pm 1493 517.83, (18)	230944.44 \pm 211609 .09, (18)	1147631.58 \pm 247 6530.59, (19)	711036.36 \pm 1 704330.92, (55)
Investment in 2010-2011 in Taka (Mean \pm SD), (n)	1775288.46 \pm 6132650.60, (52)	1813666.67 \pm 6672816.59, (60)	529000.00 \pm 1559206.44, (58)	1363629.41 \pm 5298812.71, (170)
Investment in 2011-2012 in Taka (Mean \pm SD), (n)	1741649.12 \pm 5950164.69, (57)	1463661.54 \pm 3197966.01, (65)	695447.76 \pm 2156709.83, (67)	1275169.31 \pm 3982273.94, (189)
Profit in 2010-2011 in Taka (Mean \pm SD), (n)	281641.79 \pm 442949.30, (67)	400625.00 \pm 474173.88, (64)	265555.56 \pm 446945.83, (63)	315670.10 \pm 456372.91, (194)
Profit in 2011-2012 in Taka (Mean \pm SD), (n)	439406.78 \pm 918841.61, (59)	554677.42 \pm 667048.10, (62)	326065.57 \pm 697397.61, (61)	440686.81 \pm 768505.54, (182)

Source: Field Survey, 2012

Recent investment scenario

The investment scenario for the last two financial years of the sampled enterprises has been documented in Table 1. It is observed that about 81% enterprises reported to invest in their enterprises in the financial year 2010-2011; while a greater percentage (89.6%) of the enterprises were found to invest in the financial year 2011-2012. The average amount of investment is estimated at Tk.1363629.41 for the financial year 2010-2011 and Tk.1275169.3 for the financial year 2011-2012.

The average investment amount in the sampled enterprises was found to vary significantly across the sectors of the enterprise. The average amount of investment for the year 2011-2012 was

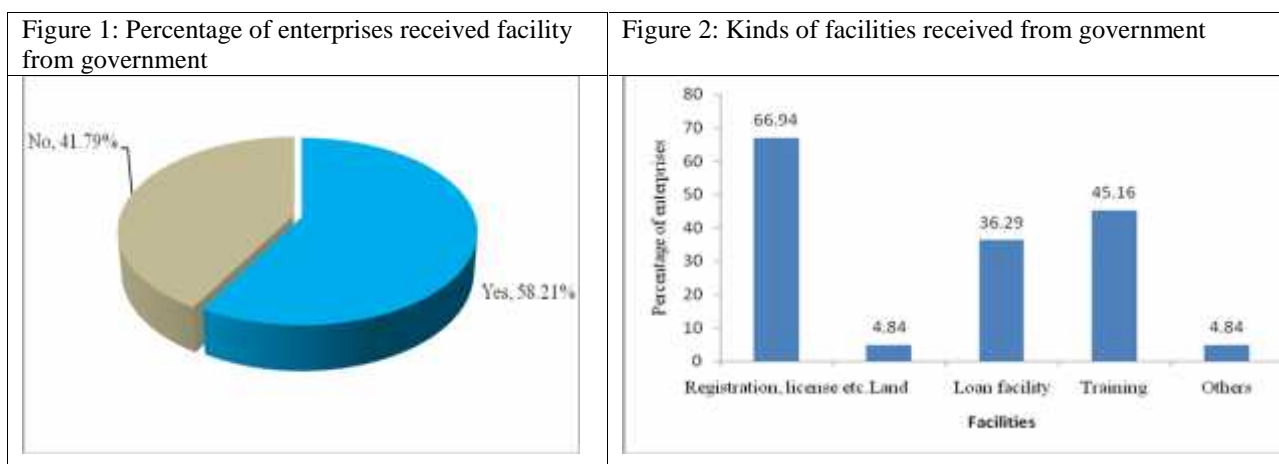
found lower (Tk.695447.76) for the enterprises of crop sector and higher for the enterprises of livestock sector (Tk.1741649.12).

Profit of the enterprises

The entrepreneurs were asked whether they made any profit in the last two financial years. About 85% reported that they made profit in the last financial year (2011-2012) and about 91% reported that they made profit in the financial year 2010-2011. The average amount of profit in the last year is estimated at Tk440686.8 with a standard deviation of Tk768505.5. The average profit amount was found highest in fisheries sector (Tk554677.4), followed by livestock sector (Tk439406.8) and by crop sector (Tk326065.6). This finding suggests that the enterprises of fisheries sector are much more rewarding in terms of profit than the other two sectors.

Facilities received from Government for enterprise development

The sampled entrepreneurs were asked whether they received any facility from the government and about 58% of them reported that they received some sort of facilities from government (Figure 1). Those who received facilities, were further asked to report the types of facilities that they received and Figure 2 shows the responses. Near two-thirds of them reported that they received the facilities in terms of approvals of license and/or trade certificate, registration to Joint Stock Company (JSC) or other organizations etc; about 45% of them received facilities in terms of training; and about 36% of them received credit facility from the government.



Over four-fifths of the entrepreneurs ranked approvals of license and/or trade certificate, registration to Joint Stock Company or other organizations as the topmost one among the

facilities they received from the government (Appendix Table 1). The entrepreneurs' perception regarding kinds of the facilities received from the government was found to vary across the scale of the enterprises. Very logically, a significantly ($p < 0.01$) higher proportion of the entrepreneurs of medium scale enterprises reported to receive facilities in terms of 'SME loan' than that of small scale enterprises (Appendix Table 1). On the contrary, a higher proportion of entrepreneurs from small scale enterprises reported to receive facilities from government in terms of 'training' than that from medium scale enterprises. The entrepreneurs' perception regarding the kinds of facilities received from the government was found to vary significantly ($p < 0.10$) across the sectors of the enterprises in case of 'training' only. However, the perception regarding kinds of the facilities received from the government did not vary according to the climate affected and environmentally normal regions except 'land for the establishment'. A significantly ($p < 0.05$) higher proportion of the entrepreneurs from climatically affected regions reported that they received the facilities from the government in terms of 'land for establishment'.

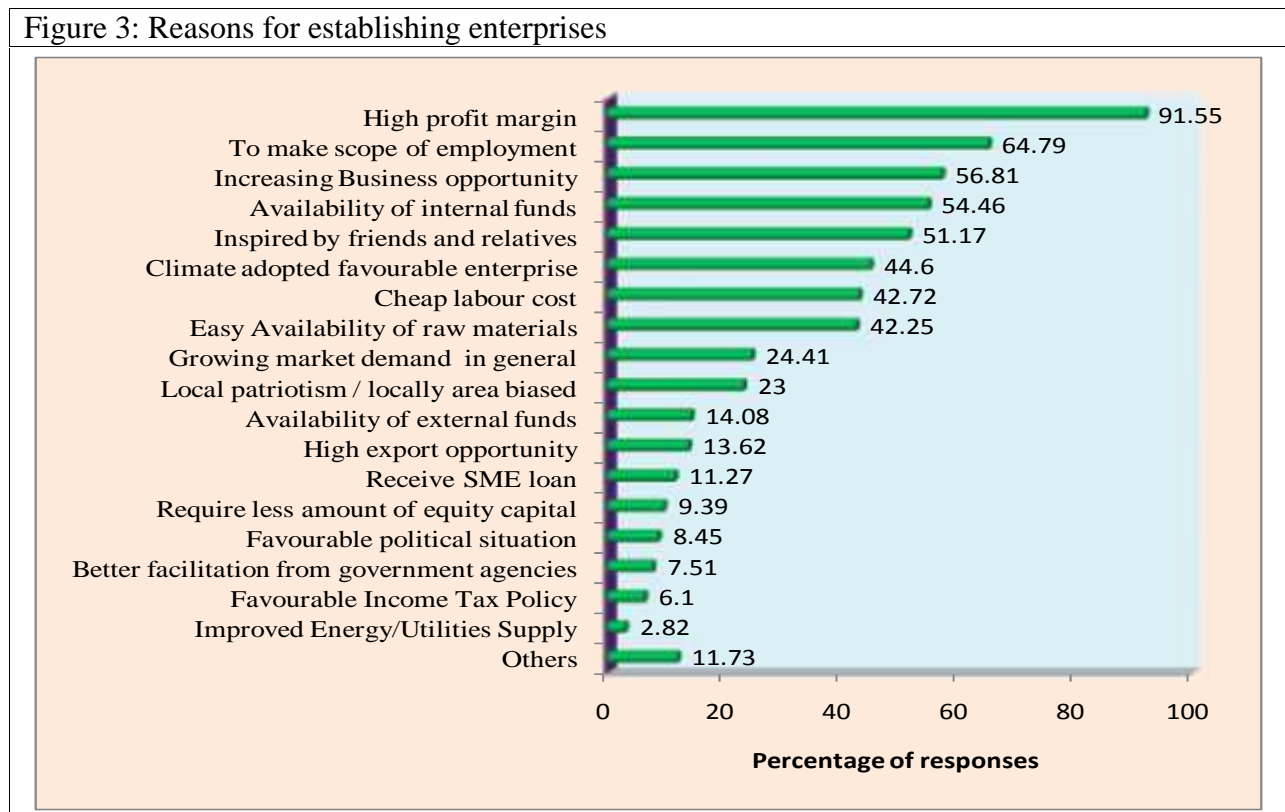
3.2 Reasons for Establishing Enterprises in Crops, Livestock and Fisheries

In this section, the opinions of the entrepreneurs regarding establishing enterprises are analyzed and the main reasons are shown in Figure 3 and Appendix Table 2. Over nine-in-ten of the entrepreneurs cited high profit margin as the main reason for establishing enterprises irrespective of environmentally fragile and normal regions. Over half of the entrepreneurs mentioned that creation of employment opportunity, increasing business opportunity, availability of internal funds, and inspired by friends and relatives as the main reasons for establishing enterprises. Other reasons such as easy availability of raw materials, chief labour cost and access to climate adopted technology were also mentioned by a considerable number of the entrepreneurs. The entrepreneurs were also asked to rank the reasons mentioned by them according to their preferences. The entrepreneurs rated the high profit margin and creation of employment opportunity as the first and second most important reasons for establishing enterprises in crops, fisheries and livestock.

In order to calculate the variation in the perceptions of the entrepreneurs regarding the reasons of establishing enterprises, the data are analyzed according to scale, sector, and region (climate affected and climate normal) and the results are given in Appendix Table 2. The perception of

the entrepreneurs by scale of enterprise shows significant ($p < 0.05$) variation in case of better facilitation from government agencies and availability of external funds. The results show that the entrepreneurs of the small scale enterprise emphasized on high profit margins, creating employment opportunity, increasing business opportunity and inspired by friends and relatives as the main reasons for establishing enterprises; while the entrepreneurs of the medium scale enterprise gave emphases on high profit margin, creating employment opportunity, increasing business opportunity, chief labour cost and easy availability of raw materials as the main reasons for establishing enterprises.

Figure 3: Reasons for establishing enterprises



The analysis of perceptions of the entrepreneurs according to climate affected and environmentally normal regions indicates a wide variation in the reasons behind establishing enterprises. The variation regarding reasons of establishing enterprises between climate affected and environmentally normal regions was found highly significant ($p < 0.01$) in case of high export opportunity, local patriotism, less amount of equity capital, SME loan facility, and favourable income tax policy. The comparison shows that a significantly ($p < 0.05$) higher percentage of entrepreneurs from environmentally normal areas stated that easy availability of raw materials,

high export opportunity, local patriotism, less amount of equity capital, SME loan facility, favourable income tax policy, and access to climate adopted technology were the main reasons for establishing enterprises; on the contrary, a significantly ($p < 0.05$) higher percentage of entrepreneurs from climate affected areas stated cheap labour cost as the main reasons for establishing enterprises.

The analysis of perceptions according to sectors of enterprises also exhibits huge variation on reasons for establishing enterprises. A relatively higher percentage of entrepreneurs from crop sector have given emphasis on availability of raw materials and chief labour cost as the main reasons for establishing enterprises than that of fisheries and livestock sectors. On the contrary, relatively higher percentage of entrepreneurs from livestock sectors state that receiving SME loan, availability of internal funds, and create employment opportunities are the main reasons for establishing enterprises.

Factor analysis regarding reasons for establishing enterprises

The descriptive statistics have indicated that a number of reasons were responsible for establishing SMEs in fisheries, livestock and crop sectors. The study has also adopted factor analysis to identify the major dimensions of reasons establishing SMEs that explain most of the variance observed in a much larger number of manifest variables by reducing the number of reasons to a few factors. The factor analysis is performed by assigning weights to the ranks of the responses (reasons establishing SMEs). A response that is ranked as 1 has the weight 13; one that is ranked 2 has the weight 12, and so on. The analysis used principal component method to extract the factors with varimax rotation technique and Table 2 shows the results of the factor analysis.

The selection of a particular variable to be included as a factor was made on the basis of whether the correlation value (factor loadings) was high or not. On the basis of the maximum variation of the factors, the study identified five main factors as the reasons for establishing SMEs in fisheries, livestock and crop sectors. These factors are:

Factor-I: To make scope of employment, Growing market demand for the product in general, Require less amount of equity capital, Favourable political situation

Factor-II: High profit margin, Climate adopted favourable enterprise in this region, Availability of internal funds, Availability of external funds

Factor-III: Cheap labour cost, Increasing Business opportunity,

Factor-IV: Inspired by friends and relatives, Local patriotism/ locally area biased

Factor-V: Easy Availability of raw materials/intermediate goods, High export opportunity

Table 2: Factor analysis for the reasons of establishing SMEs in fisheries, livestock and crops

Reasons for establishing SMEs	Factors						
	F1	F2	F3	F4	F5	F6	F7
Easy Availability of raw materials/intermediate goods					.772		
High profit margin		-.649					
Better facilitation from government agencies						.809	
Inspired by friends and relatives				.772			
High export opportunity					.584		
Cheap labour cost			.776				
Local patriotism / locally area biased				.478			
To make scope of employment	-.494						
Growing market demand for the product in general	.549						
Require less amount of equity capital	.573						
Receive special loan/ credit facilities as SME enterprise							
Climate adopted favourable enterprise in this region		.504					
Availability of internal funds		.548					
Availability of external funds		.750					
Favourable Income Tax Policy							.426
Favourable political situation	.696						
Increasing Business opportunity			.729				
Improved Energy/Utilities Supply							.745
Any others (Please specify)				-.604			
Eigenvalue	3.26	1.83	1.47	1.37	1.36	1.12	1.05
Percent of variation	17.16	9.61	7.71	7.22	7.03	6.30	5.51
Cumulative percent of variation	17.16	26.77	34.49	41.70	48.73	55.03	60.53
KMO=0.588 & Only factor loadings 0.40 has been shown in the Table							

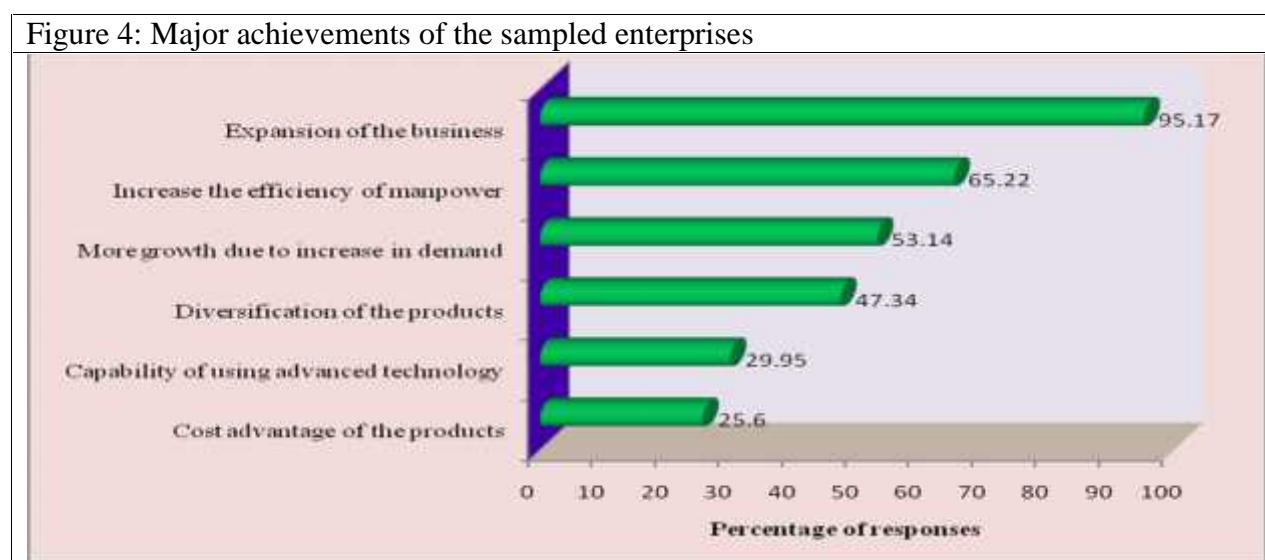
Source: Field Survey, 2012

The elements of each of the above factors are arranged in order of their respective magnitude (absolute) of factor loadings indicating the importance of a particular element in a factor. The reasons comprising Factor-I are mainly related to *sound politico-economic environment*; the reasons of Factor-II relate to the *finance and return potentials*; the Factor-III contains the reasons

related to *labour and product market facilities*; the elements of Factor-IV include the reasons related to *inspiration and local affinity*; and the elements of Factor-V include the reasons related to *easy access to intermediate goods and export market*. The result suggests that these factors are mainly responsible for establishing SMEs in crops, fisheries and livestock. Therefore, the government agencies and other concerned should take proper action to maintain the sound politico-economic environment, favourable SMEs in crops, fisheries and livestock.

3.3 Major Achievements from the Enterprise

The entrepreneurs were asked about major achievements (business expansion, growth due to demand, increased efficiency etc) of their businesses and about 97% of them reported to have significant achievements from their enterprises. Figure 4 demonstrate the significant achievements of the sampled SMEs. A remarkable portion of the entrepreneurs marked significant achievements through the expansion of their businesses (95.2%) and increase efficiency of manpower (65.2%) and more growth due to increased demand of the product (53.1%). Over four-fifths of the entrepreneurs ranked ‘expansion of the business as the foremost significant success of their enterprises.



The significant achievements of the sampled SMEs have been analyzed according to scale, region (climatically vulnerable and normal) and sector (Appendix Table 3). It is depicted that medium scale enterprises gained more significant achievement than small scale enterprises in terms of capability of using advanced technology ($p < 0.05$) and increase in the efficiency of

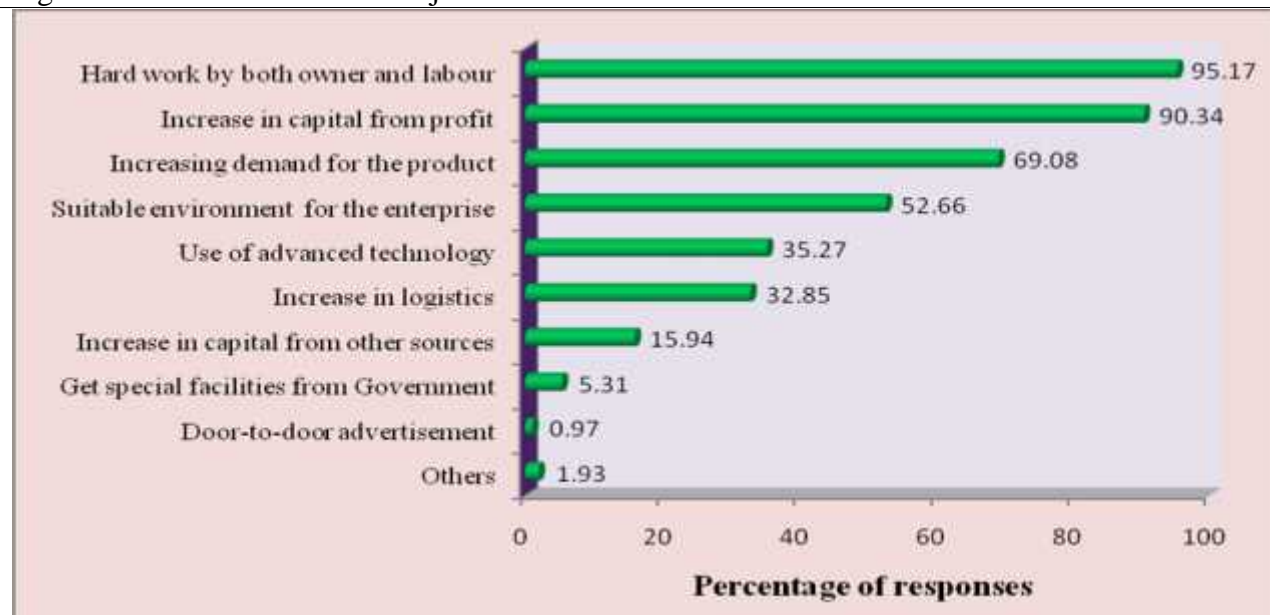
manpower ($p < 0.10$). The perception about achievements shows a wide variation according to the sector of enterprises: nearly two-thirds of the entrepreneurs of fisheries sector marked diversification of the products, while 32.4% entrepreneurs of livestock sector and 46.5% entrepreneurs of crop sector marked the same reason as one of the significant achievements.

The analysis of perceptions of the entrepreneurs regarding significant achievements according to climatically affected and normal regions indicates that there was no significant variation except expansion of the business and cost advantage of the product. A significantly ($p < 0.10$) higher percentage of the entrepreneurs from climate affected regions mentioned that their product was cost effective than that of the entrepreneurs from environmentally normal regions, may be due to cheap labour cost in climate affected regions.

3.3.1 Reasons behind the Major Achievements of the Enterprises

The entrepreneurs were asked to report the major factors responsible for the significant achievements of their enterprise and Figure 5 illustrates the views of the entrepreneurs concerning the factors responsible for significant achievements. The most important factors behind significant achievements were identified as retention of profits as capital (90.3%), increasing demand for the product (69.1%), favourable investment climate (52.7%), and hard work by both the owner and labour (95.2%).

Figure 5: Reasons behind the major achievements



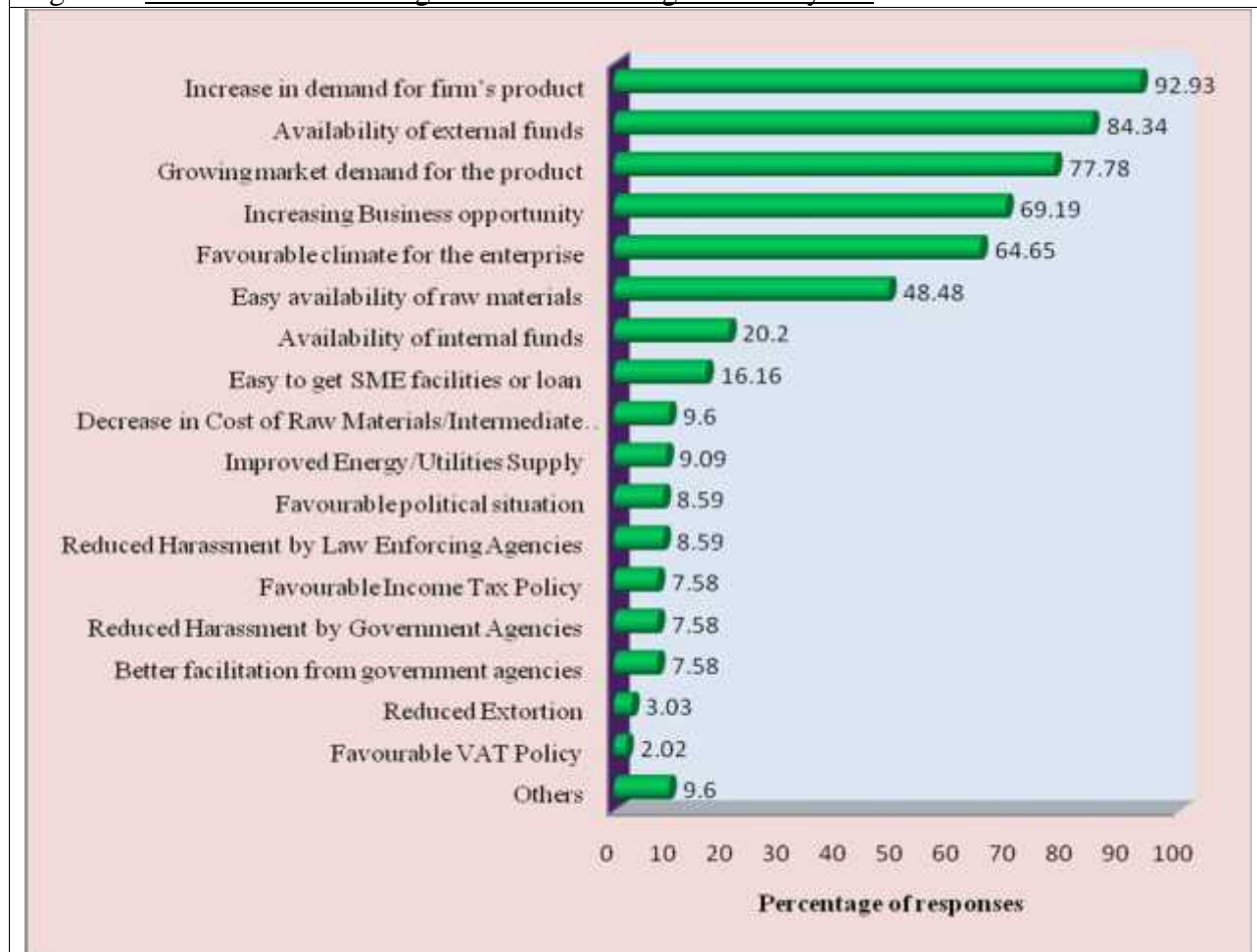
More than three-fifths of the entrepreneurs ranked hard working by both the owner and labour and nearly three-in-ten ranked increasing demand for the product as the most significant factor for the achievement (Appendix Table 4). The analysis on the perception of the entrepreneurs regarding factors responsible for significant achievements according to the scale of enterprise indicates significant ($p < 0.01$) variation in case of 'received special facilities from government' only. The factors responsible for significant achievements of the sampled entrepreneurs were also found to vary according to the sectors of the enterprises.

The analysis of the perceptions of the entrepreneurs regarding factors responsible for significant achievements according to the climatically affected and normal areas indicates a wide variation for a number of issues. A significantly ($p < 0.05$) higher proportion of entrepreneurs of environmentally normal areas mentioned that increasing demand for the product, retention of profits as capital, received special facilities from government as major factors contributing to the significant achievements of their enterprises in comparison to the entrepreneurs of climate affected areas.

3.3.2 Reasons for Increasing Investments during the Last 2 Years

At first, the entrepreneurs were asked whether their investments had increased or not during the last 2 years. Over nine-in-ten of the entrepreneurs have reported to increase their investment during 2 years prior to the survey. Figure 6 illustrates the perceptions of the entrepreneurs regarding reasons for increasing investment in their enterprises during this couple of years. The main reasons were identified as increase in demand for their firm's product (92.9%), growing market demand for the product in general (77.8%), increasing business opportunity (69.2%), favourable climate for the enterprise development (64.6%), availability of external funds (84.3%) and availability of raw materials (48.5%). About 45% of the entrepreneurs ranked increase in demand for their firm's product as the top choice for reasons of more investment during this period of time, while about 31% put the same reason as second choice for more investment. On the other hand, about 41% entrepreneurs rated growing market demand for the product in general as the second choice for reasons of more investment with about 14% ranking the reason as first choice.

Figure 6: Reasons for increasing investments during the last 2 years



The results of the analysis on the perceptions according to scale, sector and location of enterprises are shown in Appendix Table 5. On the basis of the scale of enterprises, the reasons for increasing investment was found to vary significantly ($p < 0.05$) in case of increase in demand for their firm's product, better facilitation from government agencies, reduced harassment by government agencies, favourable income tax policy and improved energy/utility supply. A significantly ($p < 0.01$) higher percentage of entrepreneurs from small scale enterprises (94.6%) stated that increase in demand for their firm's product as the main reason for increasing investment than medium scale enterprises (71.4%).

The analysis of perceptions regarding reasons for increasing investment in their enterprises according to the sectors of enterprises was found to vary significantly ($p < 0.05$) for 'growing market demand for the product in general' and 'availability of internal funds'. The 'growing

market demand for the product in general' was identified as one of the main reasons for increasing investment by 86.1% of entrepreneurs belonging to the fisheries sector, while very logically, 66.2% of the entrepreneurs of crops sector identified the same reason for increasing investment. The analysis of reasons for increasing investment according to the climatically normal and vulnerable region shows significant ($p < 0.05$) variations for a number of reasons including easy to get SME loan, decreasing cost of raw materials and improved energy/utility supply (Appendix Table 5). A higher percentage of respondents from climatically normal areas mentioned these reasons than that from vulnerable areas.

Factor analysis of reasons for increasing investments during the last 2 years

The descriptive statistics have indicated that a number of reasons were responsible for increasing investments during the last 2 years. The study also adopted factor analysis to identify the major dimensions of reasons for increasing investments during the last 2 years that explain most of the variance observed in a much larger number of manifest variables by reducing the number of reasons to a few factors. The factor analysis is performed by assigning weights to the ranks of the responses (reasons for increasing investments). A response that is ranked as 1 has the weight 12; one that is ranked 2 has the weight 11, and so on. The analysis used principal component method to extract the factors with varimax rotation technique and Table 3 shows the results of the factor analysis. The selection of a particular variable to be included as a factor was made on the basis of whether the correlation value (factor loadings) was high or not. On the basis of the maximum variation of the factors, the study identified six main factors as the reasons for increasing investments during the last 2 years. These are:

Factor-I: Reduced harassment by government agencies, Reduced harassment by law enforcing agencies.

Factor-II: Increase in demand for firm's product, Growing market demand for the product in general, Availability of internal funds, Favourable climate/environment for the enterprise, Increasing business opportunity.

Factor-III: Favourable income tax policy, Favourable VAT policy.

Factor-IV: Availability of external funds, Better facilitation from government agencies, Easy to get SME facilities or loan.

Factor-V: Favourable political situation, Reduced extortion.

Factor-VI: Decrease in cost of raw materials/intermediate goods, Easy availability of raw materials/intermediate goods.

Table 3: Factor analysis for the reasons of increasing investments during the last 2 years

Reasons of increasing investments during the last two years	Factor						
	F1	F2	F3	F4	F5	F6	F7
Increase in Demand for firm's product		-.431					-.546
Growing market demand for the product in general		-.669					
Decrease in Cost of Raw Materials/Intermediate Goods						.623	
Easy Availability of raw materials/intermediate goods						.798	
Availability of internal funds		.435					
Availability of external funds				-.622			
Better facilitation from government agencies				.596			
Reduced Harassment by Government Agencies	.867						
Reduced Harassment by Law Enforcing Agencies	.878						
Easy to get SME facilities or loan				.668			
Favourable climate/ environment for the enterprise		.664					
Favourable Income Tax Policy			.808				
Favourable VAT Policy			.892				
Favourable political situation					.814		
Increasing Business opportunity		.736					
Improved Energy/Utilities Supply							.779
Reduced Extortion					.744		
Eigenvalue	2.68	2.03	1.55	1.35	1.31	1.19	1.04
Percent of variation	15.78	11.91	9.10	7.95	7.70	7.02	6.12
Cumulative percent of variation	15.78	27.70	36.80	44.75	52.46	59.48	65.60
KMO=0.564 & Only factor loadings 0.40 has been shown in the Table							

Source: Field Survey, 2012

The elements of each of the above factors are arranged in order of their respective magnitude (absolute) of factor loadings indicating the importance of a particular element in a factor. The reasons comprising Factor-I are mainly related to *hassle free government services*; the reasons of Factor-II related to the *expansion of market demand and favourable investment climate*; the Factor-III contains the reasons related to *investment friendly fiscal policy*; the elements of Factor-IV include the reasons related to *good investment opportunity*; the elements of Factor-V include the reasons related to *congenial public environment*; and the elements of Factor-VI include the reasons related to *improved access to raw materials*. Broadly, the above six factors can be named

as *good governance and sound investment climate*. The result suggests that these factors are mainly responsible for increasing investments of SMEs in crops, fisheries and livestock during the last 2 years. Therefore, the government agencies and other concerned should take proper action to maintain the good governance and investment friendly climate for increasing the investments of SMEs in crops, fisheries and livestock.

4. Conclusion and Recommendation

Most of the entrepreneurs were middle-aged and became the owner of the enterprise through their own initiative. Government agencies, NGOs, media and reference groups play a vital role in generating idea about SME development. Most of the sampled enterprises of fisheries and livestock sectors were found to be engaged in production. Substantial portion of the enterprises generated profit in the last two years and the enterprises of fisheries sector earned more profit followed by livestock sector. Near half of the enterprises increased manpower in last year that indicates that employment generation is a regular phenomenon for the SMEs of crops, fisheries and livestock.

The study focused that high profit margin, creating employment opportunity, increasing business, availability of internal funds and inspiration by friends/ relatives were the main reasons behind establishing enterprises. The results from factor analysis identified that sound politico-economic environment, favourable finance condition, easy access to raw materials and export market are the major dimensional factors for establishing the SMEs in crops, fisheries and livestock. A significant proportion of the SMEs received facilities from government in terms of registration/ license and training. The most significant achievements of enterprises were expansion of business and increased efficiency of manpower. The achievements were due to hard work by the owner and labourer, increase in capital through retention of profit and increasing demand for the product. The main reasons for increasing investments during recent years were increase in demand for farm's product, availability of external funds and favourable climate for investment. The results from factor analysis explored that good governance and sound investment climate are the main issues for increasing investments in SMEs in recent years.

This study makes efforts to provide some recommendations basing on the major findings of the research directly or indirectly. The recommendations are as follows:

- Government including other stakeholders should give special attention to SME development in agricultural sector along with manufacturing and service sectors and proper actions deserve to be taken to bring this sector into economic census.
- Sound financing through organized credit market should be ensured to mitigate initial fund crisis for SME development in the concerned agricultural sub-sectors. In this respect, specific SME-loan cells both in scheduled commercial banks and specialized banks can be opened and activated. Besides, government as well as NGOs can raise funds from the development partners for advancing SME-loan. In the annual budget government can sanction special allotments for SME development in the ADP for these sectors.
- Particular training programs can be arranged for human resource development pertaining to farm-activities that facilitate SME development in these sectors by the government and other stakeholders. This will reduce the shortage of skilled manpower.
- Government should provide uninterrupted and adequate power and energy supply. In this regard, the government can enhance the source of power and energy through launching new power generating stations resorting to modern cost-effective technology and exploring new mines of energy in the long run. In the short-run government can take proper steps to reduce the system-loss and unscrupulous use of power and energy and switch some portion to these sectors, particularly in peak seasons.
- Government can declare special SME industrial policy with enriched components from other fellow successful countries in this very regard and continue R & D activities with more investments for innovating new technologies. Besides, information regarding any facet of SME development should spread to the interested parties.

Appendix Table 1: Entrepreneurs' perception regarding kinds of facilities received from government according to scale, sector and location

Kinds of Facilities from government	# of responses	% of responses	Rank of the responses			Percentage of responses by various groups						
						Scale of enterprise		Sector of Enterprise			Region	
			1 st	2 nd	3 rd	Small	Medium	Livestock	Fisheries	Crops	Affected	Normal
Approvals of license, registration to JSC etc	83	66.94	81.93	14.46	3.61	65.77	76.92	71.05	58.70	72.50	67.11	66.67
Land for establishment	6	4.84	50.00	33.33	16.67	5.41	0.00	2.63	6.52	5.00	7.89	0.00 ^b
Loan facility / SME loan facility	45	36.29	33.33	53.33	11.11	32.43	69.23 ^a	42.11	32.61	35.00	32.89	41.67
Training	56	45.16	60.71	32.14	5.36	46.85	30.77	52.63	52.17 ^c	30.00	46.05	43.75
Others	6	4.84	66.67	16.67	16.67	4.50	7.69	0.00	6.52	7.50	3.95	6.25
Total (n)	124					111	13	38	46	40	76	48

Source: Field Survey, 2012

a, b and c indicate the significant at 1%, 5% and 10% level respectively

Appendix Table 2: Entrepreneurs' perception regarding reasons for establishing enterprise according to scale, sector and location

Reasons for establishing enterprise	# of responses	% of responses	Rank of the responses				Percentage of responses by various groups						
							Scale		Sector of Enterprise			Region	
			1 st	2 nd	3 rd	4 th	Small	Medium	Livestock	Fisheries	Crops	Affected	Normal
Easy availability of raw materials/ intermediate goods	90	42.25	8.89	30.00	24.44	13.33	40.70	64.29 ^C	30.00	40.00	56.16 ^a	35.66	52.38 ^b
High profit margin	195	91.55	51.79	28.72	9.74	1.54	92.46	78.57 ^C	95.71	95.71	83.56 ^b	93.02	89.29
Better facilitation from government agencies	16	7.51	6.25	18.75	12.50	31.25	6.53	21.43 ^b	8.57	4.29	9.59	7.75	7.14
Inspired by friends and relatives	109	51.17	4.59	17.43	27.52	24.77	51.26	50.00	50.00	58.57	45.21	49.61	53.57
High export opportunity	29	13.62	3.49	17.40	17.40	20.69	14.57	0.00	2.86	24.29	13.70 ^a	7.75	22.62 ^a
Cheap labour cost	91	42.72	3.30	12.09	19.78	25.27	41.21	64.29 ^C	41.43	40.00	46.58	48.84	33.33 ^b
Local affinity	49	23.00	4.08	12.24	20.41	18.37	22.61	28.57	18.57	22.86	27.40	14.73	35.71 ^a
To make scope of employment	138	64.79	34.06	20.29	21.74	7.97	63.32	85.71 ^C	67.14	64.29	63.01	67.44	60.71
Growing market demand for the product in general	52	24.41	5.77	23.08	17.31	25.00	23.62	35.71	24.29	25.71	23.29	20.16	30.95 ^C
Require less amount of equity capital	20	9.39	10.00	35.00	20.00	10.00	10.05	0.00	12.86	14.29	1.37 ^b	3.88	17.86 ^a
Receive special loan/ credit facilities as SME	24	11.27	8.33	8.33	4.17	25.00	10.55	21.43	22.86	5.71	5.48 ^a	6.20	19.05 ^a
Climate adopted enterprise in this region	95	44.60	14.74	14.74	12.63	13.68	45.23	35.71	31.43	51.43	50.68 ^b	37.98	54.76 ^b
Availability of internal funds	116	54.46	7.76	21.55	28.45	22.41	54.77	50.00	60.00	48.57	54.79	56.59	51.19
Availability of external funds	30	14.08	3.33	6.66	16.67	23.33	12.56	35.71 ^b	12.86	8.57	20.55	13.95	14.29
Favourable Income Tax Policy	13	6.10	7.69	15.38	7.69	30.77	5.53	14.29	7.14	7.14	4.11	2.33	11.90 ^a
Favourable political situation	18	8.45	5.56	11.11	22.22	16.67	8.04	14.29	7.14	14.29	4.11 ^C	8.53	8.33
Increasing Business opportunity	121	56.81	10.74	20.66	15.70	16.53	55.28	78.57 ^C	55.71	52.86	61.64	53.49	61.90
Improved Energy/Utilities Supply	6	2.82	0.00	0.00	16.67	33.33	2.51	7.14	4.29	1.43	2.74	0.78	5.95 ^b
Any others	25	11.73	72.00	4.00	12.00	8.00	12.06	7.14	12.86	12.86	9.59	17.83	2.38
Total (n)	213						199	14	70	70	73	129	84

Source: Field Survey, 2012

a, b and c indicate the significant at 1%, 5% and 10% level respectively

Appendix Table 3: Entrepreneurs' perception regarding major achievements from the enterprises according to scale, sector and location

Achievements from enterprises	# of responses	% of responses	Rank of the responses				Percentage of responses by various groups							
							Scale of enterprise		Sector of Enterprise			Region		
			1 st	2 nd	3 rd	4 th	Small	Medium	Livestock	Fisheries	Crops	Affected	Normal	
Expansion of the business	197	95.17	83.75	12.69	2.54	1.01	94.82	100.00	92.65	98.53	94.37	92.86	98.77 ^c	
Diversification of the products	98	47.34	14.28	65.31	15.31	5.10	48.19	35.71	32.35	63.24	46.48 ^a	51.59	40.74	
More growth due to increase in demand	110	53.14	7.27	42.73	34.55	12.73	52.85	57.14	48.53	57.35	53.52	52.38	54.32	
Increase the efficiency of manpower	135	65.22	6.67	25.93	45.93	18.52	63.73	85.71 ^c	58.82	69.12	67.61	61.11	71.60	
Cost advantage of the products	53	25.60	9.43	9.43	20.75	39.62	25.39	28.57	11.76	29.41	35.21 ^a	30.16	18.52 ^c	
Capability of using advanced technology	62	29.95	8.06	19.35	27.42	32.26	27.98	57.14 ^b	23.53	27.94	38.03	32.54	25.93	
Total (n)	207						193	14	68	68	71	126	81	

Source: Field Survey, 2012

a, b and c indicate the significant at 1%, 5% and 10% level respectively

Appendix Table 4: Entrepreneur's perception regarding reasons behind major achievements from enterprises according to scale, sector and location of enterprises

Reasons behind achievements	# of responses	% of responses	Rank of the responses				Percentage of responses by various groups						
							Scale of enterprise		Sector of Enterprise			Region	
			1 st	2 nd	3 rd	4 th	Small	Medium	Livestock	Fisheries	Crops	Affected	Normal
Increasing demand for the product	143	69.08	30.07	41.26	17.48	6.29	68.39	78.57	64.71	73.53	69.01	62.70	79.01 ^b
Increase in logistics	68	32.85	10.29	16.18	30.88	32.35	31.61	50.00	26.47	35.29	36.62	30.16	37.04
Hard work by both owner and labour	197	95.17	63.96	22.34	9.64	3.55	95.85	85.71 ^c	97.06	94.12	94.37	96.03	93.83
Door-to-door advertisement of the product	2	0.97	0.00	100.00	0.00	0.00	1.04	0.00	1.47	0.00	1.41	1.59	0.00
Increase in capital from profit	187	90.34	16.58	33.69	39.04	8.56	91.19	78.57	89.71	91.18	90.14	85.71	97.53 ^a
Increase in capital from other sources (other than profit)	33	15.94	0.00	9.09	27.27	36.36	15.03	28.57	16.18	16.18	15.49	11.90	22.22 ^c
Use of advanced technology	73	35.27	2.74	15.07	28.77	31.51	34.20	50.00	32.35	33.82	39.44	37.30	32.10
Get special facilities from Government as SME entrepreneur	11	5.31	0.00	18.18	9.09	18.18	4.15	21.43 ^a	8.82	1.47	5.63	1.59	11.11 ^a
Suitable climate/ environment for the enterprise	109	52.66	8.26	17.43	26.61	32.11	51.81	64.29	39.71	57.35	60.56 ^b	53.17	51.85
Others	4	1.93	75.00	0.00	25.00	0.00	2.07	0.00	1.47	2.94	1.41	1.59	2.47
Total (n)	207						193	14	68	68	71	126	81

Source: Field Survey, 2012

a, b and c indicate the significant at 1%, 5% and 10% level respectively

Appendix Table 5: Entrepreneurs' perception regarding reasons for increasing investment during last 2 years according to scale, sector and location

Reasons for increasing investment	# of responses	% of responses	Rank of the responses				Percentage of responses by various groups						
							Scale of enterprise		Sector of Enterprise			Region	
			1 st	2 nd	3 rd	4 th	Small	Medium	Livestock	Fisheries	Crops	Affected	Normal
Increase in demand for firm's product	184	92.93	44.57	30.98	11.96	5.98	94.57	71.43 ^a	90.77	98.46	89.71	92.37	93.75
Growing market demand for the product in general	154	77.78	13.64	40.91	25.97	9.74	78.26	71.43	81.54	86.15	66.18 ^b	77.12	78.75
Decrease in Cost of Raw Materials/Intermediate Goods	19	9.60	5.26	21.05	36.84	5.26	9.78	7.14	7.69	13.85	7.35	5.93	15.00 ^b
Easy availability of raw materials/intermediate goods	96	48.48	5.21	14.58	27.08	30.21	48.37	50.00	41.54	43.08	60.29 ^c	46.61	51.25
Availability of internal funds	40	20.20	0.00	2.50	20.00	35.00	19.57	28.57	16.92	13.85	29.41 ^b	21.19	18.75
Availability of external funds	167	84.34	27.54	13.77	31.14	13.77	85.33	71.43	84.62	84.62	83.82	84.75	83.75
Better facilitation from government agencies	15	7.58	13.33	13.33	13.33	20.00	5.43	35.71 ^a	7.69	6.15	8.82	5.93	10.00
Reduced Harassment by Government Agencies	15	7.58	0.00	0.00	6.67	26.67	6.52	21.43 ^b	9.23	6.15	7.35	0.00	18.75 ^a
Reduced Harassment by Law Enforcing Agencies	17	8.59	0.00	0.00	5.88	5.88	7.61	21.43 ^c	9.23	7.69	8.82	0.00	21.25 ^a
Easy to get SME facilities or loan	32	16.16	6.25	12.50	25.00	28.13	15.76	21.43	21.54	18.46	8.82	8.47	27.50 ^a
Favourable climate/environment for the enterprise	128	64.65	16.41	14.06	16.41	25.78	64.67	64.29	55.38	70.77	67.65	61.86	68.75
Favourable Income Tax Policy	15	7.58	0.00	0.00	6.67	26.67	6.52	21.43 ^b	7.69	9.23	5.88	1.69	16.25 ^a
Favourable VAT Policy	4	2.02	0.00	0.00	0.00	25.00	2.17	0.00	3.08	3.08	0.00	0.85	3.75 ^b
Favourable political situation	17	8.59	5.88	0.00	5.88	17.65	8.70	7.14	7.69	12.31	5.88	11.86	3.75
Increasing Business opportunity	137	69.19	13.14	17.52	13.14	17.52	69.02	71.43	63.08	69.23	75.00	67.80	71.25
Improved Energy/Utilities Supply	18	9.09	5.56	0.00	0.00	11.11	7.61	28.57 ^a	12.31	7.69	7.35	5.08	15.00 ^b
Reduced Extortion	6	3.03	0.00	0.00	0.00	0.00	3.26	0.00	3.08	3.08	2.94	3.39	2.50
Any others (Please specify)	19	9.60	52.63	10.53	10.53	10.53	9.78	7.14	10.77	12.31	5.88	12.71	5.00 ^c
Total (n)	198						184	14	65	65	68	118	80

Source: Field Survey, 2012;

a, b and c indicate the significant at 1%, 5% and 10% level respectively

REFERENCES

- Ahmed, M. U. (2008), “Report of the PRSP-2 Thematic Study on Small and Medium Enterprises Development in Bangladesh”, Dhaka, March 30, 2008.
- BBS (2002), “Statistical Pocket Book of Bangladesh”, Bangladesh Bureau of Statistics, Ministry of Planning, Government of the Peoples’ Republic of Bangladesh.
- DoF (2009), “Fisheries Statistical Yearbook of Bangladesh”, Department of Fisheries, Ministry of Fisheries and Livestock, Government of the Peoples’ Republic of Bangladesh.
- Karim, Z., K.S. Huque, M.G. Hussain, Z. Ali and M. Hossain, (2010), “Growth and Development Potential of Livestock and Fisheries in Bangladesh”, Presented at the Bangladesh Food Security Investment Forum, 26-27 May, 2010, Dhaka.
- Uddin, S. M. N. (2008), “A Country Paper for Bangladesh presented in the Joint Regional Workshop on SME Development and Regional Economic Integration”, Tokyo, Japan, 22-26 September, 2008.