

# **Not Yet Free of Bondage**

**A Civil Society Report on  
The Progress of MDGs in Bangladesh, 2007**

**People's Forum on MDGs (PFM), Bangladesh  
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*Rabindranath Tagore*

|                                   |                                  |
|-----------------------------------|----------------------------------|
| The darkness is yet to abate      | The barrier remains unscaled.    |
| The vow to “do or die”            | Is yet to be made.               |
| When would grief and suffering    | Turn to triumph,                 |
| For light of dawn                 | To shine upon tear-stained face? |
| The shadow of own doubt           | Casts so much illusion.          |
| Why this futile look back to past | Again and again,                 |
| When lightning pierces darkness   | All around.                      |

Rabindranath Tagore  
Nobel Laureate  
(1861-1941)

*(Unofficial English translation of original Bengali song)*

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## **Acknowledgements**

**(Somebody to write)**

**Preface**

**(Somebody to write)**

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## Executive Summary

### Introduction

The Millennium Development Goals (MDG) announced by the United Nations on behalf of the signatory nations, 189 in all, have its detractors and admirers. While it must be admitted that the goals themselves can and have to be contextualized depending on a specific country's situation and may thus reflect better the economic, social, cultural, political, legal, institutional and financial parameters and constraints a country faces, this is also true that these global goals possibly embody the barest minimum of a human society's yearning for a better quality of life. Attainment of these goals therefore may be taken to indicate that the country has achieved a minimum acceptable level of standard of life. Herein lies the importance of the MDGs.

### The MDGs

There are 8 global MDGs. These are as follows:

Goal 1: *Eradicate extreme poverty and hunger*

Goal 2: *Achieve universal primary education*

Goal 3: *Promote gender equality and empower women*

Goal 4: *Reduce child mortality*

Goal 5: *Improve maternal health*

Goal 6: *Combat HIV/AIDS, malaria and other diseases*

Goal 7: *Ensure environmental sustainability*

Goal 8: *Develop a global partnership for development*

These 8 goals have 18 targets in all. The number of global indicators to monitor the targets is 48.

The present report tries to find out if Bangladesh has progressed well towards achieving the MDGs and the targets under them.

### Objective

The main objective behind the preparation of the present People's Report (PR) is to educate the general public and create awareness among them as well as sensitizing the policy makers, concerned organisations, groups and individuals regarding the progress of attaining the MDGs. But more importantly, it also aims at finding the differentials that one finds in the society between and among regions, groups or men and women in their experience or benefits from the progress towards the goals as well as analysing and understanding the factors behind some of the observed patterns. Furthermore, another objective of the report is to analyse and report on the policy implications of the findings.

### Method of Investigation

Information for the present report has been collected for analysis in basically two ways. First, the Research Team (RT) for the People's Report (henceforth PR) has collected

various secondary materials on quantitative information from statistical sources. Armed with whatever have been learnt from this exercise, the RT had gone to the field and talked to people at length in focus group discussion on the whole gamut of issues related to the MDGs. Six such regional consultation meetings were held. The regional meetings were organised by local level NGOs who are also members of the People's Forum on MDGs.

These meetings provided the RT with fora for validation of what have been understood from the secondary sources. Apart from validation of findings, these meetings also provided the RT to find out from the people their areas of policy concern. This allowed the RT to put the future policy directions in proper perspective.

### **Unique Characteristics of the PR**

The present report differs from other similar reports in several ways. First, like others the present report has provided a general score card based on indicators related to the progress towards MDG. In doing that both global and whenever possible localized indicators have been used. Second the PR has tried to highlight two aspects all through out. These are the rural-urban differentiation and the regional variation in the progress towards achieving the MDGs. Third, while gender concerns are germane in some of the goals, the PR has tried to make it, as far as data and information allow, a more general development concern across all the goals. Fourth, attempt has been made to analyse the factors underlying the observed MDG status and their differences across households, groups, regions and gender. Fifth, the statistical and econometric findings have been sought to be validated through a spatially distributed consultative process across all the divisions keeping in mind the ecological settings to capture the roles of factors such as lack of communication, fragile environment and existence or the lack of facilities in attaining the desirable levels of the indicators. Finally, the policy dimensions based on all these data, analyses and consultations have been brought out.

The RT wishes to sound a note of caution to the readers of this report. The PFM was unable to conduct large scale surveys for resource and time constraints. The RT therefore had to depend on surveys, information and data sets conducted and collected by others including the Government and civil society, research organisations and academics and use them judiciously to arrive at its conclusions. Naturally, many of the estimates of indicators vary, some time widely, the biases of which are difficult to determine. The RT, therefore, has tried to verify through 6 stakeholder meetings if the trends, if not the levels of the various indicators, are in the right direction. The reader is advised to keep these limitations in mind while using this report for any purpose.

There is another limitation or rather omission in the present report which the RT thinks is crucial. This report has given little attention to some of the special marginalized socio-economic groups in society. Unfortunately the time and resources available to the Research Team was limited and although the critical importance of the issues had never been in any doubt, it was not possible to study them.

A further limitation had been that while we have tried to indicate the policy implications of our results, it was not possible at this stage to analyse how far these implications are backed by actual policy statements or practices in terms of programmes and projects. We found that this would have to be a full-fledged future exercise to do proper justice to the issues involved.

Given the above caveats, the findings and the associated policy concerns and implications are summarised below on a goal by goal basis.

### **Goal 1: Eradicate extreme poverty and hunger**

#### *Summary of Findings*

Goal 1 for reduction of poverty is probably the most important among the eight MDGs. The conceptualization of poverty to be meaningful, however, has to be context (cultural, social) specific as well as commensurate with nutritional standards. The global yardstick of defining an income of less than \$1 a day has therefore been not used in the present analysis. Instead the two measures that are widespread in Bangladesh have been used as explained in the main text. Very briefly, we have used the concept of nutritional adequacy at two levels, viz., calorie consumption of 2122 Kcal (absolute poverty) and of 1805 Kcal (hardcore poverty). The size of the poor people nationally in 2005, the year for which detailed data are available was 56 million in Bangladesh. Under a lower level of calorie consumption of 1805 kcal, the total size of the population under hardcore poverty was also huge, 27 million nationally. In terms of proportion of population the incidence was 40 and 20% respectively.

The incidence of absolute poverty has fallen over time. So has rural poverty while urban poverty appeared to be on the rise in most of the recent years. Then again, the urban hardcore poverty has hardly moved while rural and correspondingly national hardcore poverty has fallen, the speed of fall being faster during the late nineteen nineties. As absolute calorie poverty has fallen, but not hardcore poverty, this may mean that either that the absolute poor has moved up faster in the calorie scale compared to the hard core poor; or, that those in the lower end of calorie scale in the absolute poor category have lapsed into the hardcore category.

Calorie consumption has been found to vary by several economic and social factors as well as regionally. The lowest level of calorie consumption was seen in Barisal division while the opposite picture prevails in case of Dhaka division. Household income has a clear monotonically positive influence on calorie consumption. The level of education, particularly of women in the family, not so much household head's education appears to influence calorie consumption levels in an appreciable manner. Female headed households appeared to suffer less from poverty possibly because of receipt of remittances as well as large scale micro credit operation among them. Also more often than not the members in larger families do fall more in the lower calorie categories.

Higher proportion of income from agriculture appears to have salutary effect on reduction in poverty. Unemployment is a huge problem. Seasonality of agriculture and consequent unemployment has certain negative influence on poverty. Consequently, people think that suitable training and finance programmes for employment generation during the lean season is necessary for generating employment. In many areas people suffer from environmental degradation and changing seasonal behavior of weather and calamities. This is adding to the problem of crop production and also employment of labour. People during stakeholder meetings have pointed out the high risk of livelihood that various marginalized groups face.

Two groups, at risk in particular of malnutrition, in Bangladesh are mothers and children. Nearly half the children suffer from problems of underweight. Both age and sex variations have been observed in case of child malnutrition in Bangladesh. Particularly,

incidence of malnutrition begins only a few months after birth. Proportionately more of children in rural areas appear to suffer from malnutrition. Girl children are slightly more likely to be at disadvantage than boy children in the rural areas. Regionally, there is not much appreciable variation although the situation in Chittagong Hill Tracts is somewhat worse than others.

The higher a household is in wealth ranking the less likely it is that children from that family will suffer from malnutrition. Parental education especially mother's education has a positive impact on nutritional status of children. For, higher birth orders above 3, there is a sizeable jump in the incidence of malnutrition, be it stunting or underweight. Bangladesh has still a long way to go to eradicate child malnutrition.

### *Policy Implications*

Several major issues have come up during analysis and consultation. First, there is a major regional variation, independent of influence of other factors, in incidence of poverty as well as of child malnutrition. This means that in future the anti-poverty programmes and child nutrition programmes have to be better targeted by region. The implication is that the potential for development of the regions have to be assessed and reviewed clearly for implementable actions. The policy of "all size fits all" will not do. These highlight the importance of community level actions and local government's institutional mechanisms.

Whatever is done to reduce poverty, in ultimate analysis unless people are able to earn a decent income which implies security of livelihood and employment becomes, it is unlikely to fall fast. All avenues for employment whether in agriculture, industries, particularly SMEs, and services of all kinds need therefore to be explored. And here, the suggestions made by people in stakeholder meetings of the need for training in skills and facilities for financing such activities become important. These are not unknown issues. What remains to be done is to take the challenge on a war footing.

The above policy implication becomes all the more important because poverty eradication in Bangladesh has reached a stage where fine-tuned programmes, which may raise complex issues of trade-off when aimed at special marginal groups, may be needed. For example, while agricultural wage labourers are thought to be among the poorest, the fact remains that the market for such wage labour is often seasonally tight and farmers often end up paying rather high wages for hired labour. This may create problems for cash-strapped farmers as well as for marketed food which may be higher priced. Higher food price hit the poor hardest. How to balance the interests of various groups therefore becomes a priority area of concern. This is as yet a neglected area of policy intervention in Bangladesh.

Apart from agricultural labourers, there are other marginal groups such as fishermen, traditional potters and craftsmen and others including the disabled who constitute a large proportion of the population. They all need specialised programmes if their poverty is to be addressed. Without community-based and local level initiatives their concerns may remain unaddressed.

Family size appears to have a negative effect on poverty reaffirming the role of population planning, an issue which appears to be somewhat sidelined these days. This role is again highlighted as higher birth order (i.e., larger family of children) has a negative effect on children's nutritional status.

Education, particularly of women appears to be one of the most potent weapon against both poverty and child malnutrition. However, as shown in the next chapter so far Bangladesh has progressed most in terms of gender equity in only primary education while it is secondary education which is of more importance in making a dent in both poverty and child malnutrition. Here as we shall show later in next chapter, the situation is not that good yet.

Timing of intervention in child nutrition programmes is important in lowering child malnutrition, particularly as malnutrition becomes clearly perceptible within a year of child birth. Nutrition-supplement programmes, for example, have to be designed therefore in a way that children more at risk of malnutrition at particular age-brackets may be reached.

## **Goal 2: Achieve universal primary education**

### *Summary of Achievements*

The provision of basic education is one of the major goals under MDG. A minimum of five years of schooling i.e. up to the completion of the primary level is accepted as the minimum level of education that everybody, particularly all children must have. In the primary education sub-sector the country aims to attain net enrollment rate of 100% by the year 2015. Peoples' perception indicates that the present status is satisfactory so far as the quantitative targets are considered regarding increased net enrollment, decreased drop out, increased number of teachers in the context of government incentives and supports, infrastructure development and expansion of girls' education.

Net enrollment in primary education has increased over the last five years and stood at 80 percent or so in 2005 according some estimate while according to others it stood at nearly 90 percent. But this provides only a partial picture of the over-all situation as still a lot of children still do not go to school.

Net enrollment ratios for girls in recent years are higher compared to those for boys. The urban ratio is higher than the rural ratios in both the years. The wider variation has been observed among districts as well as divisions and also by sex of the children. Khulna and Barisal appear to have fared best in recent years. But the performance over time has also varied. Chittagong, most interestingly, has actually faltered while Dhaka has (possibly because of inclusion of the capital city) done the best. Barisal and Khulna have progressed very little compared to say Rajshahi. Comparable figures for Sylhet were not available for 2000 yet note that it is the second worst performer. Everything remaining the same an urban area child is 68% more likely to go to a primary school compared to a rural child.

A clear positive and monotonic link between income level and net enrollment ratio for children at the primary level has been observed. This is corroborated by the significant role that provision of stipend plays in enrolling students in school. For every 100 stipend recipients who are studying at the primary level, among the non-stipend holders with exactly the same characteristics only 10 children are studying at the primary level. The influence of women's education has been found to be pervasive and strong. Women's education thus creates a very significant intergenerational positive externality.

The flip side of the net enrollment situation is that of those students who are going to school not all are completing the primary cycle. And this tendency is more acute

among the boys. Female stipend programme on the other hand has a very important role in keeping girl students in the schools.

There is little apparent variation between boys and girls and between the town and the countryside in primary completion rates. Boys are in many cases employed in various income generating activities to help their family. Poverty is the main barrier to completion of the primary cycle as well as being enrolled in primary schools. Girls do drop out in significant numbers. The main reasons for female drop out include early marriage, poverty, lack of physical security for adolescent girls, distance of school from their houses, and various social and religious values and beliefs that militate against women's education. Urban areas not only have higher enrollment rates, the pass-out rates are also higher there. If such a trend continues, it would mean a substantial drag in the rural areas in terms of employment and productivity rise and subsequently on income growth and consequently on poverty.

Barisal which appeared to have the highest enrollment rates now shows the lowest completion rate of 63% while Dhaka which appeared to have a rather low enrollment rate show the highest pass out rate of 71%. These opposing tendencies thus partly offsets each other and makes the over-all situation not so positive in terms of acquisition of basic education and skill which is a major necessary condition for future growth.

Quality of education is the other seamier side of the primary education scene in Bangladesh. The competency that students achieve is abysmally low and in critical areas such as general science and mathematics students fared very badly while tested for competency. Not even 2 percent of students could achieve all the competencies. These means that while enrolled and passing out, the students are not all equipped to use their knowledge, if they have gained any, in the practical life. One of the major findings is that there are many factors that impinge upon quality which makes it difficult to prioritise areas of intervention.

### *Policy Implications*

Five types of policy concerns and implications stand out regarding further advancement in primary education. First, net enrollment in general has increased while the internal efficiency of the system in terms of completion rates, drop out rates, repetition in the same class all remain major sources of colossal waste. Second, there are wide regional and even within regions between districts substantial variations in performance related to enrollment. Third, poverty or in other words, lack of income remains a major cause of non-enrollment as evident from the positive independent role played by provision of stipend as well as people's inability to send children to school because of high costs of various education materials. Fourth, female education plays a very positive and independent intergenerational and thus a snow-balling role in fostering education for children. Fifth, quality of education has become a major cause of concern, but may be very hard to achieve.

What all these mean is that the relevant authorities must try to find out the causes behind widespread variation in enrollment so that appropriate measures be taken to equalize performance over space. Secondly, stipends for children in general and for girls in particular must be continued, expanded, increased in terms of real value and its management streamlined for better efficiency and targeting. Third, apart from streamlining and expansion of the stipend programmes, vigorous awareness campaign

must be made for not just enrolling girls in schools but also retaining them till completion of the full cycle.

Fourth, renewed efforts must be made to improve quality of education. The teaching methods may need to be reviewed. If necessary, new teaching methods may be introduced on a pilot basis for understanding their efficacy and if found suitable should be replicated. At the same time, the best schools in terms of students learning capability should be found out and studied for the possible replication of the teaching and other relevant environment. A strong political will in this regard must be shown by the government in terms of action plans for improvement of quality, and necessary budget allocations.

### **Goal 3: Promote gender equality and empower women**

#### *Summary of Findings*

The MDG on gender equality is a rather limited goal as it restricts itself only the actions at the public space. It is widely known that in the private sphere of the household, there are many types of inequity that women suffer from, and indeed this is the well-spring of the inequality that women suffer from in the public space too.

At a superficial level, particularly in primary education gender parity of sorts has been achieved. But the over-all parity in education is still a far off prospect. Particularly the situation regarding tertiary education is highly unsatisfactory. In other areas in public space such as paid employment outside home, women are still at great disadvantage despite they being the major workforce behind the whole export-based readymade garments industry. In this industry as elsewhere women earn far less than men.

A major reason for women's income to be lower in general is that women have very limited access to productive resources such as land. Women practically have no access to cultivated land while in case of homestead land the situation is only marginally better. Jobs, particularly paid employment, are out of women's reach, be it in agriculture or non-agricultural activities.

Violence against women is a major concern in Bangladesh. It is a widespread problem across the country that exists at the family, society and national level although beating wives and other physical torture on women have become slightly less common than before probably because of strong law existing against violence on women and its implementation.

Political participation of women is important as it enhance their position at the policy decision making level. Possibly Bangladesh is unique as since 1990 women have headed successive governments. Yet, the ground reality is that little have changed so far in terms of opportunities for women.

#### *Policy Implications*

Gender equality is an area where old mind sets have hardly changed. The attack against gender-based inequity therefore has to be three-pronged. First, there must be vigorous awareness-raising campaigns in favour of gender equality in terms of opportunities. Second, avenues have to be created in various manner including legal means, budgetary allocation for balanced gender-base development, and interventions in specific areas such as creation of facilities for women's education at tertiary levels. Add to these other

measures related to some other goals such as Goals 2, 4 and 5 which also may create an expanded area for gender-related intervention.

#### **Goal 4: Reduce child mortality**

##### *Summary of Achievements*

Three of the eight goals under MDG refer to health improvement. These relate to child mortality, maternal mortality and prevention of certain killer diseases. And the success in one is to a considerable extent dependent on that in another field. Given this caveat, it may be noted that there are three indicators to analyze the progress towards the goal of reduction in child mortality. These are: Infant Mortality Rate (deaths per 1000 live births), Under-five Mortality Rate (deaths per 1000 live births), and Proportion of 1-year Old Children Immunized against Measles.

Neonatal and post neo-natal rates have been falling over years but have stagnated of late. Child mortality rate, however, had continued to fall over these years and consequently, the average under-five mortality rate continued to fall and stood at 88 (deaths per 1000 live births) for the period 1999-2003. Yet, it is a matter of concern that a plateau appears to have been reached because of the stagnation in neonatal and post-neonatal rates. Vaccination coverage has increased during last decade although about one fourth of 1- year old children are still out of reach. The partial coverage may be a major cause of the stagnation of the early childhood mortality rates.

There is a substantial variation in infant mortality rate by division. Although Sylhet remains the worst case, the situation may be improving there. In case of child mortality the bias now appears to be in favour of girl children. Also, U-5 mortality appears to be inversely related to the length of the birth interval from the previous birth. Birth order also appears to have certain influence on child death (U-5). More at risk are the first borns and those who are born much later. Child mortality falls with rise in wealth. Along with government initiatives, NGO's in health sectors contributed enormously in reducing child mortality through their intensive door-to-door services.

The main causes of death of newborn babies are – asphyxia, pneumonia, complex delivery, malnutrition (immature /low birth weight baby), tetanus, jaundice and diarrhea. And main causes of death of babies aged one to five years are – malnutrition, pneumonia, tetanus, diphtheria, hopping cough, malaria, jaundice and diarrhea. There is a certain pattern of the causes by age and mother's education. Possible serious infection, Acute Respiratory Infection (ARI) and birth asphyxia cause two thirds of under-five deaths. These three remain the main causes of neonatal and post-natal death. ARI causes nearly 43% of post-neonatal death. Diarrhea no longer is a major killer disease. Note that more recent research have found that while the broad pattern remains valid, for children of age 1-4 years, drowning is a major cause of death (26%).

Children of better educated women die more from less preventable causes such as congenital abnormality, injury, drowning, prematurity and birth asphyxia. On the other hand, in case of illiterate mothers children die more from more easily preventable causes such as infection and malnutrition. This means that poverty and lack of awareness may be ultimate major causes of death.

In such a situation the EPI has helped somewhat. Most interestingly we again find here virtuous impact of mother's education. Indeed, the only clear and perceptible pattern of immunization relates to education level of mothers. The higher the education level, the

higher is the immunization rate. Thus, children of mothers with little or no education are immunized in only 60 percent cases. It then steadily rises with the level of mother's education and reaches 92% for children of those mothers with secondary level education or beyond.

### *Policy Concerns*

The policy concerns in case of prevention and lowering of child mortality relate to several issues. One of these is immunization which still leaves out a substantial group of children. This means that the scope and extent of EPI has to be further broadened.

The other issue relates to the persisting regional differences which needs to be addressed more carefully, particularly as high income does not appear to have a clear one to one correspondence at least in case of infant death. The nature of relationship with birth order and the birth interval clearly indicates the role of awareness raising regarding such issues under a programme of population planning.

Death patterns by age indicate that infant death arise more due to environmental sanitation and hygiene apart from malnutrition due to various factors while immunisation does not protect against them. Better awareness is thus necessary and improved sanitation is essential for lowering infant death rates. This is an issue which is dealt under environmental sustainability under the MDGs. And finally the role of mother's education in preventing death through better immunization bind the progress towards greater gender equality and over-all improvement of the situation regarding women's education beyond the primary level.

## **Goal 5: Improve maternal health**

### *Summary of Achievements*

Safe motherhood for women is the fifth of the eight goals under MDG. The target is to reduce by three-quarters, between 1990 and 2015, the maternal mortality ratio. For Bangladesh the specific target is to reduce the maternal mortality ration from 570 in the base year of 1990 to 143 per 100,000 live births by 2015. Because we are all a child of a mother, may be that is a good starting point to build up a socially sustainable society. Well-nourished mothers tend to carry, deliver and nurture children who are healthier and better developed, both physically and cognitively, both in childhood and in later life.

Maternal health care refers to the caring for women's health during pregnancy, childbirth and the postpartum period. If such care is proper and adequate, maternal mortality is likley to be low. It is therefore expected that safe motherhood shall refer to indicators not simply of the mortality rate but some of the proximate factors that determine it. There are thus 6 indicators which include those related to maternal care as well as maternal nutritional issues and also those which indirectly influence maternal health and thus maternal mortality. These include the age at marriage as well as total fertility rate.

Recent information on maternal mortality ratio or their correlates is lacking. the most comprehensive dat refers to those based on s survey conducte din 2001. At that time the national level mortality ratio was 322 per 100,000 live births. It appears that the MMR may have fallen somewhat over time, but not by much. There are major regional differences in MMR, the worst situation being in Sylhet where the ratio in 2001 was 471.

There is no clear rural-urban difference in favour of urban areas. Nor is there a clear monotonic relationship between MMR and wealth.

While motherhood is often a positive and fulfilling experience, for too many women it is associated with suffering, ill-health and even death. Many women die each year in pregnancy and childbirth. Most of them die because there is not enough skilled regular and emergency care because of an acute shortage of trained midwives. Condition of chars and hilly areas are worst in respect of health facilities. These areas acutely lack in doctors, health care centres and communication.

There is a wide rich – poor and urban – rural gap in mother's health care during pregnancy. Poor mothers do not get enough or quality food during pregnancy period, have to do heavy works, cannot go to doctors / health workers and seek proper advice or treatment for want of money. On the other hand, education of mothers positively influence where the delivery takes place, at home or in clinics.

The deaths occur more not during delivery but afterwards. The major direct causes of maternal mortality include eclampsia, haemorrhage, anemia, infection, high blood pressure, unsafe abortion, and obstructed labour. On the other hand, aged mothers are highly exposed to death risk. Besides this, maternal mortality ratio is much higher for those who are going to be mother for the first time and for those who already have five or more children.

Total fertility has gone down from more than 6 to slightly above 3 over the last thirty years or so. But it has hardly moved for women of the most fecund periods in their lives. One again finds major divisional differences. Sylhet women are the most fecund and the total fertility in fact has risen slightly during last years of the 20th century. Better educated mothers have a much lower TFR than illiterate mothers. Every two women with the highest level of education have 2 children less between them compared to two such women without any education at all.

Nearly 40% of women suffer from malnutrition. While the regional variations may not seem much, at least Sylhet is again the outlier where just about 50% of mothers are malnourished. There is also substantial rural-urban gap in favour of the latter.

Women's education has again come out to be the most consistent factor positively impacting upon nutritional status. While among illiterate mothers the incidence of malnutrition is 40%, it is only 17% for the most educated.

### *Policy Concerns and Implications*

There are several policy concerns and implications that arise out of the information on maternal mortality and their analysis. The very first of this is the acute lack of recent information on maternal mortality. This needs to be looked into for regular monitoring of the situation without which no informed and proper policy making is possible. Secondly, it appears that despite some efforts, the MMR has hardly fallen and that there are major regional variations which again remain to be explained adequately.

Four groups of women are at high risk of maternal death, those who are rather young and those who are much older, and those who are giving birth for the first time and those who have already given birth to several children. The two findings mutually support each other as the younger ones are likely to experience more the child birth for the first time while the much older ones may already have several children. Given that the TFR has not fallen for the young and the most fecund groups, clearly awareness raising

regarding population planning and prevention of under-age marriage are important from policy point of view.

Time and again the virtuous role of women's education has been pointed out in all sorts of issues related to maternal mortality, be it TFR, or maternal care or delivery in the possibly safer clinics. What all these mean is that the issue of maternal mortality is linked to what happens to gender equality in education and elsewhere. Educated and healthy mothers are the ultimate well-spring of a healthier, educated and poverty-free nation.

### **Goal 6: Combat HIV/AIDS, malaria and other diseases**

Information on major killer diseases is rather rare in the country. While one can understand the problems of information related to HIV/AIDS because of its recent inroads in the country, the lack of information on malaria and TB is surprising. This alone speaks volumes regarding the public health system in the country.

Give the above situation, the incidence of malaria, TB and HIV/Aids all may seem to be low. But actually it is not. Take for example, the incidence of TB. A 0.07 percent prevalence rate in the country means that at least 100,000 people are affected. Similarly, a 0.61% prevalence rate for malaria indicates that there are at least a million people who are suffering from malaria. These are no mean figures. In fact, the real figures may be several times of these numbers.

The policy concerns in such a situation should focus, among others, on collection of information at various levels for understanding the gravity of the problem. And this should cover other new threats such as avian influenza.

Awareness-raising is the most important task for combating HIV/AIDS. This has to be at both the individual and community level. Side by side, proper health care facilities need to be built up.

For malaria and tuberculosis, a nationwide screening drive is absolutely essential. Policy level awareness is the first priority as the treatments for malaria and tuberculosis is almost standard and new combination drugs are easily available. These do not yet happen to be priorities of the government.

### **Goal 7: Ensure environmental sustainability**

Sustainable development as a part of policy has not been pronounced anywhere in so many words. But the PRSP has a major chapter on environment. On the whole there had been major degradation of the natural resource base (land, wetlands, forest) for all kinds of economic activities as well as for life support natural systems (such as biodiversity) while pollution has choked the ecosystems in some areas such as around Dhaka. Yet, there also some success stories such as road side plantation, near stoppage of polythene shopping bags and improved air pollution in Dhaka by banning two stroke vehicles and introducing 4-stroke ones in their place.

In general, Bangladesh showed high inclination in pronouncing policies, but not so much capability to implement them. The level of implementation is unacceptably poor, making a policy pronouncement a mere rhetoric. In some cases, inconsistencies have been found due to very strong sectoral biases. Weak institutional arrangements often act as deterrent factors that further weaken implementation procedures. Lack of adequate human and other resources (in terms of skills, number, equipment, surveillance capacity, etc.), wide-spread lack of coordination among relevant government institutions (i.e.,

ministries, departments, directorates, boards, etc.), and inter-ministerial hierarchy are the major constraints towards implementation of pro-environmental policy regime in Bangladesh.

As a result, while the aim was to reverse the loss of natural environmental resources, one can find a host of reports on how environmental resources of the country have been deteriorating despite some new initiatives to reverse the situation. By analyzing the current trends, one can infer that the reversal of degradation of natural resources might not be achieved unless the current institutional weaknesses are adequately addressed, administration is made pro-active to arrest encroachment and pollution, urbanization is properly guided with a possible enforcement of zonation, and inter-ministerial coordination is enhanced with increased awareness on environmental values and norms. Just by pronouncing policies would not lead the country to environmental sustainability.

Unless a viable water treatment modality to remove labile arsenic can be found out and disseminated amongst millions of rural households, the target in relation to safe rural water supply might not be achieved. Since urban water supply is predominantly dependent on ground water resources and by 2015, over 40% of the population will be residing in urban areas, the target for 'safe water supply' in urban areas might not be achieved either. The piezometric surfaces of groundwater aquifer in most populated cities (i.e., Dhaka, Chittagong and Khulna) have been declining rapidly, which have already posing risks to long-term sustainability of the resource base itself. Moreover, frequent drainage congestion leading to urban flooding and potential to recharge groundwater aquifer with pathogen laden filthy water might increase the risk further. The quality of supplied water in these cities is already questioned, which is manifested by increasing demand for bottled mineral water. Such a trend would further limit the access of urban poor to safe water and might put them under severe threat of health disorder.

It is heartening to note that the sanitation coverage is indeed increasing, though there is deficiency in service delivery in urban areas. The target might still be achieved by 2010. However it would require strong collaboration between concerned government agencies and NGOs operating at the grassroots. Involvement of local government institutions is also necessary. The level of financing needs to be reinforced in order to facilitate the process of implementation.

It is important to note that the gradual degradation of natural resources such as land and water would eventually lead to loss of overall productivity, which in turn adversely affects other targets in the long run. Similarly, degradation of water quality will adversely affect health condition of urban poor. Integration of the principles of sustainable development in a sense becomes not simply an integral part of MDG but rather an essential part because without this quite a few of the other MDGs including possibly the most important one of what an activist termed as "making poverty a museum piece" will probably never happen. Unfortunately these intricate web of intertwining relationships are hardly understood by the fence mending policy makers who are in charge of specific ministries. That we think remains a major challenge to be overcome in the future.

### **Goal 8: Develop a global partnership for development**

In global partnership for development we find that it has received mainly lip service both in management of aid and trade. However, Bangladesh does not appear to be in a

hopeless situation. In fact, it is in a rather comfortable situation in terms of foreign exchange earnings thanks to remittances and export earnings. Aid is no longer a major critical factor for Bangladesh development. Terms of trade remains a problem, however.

The problem lies elsewhere. This is in aid management and fixing our priorities. Secondly, part of the problem is in the mindset of the policy makers. The country's basic economic policies are still guided by preferences expressed by some of the big bilateral and multilateral donors. Taking policy initiatives in one's own hands have never been a hallmark of policy making so far. Agriculture is a case in point.

While subsidies should be avoided as far as practicable as spoon-feeding creates dependency syndromes, it can not be a policy that it would not be given under any circumstances. If agricultural subsidies are so large in EU and USA, a level playing field demands that Bangladesh too shall provide subsidy if the case can be made. And we think that the case is there. Where exactly and how the subsidy should be given may be a matter of debate but not principle of subsidy, if the need so arises. Otherwise food prices will not remain within the reach of the poor and attaining the MDGs will remain an elusive dream.

### **The Core Message of PR**

A summary view of the achievements of Bangladesh in reaching the MDGs is shown in Table 1.2 in Annex 1. Obviously, the PR has to paint a vast canvas not all parts of which have been covered equally well. Yet one or two clear messages can be read out from the picture.

First, the achievements of Bangladesh constitute a mixed bag. Progress towards the various goals and targets appear to be uneven. Records are better in some areas than others. There is some success in poverty eradication and in spreading primary education with gender parity in enrollment and mobilising external resources through export earnings and remittances. But areas of darkness persist in case of say, provision of quality education, maternal mortality, prevention of killer diseases, environmental management and gender parity in public space. Secondly, whatever be the over-all progress, substantial regional variations underlie the achievement in any given area of endeavour. While such differences can be explained due to influence of other factors that vary systematically with location, there still remain in cases a substantial unexplained variation. This is a measure of our ignorance removal of which is absolutely essential for fine tuning interventions targeted at particular locality.

Third, higher income does not necessarily get translated into advancement in social goals such as education or health. This, of course, is not surprising as social change is influenced by factors some of which depend on values and cultural mind set which takes time to change. Fourthly, and we think that this is extremely important, **women's education, particularly up to secondary level, is probably the magic wand**, if there is one, for changing a tradition-bound society into a progressive one. Napoleon was right, after all in his adage that it is the educated mothers which make a nation great. Such findings clearly have extremely important policy implications, budgetary allocations and chalking out of appropriate programmes for fostering women's education at all levels.

Among all these, one of the clearest finding appears to be the failure of the developed countries of the world in living up to their promise of partnership in progress through larger and freer flow of resources in terms of finance and technology. Of course

some of the developed countries have shown better faces than others. Unfortunately, for Bangladesh, those who have provided her most resources are the most tight-fisted in general. Despite this, Bangladesh has not done badly because of her performance in other related areas such as remittances from abroad and high export earnings. This clearly indicates that while resources from abroad are critical in some cases, they may not in ultimate analysis be so much of a binding constraint.

What all these mean is that there is still darkness all around us. Bangladesh as a nation is still has a long way to go to free herself from the bondage of poverty, ignorance, disease and death. Yet, there should not be any reason for despair. The light of knowledge borne out of science, technology and fast communication and the people's will and creativity to use them for being free of the bondages will be the beacon for coming out of the darkness that still linger around.

# **Chapter 1**

## **Millennium Development Goals: Towards a Minimum Desirable Quality of Life for All**

### **1.1 Preamble**

The Millennium Development Goals (MDG) announced by the United Nations on behalf of the signatory nations, 189 in all, have its detractors and admirers. While it must be admitted that the goals themselves can and have to be contextualized depending on a specific country's situation and may thus reflect better the economic, social, cultural, political, legal, institutional and financial parameters and constraints a country faces, this is also true that these global goals possibly embody the barest minimum of a human society's yearning for a better quality of life. On the other hand, even if these goals are accepted as the barest minimum, whether the countries are trying to attain them and in what manner are not often obvious. One reason is that while the goals are desirable, the declaration stating these goals is silent on the social, economic and political mechanisms to achieve them. Debates about these mechanisms and the level of achievements are therefore natural and in fact is a healthy sign for the society.

Bangladesh has a vibrant civil society. Indeed, Bangladesh has various Civil Society Organisations (CSOs) working in areas of education, health, environment and gender mainstreaming as well as in income generating activities for the poor including the whole micro credit programme. The MDGs, on the other hand, are mostly around such concerns. It is only natural for the various concerned organisations and individuals, therefore, to join hands to monitor the MDGs. The People's Forum on MDGs (PFM) is one such coalition of various CSOs, NGOs and concerned individuals. In 2006, the Forum published one such monitoring report. The present one is the second in this series. It must, however, be pointed out that this is not the only report that is available on the progress on MDGs.

So far there has been several progress reports published in 2005/06. Apart from the PFM's report there was one jointly by the BD government and the UNDP (GoB/UNDP: 2005), and one by the World Bank (World Bank: 2005). This year the Government has just made public its progress report on MDGs while the World Bank has already published a report but with emphasis on health rather than the over-all MDGs. There is, however, certain differences between these reports and the present one as will be pointed out shortly.

### **1.2 Importance of Monitoring Progress towards MDGs**

The present report is being released at a time which is the mid-point of the time horizon for the attainment of the quantitative targets under the MDGs. Then again, many countries by this time have prepared, in one form or other, the so called Poverty Reduction Strategy Papers (PRSPs) which are expected to be the operational strategic blueprints for the attainment of the MDGs as well as other desirable national economic, social, political and cultural goals. Bangladesh had been one of those countries which first prepared an Interim PRSP and then subsequently a full-fledged PRSP (GoB: 2005). It would thus be good to find out if intentions have been matched by performance. Furthermore, being the mid-year between 2000 and 2015, it is a right and opportune moment to reflect upon the actual achievements, the successes and failures and the policy needs for course corrections, if necessary. This report shall try to do that in a modest manner, from the perspectives of the people.

### **1.3 Objective**

The main objective behind the preparation of the People's Report (PR) is to educate the general public and create awareness among them as well as sensitizing the policy makers, concerned organisations, groups and individuals regarding the progress of attaining the MDGs. But more importantly, it also aims at understanding the differentials that one finds in the society between and among regions, groups or men and women in experiencing or benefiting from the progress towards the goals as well as understanding the factors behind some of the observed patterns. This process of understanding, as described later, utilised two methods, one analytical and the other public participation. Furthermore, another objective of the report is to analyse the policy implications of the findings. Initially we wanted to compare these with actual policy statements including practices in terms of programmes and projects and supporting activities. While this would have proved very useful in terms of actions to be taken to reach the MDGs, we found that the time and resources would be extremely inadequate to do proper justice to an analysis of the problems of policy formulation and related and issues. This now remains a matter for the future.

### **1.4 The MDGs**

There are 8 global MDGs. These are as follows:

Goal 1: *Eradicate extreme poverty and hunger*

Goal 2: *Achieve universal primary education*

Goal 3: *Promote gender equality and empower women*

Goal 4: *Reduce child mortality*

Goal 5: *Improve maternal health*

Goal 6: *Combat HIV/AIDS, malaria and other diseases*

Goal 7: *Ensure environmental sustainability*

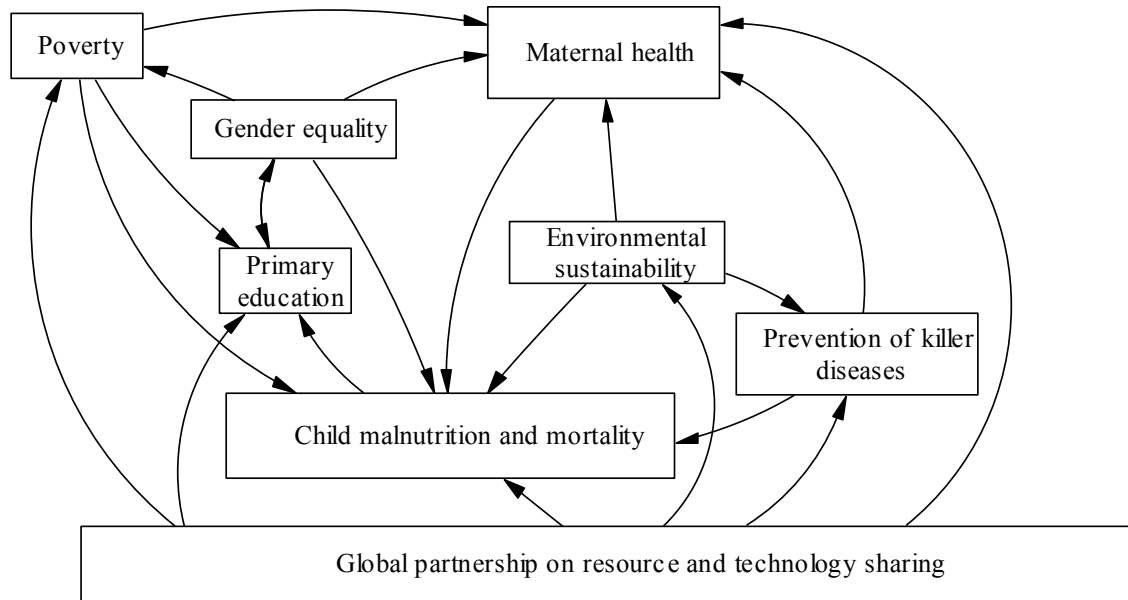
Goal 8: *Develop a global partnership for development*

These 8 goals have 18 targets in all. The number of indicators to monitor the targets is 48. The details of the targets and the indicators will be described later in the relevant chapters.

Before going into the details of the analysis of MDGs as realised in Bangladesh as well as elsewhere, it would be only proper to mention that these goals have not materialised one fine morning out of thin air. While poverty reduction has remained an avowed goal of many national policies in many countries, there had been international efforts to collectively work towards other goals. The Alma Ata declaration on improvement of health situation and the Dakar declaration on education are only just two of the better known ones. Nations including Bangladesh already progressed though at differential rates towards the achievement of goals under such previous international decisions and the present situation can not therefore perhaps be entirely ascribed to MDGs. However, it must be admitted that whereas the previous other related attempts had been rather stand alone programmes, the MDGs probably is the first more holistic approach towards improving the material, physical, economic and socio-cultural well-being of people in general and the poor people in particular in all regions and countries of the world.

Indeed, it is the interrelationships among the goals which distinguish the MDGs from the previously announced specific goals or programmes. Thus, the achievements under one of the goals impinge upon the progress under another. Figure 1.1 shows some of these relationships among the goals.<sup>1</sup>

**Fig. 1.1**  
**Linkages among MDGs**



Note first the first goal on poverty reduction. Poverty directly affects child malnutrition, child mortality, maternal mortality as well as enrollment in primary schools for children because it limits the capability of a household to spend on enough and nutritious food, pay for health related expenditures and school fees and related expenditures. Then again child malnutrition directly affects child mortality. Similarly the quality of physical environment particularly the access to sanitary conditions and safe water affects the susceptibility to diseases and thus child malnutrition, child mortality and maternal mortality. All such relationships are shown through arrows leading from the issues under one goal to another. There are cases where the relationship may run both ways. Thus while lack of gender equality may lower the enrollment of girls compared to boys, the resultant lack of women’s education may further accentuate gender inequality.

The goal of global partnership is one which appears to influence practically all the other goals save, gender equality. This is so because, gender equality depends not so much on resources or technology but on the cultural and social values, norms and the political will to take appropriate and may be some times unpopular measures. In case of all other goals, both the flow of resources as well as technology from the developed countries is likely to be important. Thus, for example, training of mid-wives in medically better child delivery techniques is important for

<sup>1</sup> Not all the interrelationships can be shown in the figure as it clutters the diagram too much.

lowering maternal mortality. Both financial resources and skilled trainers may be needed for that along with better medical equipments.

Note that the MDGs are global goals. In any given society, the exact context for achieving the goals may differ from that in another. Furthermore, the declaration on MDGs says little or nothing about the processes underlying the achievement of the goals. This is because the processes are also context-dependent. Achieving the MDGs is thus likely to be influenced by the extent to which the MDGs are internalized within the national development processes, plans, and programmes.

### **1.5 Method of Data Collection and Analysis**

Information has been collected for analysis in basically two ways. First, the Research Team for the People's Report (henceforth PR) has collected various secondary materials on quantitative information from statistical sources. A major source had been the Household Income and Expenditure Survey 2005 published by the Bangladesh Bureau of Statistics (BBS). The Research Team has used both BBS' analysis and also did its own based on unit records of the survey. This is the main source of statistical information on poverty related indicators.

A second source had been the Bangladesh Demographic and Health Surveys conducted periodically by several reputable organisations. While the unit records of these surveys are available in the public domain, we have used their analytical results mainly related to child nutrition rather than conducting our own statistical analysis.

Recent maternal mortality information is scarce. But one survey conducted in 2001 (NIPORT *et al.*: 2002) contains information which are relevant for understanding its patterns. The Research Team believes that there had been little societal change between 2001 and the present and that the observed patterns in 2001 are likely to be still valid. So this source has been used for analyzing maternal mortality.

Another major source of data and subsequent analysis of unit record is the Helen Keller Institute's surveys on children and mother's nutritional status for the year 2005 (HKI and IPHN: 2006). These have been used extensively for new analyses.

For education we have used partly the results of the HIES, 2005 (BBS: 2006) as well as the reports of the Education Watch for various years. We have also used the unit records of HIES, 2005 for estimating several indicators. The Directorate of Primary Education has made available in the internet (<http://www.dpe.gov.bd/>) a copy of the Baseline report of Second Primary Education Development Programme (PEDP-II). Some of these results have been used. Other survey results of similar nature have also been utilised.

Gender analysis permeates all of our analysis on the goals, not just for the gender-based MDG and its targets and indicators. For these, again we have used all the above sources of information.

One particular aspect of all the analyses had been that the Research Team has tried to find out if there are regional variations in the achievement of the goals. This was done in two ways. We have contrasted the rural-urban differences. Secondly, we have tried to find out if various administrative divisions of the country have performed differently.<sup>2</sup>

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<sup>2</sup> Bangladesh is divided into 6 administrative divisions which are Barisal, Chittagong, Dhaka, Khulna, Rajshahi and Sylhet. These areas have certain distinct physico-environmental characteristics as well as socio-economic and cultural differences. While both Barisal and Khulna are coastal divisions, the latter has the largest mangrove forest in one patch in the world and also substantial economic activities related to shrimp farming. Barisal on the other hand had been historically the granary, but no longer, of Bengal (Bangladesh and West Bengal of India combined).

For environmental goal and targets we have used, apart from the available secondary materials, primary qualitative information based on focus group discussions in several areas. Apart from these we have constructed several case studies based on both good and bad experiences in the field of environment.

Note that in all the cases above, we have tried to analyse as far as possible, given the nature of data, if there are factors which systematically influence the outcome and if so, what it means in terms of the nature of intervention to improve the situation further.

Secondary data and their reanalysis formed only one part of our data collection and analysis efforts. Armed with whatever we have learnt from them, we had gone to the field and talked to people at length in focus group discussion on the whole gamut of issues related to the MDGs. Six regional consultation meetings were held apart from one in the very beginning about the methods to be adopted for data collection and analysis in Dhaka. The regional meetings were organised by local level NGOs who are also members of the People's Forum on MDGs. While the intensity of discussion varied from place to place, because these were organised by local level organisations, they had been successful in mobilizing people from various walks of life including local government officials, farmers, school teachers, women activists and members of the general public. Women were specifically targeted and consultation had taken place both in the meeting place and also in the households where the field workers had gone to discuss specific issues which women were some times found to be unwilling to discuss in public because of cultural norms.

These meetings provided us with fora for validation of what we have understood from the secondary sources. Apart from validation these meetings also provided us a chance with the people to delineate areas of policy concern. This provides us a link with the third part of our concern regarding future policy directions.

We may now indicate clearly where the present report differs from other similar reports. First, like others we have provided a general score card based on indicators related to the progress towards MDG. In doing that while we have used the global indicators, wherever possible we have also used the localized indicators. Second, we have tried to highlight two aspects all through out. These are the rural-urban differentiation and the regional variation in the progress towards achieving the MDGs. Third, while gender concerns are germane in some of the goals, we have tried to make it, as far as data and information allow, a more general development concern across all the goals. Fourth, we have tried to analyse the factors underlying the observed MDG status and their differences across households, groups, regions and gender. Fifth, we have tried to validate the statistical and econometric findings through a spatially distributed consultative process across all the divisions and keeping in mind the ecological settings to capture the roles of factors such as lack of communication, fragile environment and existence or the lack of facilities in attaining the desirable levels of the indicators. Finally, we have tried to bring out the policy dimensions based on all these data, analyses and consultations. To the best of our knowledge, only the World Bank to an extent tried to cover some of the grounds in 2005 (particularly explaining the outcomes and regional variations). The government report has never gone into these issues.

## **1.6 Limitations of the Present Report**

The Research Team wishes to sound a note of caution to the readers of this report. The PFM was unable to conduct large scale surveys for resource and time constraints. The Research Team therefore had to depend on surveys, information and data sets conducted and collected by others

including the Government and civil society, research organisations and academics and use them judiciously to arrive at its conclusions. Naturally, many of the estimates of indicators vary, some time widely, the biases of which are difficult to determine. The Research Team, therefore, has tried to verify through 6 stakeholder meetings if the trends, if not the levels of the various indicators, are in the right direction. The reader is advised to keep these limitations in mind while using this report for any purpose.

There is another limitation or rather omission in the present report which we think crucial. This report has given little attention to some of the special marginalized socio-economic groups in society. The poor are mostly drawn from many of these marginalized groups. A very large group is the agricultural wage workers. But there are others categorized by their residence (areas prone to river erosion or in fragile ecological settings), ethnicity (ethnic minorities such as the hill region indigenous people, *garos*, *saontals* and others), occupational groups such as cobblers or *doms* (occupational cleaning service persons), and groups who may be categorized because of affliction with specific diseases (such as leprosy-affected persons). There may be other such categorization. Often the categories overlap with each other. They are generally not only poor; they are deprived also in terms of education and health facilities and other services.

While there is no clear statistics or easily available information regarding the groups (except perhaps to an extent on some of the indigenous communities), the fact remains that they may be a large group of the citizens of the country and thus have equal rights as others to development. Unfortunately the time and resources available to the Research Team was limited and although the critical importance of the issues had never been in any doubt, it was not possible to study them. The Research Team is of the view that the importance of the issues demands a full professional investigation and therefore believes that time has come for more intensive studies on these marginalized groups if we want to leave none of the fellow citizens behind. In future special studies may therefore be commissioned for the purpose.

A further limitation had been that while we have tried to indicate the policy implications of our results, it was not possible at this stage to analyse how far these implications are backed by actual policy statements or practices in terms of programmes and projects. We found that this would have to be a full-fledged exercise to do proper justice to the issues involved.

## **1.7 Organisation of PR**

The PR is organized as follows. The next section in this chapter tries to compare three types of development goals to find out how far MDGs are germane in such goals and commitments. This helps us to understand how far the MDGs are already subsumed within other development objectives to which the country is committed. This also helps us to find out if MDGs offer something which is not included among other goals.

Also for ease of reference we present, in a subsequent section, a highly summarised view of the basic findings of the present exercise. This is presented as the average progress towards achieving the goals on target by target basics under each goal in a tabular form. At the end we also provide the most important core messages based on the analyses of both quantitative and qualitative data and information.

The next few chapters try to analyse the progress towards each of the goals. The organisation of the discussion under each follows a particular format which is discussed below.

Each of the next eight chapters discusses and analyse one particular goal in the order these have been listed earlier. Each goal is understood in operational terms by one or more targets to be achieved, while several indicators may be used to verify if the targets have been

reached. The basic format is that each of the goals along with specific targets and indicators are presented in a box. This is followed by definitions of technical terms as far as practicable. Sometimes such definitions are given while discussing a particular topic.

For each goal the discussions and analyses are in three parts. The first part portrays first the current situation with respect to the indicators. These are the global indicators. We have however, also tried to use other plausible indicators that may be applicable to Bangladesh. This discussion is followed in some cases by causal explanations behind the observed indicators. A separate subsection then follows which critically discuss the impression from the fields based on the stakeholder meetings that have been described above. Subsequently the analysis based on secondary information and field impressions are combined to understand the policy implications and types of necessary future interventions, although policy concerns have also been pointed out briefly while discussing the results of analyses.

Finally, there is a summary section to sum up the major findings on the progress towards achieving the particular goal. These summaries later form the basis for the over-all summary of findings.

## **1.8 National Development Goals vis-à-vis Other Development Goals**

### *1.8.1 National Goals*

According to the Poverty Reduction Strategy Paper, the vision of the strategy is to reduce poverty substantially within the next generation and so it gives emphasis on poverty reduction (with particular focus on the removal of hunger and chronic poverty) and social development (with particular emphasis on gender equality). The paper also takes into account Bangladesh's previous official commitment associated with MDGs and the social targets set in PAPR (Partnership Agreement on Poverty Reduction) with the ADB and in the reports of the ISACPA (Independent South Asian Commission on Poverty Alleviation).

Considering all these the PRSP sets the national goals as follows:

1. Remove the "ugly faces" of poverty by eradicating hunger, chronic food insecurity and extreme destitution.
2. Reduce the proportion of people living below the poverty line by 50 percent.
3. Attain universal primary education for all girls and boys of primary school age.
4. Eliminate gender disparity in primary and secondary education.
5. Reduce infant and under-five mortality rates by 65 percent and eliminate gender disparity in child mortality.
6. Reduce maternal mortality rate by 75 percent.
7. Ensure access of reproductive health services to all.
8. Reduce substantially, if not eliminate totally, social violence against the poor and the disadvantaged groups, especially violence against women and children.
9. Ensure comprehensive disaster risk management, environment sustainability and mainstreaming of these concerns into the national development process.

All these goals would have to be achieved by the year 2015 by taking 2002 as the benchmark year.

### *1.8.2 SAARC Development Goals (SDG)*

At the twelfth SAARC Summit held in Islamabad, Pakistan ISACPA has been directed to submit a comprehensive and realistic blue print of the SAARC Development Goals (SDG) to the next SAARC Summit. Accordingly the 13<sup>th</sup> SAARC Summit held in Dhaka adopted SAARC Development Goals (SDG) for 2005-2010. SDG has been developed in line of MDG to ensure a hunger free, secured and enlightened life for the South Asian people.

### *1.8.3 Consistency among National goals, MDGs and SDGs*

As indicated above, there are certain synergies among the MDGs with the other development goals that have been formulated later on. Hence these are likely to be somewhat similar. Yet, because these have country or region specificity in mind, there is likely to be also certain differences among them. Indeed, it can be said that our national goals are consistent with MDGs and SDGs. But some of these are more specific than others. Table A.1.1 in Annex 1 provides a comparison among these sets of goals to understand these similarities or differences.

Note that despite the apparent similarities certain issues have been focused in one type of goals while not in others. An important issue is inequality the removal of which is not a part of either SDG or the national goals. On the other hand while quality education is a part of the national development goals, it is not so under MDGs or the SDGs. Then again the SDG speaks about not simply the outcomes but also the process such as community actions and also governance issues under development goals while the MDGs are silent on them. Of course, the acid test for all these intentions is in their actual implementation. This is what we shall investigate in the course of the next few chapters.

One point that may be noted is that the national goals as set in the PRSP are more ambitious in some cases than what the global MDGs imply. Thus, while poverty is to be reduced to say 29% by 2015 according to the interpretation of the global MDG 1, the national goal is set to reduce it to 20%. Similarly in place of MDG target of reducing extreme poverty to 14% by 2015, the national target is set at lowering it to 10%.

The MDGs are explicit in relation to the obligations of the international community in achieving them. The facilitation of flow of adequate resources, technology and know-how to the developing countries including the LDCs from the developed world has been emphasized under MDGs but not under other goals. In fact, these obligations have arisen slowly over time for various purposes. A long process of international deliberations in areas of health, education, environment, gender equity, aid harmonization have obligated the developed countries to be more forthcoming and transparent in their dealings with the developing countries. While some kind of harmonization of goals and means are needed among all these declarations, conventions, protocols and treaties, the achievements of any of the goal under MDGs can not be divorced from the performance of the international community in facilitating them particularly in the developing countries and LDCs.

## **1.9 Summary of Achievements and the Core Messages**

A summary view of the achievements of Bangladesh in reaching the MDGs is shown in Table 1.2 in Annex 1. Obviously, the PR has to paint a vast canvas not all parts of which have been covered equally well. Yet one or two clear messages can be read out from the picture.

First, the achievements of Bangladesh constitute a mixed bag. Progress towards the various goals and targets appear to be uneven. Records are better in some areas than others. Secondly, whatever be the over-all progress, substantial regional variations underlie the achievement in any given area of endeavour. While such differences can be explained due to

influence of other factors that vary systematically with location, there still remain in cases a substantial unexplained variation. This can be a measure of our ignorance removal of which is absolutely essential for fine tuning interventions targeted at particular locality.

Third, higher income does not necessarily get translated into advancement in social goals such as education or health. This, of course, is not surprising as social change is influenced by factors some of which depend on values and cultural mind set which takes time to change. Fourthly, and we think that this is extremely important, women's education, particularly up to secondary level, is probably the magic wand, if there is one, for changing a tradition-bound society into a progressive one. Napoleon was right, after all in his adage that it is the educated mothers which make a nation great.

Among all these, one of the clearest finding appears to be the failure of the developed countries of the world in living up to their promise of partnership in progress through larger and freer flow of resources in terms of finance and technology. Of course some of the developed countries have shown better faces than others. Unfortunately, for Bangladesh, those who have provided her most resources are the most tight-fisted in general. Despite this, Bangladesh has not done badly because of her performance in other related areas such as remittances from abroad and high export earnings. This clearly indicates that while resources from abroad are critical in some cases, they may not in ultimate analysis be so much of a binding constraint.

## Annex 1

**Table A 1.1**  
**Types of Goals under Various Proclamations or Statutes**

| Goals                                   | National goal  | MDG   | SDG   |
|---|--|---|---|
| <i>Poverty</i>                          |  |   |   |
| 1.Income poverty                        | Reduce proportion of people living below poverty line from 40 % in 2002 to 20 % in 2015.                   | Reduce proportion of people living below poverty line (US \$ 1 per day) from 58.8 % in base year <sup>3</sup> to 29.4 % in 2015.    | Halve proportion of people living in poverty between the period 2005-2010 .   |
| 2.Extreme poverty                       | Reduce proportion of people in extreme poverty from 19% in 2002 to 10 % in 2015 .                          | Reduce proportion of people in extreme poverty from 28% in base year to 14 % in 2015.   | Eradicate hunger poverty  |
| 3.Nutrition                             | Reduce the proportion of malnourished children from 51% in 2002 to 26% in 2015                             | Prevalence of underweight children has been mentioned as an indicator but target is not specified                                   | Ensure adequate nutrition and dietary improvement for the poor  |
| 4.Disparity                             |  | Poverty gap ratio and share of poorest quintile in national consumption has been mentioned as indicator but target is not specified |   |
| 5.Others                                | Remove the ugly faces of poverty by eradicating hunger, chronic food – insecurity and extreme destitution. |   | a) Ensure a robust pro-poor growth process.<br>b) Strengthen connectivity of poorer regions and of poor as social groups.<br>c) Ensure access to affordable justice.<br>d) Ensure effective participation of poor and of women in anti-poverty policies and programmes. |
| <i>Education</i>                        |  |   |   |
| 1.Primary school enrolment              | Increase primary enrolment from 86.7 % in 2002 to 100% in 2015   | Increase net primary enrolment from 73..7 % in base year to 100% in 2015  | Access to primary / communal school for all children , boys and girls   |
| 2.Secondary school enrolment            | Increase secondary enrolment from 52.8 % in 2002 to 95% in 2015  |   |   |
| 3.Completion of primary education cycle | Attain universal primary education for all girls and boys of   | Increase proportion of pupils starting class 1 who reach class 5 from 42.5%   | Completion of primary education cycle has been  |

<sup>3</sup> The base year varies depending on availability and acceptability of data . The range is between 1990-1995 .

|                                       |  |  |   |
|---------------------------------------|--|--|---|
|                                       | primary school age.  | in base year to 100% in 2015   | mentioned as an indicator but target is not specified   |
| 4. Adult literacy rate                | Increase adult literacy rate from 49.6% in 2002 to 90 % in 2015                      | Adult literacy rate has been mentioned as an indicator but target is not specified                         | Universal functional literacy has been mentioned as an indicator but target is not specified                                  |
| 5. Quality education                  |  |  | Quality education in primary , secondary and vocational levels has been mentioned as an indicator but target is not specified |
| <i>Health</i>                         |  |  |   |
| 1. Infant mortality rate              | Reduce infant rate ( per 1000 live births ) from 53 in 2002 to 18 in 2015            | It has been mentioned as an indicator but target is not specified  |   |
| 2. Under-five mortality rate          | Reduce under-five rate ( per 1000 live births ) from 76 in 2002 to 25 in 2015        | Reduce under-five rate ( per 1000 live births ) from 151 in base year to 50 in 2015                        | Child health has been mentioned as an indicator but target is not specified   |
| 3. Immunization                       |  | Increase proportion of 1 year old children immunized against measles from 54% in base year to 100% in 2015 |   |
| 4. Maternal health                    | Reduce maternal mortality rate (per lac live births ) from 390 in 2002 to 98 in 2015 | Reduce maternal mortality ratio( per lac live births ) from 570 in base year to 143 in 2015                | Nothing specific  |
| 5. Mother malnourishment              |  | Reduce proportion of malnourished mothers to less than 20 % by 2015  |   |
| 6. Health care                        |  |  | Affordable health care has been mentioned as an indicator but target is not specified   |
| 7. Population growth                  | Reduce population growth rate from 1.4 in 2002 to 1.3 in 2015                        | Reduce Total Fertility Rate from 3.3 in base year to 2.2 by 2010   |   |
| 8. Reproductive health service        | Ensure access of reproductive health service to all.                                 | Increase proportion of births attended by skilled health personnel from 5 % in base year to 50 % in 2010   |   |
| 9. Girls' legal age at marriage       |  | Increase legally stipulated age at girl's first marriage to 20 years                                       |   |
| 10. Life expectancy (years at birth ) | Increase life expectancy from 64.9 years in 2002 to 73 years in 2015                 |  |   |
| 11. Prevalence of HIV/                |  | Halt and begin to reverse  |   |

|  |  |  |  |
|--|--|--|--|
| AIDS   |  | the spread of HIV / AIDS by 2015   |  |
| 12.Prevalence of malaria                                   |  | Reduce prevalence of malaria to 0.5 million cases (annually ) and death rate associated with malaria to .05 % by 2015                        |  |
| 13.Prevalence of tuberculosis                              |  | Increase detection of tuberculosis under DOTS to 70 % and rate of cure of detected cases to 85 % by 2015                                     |  |
| <i>Gender disparity</i>                                    |  |  |  |
| 1.Gender disparity in education                            | Eliminate gender disparity in primary and secondary education  | Eliminate gender disparity in primary and secondary education preferably by 2005 and in all levels no later than 2015                        | Access to primary / communal school for all children , boys and girls                |
| 2.Gender disparity in health                               | Eliminate gender disparity in child mortality and child malnutrition.  |  |  |
| 3.Share of women in wage employment                        |  | It has been mentioned as an indicator but target is not specified  |  |
| 4.Proportion of seats held by women in national parliament |  | It has been mentioned as an indicator but target is not specified  |  |
| 5.Violence against women                                   | Reduce substantially, if not totally, social violence against the poor and the disadvantaged groups, specially women and children. | Eliminate maternal deaths caused by violence   | Reduce social and institutional vulnerabilities of the poor, the women and children. |
| <i>Environment</i>   |  |  |  |
| 1. Forest cover  |  | Increase forest cover from 9% in base year to 20% in 2015  | Acceptable level of forest cover   |
| 2.Biological diversity                                     |  | Proportion of protected area to surface area to maintain biological diversity has been mentioned as an indicator but target is not specified | Conservation of bio-diversity.   |
| 3.Energy use   |  | Energy use (kilogram oil equivalent) per US \$ 1000 GDP (PPP) has been mentioned as an indicator but target is not specified                 |  |
| 4.Carbon dioxide emission                                  |  | Target is not specified  | Acceptable level of air quality  |
| 5.Access to safe drinking water                            |  | Ensure that 100% of urban and 96.5 % of rural population have access to  | Improved hygiene and public health   |

|                                 |  |   |  |
|---------------------------------|--|---|--|
|                                 |  | safe drinking water by 2015   |  |
| 6.Access to improved sanitation |  | Ensure that 100% of urban and rural population have access to improved sanitation by 2010 | Improved hygiene and public health   |
| 7.Others                        | Ensure comprehensive disaster risk management , environmental sustainability and mainstreaming of these concerns into the national development process | Achieve a significant improvement in the lives of at least 100 million slum dwellers      | a) Acceptable level of water and soil quality.<br>Wetland conservation<br><br>Ban on dumping of hazardous waste, including radio-active waste. |

**Table A.1.2**  
**A Summary Score Card on Progress towards MDGs**

| Universal target   | Target for Bangladesh   | Indicator  | Base year status        | Current status                         | Target                  |
|--|---|--|-------------------------|--|-------------------------|
| <b>Goal 1: Eradicate extreme poverty</b>   |   |  |                         |  |                         |
| <b>Target 1:</b><br>Halve, between 1990 and 2015, % of people with income <\$ 1/day.   | Reduce % of people below poverty line (US \$ 1 per day) from 58.8 % in 1991 to 29.4 % in 2015.  | Proportion of population below \$1 (PPP) per day.                | 59%                     | 40% (2005)                             | 28%                     |
|  |   | Poverty gap ratio  | 17.2                    | 9 (2005)                               |                         |
| <b>Target 2:</b><br>Halve between 1990 and 2015, the proportion of people who suffer from hunger.  | Reduce proportion of people in extreme poverty from 28% in base year to 14 % in 2015.   | Share of poorest quintile in national consumption.               |                         | 5.26% (2005)                           |                         |
|  |   | Prevalence of underweight children under five years of age       | 67%                     | 48% (2004)                             | 33%                     |
|  |   | Proportion of people in extreme poverty                          | 28%                     | 19.5% (2005)                           | 14%                     |
| <b>Goal 2: Achieve universal primary education</b>   |   |  |                         |  |                         |
| <b>Target 3:</b><br>Ensure that, by 2015, children everywhere, boys and girls alike, will be able to complete a full course of primary schooling         | Increase net primary enrolment from 73.7 % in base year to 100% in 2015<br><br>Increase proportion of pupils starting class 1 who reach class 5 to 100% in 2015 | Net enrolment ratio in primary education                         | 74%                     | 80.4% (2005)                           | 100%                    |
|  |   | Proportion of pupils starting grade 1 who reach grade 5          | 43%                     | 68.3% (2005)                           | 100%                    |
|  |   | Literacy rate of 15-24 year-olds                                 | 37%                     | 50.3% (2003)                           | 74%                     |
| <b>Goal 3: Promote gender equality and empowerment of women</b>  |   |  |                         |  |                         |
| <b>Target 4:</b><br>Eliminate gender disparity in primary and secondary education, preferably by 2005, and in all levels of education no later than 2015 |   | Ratio of girls to boys in primary, Secondary, tertiary education | 45:55<br>34:66<br>25:75 | 50:50<br>52:48<br>36:50 (2005)         | 50:50<br>50:50<br>50:50 |
|  |   | Ratio of literate women to men, 15-24 years old                  | na                      | 52:48 (2005)                           | 50:50                   |
|  |   | Share of women in wage employment in non-agriculture             | na                      | na                                     |                         |
|  |   | Proportion of seats held by women in national parliament         | na                      | 2.3% (2006)                            |                         |
| <b>Goal 4: Reduce child mortality</b>  |   |  |                         |  |                         |
| <b>Target 5:</b><br>Reduce under-five mortality rate by two thirds between 1990 and 2015   | Reduce under-five mortality rate from 151 (in 1990) to 50 (in 2015)   | Infant mortality rate (deaths per 1000 live births)              | 94                      | 65 (2004)                              | 31                      |
|  |   | Under five mortality rate (deaths per 1000 live births)          | 151                     | 88 (2004)                              | 50                      |
|  |   | Proportion of 1-year old children immunized against measles      | 54%                     | 75.7% (2004)                           | 100%                    |
| <b>Goal 5: Improve maternal health</b>   |   |  |                         |  |                         |
| <b>Target 6:</b><br>Reduce the maternal mortality ratio by three quarters between 1990 and 2015.   | Reduce the maternal mortality ratio from 570 in base year to 143 by 2015  | Maternal mortality rate (deaths per 100,000 live births)         | 554                     | 402 (2003)                             | 139                     |
|  |   | Proportion of birth attended by skilled health personnel         | 5%                      | 9% (2004)                              | 50% by 2010             |
|  |   | Total fertility rate   | 3.3                     | 3.0 (2004)                             | 2.2 by 2010             |
|  |   | Proportion of mother who are malnourished                        | na                      | 38% (2004)                             | <20%                    |
|  |   | Legally stipulated age at girls' first marriage                  | na                      | 18 years (2006)                        | 20 years                |
|  |   | Proportion of maternal death caused by violence                  | na                      | na                                     |                         |
| <b>Goal 6: Combat HIV/AIDS, Malaria and Other Diseases</b>   |   |  |                         |  |                         |
| <b>Target 7:</b><br>Halt by 2015 and begin to reverse the spread of HIV/AIDS.  |   | HIV positivity incidence   | na                      | IDUs (4.9%)<br>FSW (<1%)<br>MSW (0.4%) |                         |
| <b>Target 8:</b><br>Halt by 2015 and begin to reverse the incidence of malaria and other major diseases.   | Reduce by 50 % incidence & number of deaths from malaria by 2015. Also detect 70% & cure 85% of detected cases of TB.   | Malaria and TB prevalence  | na                      | Malaria (0.61%)<br>TB (0.07%) (2005)   |                         |

| <b>Goal 7: Ensure environmental sustainability</b>   |   |   |       |                                  |     |
|--|---|---|-------|----------------------------------|-----|
| <b>Target 9:</b><br>Integrate principles of sustainable development into country policies and programmes and reverse the loss of environmental resources |   | Proportion of land area covered by forest   | 9%    | 17.5% (2003)                     | 20% |
|  |   | Ratio of protected area to surface area to maintain biological diversity            |       |                                  |     |
|  |   | Energy use (kilogram oil equivalent) per US \$ 1000 GDP (PPP)                       | 123.8 |                                  |     |
|  |   | Carbon dioxide emissions per capita   | 0.141 |                                  |     |
| <b>Target 10:</b><br>Halve by 2015, the proportion of people without sustainable access to safe drinking water and basic sanitation.                     | Ensure that 100% of urban and 96.5 % of rural population have access to safe drinking water by 2015 | Proportion of the population with sustainable access to an improved water resource: | na    | Urban: 99%<br>Rural:96% (2005)   |     |
|  | Ensure that 100% of urban and rural population have access to improved sanitation by 2010           | Proportion of the population with access to improved sanitation                     | na    | Urban: 6.1%<br>Rural: 20% (2005) |     |
| <b>Target 11:</b><br>By 2020, achieve a significant improvement in the lives of at least 100 million slum dwellers.                                      |   | Proportion of (urban poor ) households owning dwelling and owning land              | na    |                                  |     |

## Chapter 2

### Poverty Eradication: Removing the Ugliest Scar on Society

#### 2.1 Introduction

Poverty is the ugliest scar on the face of Bangladesh society. We shall see later in the rest of this report that it has a pervasive negative effect on the achievements of all other goals directly or indirectly. Poverty eradication thus becomes possibly the most important among all the goals under MDG.

Poverty has multi-dimensional characteristics. Yet, poverty as defined under MDG is basically mono-dimensional based on income poverty. The particular indicators thus may fail to convey entirely the state of the poor such as their helplessness in the society or even before law. With this caveat, we turn to the details of Goal 1.

#### 2.2 Goal 1: Issues Related to Poverty

Box 1 shows Goal 1 for poverty eradication along with the associated targets and indicators. We shall explain these first and then move on to discuss and analyse them in the Bangladesh context.

#### Box 1: Poverty Eradication

**Goal 1: Eradicate extreme poverty and hunger**

**Target 1:** Halve, between 1990 and 2015, the proportion of people whose income is less than one dollar a day.

Indicators

1. *Proportion of population below \$1 (PPP) per day.*
2. *Poverty gap ratio*
3. *Share of poorest quintile in national consumption.*

**Target 2:** Halve between 1990 and 2015, the proportion of people who suffer from hunger.

Indicators

4. *Prevalence of underweight children under five years of age*
5. *Proportion of population below minimum level of dietary consumption.*

Under Target 1 shown in the box the first indicator is proportion of population below \$1 (PPP) per day.<sup>4</sup> However we used instead two specific national indicators both using human nutritional needs as the basis. The first indicator we use is nutritional poverty. The usual

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<sup>4</sup> PPP means purchasing power parity. To use US\$ 1 (PPP) as the poverty line income, the idea is first to find out what can be bought with US\$ 1 in USA. Let this consumption basket be called K. In the second step, for a given country, one has to find out the cost of purchasing the same basket of goods and services (K) in the given country's currency. This cost is the poverty line income at US\$1 (PPP). However the consumption basket in any country depends, among others, on cultural values. Hence we have not used this indicator. Rather we have used two-country specific indicators as explained in the text.

nutritional cut-off point for a human being to determine if he/she is poor is to find out whether he/she consumes at most 2122 kilo calories per day.<sup>5</sup> Those who consume no more are poor and those whose calorie consumption is above the cut-off point are non-poor. This definition of poverty is also called absolute calorie poverty. There is another cutoff point, 1805 K Calorie. Those who consume at most this much are called hardcore calorie poor. Those who consume more are not hardcore poor.

The second type of indicator is based upon what is often called the cost of basic needs (CBN). Under this method, one adds the minimum cost necessary for non-food essentials items to the cost of the minimum acceptable calorie norms (2122 or 1805 K calorie). The minimum cost of food and non-food essential items is the cost of basic needs which is used as the poverty line income. Thus persons whose incomes are at most equal to the cost of basic needs are poor, others are non-poor.

Nutritional poverty is the basic core issue in poverty analysis while the poverty line based on cost of basic needs is the expanded idea of poverty. The way the targets and their indicators have been put under Goal 1 of global MDGs, the nutritional issues have been put second to the basic needs-based poverty issues. For our reporting and analysis, however, we have brought the nutritional issues first because while man does not live by food alone, that is the first necessity of life which must be fulfilled.

For the malnutrition related issues, the specific indicators will be explained in the relevant sub-sections. As will be evident while going through that section, we have, as in case of poverty analysis, gone beyond the global indicators as well as trying to find out the relevant socio-economic factors causing nutritional poverty.

## **2.3 Nutritional Poverty**

### *2.3.1 General Picture*

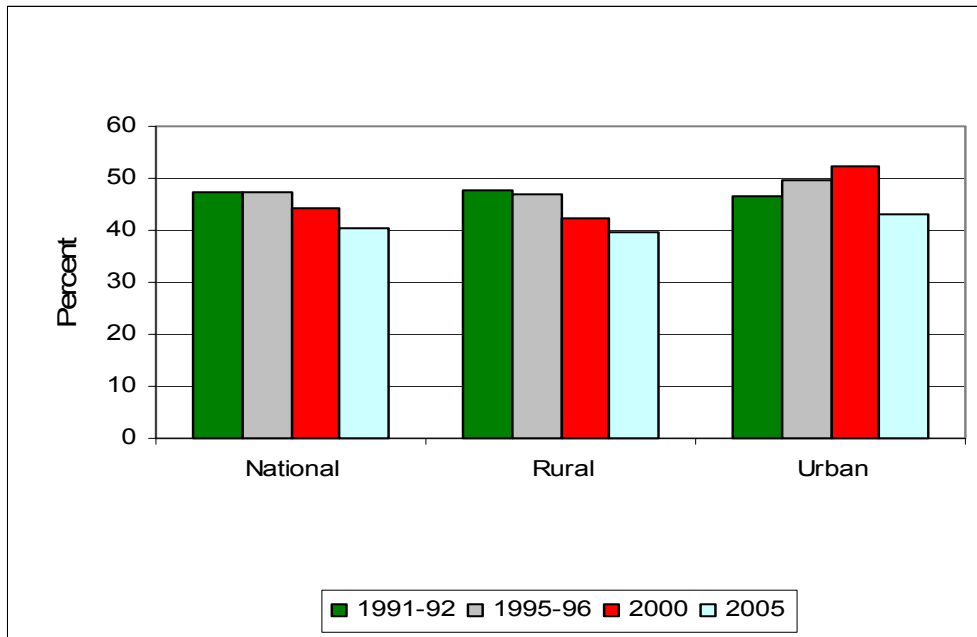
The situation related to nutritional poverty as of 2005 and the trends since the 1990s is depicted in Fig. 2.1. The proportions of people who are absolutely poor nationally as well as in the rural and the urban areas have been around 45 percent for most of this period except in 2005 when it has fallen to just above 40 percent. The trend had been downwards nationally and also for the rural areas. For the urban areas, however, the trend except for the last year (2005) had been upwards. The fall in urban absolute calorie poverty had been the most pronounced since 2000 falling by almost 10 percentage point. The fall for the national and the rural proportion had been much milder in comparison.

While the picture may seem somewhat rosy, note that the size of the poor people nationally is 56 million. And the number appears to be rising for the national aggregate and urban poverty in which case it is quite pronounced over the last one decade and a half (Fig. 2.2). In contrast, the number of rural poor appears to first rise a little and then fall which had been insubstantial. While part of the rise in urban poor can perhaps be explained with respect to rural-urban migration particularly of the poor, whether there is an independent set of factors apart from migration to explain the phenomenon remains unknown. In any case, pulling these extremely large groups of people, or even one-half of them, out of the morass of poverty will prove very challenging for even the most well-meaning and dedicated national authority.

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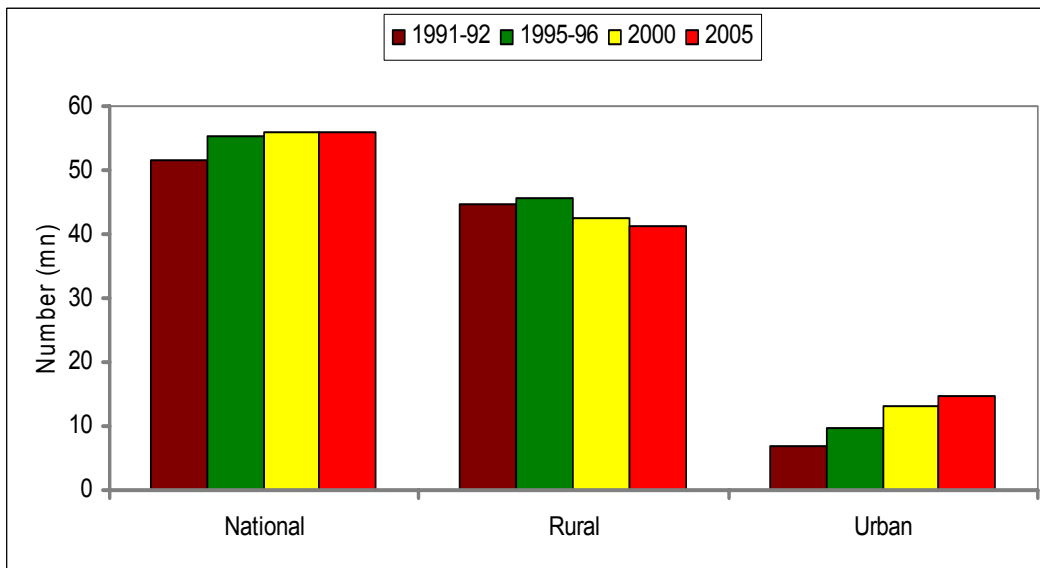
<sup>5</sup> Note that this average disregards age/sex differences as well as seasonality in food consumption. The available data are not refined enough for attempting such analysis although intra-household differences in food consumption is known to exist and may be severe also. We shall come back to this issue later on.

**Fig. 2.1: Trend in Absolute Nutritional Poverty (% poor)**



Source: BBS (2006).

**Fig. 2.1: Trend in Absolute Nutritional Poverty (number in mn)**



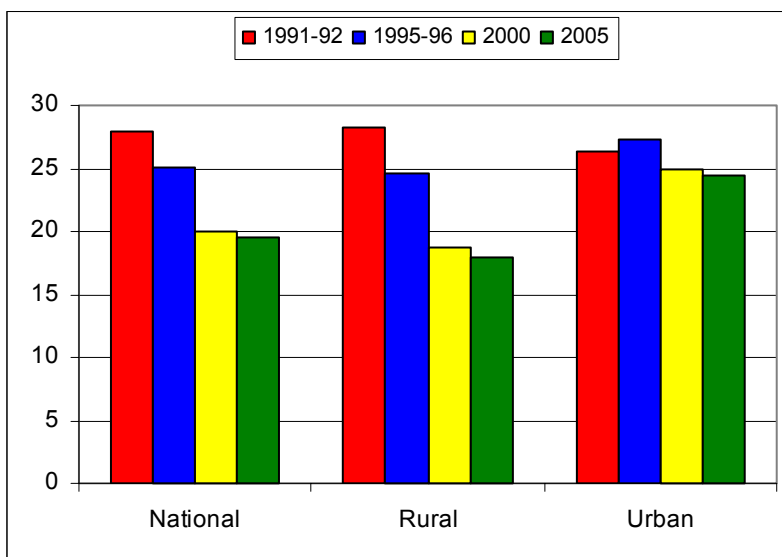
Source: BBS (2006).

The above figures refer to absolute calorie poverty. If we consider a lower level of calorie consumption (1805 Kcal), the situation appears somewhat similar to absolute calorie poverty. Hardcore calorie poverty has fallen from 28 to 20% of population over 1991-2005 but much of the change had taken place during the second half of the 1990s (Fig. 2.3). In contrast, over 2000-05, the fall had been from 20 percent to 19.5 percent indicating little or no change. The

corresponding fall in rural and urban areas over the 15 years had been from 28 to 18% and 26 to 24% respectively the fall again being insubstantial during the recent period (2000-05).

What all these mean is that the urban hardcore poverty has hardly moved while rural and correspondingly national hardcore poverty has fallen, the speed of fall being faster during the late nineteen nineties. On the other hand, as absolute calorie poverty has fallen, but not hardcore poverty, this may mean that either that the absolute poor has moved up faster in the calorie scale compared to the hard core poor; or, that those in the lower end of calorie scale in the absolute poor category have lapsed into the hardcore category. Which has happened is difficult to speculate but we shall try to understand this phenomenon somewhat while discussing the field impressions. We also note again that the total size of the population under hardcore poverty remains huge, 27 million nationally. The sizes in the rural and the urban areas are 19 and 8 million approximately.

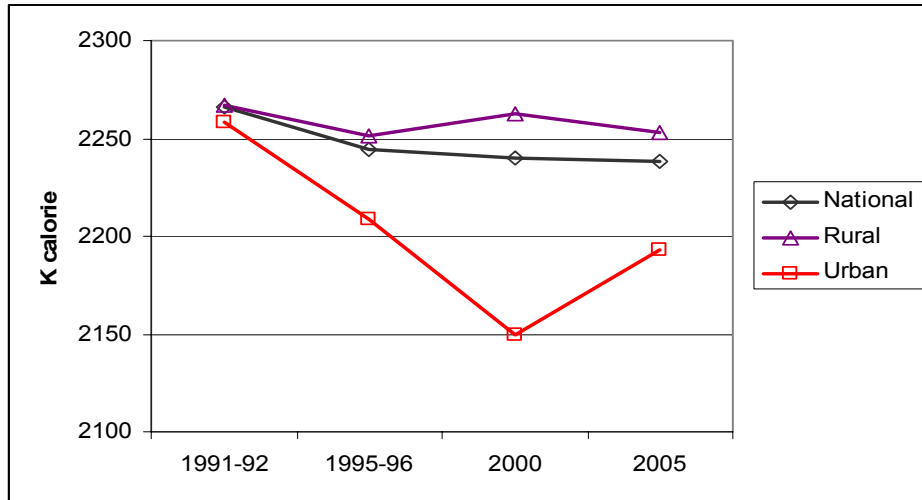
**Fig. 2.3 Trend in Hardcore Nutritional Poverty (% poor)**



*Source: BBS (2006).*

The rural-urban differences in absolute and hardcore poverty are shown in Figs. 2.1 and 2.3. Additionally these differences may also be seen if we compare the trends in the average calorie consumption over the 1990s and the first half of the present decade. This is shown in Fig. 2.4. The patterns for the rural and urban areas mirror the picture one gets from the discussion above. Urban areas registered a precipitous fall since 1991 which had been reversed only recently. In the rural areas, the changes had, in comparison, been minimal.

**Fig. 2.4: Trends in Average per Capita Calorie Consumption**



Source: BBS (2006)

### 2.3.2 Regional Variations

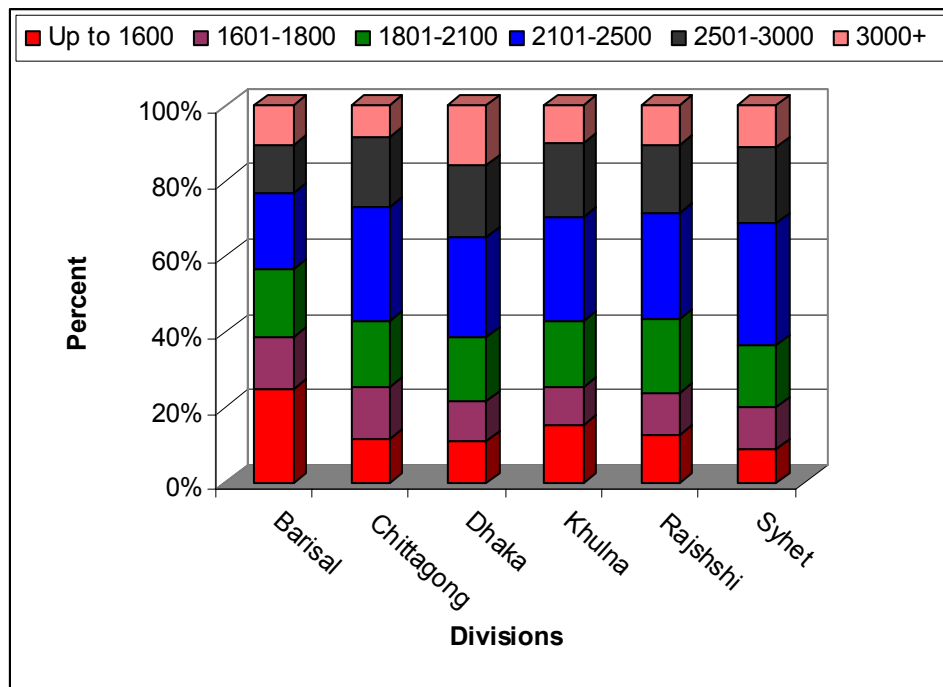
There are two types of regional variation that we have tried to analyse. The rural-urban differences have already been discussed. Here we bring in the spatial variation by administrative divisions. Fig. 2.5 shows the situation for 2005.

Here the comparison has been shown, however, in a somewhat different manner. But note that the two lowest calorie categories may be taken to comprise of the hardcore calorie poor while the lowest three may be broadly taken to be the absolute calorie poor. Most divisions show similar patterns of distribution by calorie categories. But Barisal stands out as a major sore point. Here the proportions of both the absolute and hardcore poor are the highest among all divisions. While the proportion of poor are similar across all other divisions with the lowest proportion being in Sylhet, Dhaka stands out as the division with the size of the highest calorie group much larger than elsewhere.

### 2.3.3 Variation by Sex of the Household Head

Men and women have different biological needs for nutrition due to differences in biological, including reproductive, functions as well as culturally mandated demands for physical activities. Unfortunately, there is little recent comparative information on the nutritional levels of men and women. What we have is the information on calorie consumption by sex of the household head. This is reproduced for whatever it is worth in Table 2.1. It is evident from the table that there is not much variation in the patterns of calorie consumption by the sex of the household head. Yet, it may be noted that female-headed households are somewhat more numerous in both the lowest and the highest calorie group. We shall come back to this question later while examining the role of remittances.

**Fig. 2.5: Calorie Consumption Variation by Division**



*Source:* Estimated from unit records of HIES 2005.

**Table 2.1 Calorie Consumption by Sex of Household Head**

| Calorie levels (K cal) | Female | Male | Both |
|------------------------|--------|------|------|
| Up to 1600             | 15.3   | 12.8 | 13.0 |
| 1601-1800              | 9.1    | 11.9 | 11.6 |
| 1801-2100              | 13.9   | 18.4 | 17.9 |
| 2101-2500              | 26.9   | 27.6 | 27.5 |
| 2501-3000              | 18.6   | 18.2 | 18.3 |
| 3000+                  | 16.1   | 11.1 | 11.6 |

*Source:* Estimated from unit records of HIES 2005.

## 2.4 Explaining Calorie Consumption Levels

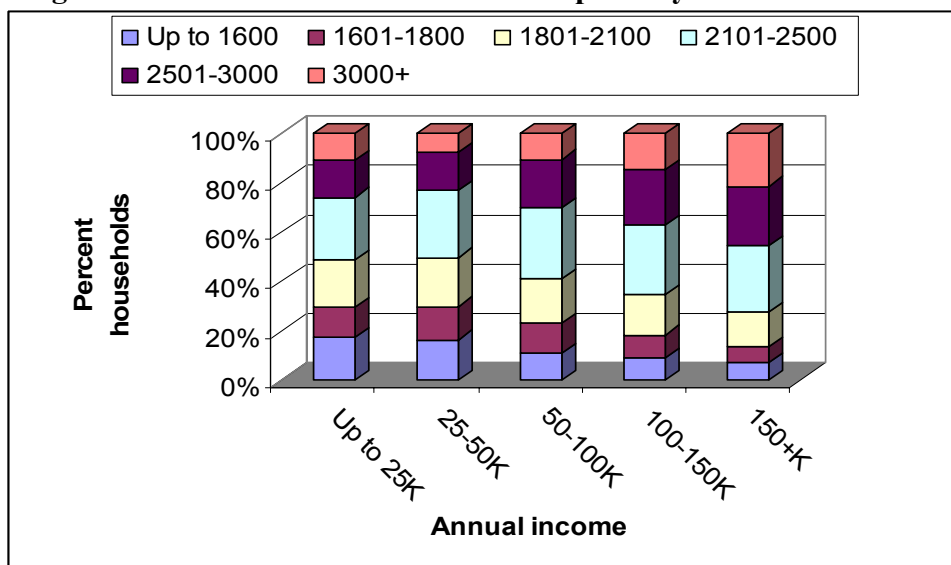
How much calorie one consumes may be determined by several factors, some of which are economic (e.g., income level), some are socio-cultural (earning men get more to eat), while some others are due to awareness (possibly leveraged by education). In this section we try to find out the influence of such socio-economic factors on the level of calorie consumption. In this exercise, we take one variable at a time. In such a situation, the variable does not exhibit its

influence independent of others. To see the influence of a variable when those of all others are controlled for we have to use specific types of statistical analysis (see later). However as our main interest lies in understanding the significance and the interpretation of these influences, we first present the results in an easily understandable, albeit somewhat less rigorous, manner. First, we look at income and calorie consumption.

#### 2.4.1 Income and Calorie Level

The relationship between household income and calorie consumption has been shown in Fig. 2.6. The figure clearly points to the inverse relationship between household income and the average levels of calorie consumption by household members.

**Fig. 2.6: Distribution of Calorie Consumption by Household Income**



Source: Based on unit records of HIES 2005.

For the lowest income group, the average calorie consumption per capita per day is just 2100 Kcal (not shown). It remains static for the next income group and then slowly rises roughly by 100 Kcal per capita per day and reaches a level of 2444 Kcal for the highest income group. This may not seem a sharp rise with income but two points may be noted from the figure.

First, for the lowest income group, the proportion of households with lowest calorie level is much more distinguishable than in case of other income categories. On the other side of the scale and this is the second point of note, the proportion of households with the highest levels of calorie consumption by its members goes up sharply with a rise in income with a concomitant fall in the importance of the lowest two calorie consumption categories.

#### 2.4.2 Sources of Income and Poverty

The source of income may have certain influence on the consumption, its structure and thus on calorie poverty. If much of the income is obtained from agriculture in which case the accrual of income usually occurs at least initially in kind and in most cases, edibles, it is quite conceivable that the opportunity for direct consumption may lower poverty. On the other hand, remittances,

particularly foreign remittances may also lower poverty as usually such receipts are large by Bangladesh standards. We shall analyse the role of agricultural income later. Here we discuss only the role of remittances.

Twenty percent of households receive some domestic remittances while only 9 percent receive foreign remittances. When poverty status is cross-tabulated with incidence of domestic remittances, there is hardly any difference in the incidence of poverty between those receiving them or not. However, if foreign remittance is considered, the incidences of hardcore and absolute calorie poverty among the recipients are 21 and 40%. Among the non-recipients of such remittances, the corresponding proportions are 25 and 45%. Admittedly, the differences are small, but these are systematic and thus statistically significant. The incidence of foreign remittance is therefore likely to explain, however small, partly the incidence of calorie poverty.

Such results may be a reason behind certain divisional differences, e.g., between Sylhet and others given that there is a very large number of migrants from Sylhet to other countries, particularly UK. We shall come back to this question later on.

For the time being, it may be pointed out that when we look at the sex of the heads of household which receive remittances, it is found that the proportions of female-headed households among them are relatively higher.<sup>6</sup> Thus, 31% of female headed households receive domestic remittances as opposed to only 21% for the male-headed ones. In case of foreign remittances, the difference is much wider, about 29 against only 7% for male-headed households. We believe that this partly explains the relatively higher calorie consumption among a section of them. On the other hand, female headedness arise also due to death of male heads of the family and more often than not such households are rather poor given the relatively lower prospects for employment for women. This may give rise to the higher incidence of low calorie consumption. On the whole thus, one may not find much of a difference in aggregate in the incidence of poverty among the female-headed households compared to the male-headed ones as have been observed earlier.

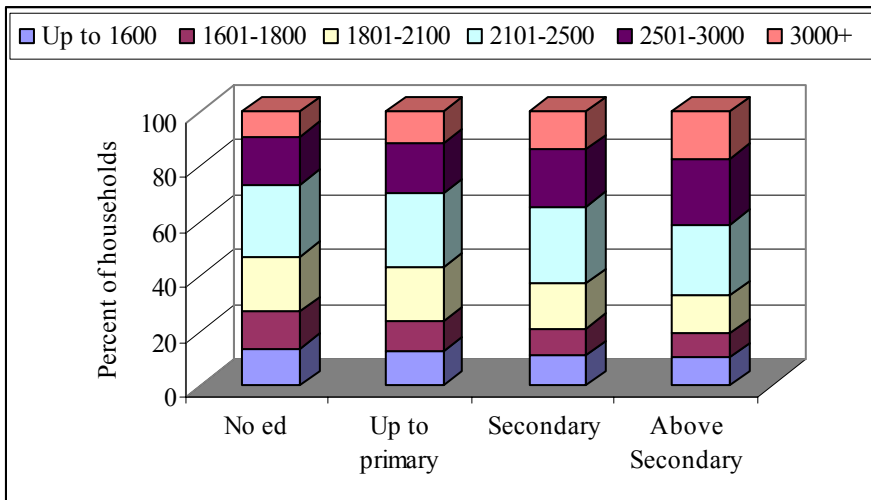
#### *2.4.3 Education of Household Head and Calorie Consumption*

Similar to income, the education of the household head appears to influence calorie consumption levels in an appreciable manner (Fig. 2.7). The proportion of households with members enjoying on an average up to 2100 Kcal fall steadily as the level of education rises. Thus, 45-46 percent of households with heads having little or no education may be termed absolute calorie poor. The corresponding percentage is 31-32 for the heads with education above secondary level. A similar fall in percentage of hardcore poor (consuming up to 1800 Kcal in the figure) is observed with rise in level of education of the heads of household.

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<sup>6</sup> It is rather likely that the female-headedness of households is the consequence, among others, of male migration leaving the women folks to run the family. If so, female-headed households are more likely to receive remittances compared to the male-headed households. But of source, there may be other factors which may confound such relationships.

**Fig. 2.7: Education of Household Head and K Cal Consumption**

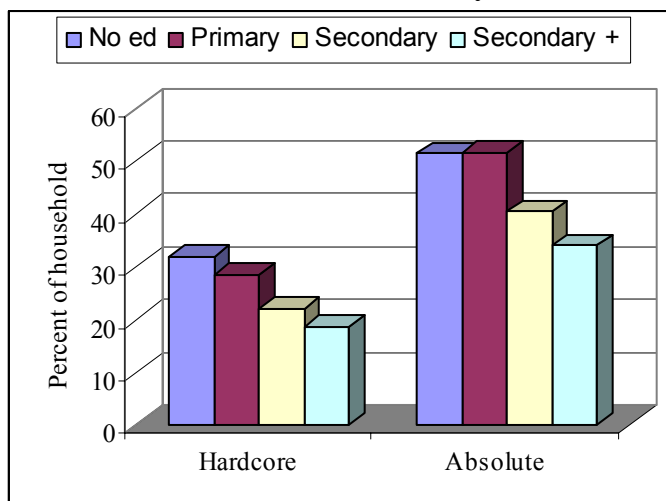


Source: Based on unit records of HIES 2005

#### 2.4.4 Female Education and Calorie Poverty

Being educated and female has a positive influence on poverty incidence possibly because of various positive social externalities that are created. In the present exercise, we have tried to categorise households by the maximum level of female education within the family and tabulated poverty status by the categories. The results are shown in Fig. 2.8.

**Fig. 2.8: Maximum Female Education in Household and Calorie Poverty Incidence**



Source: Based on unit records of HIES data 2005

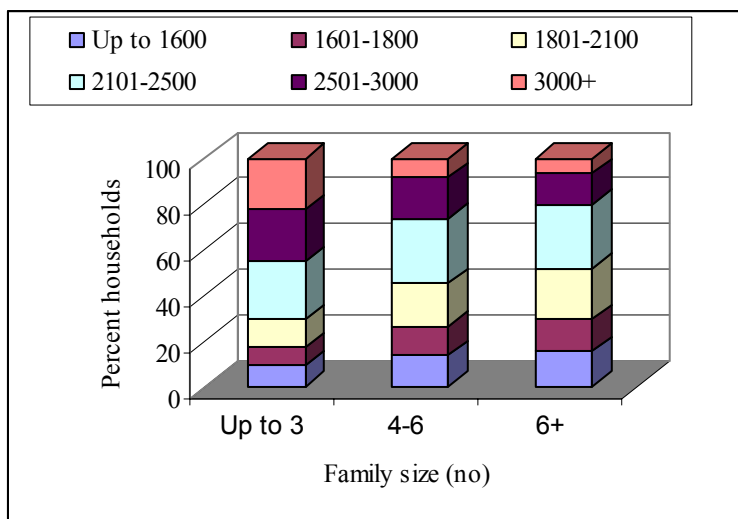
We find that for absolute calorie poverty there is little change in poverty incidence for households with women having up to primary level education over those with women having no

education. But as the level of maximum education rises, there appears to be a precipitous fall in incidence from just about 51% to 40% and then to 34% as the level of education rises further. For hardcore poverty the effect appears to be even stronger. In this case, the move from no education category to primary category leads to a fall of 8 percentage point reduction in poverty incidence and ultimately by 14 percentage point for the highest education group. As we shall show later, these results remain valid even when the influences of other socio-economic variables are controlled for.

#### 2.4.5 Family Size and Calorie Consumption

Conventional wisdom often blames population pressure as a cause of penury. To see if this may be true at the micro level, we plotted distribution of calorie consumption against family size (Fig. 2.9). Indeed, the picture came out bright and clear that family size does matter. Larger the family, more often than not the members in those families do fall more in the lower calorie categories. If as above, we count the absolute calorie poor consuming up to 2100 Kcal or thereabout, the proportion of households who are absolute calorie poor rises rather sharply with increase in family size. A similar situation obtains in case of hardcore poverty for which the consumption is considered only up to 1800 Kcal. Looked at it another way, persons from larger families are more numerous in the lower calorie categories than those from smaller ones. The reverse holds true for higher calorie groups. So much so that the smallest family size households have more than 20% of their members in the highest calorie group while other family size categories have only around 5% or so of their members in the same calorie category.

**Fig. 2.9: Calorie Consumption Patterns by Family Size**



Source: Based on unit records of HIES 2005

## 2.5. Independent Influence of Socio-Economic and Other Factors

Earlier it has been noted that the bivariate tables/analyses do not control for the effects of other factors that may be correlated with the one of interest. The observed bivariate relationship may therefore be of not much policy relevance if it is in fact the reflection of influence of other factors. One should therefore try to purge such confounding influences of other intervening factors with which the factor of interest may be correlated. This section reports on the results of attempts at controlling for such influences.<sup>7</sup>

### 2.5.1 Influence of Rural-Urban Location

Earlier we have seen that there are substantial rural-urban differences in the incidence of poverty. Many factors may account for these differences. The level of income in urban areas may be higher, while the likelihood of agriculture as a major source of income is expected to be lower therein. As we shall see later while rising income leads to lower incidence of poverty, lower proportion of income from agriculture increases it. The combined effect can not thus be predicted *a priori*. It becomes an empirical issue. There are also other factors which may differ between rural and urban areas. If the effects of all these factors are netted out, one may expect the rural-urban differences to be of small magnitude at best. As we have discovered this is not so.

The probability of a person to be absolute calorie poor, keeping all other things constant, is nearly 23% higher in the urban areas compared to the rural. For hardcore calorie poverty, it is nearly 41% higher. Why should this be and what is the implication of such results?

Apparently two factors have not been controlled between the rural and urban areas while statistically analysing the data. Both, however, may act in favour of lowering rural calorie poverty. One is price while the other is the opportunity for foraging as well as home production. The prices could not be held constant because of the statistical problem of estimating a weighted price across various commodities and space. But almost certainly prices are likely to be higher in the urban areas compared to the rural. This will mean, given other things constant a lower level of consumption of food or less costly but probably also less nutritious food either of which is likely to lead to lower calorie consumption and thus higher level of poverty. On the other hand, there are certain scopes for foraging for food in the rural areas which may allow the rural people to consume higher calories. And of course prospects for home (or, own) production of food is higher in the rural areas. This will mean a lower incidence of calorie poverty in the rural areas in the aggregate although certain groups (such as landless wage labour) are more at risk of low calorie consumption compared to others.

Given the above situation there is a need for urgent actions on the urban front for poverty eradication. So far this has hardly drawn attention of the policy makers. Intervention for eradicating rural poverty must continue, but time has come for changing some of the priorities more in favour of urban areas than before.

### 2.5.2 Influence of Divisional Location

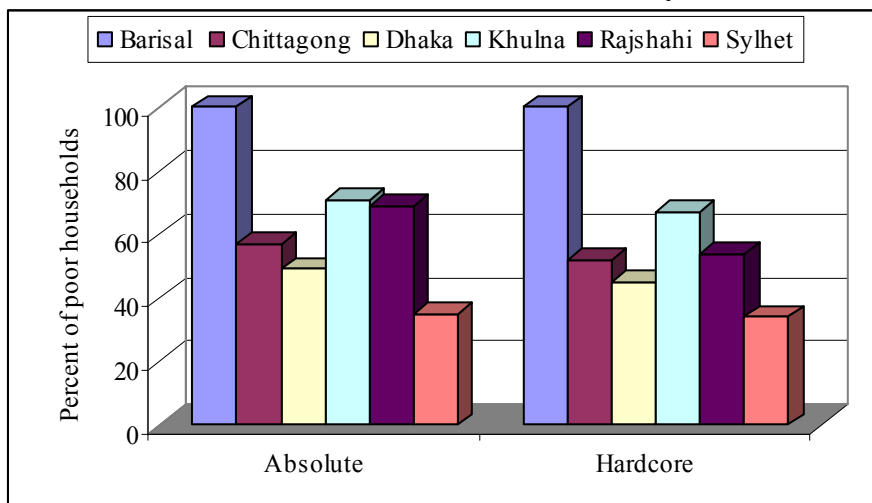
Figure 2.10 depicts the independent influence of divisional location on calorie poverty. Note first that the situations in all divisions have to be interpreted with respect to Barisal division. Consider

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<sup>7</sup> In most cases we have used a logistic regression for the purpose in which the inclusion of a household in poor or non-poor category is regressed upon a set of factors such as level of income, divisional location, education of the head of the household head, family size, source of income and the like. The final logistic regression is shown in Annex 2.

now absolute poverty in Chittagong division. Barisal has a value of 100 while Chittagong has 56.8. The meaning is that if there are 100 people in Barisal with certain characteristics who are all absolute poor, in another group of 100 persons in Chittagong with exactly the same characteristics (as reflected in the values of the other factors being considered together) as in the Barisal group will have only nearly 57 persons who are poor.<sup>8</sup> Note that the proportion of such poor whether or absolute or hardcore are the lowest in Sylhet. In Dhaka, the proportion is generally on the lower side of the scale while Rajshahi and Khulna are in the middle. One also observes that the relative probabilities for being hardcore poor are somewhat lower in all cases compared to becoming absolute poor.

**Fig. 2.10: Influence of Divisional Location on Poverty Relative to Barisal**



Source: Based on Unit Records of HIES 2005

### 2.5.2 Independent Influence of Income

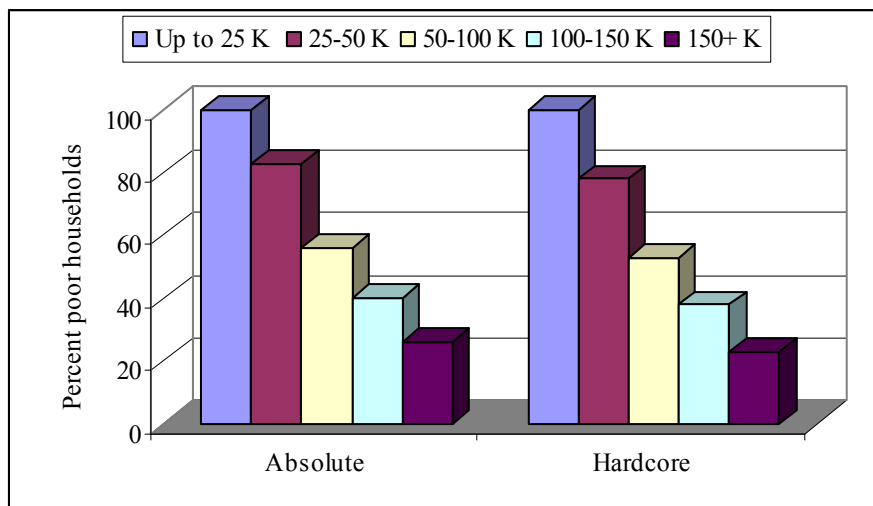
We have shown earlier that household income appears to have a strong influence on calorie consumption. When the independent influence of such income is considered, its importance in lowering poverty is again clearly evident. Thus as income of the household increases, progressively the proportion of people, who differ only by income but not by other characteristics, to be in poverty falls sharply (Fig. 2.11). As a result, for every 100 absolutely calorie poor people in the lowest income group, if we find 100 persons exactly with the same characteristics but having an income of above Taka 150 thousand per year, the number of poor in the higher income group will be only 26. For the hardcore poverty, it is 23 or so. Two points may be noted here. The fall in poverty incidence is rather sharp as one goes up the income scale. Secondly, and this is a cause of concern, that even for the highest income group almost a fifth or more of the people are still either absolute or hardcore poor in terms of calorie consumption, an issue which we had observed earlier. Income alone therefore may not be the guarantor of nutritional adequacy. Probably nutritional awareness or environmental hygienic factors may also be important.

<sup>8</sup> Thus a person in Chittagong with the same characteristics as in Barisal has only 55% probability of being poor compared to the Barisal person. In statistical language this is called the odds ratio.

### 2.5.3 Independent Influence of Source of Income

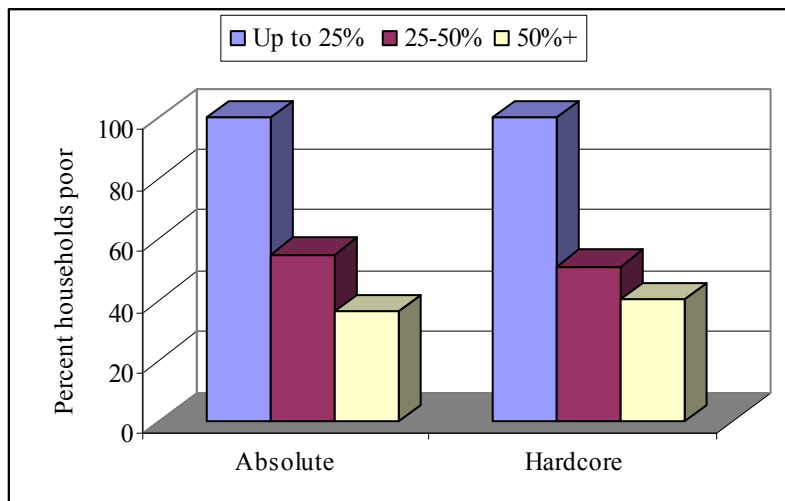
Those who have income from agriculture have one advantage over others in calorie consumption. They may be able to produce part or whole of what they eat and thus the risks for falling below the calorie poverty line may be lower for them. When we tried to assess if this is true, we have been vindicated. As the share of agriculture in total household income rises from at most 25% to 25-50%, the proportion of people to be in poverty compared to the lowest group becomes nearly one-half for both absolute and hardcore poverty (Fig. 2.12). Note, however, that a further increase in the importance of agriculture as source of income brings down the proportion comparatively mildly.

**Fig. 2.11: Independent Influence of Income on Calorie Poverty Relative to Lowest Income Holders**



Source: Based on Unit Records of HIES 2005

**Fig. 2.12: Independent Influence of Agriculture as Source of Income on Poverty**



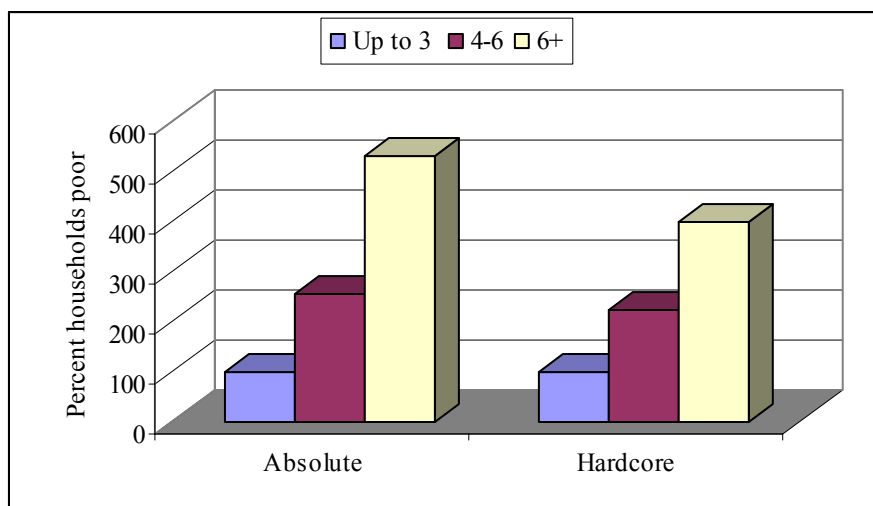
Source: Based on Unit Records of HIES 2005

We tried to use source remittance as a factor to explain incidence of poverty. The incidence of remittance did not influence incidence of poverty as such, but its share in total income did. Thus, if the share was more than 50% of household income, the incidence of poverty fell by nearly a quarter for both absolute and hardcore poverty compared to those who had at most 25% of their income from remittances, whether domestic or foreign. But those who had a share between 25-50% did not experience any appreciable dent in their poverty compared to the reference group.

#### 2.5.4 Independent Influence of Family Size

In a similar manner as for divisions and income groups we have tried to find out the independent influence of family size. And here again we find as before that family size does matter in a most negative manner for people to be in poverty (Fig. 2.13). Thus, if there are 100 persons in poverty in a group of people coming from households of size up to 3 persons, more than 5 times as many people would be in absolute poverty with exactly the same characteristics but coming from families having more than 6 members. For the hardcore poor, it is almost 4 times.

**Fig. 2.13: Independent Influence of Family Size on Poverty**

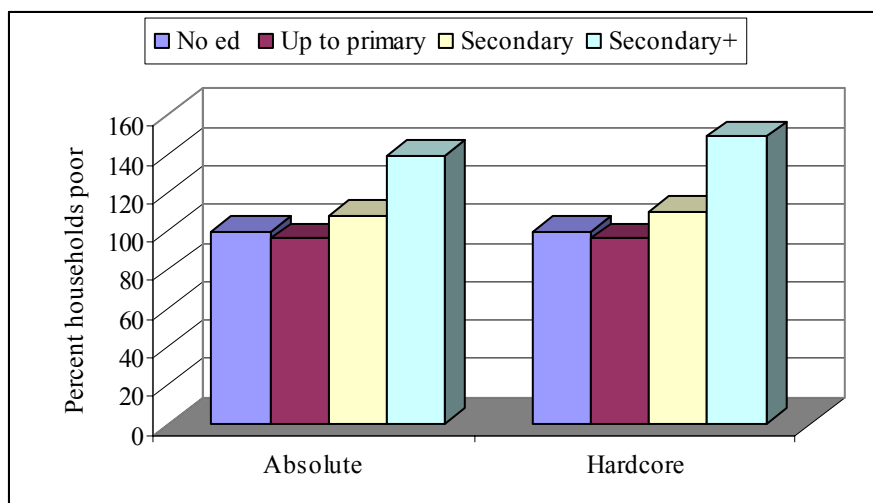


Source: Based on Unit Records of HIES 2005

#### 2.5.5 Independent Influence of Household Head's Education

We tried to find out if education has a role in determining a person's poverty status. It has an independent influence, but this appears to be counter-intuitive as the incidence of poverty actually goes up for higher levels of education though it falls for the primary educated household heads. But these are in general not statistically significant. As Fig. 2.14 shows if heads of household with no education are compared with those having education beyond secondary level, persons in the latter types of families are 40 percent more likely to be in poverty. One needs to better understand the dynamics of role of education in reducing poverty. This remains an issue for the future.

**Fig. 2.14**  
**Independent Influence of Household Head's Education on Calorie Poverty**

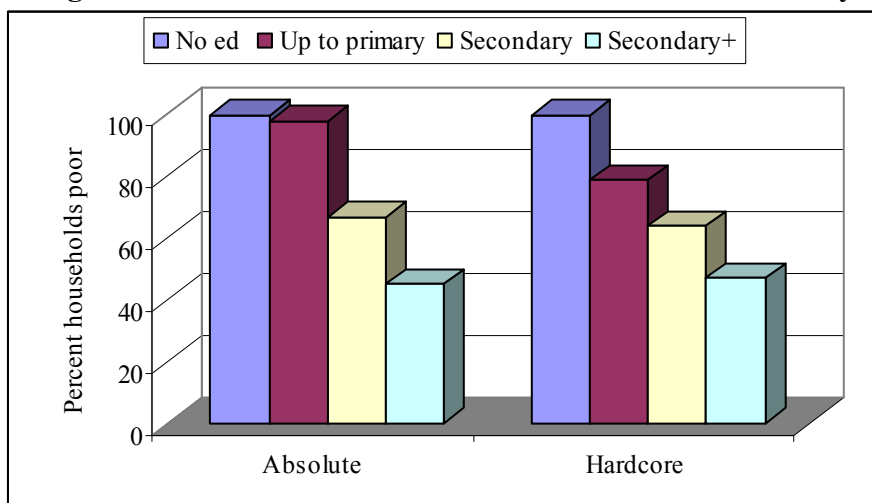


Source: Based on Unit Records of HIES 2005

**2.5.6 Independent Influence of Female Education**

Earlier it has been shown that the level of female education in the family has apparently a high negative correlation with calorie poverty. Here we have tried to find out if it does indeed have a high independent effect on incidence of calorie poverty. The result of analysis is shown in Fig. 2.15. It clearly shows that female education indeed has a very substantial independent effect on incidence of calorie poverty, probably more in case of hardcore than absolute poverty.

**Fig. 2.15: Maximum Female Education and Calorie Poverty**



Source: Based on unit records of HIES 2005

Thus members from households where women are educated at most up to primary level have incidence of absolute poverty similar to those where women are not educated at all. But the

incidence of poverty falls by 34% for members of those households with women having education up to secondary level. For the members of households with women having education beyond the secondary level, the fall in poverty incidence over the members from households with illiterate women is 55%. For hardcore calorie poverty, the effect is even more pronounced in that here the incidence falls even for those households with women having only up to primary level education. In this case, the fall is 21%.

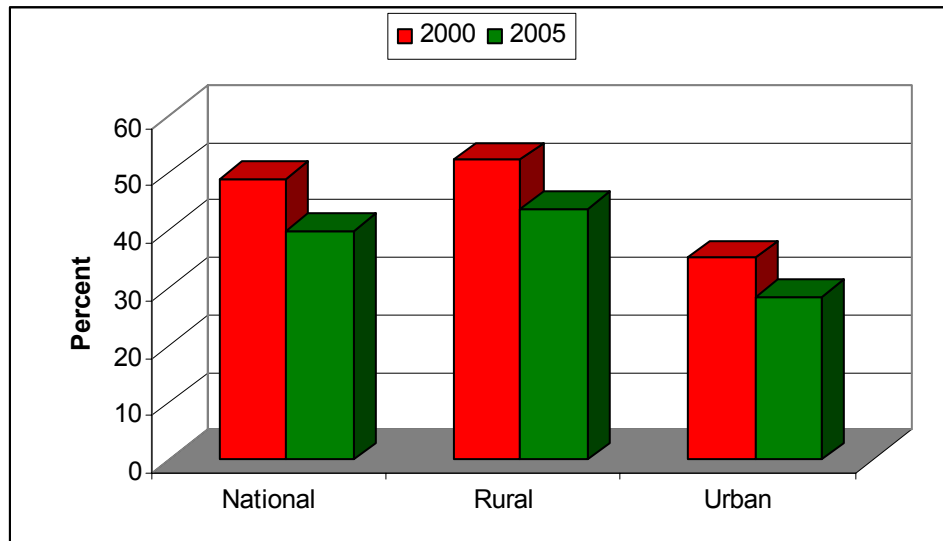
The policy implications of these findings are clear. Fostering women’s education is a very important weapon for the war against poverty. The investment in women’s education is thus money extremely well spent.

## 2.6 Income Poverty

### 2.6.1 Cost of Basic Needs and Absolute Income Poverty

We now use a somewhat broader definition of poverty in which the basic non-food requirements for human existence are considered along with nutritional needs. For this, the required additional income is added to the cost of acquiring the minimum calorie needs of 2122 Kcal per capita per day. This poverty line is thus similar in principle to the absolute calorie poverty line and we call it for want of a better name absolute income poverty. There is no clear estimate of hardcore income poverty line corresponding to the hardcore calorie poverty line. We thus discuss only the absolute income poverty line. Figure 2.16 shows the situation in 2000 and 2005.

**Fig. 2.16: Income Based Absolute Poverty**



Source: BBS (2006).

As in case of nutritional poverty, it is found that the incidence of national poverty has fallen by 7-8 percentage points over the first half of the present decade. While both rural and urban poverty has fallen, rural poverty appears to have fallen more sharply than the urban one. Note that this is somewhat in contrast to the calorie poverty in which case improvement in the rural situation had been rather mild.

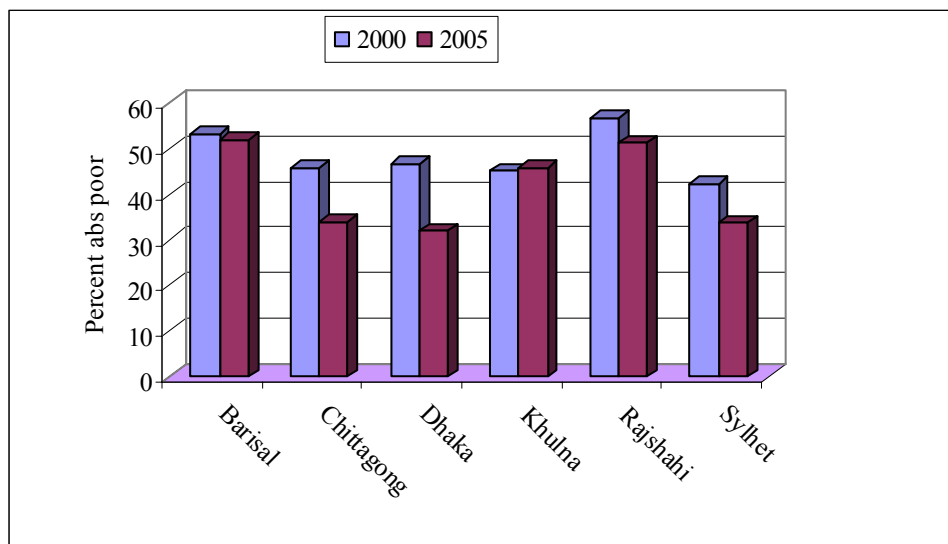
### 2.6.2 Regional Variations

As in case of calorie poverty, the poverty incidence based on failure to attain an income to meet minimum basic needs is not the same for all divisions. Poverty incidence was the highest in Rajshahi followed by Barisal in 2000 (Fig. 2.17). By 2005, there has been a switching of ranks. Sylhet division had the lowest proportion of poor based on fulfillment of basic needs in both years.

The fortune of lower incidence of poverty by 2005 over 2000 had, however, been unevenly distributed. Only Chittagong, and Dhaka and to an extent Sylhet had appreciable improvements. Rajshahi also experienced a little improvement. People in both Khulna and Barisal have, however, seen rather small changes in their lot.

In fact, even within a division, the improvements, if at all, have been unevenly spread between the rural and urban areas (not shown). For the rural areas, the picture mirrors that for the division as a whole. But for the urban areas, in cases such as Barisal, poverty has actually increased.

**Fig. 2.17: Division-wise Incidence of Absolute Income Poverty**



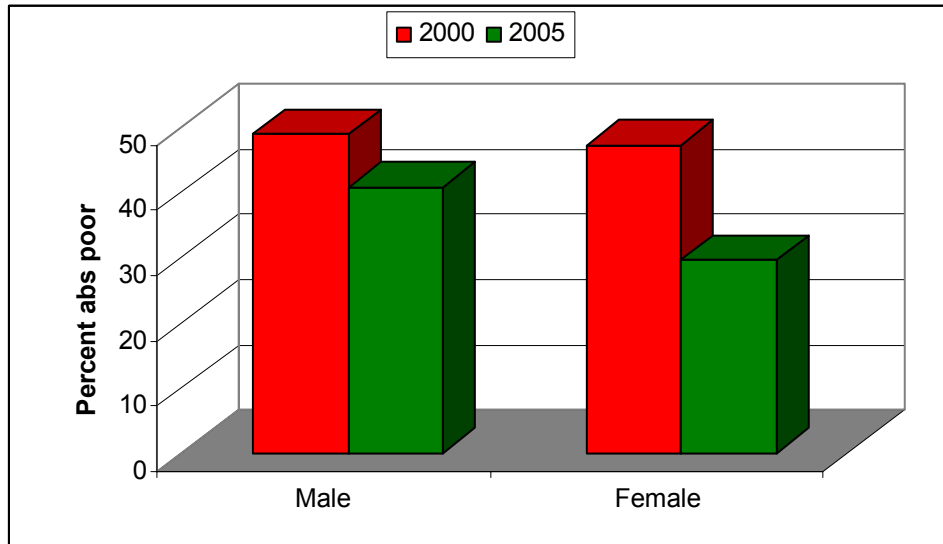
Source: BBS (2006).

### 2.6.3 Gender Variation in Poverty

The data from HIES does not allow any direct comparison of poverty among women with that for men. What it allows us to do is to compare the poverty among female-headed households with that for male-headed households. Doing so, we discover as before for calorie poverty that while members from male-headed and female-headed households had been similarly poor in 2000, the situation had improved considerably for the latter by 2005 (Fig. 2.18). For these households the drop in incidence of poverty had been from 47 to 29 percent. For male-headed households, the fall had been much more modest, from 49 to 41 percent. Remittances sent by male migrants may be one reason for the lower incidence of poverty among female-headed households. Possibly the large scale micro credit operation had also been a major factor as such

credit is given overwhelmingly to women and it is likely that women from female-headed households may have participated more in these programmes. But for the time being the latter remains a speculation only. We have little by way of confirmed analysis.

**Fig.2.18: Absolute Income Poverty by Sex of Household Head**

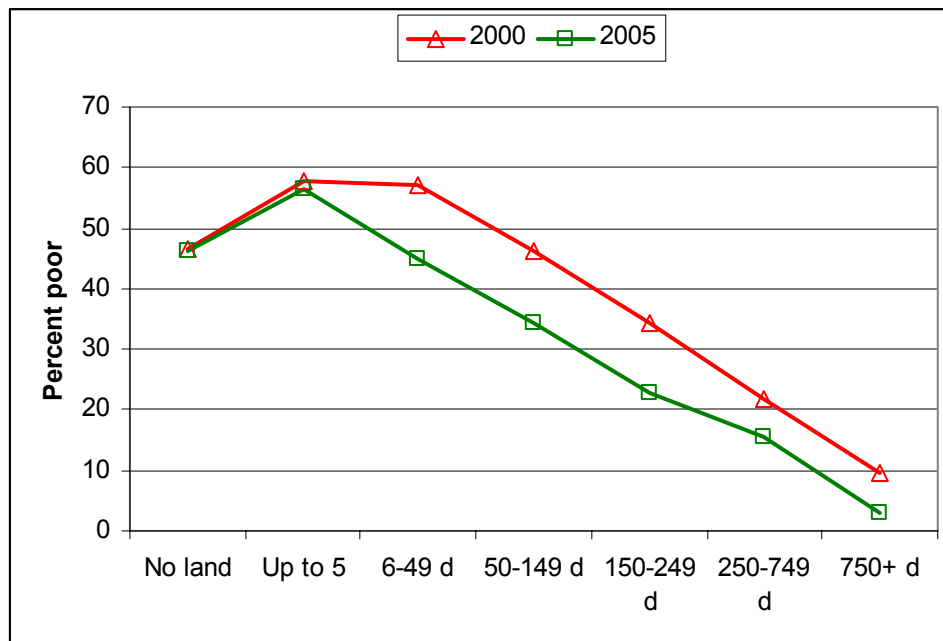


Source: BBS (2006).

#### 2.6.4 Poverty Incidence by Land Holding

Earlier we have tried to find out the incidence of calorie poverty by proportion of income from agriculture as well by total household income. This is not possible for absolute poverty under the cost of basic needs approach due to certain data limitations. However we may use the access to land as a kind of crude proxy for both but more so for income from agriculture. Doing so, we have graphed the poverty incidence patterns for 2000 and 2005. The results are shown in Fig. 2.19. It is clear from the figure that for those with little or no land, the situation has remained equally bleak over years. For those with some land, the situation appeared to have improved some times substantially. For example for the groups having land between 0.06 and 2.49 acres, the drop in poverty incidence had been more or less 12-13 percentage points. For the group with land between 1.5 and 2.49 acres, it was from 34.3 to 22.9 percent, a very large drop. This finding tallies with the one before that those with agriculture as source of income has lower incidence of poverty.

**Fig. 2.19: Incidence of Absolute Income Poverty by Land Holding**



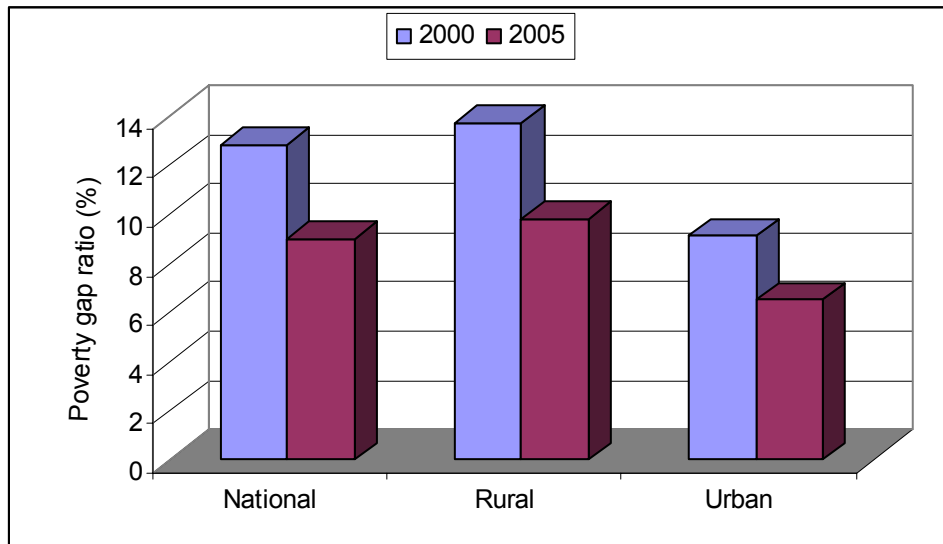
Source: BBS (2006).

## 2.7 Depth of Poverty

One of the indicators under Target 1 of Goal 1 refers to Poverty Gap ratio. The concept measures in a sense the depth of poverty. It expresses the proportion of the poverty level income that would be necessary to be transferred to a poor person to bring him/her above the poverty line and then averaged over the total population. The non-poor have a poverty gap ratio of zero.

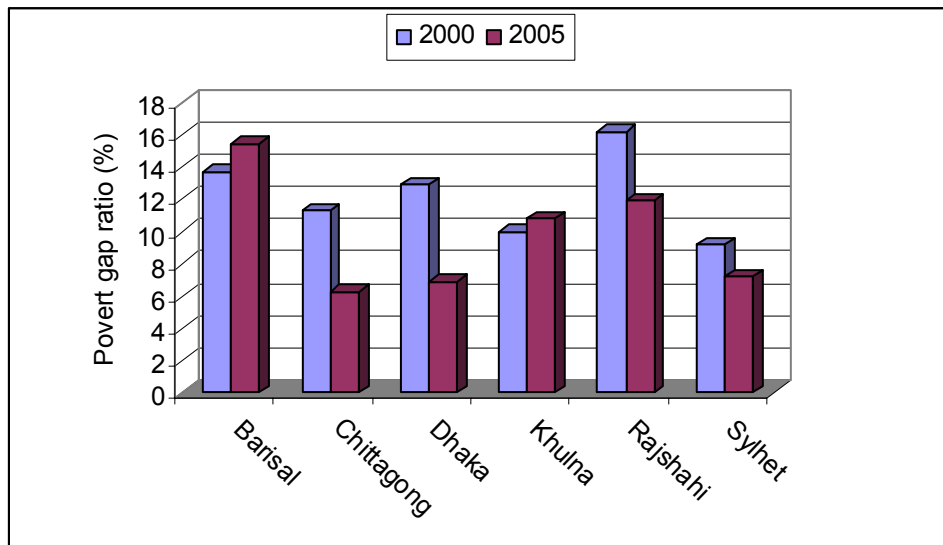
Fig. 2.21 indicates that over time the Poverty Gap ratio has fallen signifying that the economic situation of the poor has improved so that the hypothetical transfer necessary to make all the poor non-poor has also fallen. Fig. 2.22, however, indicates that this may not have happened everywhere within the country. Particularly the situation of the poor in Barisal has substantially worsened over time. The Khulna poor also have experienced a worsening situation but in a much milder form. In all other divisions the poor have improved their lot but the progress had been the slowest in case of Sylhet.

**Fig. 2.21: Poverty Gap Ratios (%)**



Source: BBS (2006).

**Fig. 2.22: Poverty Gap Ratios by Division (%)**



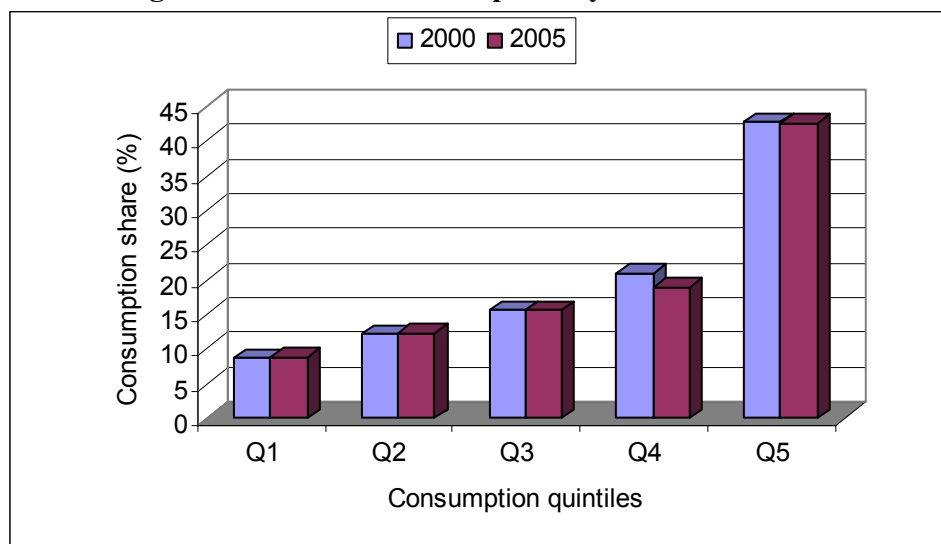
Source: BBS (2006).

## 2.8 Distribution of Consumption

One of the indicators for poverty reduction is if the share of the poor in national consumption is increasing over time. For this one compares the share of the poorest quintile in the national consumption. The situation of the various quintiles over 2000-05 are shown in Fig. 2.23. What it indicates is that the shares of the various quintiles have more or less remained stagnant.

Furthermore the picture is one of gross inequity in that the lowest quintile shows a share of only 7-8% in consumption while the richest quintile enjoys more than 40% of the total consumption in both the years under consideration.

**Fig. 2.23: Share of Consumption by Income Quintiles**



Source: BBS (2006).

## 2.9 Chronic Energy Deficiency of Children

### 2.9.1 Malnutrition of Children

Two groups, in most developing countries, at risk in particular of malnutrition are mothers and children. The issue of mothers' health will be discussed later in Chapter 4. Here we shall analyse the situation related to children's malnutrition.

Before proceeding further, we need to understand why in discussion of poverty and hunger a child's nutritional status becomes important. One reason is of course that no human being must go hungry and children being among the most helpless deserve most attention in this regard. But also note that for a child going hungry and for prolonged periods lead to stunting that is they become shorter for their age, wasting that is they can not transform what is eaten into body mass and thus finally they become underweight. All these lead to poor health being prone to disease over the course of their life times while their brains also may not develop well. Ultimately this means that they can not develop fully in their body and mind and further physical and mental development may not take place even if apparently sufficient nutrition is available later in life. Their productivity may therefore be less than their potential and they may become tomorrow's poor. Poverty may thus fall at a slower rate than expected. Child malnutrition thus has a clear correspondence with poverty reduction in general.

Children if fed well and with nutritive food gain better height and weight for their age compared to those who are not so fortunate. Information on height for age and weight for age is thus vital indicators for understanding the nutrition status of children. Usually three such indicators are defined in the literature. These are

- a) Low Height for Age (Stunting)
- b) Low Weight for Height (Wasting)

c) Low Weight for Age (Underweight)

The detailed definitions of these indicators and their measurements are shown in Box 2.

**Box 2: Definition and Measurements of Nutritional Status of Children**

**Stunting**

Height-for-age is a measure of linear growth. A child who is below -2 SD from the median of the NCHS (National Center for Health Statistics) reference population in terms of height-for-age is considered short for his/her age, or “stunted,” a condition reflecting the cumulative effect of chronic malnutrition. If the child is below -3 SD from the Reference median, then the child is considered to be severely stunted. A child between -2 and -3 SD is considered to be moderately stunted. Stunting reflects failure to receive adequate nutrition over a long period of time and may also be caused by recurrent and chronic illness. Height-for-age, therefore, represents a measure of the long-term effects of malnutrition in a population and does not vary appreciably according to the season of data collection. Stunted children are not immediately obvious in a population; a stunted three-year-old child could look like a well-fed two-year-old.

**Wasting**

Weight-for-height measures body mass in relation to body length and describes current nutritional status. A child who is below -2 SD from the reference median for weight-for-height is considered to be too thin for his/her height, or “wasted,” a condition reflecting acute malnutrition. Wasting represents the failure to receive adequate nutrition in the period immediately preceding the survey and may be the result of inadequate food intake or recent episodes of illness causing loss of weight and the onset of malnutrition. As with stunting, wasting is considered severe if the child is below -3 SD from the reference mean. Severe wasting is closely linked to an elevated risk of mortality. Prevalence of wasting may vary considerably by season.

**Underweight**

Weight-for-age is a composite index of height-for-age and weight-for-height and, thus, does not distinguish between acute malnutrition (wasting) and chronic malnutrition (stunting). A child can be underweight for his/her age because of stunting, wasting, or both. Weight-for-age is a useful tool in clinical settings for continuous assessment of nutritional progress and growth. Children whose weight-for-age is below -2 SD from the median of the reference population are classified as “underweight,” and those who fall below -3 SD are classified as “severely underweight.”

SD or standard deviation is a statistical measure of variation around the average value of a variable.

*Source:* NIPORT, MA and ORCM (2005), several pages

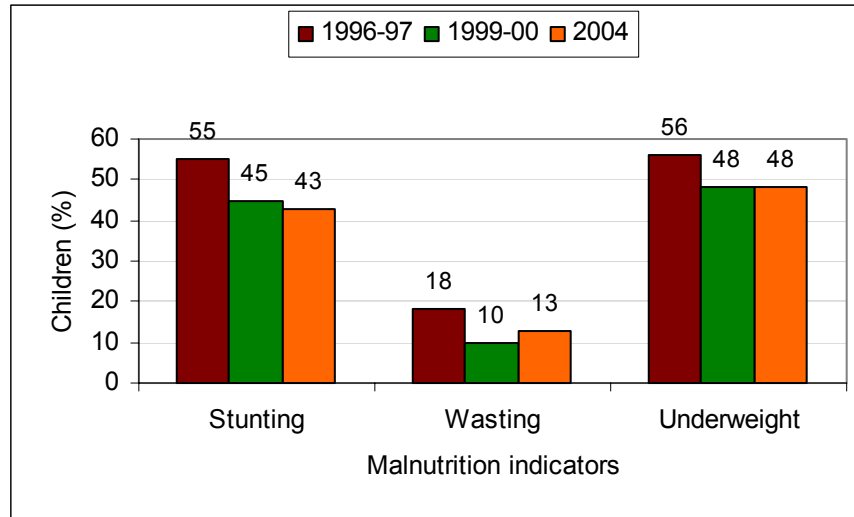
Note that only one of these indicators, “underweight” is part of MDG indicators. However, as underweight is a composite indicator based on the other two, it is instructive to examine the other indicators of malnutrition also.<sup>9</sup> Fig. 2.24 shows the movements of the indicators since the mid-1990s.

It is clear from the figure that over the second half of the 1990s there had been significant improvement in the nutritional status of children as reflected in the downward change of the malnutrition indicators. Thus, the proportion of children who are stunted fell from 55% to 45%

<sup>9</sup> We have used two sources of data. The BDHS data includes both rural and urban children. So do HKI data. But the urban data for the latter have been collected from only slums and thus do not reflect the general picture while the rural data is more representative. For most part we have used the HKI rural data which is more recent and also particularly as child malnutrition is more pervasive in the rural areas.

over the length of 3 years. But the subsequent 3 years saw little change. In case of wasting the fall had been followed by a rise in the proportion of children so afflicted which resulted in little or no change in underweight in these later years. What all these mean is that Bangladesh has still a long way to go to eradicate child malnutrition. Furthermore, this means that child malnutrition status may be quite sensitive to short term changes. Policies should therefore be devised to put in place early warning systems and trigger fast and effective mechanisms to help the children under risk.

**Fig. 2.24: Trend in Child Malnutrition**



Source: NIPORT, MA and ORCM (2005)

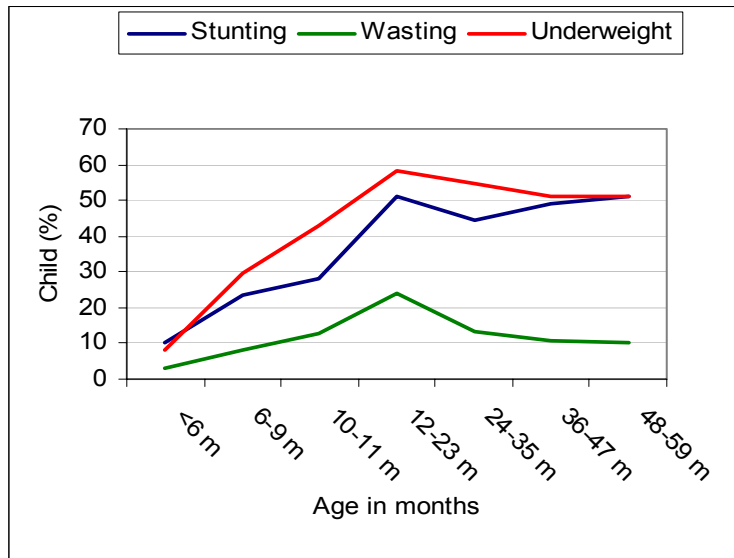
### 2.9.2 Age and Sex Variation in Child Malnutrition

Variation by age: Both age and sex variations have been observed in case of child malnutrition. The first point of note is that children begin to suffer from malnutrition only a few months after birth (6-12 months). As Fig. 2.25 shows between the ages of 6 months to 9 months, proportion of children underweight go up from nearly 10% to 30% and continues to climb up to the age of nearly 2 years when it begins to taper off. Stunting shows a similar pattern although rise in wasting is much more muted in comparison. What these mean is that the nutritional interventions, if made, have to be for children at very early age.

Variation by sex: Sex of the children appears to have not much relationship, on the whole, with malnutrition although as Fig. 2.26 shows, if anything, girl children are slightly more likely to be at disadvantage than boy children in the rural areas. Note that this picture is very similar to that obtained from BDHS data for 2004 for rural and urban area combined.

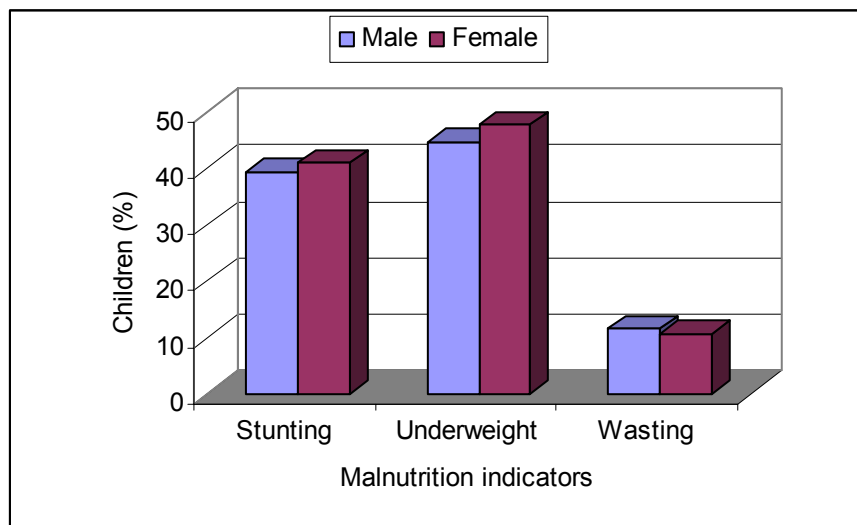
The gender variation, however, begins more as one age (Fig. 2.27). Up to 2 years of age or so, there are little observed gender differences. But as they grow up further, proportionately more of girl children begin to be underweight. A similar picture is observed also for stunting and wasting.

**Fig. 2.25: Child Malnutrition by Age of Child**



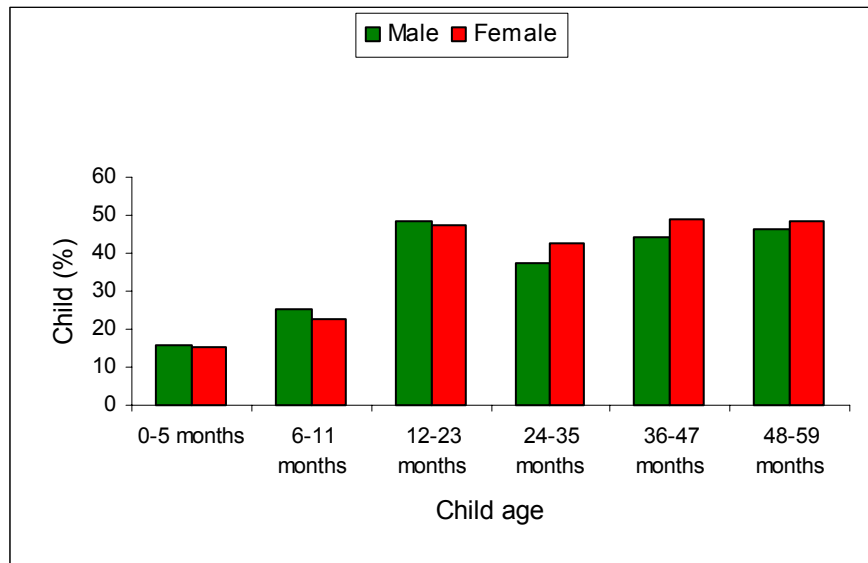
Source: NIPORT, MA and ORCM (2005)

**Fig. 2.26: Gender Differences in Rural Child Malnutrition (2005)**



Source: HKI and IPHN (2006)

**Fig. 2.27: Age/Sex Variation in Rural Child Malnutrition**

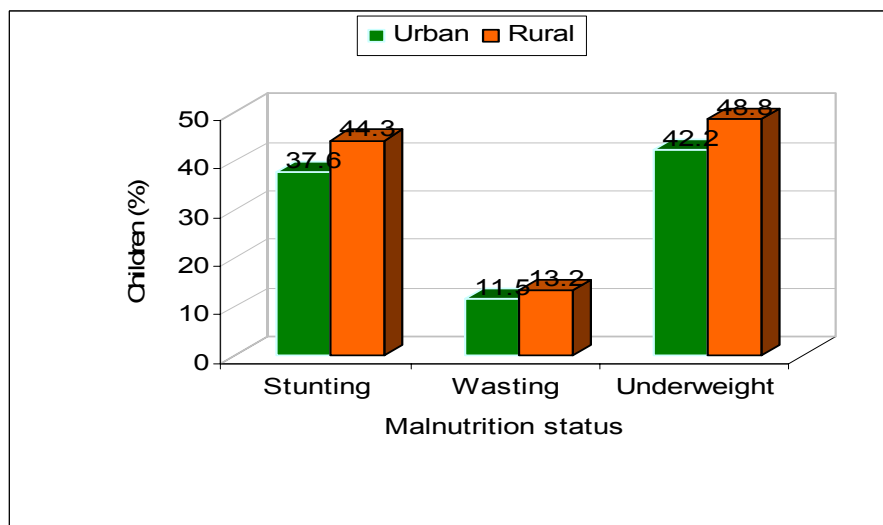


Source: HKI and IPHN (2006)

### 2.9.3 Spatial Variation in Child Malnutrition

Rural-urban variation: Proportionately more of children in rural areas appear to suffer from malnutrition. This is true of all the three indicators of malnutrition (Fig. 2.28). Despite this, it may be pointed out that even the urban incidence of malnutrition is rather high.

**Fig. 2.28: Rural-Urban Variation in Child Malnutrition (2004)**



Source: NIPORT, MA and ORCM (2005)

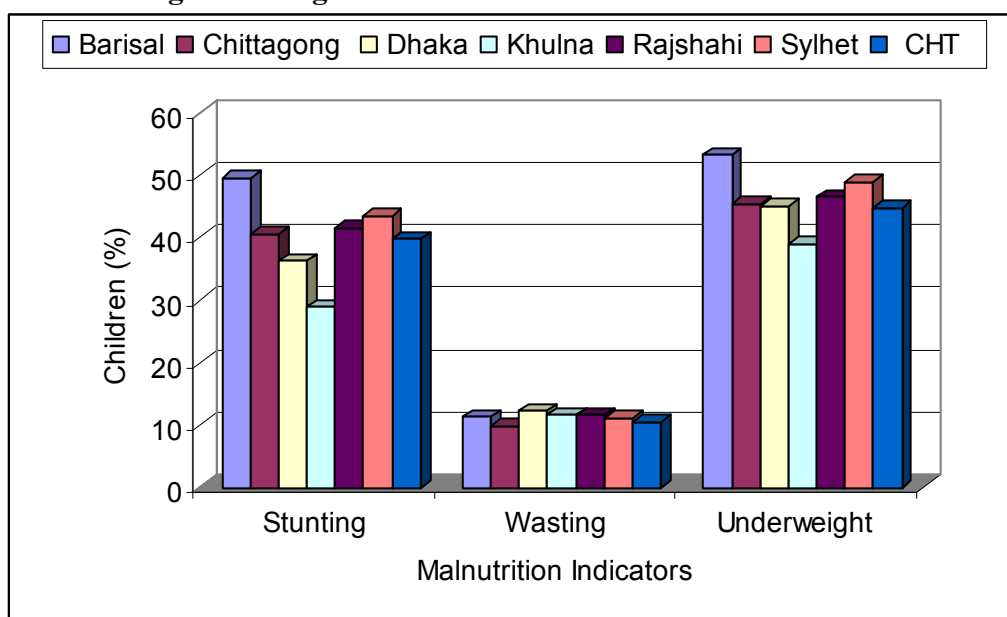
Regional variation: The information pertaining to 2003/04 indicate that there may not be much of a variation across divisions in terms of child malnutrition although Khulna children appears to be somewhat luckier than others, particularly in terms of stunting and being underweight (Table 2.2). The rural data for 2005, also appear to portray a somewhat similar picture as shown in Fig. 2.29 but the separation of CHT from Chittagong division appears to somewhat improve the situation for Chittagong. This also means that the situation in CHT is somewhat worse than the average for the Chittagong division

**Table 2.2: Percentage of Children Suffering from Malnutrition by Division**

| Malnutrition indicators | Barisal | Chittagong | Dhaka | Khulna | Rajshahi | Sylhet |
|-------------------------|---------|------------|-------|--------|----------|--------|
| Stunting                | 48.9    | 46.2       | 44.7  | 31.7   | 40.3     | 46.2   |
| Wasting                 | 7.2     | 14.1       | 11.7  | 14.2   | 14.2     | 12.2   |
| Underweight             | 46.3    | 49.9       | 47.6  | 40.3   | 48.1     | 49.8   |

Source: NIPORT, MA and ORCM (2005)

**Fig. 2.29: Regional Variation in Malnutrition Incidence**



Source: HKI and IPHN (2006)

#### 2.9.4 Influence of Birth Order on Child Malnutrition

The birth order of a child may determine to an extent his/her nutritional status. This may be due to the reason that if a mother has several children, it may not be possible for her to give much time to the young ones. As Table 2.3 shows, for the children born in higher birth order beyond 3 the risk of malnutrition is rather high compared to those born earlier. It is seen that among children born up to 3<sup>rd</sup> in birth order, the prevalence of malnutrition is just about 40% for stunting while for underweight it is around 45%. But for higher birth orders, there is a sizeable

jump in the incidence of malnutrition, be it stunting or underweight. For wasting, however, there is no pattern at all.

**Table 2.3: Birth order and Child Malnutrition**

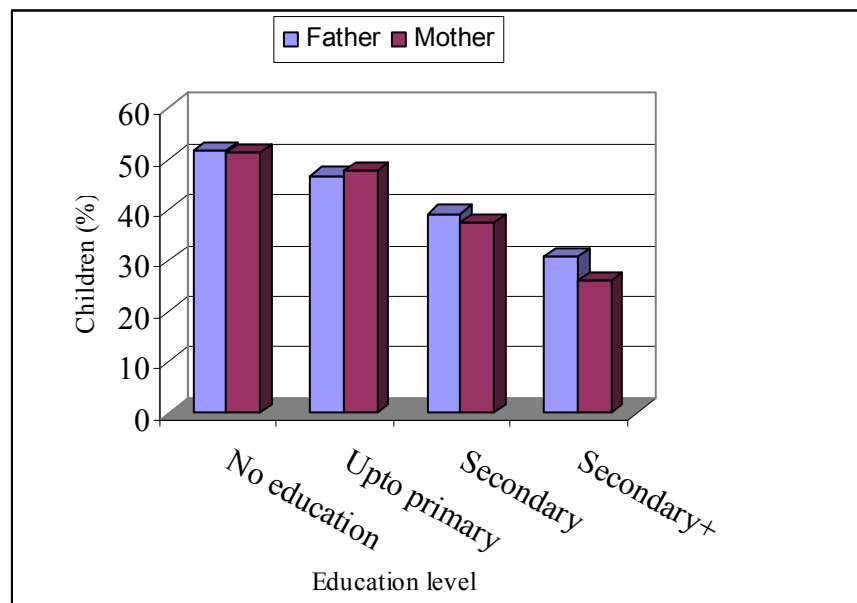
| Birth order | Stunting | Wasting | Underweight |
|-------------|----------|---------|-------------|
| 1           | 40.1     | 12.8    | 44.9        |
| 2-3         | 40.1     | 13      | 45.7        |
| 4-5         | 48.9     | 13.1    | 52          |
| 6+          | 53.8     | 12.7    | 55          |

Source: NIPORT, MA and ORCM (2005)

### 2.9.5 Influence of Socio-economic Variables on Child Malnutrition

Parents' education and child malnutrition: Parental education has a positive impact on nutritional status of children. Fig. 2.30 shows the proportion of rural children who are underweight by their parents' education. For both the father and the mother as the education level goes up the proportion of underweight children goes down. It also apparently goes down faster in case of the education of the mother than that for the father. A similar situation for the effect of mothers' education was observed in 2003/04 for rural and urban children combined. In this case, the proportion of underweight went down from 55.4 to 21.8% between those having no education and those with more than secondary education.

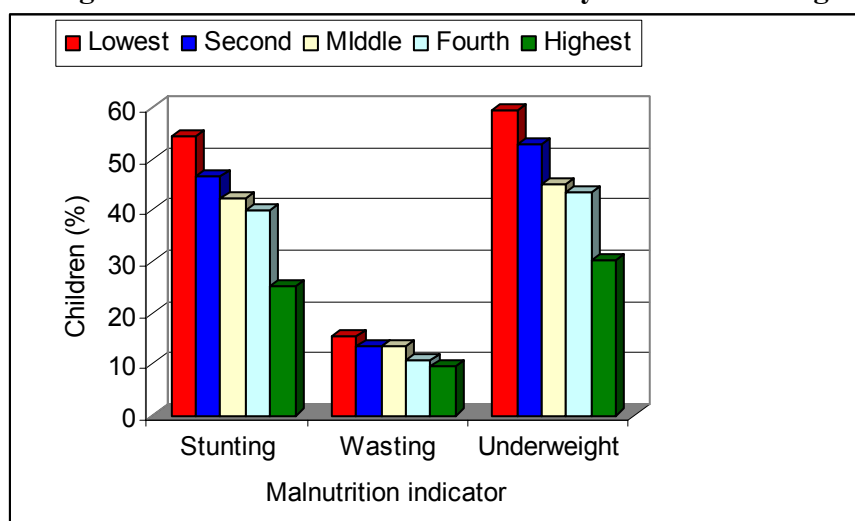
**Fig. 2.30: Parental Education and Child Underweight (%)**



Source: NIPORT, MA and ORCM (2005)

Wealth and child malnutrition: Child malnutrition has been found to be heavily influenced by wealth. The higher a household is in wealth ranking the less likely it is that children from that family will suffer from malnutrition. As Fig. 2.31 shows, for both stunting and underweight, the prevalence rates for child malnutrition monotonically fall and get halved or even lower as one moves from the lowest ranked to the highest ranked households. For wasting too, the incidence of malnutrition falls from more than 15% to less than 10%.

**Fig. 2.31: Prevalence of Malnutrition by Wealth Ranking**



Source: NIPORT, MA and ORCM (2005)

If we look at land holding, probably the most important indicator of wealth in the rural areas, we find a similar monotonically falling prevalence of malnutrition. The fall appears to be somewhat modest than composite wealth ranking, though (Table 2.4).

**Table 2.4**  
**Land Holding and Incidence of Rural Child malnutrition (%)**

| Land holding (deck) | Stunting | Wasting | Underweight |
|---------------------|----------|---------|-------------|
| No land             | 42.3     | 11.8    | 48.4        |
| Up to 50            | 40.9     | 11.4    | 47.2        |
| 51-250              | 36.7     | 9.9     | 42.3        |
| 251-500             | 31.8     | 9.1     | 37          |
| 500+                | 29.3     | 8.2     | 35          |

Source: HKI and IPHN (2006)

#### 2.7.10 Independent Influence of Various Socio-economic Factors

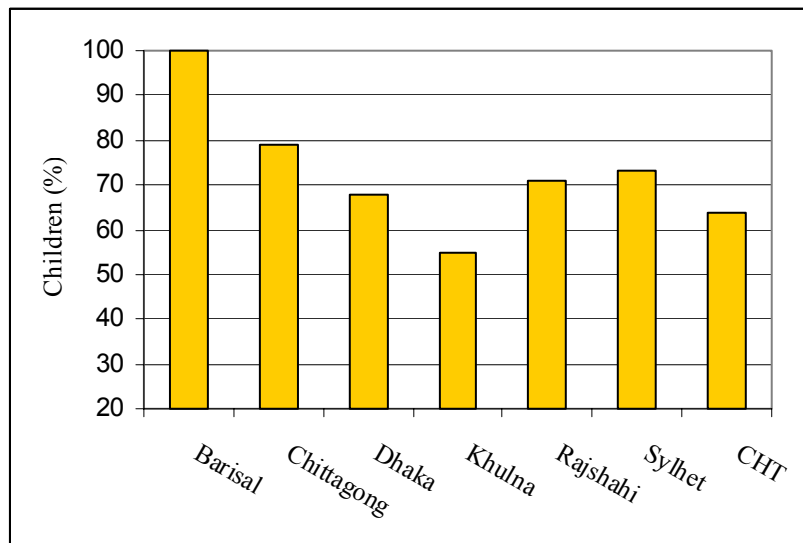
So far we have looked into the relationship of child malnutrition with various socio-economic factors. If we try to see the independent effect of a specific factor holding the effects of all other variables constant, we find that by and large the effects of child age and parental education are as these have been shown earlier. Sex of the child has little significant independent influence. An interesting finding is that mother's nutritional status has a significant influence on children's

nutrition. Thus, compared to normal weight mothers (with body mass index of around 18.5)<sup>10</sup>, the overweight mothers are likely to have 36% lower chance of having an underweight child. In contrast underweight mothers are likely to have underweight children in 72% more cases.

We tried to find out the independent effects of environmental factors such as drinking water source or hygienic toilets. The safe drinking water source, contrary to expectation, was found to be significantly associated with modest level of child underweight. On the other hand, less hygienic toilet systems in the household gave rise to 15-24% higher probability of child underweight compared to those households with a hygienic toilet.

Influence of two other factors has been substantiated. One was that of land holding. Those with the largest land holding were found to have, given all other things constant, children with 25% lower probability of being underweight compared to the landless. Similarly independent regional influences have been statistically substantiated as shown in Fig. 2.32. We find, for example, that if there are 100 underweight children in Barisal, then an otherwise exactly similar group of 100 children in Khulna will have only 55 underweight children. The other close candidate with lower percentage of underweight children is surprisingly Chittagong Hill Tracts. As yet, we have little idea of why such independent regional effects should be observed.

**Fig. 2.32**  
**Independent Variation in Rural Child Underweight by Division**



Source: Based on unit records of data of HKI and IPHN (2006)

<sup>10</sup> Body mass index (BMI) is a kind of index for weight relative to height. It is measured as kg of weight per sq metre. An index of 18.5 is the ideal normal body mass index. Those with a BMI of less than 18.5 are underweight, those with more than 18.5 are overweight.

## 2.10 Impression from the Field

As indicated earlier in Chapter 1, we tried to verify some of the important trends based on statistics on the basis of people's own observations in their daily lives. Naturally the issue of poverty trend featured prominently. So did the discussion on which groups were most vulnerable and why. What we heard from the people can be summarized as follows.

- ❑ If we just consider the number of people who take at least two meals per day we see that people think this number has increased over the last five years. But this doesn't necessarily fulfill their minimum nutritional requirement. They can eat, in their own words, at best two plates of rice or 3-6 breads per day. They have little access to meat, fish or egg i.e. protein foods.
- ❑ Marginal farmers/peasants are the poorest class in the society along with day labor, potters, indigenous people, fishermen, weavers, and cobblers. Day laborers have no access to work for the whole year; fishermen in most cases have no right over water bodies for fishing. More over due to natural disaster and drying out of rivers, they can hardly fish in many places. Weavers face problem due to introduction for better technology as they can not take advantage of it due to limited access to electricity and soft loan. Moreover, in most cases they become easy prey to village money lenders. In many instances indigenous people, for example *Garos* in greater Mymensingh and Jamalpur are deprived of traditional entitlement on ecological resources. Traditional clay potters are now living a very distressful life due to lack of demand for their products. More over livelihood of the people in the rural parts of Jamalpur, Gaibandha, and some other places are under threat from soil erosion, riverbank erosion, and degradation of arable land due to flood. Marginal peasants are in a very vulnerable position due to various natural calamities such as flood, tidal bores, salinization etc.
- ❑ Unemployment is a huge problem, which is more acute in the age group 20-24 and among people with low levels of education. Semi-literate low educated people are in real fix as they are not good for formal office-based work nor are they willing to go for unskilled manual jobs. In CHT drug addiction is very widespread among the youth, which make them lazy and reluctant to work. Young people in greater Sylhet are often thought to be lazy. Early in life, at first they try to go to abroad as many people from that region are migrants mainly in UK. If they fail, they try to collect money from their relatives staying abroad. Only if they fail in this too, do they try to be self-employed. Poverty is less acute in this region and young people can do some thing innovative if they can get some capital which is easier here. Young people in other regions usually have less access to finance and training for gainful employment.
- ❑ The observation earlier that female-headed households are economically in better situation compared to the male-headed ones do get a measure of support from the field. In most places people do state that female headed households now lead a better life than the male headed ones. Access to micro credit has been cited as a major reason. The situation, however, is not as good in the Hill Tracts region as husbands of Hill women often spend this money on gambling and liquor.

- ❑ While the income of the poor has increased, people have often complained about increased income inequality which means that the income of the poor has increased at a slower pace than that of the non-poor.
- ❑ According to large scale surveys, higher proportion of income from agriculture appears to have salutary effect on poverty. This appears to be corroborated by views expressed by people that seasonality of agriculture and consequent unemployment has certain negative influence on poverty. Consequently, people think that suitable training and finance programmes for employment generation during the lean season is necessary for generating employment.
- ❑ In many areas people suffer from environmental degradation and changing seasonal behavior of weather and calamities. This is adding to the problem of crop production and also employment of labour.

## **2.11 Summary and Policy Implications**

### *2.11.1 Summary*

Goal 1 for reduction of poverty is probably the most important among the eight MDGs. The conceptualization of poverty to be meaningful, however, has to be context (cultural, social) specific as well as commensurate with nutritional standards. The global yardstick of defining an income of less than \$1 a day has therefore been not used in the present analysis. Instead the two measures that are widespread in Bangladesh have been used as explained in the main text. Very briefly, we have used the concept of nutritional adequacy at two levels, viz., calorie consumption of 2122 Kcal (absolute poverty) and of 1805 Kcal (hardcore poverty). The size of the poor people nationally in 2005, the year for which detailed data are available was 56 million in Bangladesh. Under a lower level of calorie consumption of 1805 kcal, the total size of the population under hardcore poverty was also huge, 27 million nationally. In terms of proportion of population the incidence was 40 and 20% respectively.

The incidence of absolute poverty has fallen over time. So has rural poverty while urban poverty appeared to be on the rise in most of the recent years. Then again, the urban hardcore poverty has hardly moved while rural and correspondingly national hardcore poverty has fallen, the speed of fall being faster during the late nineteen nineties. As absolute calorie poverty has fallen, but not hardcore poverty, this may mean that either that the absolute poor has moved up faster in the calorie scale compared to the hard core poor; or, that those in the lower end of calorie scale in the absolute poor category have lapsed into the hardcore category.

Calorie consumption has been found to vary by several economic and social factors as well as regionally. The lowest level of calorie consumption was seen in Barisal division while the opposite picture prevails in case of Dhaka division. Household income has a clear monotonically positive influence on calorie consumption. The level of education, particularly of women in the family, not so much household head's education appears to influence calorie consumption levels in an appreciable manner. Female headed households appeared to suffer less from poverty possibly because of receipt of remittances as well as large scale micro credit operation among them. Also more often than not the members in larger families do fall more in the lower calorie categories.

Higher proportion of income from agriculture appears to have salutary effect on reduction in poverty. Unemployment is a huge problem. Seasonality of agriculture and consequent

unemployment has certain negative influence on poverty. Consequently, people think that suitable training and finance programmes for employment generation during the lean season is necessary for generating employment. In many areas people suffer from environmental degradation and changing seasonal behavior of weather and calamities. This is adding to the problem of crop production and also employment of labour. People during stakeholder meetings have pointed out the high risk of livelihood that various marginalized groups face.

Two groups, at risk in particular of malnutrition, in Bangladesh are mothers and children. Nearly half the children suffer from problems of underweight. Both age and sex variations have been observed in case of child malnutrition in Bangladesh. Particularly, incidence of malnutrition begins only a few months after birth. Proportionately more of children in rural areas appear to suffer from malnutrition. Girl children are slightly more likely to be at disadvantage than boy children in the rural areas. Regionally, there is not much appreciable variation although the situation in Chittagong Hill Tracts is somewhat worse than others.

The higher a household is in wealth ranking the less likely it is that children from that family will suffer from malnutrition. Parental education especially mother's education has a positive impact on nutritional status of children. For, higher birth orders above 3, there is a sizeable jump in the incidence of malnutrition, be it stunting or underweight. Bangladesh has still a long way to go to eradicate child malnutrition.

### *2.11.2 Policy Implications*

Several major issues have come up during analysis and consultation. First, there is a major regional variation, independent of influence of other factors, in incidence of poverty as well as of child malnutrition. This means that in future the anti-poverty programmes and child nutrition programmes have to be better targeted by region. The implication is that the potential for development of the regions have to be assessed and reviewed clearly for implementable actions. The policy of "all size fits all" will not do. These highlight the importance of community level actions and local government's institutional mechanisms.

Whatever is done to reduce poverty, in ultimate analysis unless people are able to earn a decent income which implies security of livelihood and employment becomes, it is unlikely to fall fast. All avenues for employment whether in agriculture, industries, particularly SMEs, and services of all kinds need therefore to be explored. And here, the suggestions made by people in stakeholder meetings of the need for training in skills and facilities for financing such activities become important. These are not unknown issues. What remains to be done is to take the challenge on a war footing.

The above policy implication becomes all the more important because poverty eradication in Bangladesh has reached a stage where fine-tuned programmes, which may raise complex issues of trade-off when aimed at special marginal groups, may be needed. For example, while agricultural wage labourers are thought to be among the poorest, the fact remains that the market for such wage labour is often seasonally tight and farmers often end up paying rather high wages for hired labour. This may create problems for cash-strapped farmers as well as for marketed food which may be higher priced. Higher food price hit the poor hardest. How to balance the interests of various groups therefore becomes a priority area of concern. This is as yet a neglected area of policy intervention in Bangladesh.

Apart from agricultural labourers, there are other marginal groups such as fishermen, traditional potters and craftsmen and others including the disabled who constitute a large proportion of the population. They all need specialised programmes if their poverty is to be

addressed. Without community-based and local level initiatives their concerns may remain unaddressed.

Family size appears to have a negative effect on poverty reaffirming the role of population planning, an issue which appears to be somewhat sidelined these days. This role is again highlighted as higher birth order (i.e., larger family of children) has a negative effect on children's nutritional status.

Education, particularly of women appears to be one of the most potent weapon against both poverty and child malnutrition. However, as shown in the next chapter so far Bangladesh has progressed most in terms of gender equity in only primary education while it is secondary education which is of more importance in making a dent in both poverty and child malnutrition. Here as we shall show later in next chapter, the situation is not that good yet.

Timing of intervention in child nutrition programmes is important in lowering child malnutrition, particularly as malnutrition becomes clearly perceptible within a year of child birth. Nutrition-supplement programmes, for example, have to be designed therefore in a way that children more at risk of malnutrition at particular age-brackets may be reached.

## Annex 2

**Table A2.1**  
**Logistic Regression for Explaining Incidence of Calorie Poverty**

| Explanatory variables                | Absolute poverty |            | Hardcore poverty |            |
|--------------------------------------|------------------|------------|------------------|------------|
|                                      | Coefficient      | Odds-ratio | Coefficient      | Odds-ratio |
| Location                             |                  |            |                  |            |
| Rural (ref)                          | -                | -          | -                | -          |
| Urban                                | 0.20             | 1.22       | 0.34             | 1.40       |
| Region                               |                  |            |                  |            |
| Barisal (ref)                        | -                | -          | -                | -          |
| Chittagong                           | -0.57            | 0.57       | -0.66            | 0.52       |
| Dhaka                                | -0.73            | 0.49       | -0.80            | 0.45       |
| Khulna                               | -0.35            | 0.71       | -0.40            | 0.67       |
| Rajshahi                             | -0.38            | 0.69       | -0.61            | 0.54       |
| Sylhet                               | -1.06            | 0.35       | -1.07            | 0.34       |
| Household's education                |                  |            |                  |            |
| No ed (ref)                          | -                | -          | -                | -          |
| Up to primary                        | -0.04 (ns)       | 0.96       | -0.36 (ns)       | 0.96       |
| Secondary                            | 0.08 (ns)        | 1.08       | 0.10 (ns)        | 1.10       |
| Secondary+                           | 0.33             | 1.39       | 0.40             | 1.49       |
| Maximum female education             |                  |            |                  |            |
| No ed (ref)                          | -                | -          | -                | -          |
| Up to primary                        | -0.02 (ns)       | 0.98       | -0.24            | 0.79       |
| Secondary                            | -0.40            | 0.67       | -0.44            | 0.64       |
| Secondary+                           | -0.80            | 0.45       | -0.76            | 0.47       |
| Family size                          |                  |            |                  |            |
| Up to 3 (ref)                        | -                | -          | -                | -          |
| 4-6                                  | 0.93             | 2.53       | 0.80             | 2.23       |
| 6+                                   | 1.67             | 5.30       | 1.39             | 3.99       |
| Total annual household income (Taka) |                  |            |                  |            |
| Up to 25 K (ref)                     | -                | -          | -                | -          |
| 25-50 K                              | -0.18            | 0.83       | -0.25            | 0.78       |
| 50-100 K                             | -0.58            | 0.56       | -0.63            | 0.53       |
| 100-150 K                            | -0.91            | 0.40       | -0.97            | 0.38       |
| 150+ K                               | -1.35            | 0.26       | -1.46            | 0.23       |
| Agriculture's share in income        |                  |            |                  |            |
| Up to 25% (ref)                      | -                | -          | -                | -          |
| 25-50%                               | -0.60            | 0.55       | -0.67            | 0.51       |
| 50%+                                 | -1.02            | 0.36       | -0.92            | 0.40       |
| Remittances' share in income         |                  |            |                  |            |
| Up to 25%                            | -                | -          | -                | -          |
| 25-50%                               | -0.03 (ns)       | 0.97       | -0.07 (ns)       | 0.93       |
| 50%+                                 | -0.25            | 0.78       | -0.29            | 0.75       |

*Note:* All coefficients are statistically significant, mostly at 1 and 5% probability. Those marked “ns” are not statistically significant.

## Chapter 3

### Education: Even the Poorest Shall Read

#### 3.1 Introduction

The goal of education has been put under the MDG right after the issues of poverty and rightly so. Education is both an outcome and an input into the process of development. As education allows the broadening of mind and also enables a person to receive and interpret the external signals better to adapt to it or take measures against it for personal and community welfare, a modicum of basic education becomes absolutely essential. Development therefore must mean among others a right to basic education. A minimum of five years of schooling i.e. up to the completion of the primary level is accepted under the MDGs as the minimum level of education that everybody, particularly all children must have.

Apart from an educated person as one of the basic indicators of development, education is also an input into the development process. Of course, for this basic education may not be enough as also highlighted in the previous chapter. But it forms the first stepping stone to the higher levels of education at the secondary and the tertiary levels including technical and science education. For all these reasons, the provision of basic education is one of the major goals under MDG.

#### 3.2 Goal 2: Achieve Universal Primary Education

Goal 2, its target and the indicators are shown in Box 3. Note particularly that there is a kind of ambivalence between the target and the set of indicators which must be noted by the national level planners. While we shall come back to this question later on during the discussion of policy, we intend to provide a brief flavor of the issues involved.

#### Box 3: Every Child must have Primary Education

**Goal 2: Achieve universal primary education.**

**Target 3:** Ensure that, by 2015, children everywhere, boys and girls alike, will be able to complete a full course of primary schooling

Indicators

6. *Net enrollment ratio in primary education*
7. *Proportion of pupils starting grade 1 who reach grade 5*
8. *Literacy rate of 15-24 year-olds*

The target is very explicit. All children must complete the primary cycle of education by 2015. This means that all children of primary school age (6-10 years) must be in school by the year 2010. Of course, even this may not ensure that all of them will complete the cycle as some will be repeaters and some may drop out completely. The real issues in meeting the education goal under MDG therefore are: first, are we prepared as a nation to take all measures to enroll all children of the relevant age group in schools? Secondly, the indicators become practically meaningless unless the necessary condition is fulfilled for which the lead time at present is only

3 years. There are three other issues which we may keep in mind before going on to discuss and analyse the present situation regarding the particular indicators (see next section and the following ones).

First, as implied under the MDGs education takes place in schools. But as everybody knows, much depends on the household environment. The role of household and parents needs therefore to be recognised and necessary support may be given for enhancing its positive. Secondly, the MDG on education has to be seen as part of a continuing life-long process. This must not be taken as an end in itself. Third, the issue of quality is extremely important. In fact, unless children really learn and are able to apply their learning in daily lives, such education is practically meaningless. We shall come back to the issue of quality later on.

## **3.2 Enrollment**

### *3.2.1 Net and Gross Enrollment Ratios*

Enrollment refers to children being in school for study. It is a ratio of number of currently school-enrolled children to total number of children. Usually two such ratios are used both using the official child age group as denominator. These are called Net Enrollment Ratio and Gross Enrollment Ratio (see Box 4 for definitions). The first indicator under MDG 2 is in terms of net enrollment ratio. However, as in developing countries children may miss entry into school in the official age of entry and may have to some time repeat in the same class, we analyse both gross and net enrollment ratios for a better picture of the situation.

## Box 4 Definitions of Enrollment Ratios

### Definitions of Enrollment Ratios

In defining the enrollment ratios, the number of children in the official age group for being in the primary level, say 6-10 years, is used as the denominator. It is the numerator which distinguishes the two ratios.

**Net Enrollment Ratio:** In measuring the *net enrollment ratio* (NER), the numerator is the number of children who are of the official age group for a grade and are actually in school in that grade. Thus, if there are 150,000 children in the age group of 6-10 years and of them 100,000 are in school at the primary level, the NER equals 67 ( $= [100,000/150,000]*100$ ).

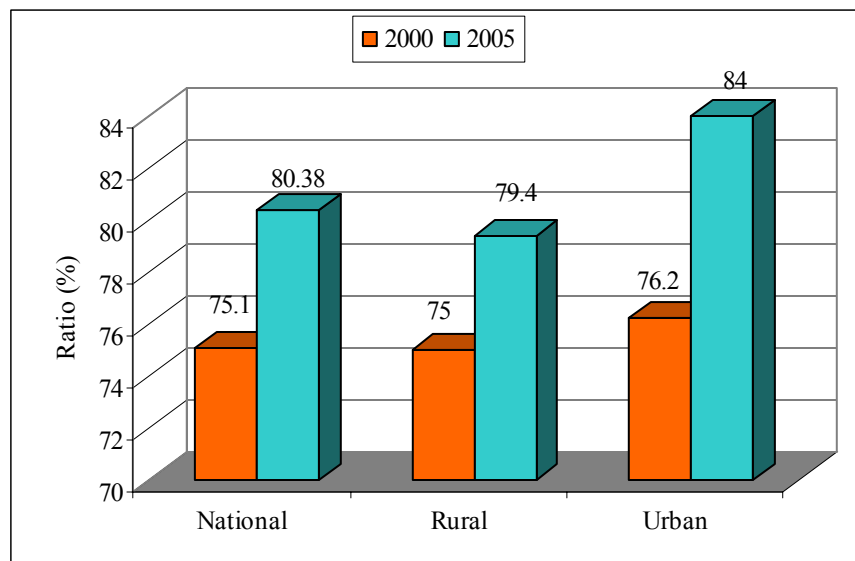
**Gross Enrollment Ratio:** *Gross Enrollment Ratio* (GER) refers to the ratio of actual number of all children enrolled at the primary level irrespective of age to the number of children of official primary level age group. Using the above example, assume that there are 200,000 children who are studying in primary level. The GER in this case becomes 133 ( $= [200,000/150,000]*100$ ).

NER can at most be 100. As some children start school late, and some may be repeaters in a particular class, gross enrollment ratio can be greater than 1 or in terms of percentage more than 100.

### 3.2.2 Current Net Enrollment Ratio and its Trend

Fig. 3.1 shows the national level situation in recent years along with the rural-urban variation. The first point of note is that we are yet far short of putting all children of 6-10 years age group in school. And secondly, the situation is worse in the rural areas, where most of the target group children live.

**Fig. 3.1: Net Enrollment in Primary Schools**



Source: BBS (2006)

The above estimates of net enrollment were made on the basis of the information contained in the Household Income and Expenditure Surveys in the year 2000 and 2005. Quite naturally, the denominator was a definitive figure here the information coming from the sampled households. Somewhat more speculative information is also available for 2005 which provides somewhat higher estimates of net enrollment.

Directorate of Primary Education (2006) made a baseline survey of most schools in a district providing primary education, used the actual enrollment of the 6-10 year age students and used an estimate of the 6-10 year age population in the district. The estimated net enrollment figure comes to 87.2% which is a full 7 percentage point above the earlier stated figure. Note that this estimate is sensitive to the projection made from 2001 Population Census for the size of 6-10 year age group in 2005.

There is yet another estimate for the net enrollment as reported by Ahmed *et al* (2007) based on data from Directorate of Primary Education. This estimate at 89.7% for 2004 is even higher than the PEDP II estimate for 2005. Note, however, that the apparent increases have occurred since 2003 before which there had been little or no trend in the net enrollment ratio (Table 3.1). But the extent of difference in percentage points over the last few years and those shown in Fig. 3.1 are similar.

**Table 3.1**  
**Trend in Gross and Net Enrollment Ratios (%)**

| Year | GER   |       |       | NER  |       |       |
|------|-------|-------|-------|------|-------|-------|
|      | Boys  | Girls | Total | Boys | Girls | Total |
| 1996 | 97.0  | 93.0  | 95.0  | 83.0 | 81.0  | 82.0  |
| 1997 | 97.0  | 94.0  | 95.6  | 83.0 | 82.0  | 82.1  |
| 1998 | 98.0  | 94.0  | 96.2  | 84.0 | 82.0  | 83.0  |
| 1999 | 98.0  | 95.0  | 96.3  | 84.0 | 84.0  | 83.1  |
| 2000 | 97.0  | 97.0  | 96.6  | 83.0 | 86.0  | 84.0  |
| 2001 | 97.0  | 98.0  | 97.5  | 83.0 | 87.0  | 85.0  |
| 2002 | 97.0  | 98.0  | 97.3  | 83.0 | 87.0  | 85.0  |
| 2003 | 101.0 | 108.0 | 104.1 | 87.0 | 99.0  | 92.4  |
| 2004 | 98.0  | 106.0 | 101.6 | 84.0 | 96.0  | 89.7  |

*Source: Ahmed et al (2007)*

### 3.2.3 Sex Differences

Table 3.1 indicates that net enrollment ratios for girls in recent years are higher compared to those for boys. The margin is quite wide, about 12 percentage point. Not only that, the apparent rate of progress for girls is faster than that for boys. For example, while for boys the progress in the NER is only 4 percentage points between 2000 and 2003, the highest water mark, that for girls is 13 percentage points from a higher base (Table 3.1). Indeed, this is now the conventional wisdom that girls' NER is higher than that for boys.

Again these findings are somewhat at variance with the other recent survey results of the Government. Using projected population of 6-10 year children, the net enrollment ratios for boys and girls for 2005 are estimated at 84.6 and 90.1 percent (PEDP II). Here the difference between boys and girls are less pronounced.

More definitive estimates based on the Household Income and Expenditure Surveys, however, paint a much less rosy picture, although here too girls outperform boys. Thus, according to this source boys and girls in 2000 had NER of 74 and 76.4 percent respectively. By 2005, both had somewhat risen but only rather mildly to 79.5 and 81.3.

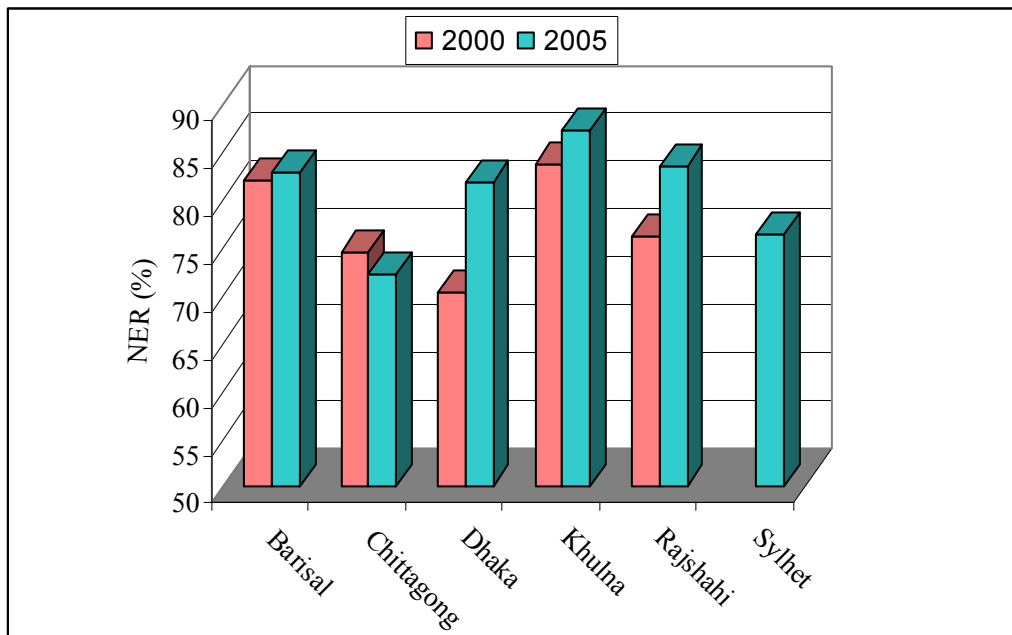
### 3.2.4 Regional Differences

Rural-urban difference: Rural-urban differences have already been shown in Fig. 3.1. The urban ratio is higher than the rural ratio in both the years. But more importantly and which is a cause of concern, the rural areas continue to advance at a much slower rate than the urban areas. Between 2000 and 2005, the rural ratio has progressed by only 4.5 percentage points. For the urban areas, the advance is more than 8 percentage point.

Divisional differences: Not all divisions have performed in a similar manner. Khulna and Barisal appear to have fared best in recent years. But the performance over time has also varied. Chittagong, most interestingly, has actually faltered while Dhaka has (possibly because of inclusion of the capital city) done the best. Barisal and Khulna have progressed very little compared to say Rajshahi. Comparable figures for Sylhet were not available for 2000 yet note that it is the second worst performer.

Why has Chittagong fared so badly? A further investigation shows that while for both boys and girls there had been a fall in the NER, it has happened actually in the rural areas. The urban areas have shown the usual rising trend. This again draws our attention to the importance of raising rural NER. Note, however, that Chittagong here includes a large *adibasi* (indigenous) region which may have lagged behind. But it is not possible to verify this with the data we have.

**Fig. 3.2: Divisional Differences in NER (2000 & 2005)**



Source: BBS (2006)

The PEDP II (DPE: 2006) survey has drawn attention to the wider variation among districts i.e. at levels below the divisions, particularly by sex of the children. And here we find some confirmation of the earlier divisional variation. Take for example, the central districts in the Dhaka Division. The boy-girl enrollment ratios for the districts here are as follows.

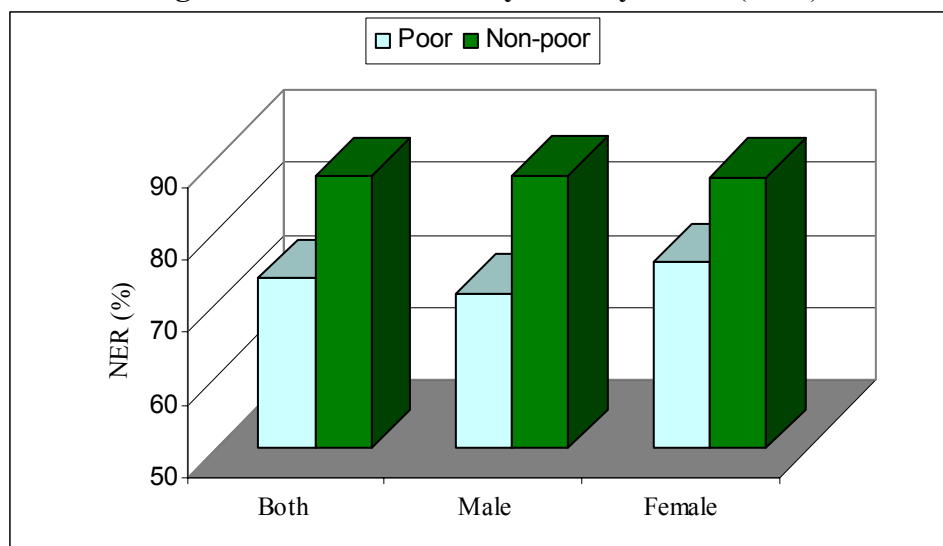
| <u>District</u> | <u>Boys</u> | <u>Girls</u> |
|-----------------|-------------|--------------|
| Gazipur:        | 65.4        | 71.6         |
| Narsingdi       | 81.7        | 90.4         |
| Manikganj       | 85.6        | 81.9         |
| Dhaka           | 81.1        | 84.3         |
| Narayanganj     | 80.8        | 90.7         |
| Munshiganj      | 91.0        | 97.6         |

Most surprising here is the situation of Dhaka district which includes the capital city. This only proves clearly that pockets of darkness can coexist with that of light. Indeed, in general except perhaps for Munshiganj, most districts show a poor performance in Dhaka division.

### 3.2.5 Poverty and Enrollment

Poverty may have a role in children enrollment in schools as often they are expected to work and contribute to family income. Fig. 3.3 shows that the children from poor households do indeed have a lower tendency to be in school compared to the non-poor. And this difference persists for both boys and girls. In fact for boys, the difference between those coming from poor households is much wider (16 percentage points) than for girls (12 percentage points).

**Fig. 3.3: Net Enrollment by Poverty Status (2005)**

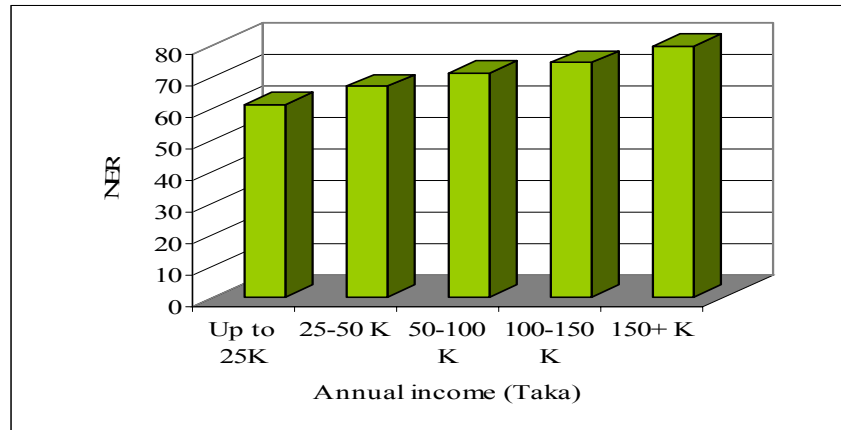


Source: Based on unit records of data of HIES (2005) data

Another way of looking at poverty is to analyse the pattern by total income of the household. This shows very clearly the role of financial affordability. When we did that it shows

a clear positive and monotonic link between income level and net enrollment ratio for children at the primary level (Fig. 3.4).<sup>11</sup>

**Fig. 3.4: Primary NER by Household Annual Income**



*Source:* Based on unit records of data of HIES (2005) data

If lack of income and poverty are major deterrents against enrollment, the provision of financial assistance through stipends may be a major policy intervention to encourage school going by children. And indeed this is so. While all the stipend holders are studying, only 86% among those without stipend are doing so. We shall see later that stipends do indeed have a positive role in a situation of poverty and lack of income for facilitating study at schools.

### 3.3 Explaining Enrollment

We have tried to find out as we did in case of poverty in Chapter 2 above if the various factors such as income or sex or region the children come from have any independent influence. Using unit recode data from the HIES 2005, we have used a binary logistic regression analysis for the purpose (see Annex 3 for the estimated equation). Note that three hypothetically influential factors are absent in the equation that has been shown. These are poverty status, income of the household and sex of the child.

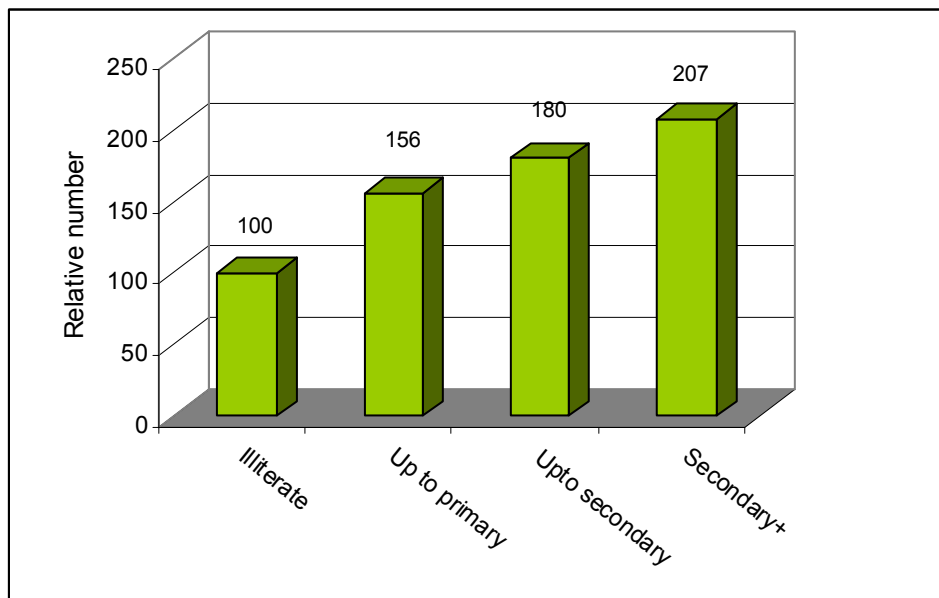
Income levels and poverty status have no significant influence on net primary enrollment if access to stipend is included in the estimated equation. But both do if the stipend factor is excluded. This proves that stipend fills up the gap in financial affordability. For this reason, we have excluded the income and poverty status from the estimated equation. Sex of the child similarly did not appear to have any independent influence and hence was not included in the final equation that has been shown in the annex.

Based on this equation, we find that there are two important policy-relevant factors explaining enrollment. One of them is if a primary stipend is enjoyed by the student. For every 100 stipend recipients who are studying at the primary level, among the non-stipend holders with exactly the same characteristics only 10 children are studying at the primary level.

<sup>11</sup> The estimated aggregate ratios may vary from those shown earlier due to missing values and the Research Team's own estimate of income from unit record analysis.

Household head's education has at best a weak influence. But policy-wise much more important is the education of the female members within the family. The relevant variable is entered as the level of maximum female education within the family. The results indicate that compared to children from a household with illiterate women, those from households with women having up to primary level education are 56% more likely to be enrolled for primary level education (Fig. 3.5). In other words, for every 100 children from families with illiterate women there would be 156 such children in families with women's education being up to primary level. For households with women's education up to secondary and beyond secondary levels, the corresponding numbers of children are 180 and 207. Women's education thus creates a very significant intergenerational positive externality. Girls' education thus creates an intergenerational momentum towards achieving the target of getting everybody to school. It may be pointed out that this same factor has a very positive effect on reducing poverty and lowering child malnutrition.

**Fig. 3.5: Independent Influence of Highest Female Education in Family on Net Enrollment**



Source: Based on equation in Annex 3.

Among other factors, family size appears to have some positive influence in that as family size increases, the tendency to send children to school rises. Why this should be so is difficult to explain. It may be that as family size increases, households find it more expedient to send one or more of the children to school.

Everything remaining the same an urban area child is 68% more likely to go to a primary school compared to a rural child. Similar regional differences in terms of division are also observed. A child from Dhaka division is only 60 percent less likely while a child from Rajshahi is 64% less likely compared to a Barisal child to be in school. In other words for every 100 Barisal children in school, among the Dhaka children with exactly the same characteristics only

40 will be in school. For Rajshahi this figure is 36. Other divisions do not differ from Barisal in a systematic manner.

We have seen earlier that divisions vary in incidence of poverty which means that they vary by income level. When income is entered into the estimating equation, one would have expected the divisional differential to be more or less wiped out or be subdued. It did not. Why such major independent regional differences exist need to be investigated in future if we want to raise children's enrollment in an even manner in all the divisions. So far this regional aspect appears to have been given only scant attention by policy makers.

### 3.4 Gross Enrollment

Gross enrollment is not part of the MDG indicators. But as children in developing countries may enter schools at an age higher than official entry age and also be in schools beyond their officially stipulated age due to repetition as well as late entry, it is instructive to look at gross enrollment ratios. These are shown for the years 2000 and 2005 in Table 3.2. What these figures imply is that there is little apparent variation between boys and girls and between the town and the countryside. In all cases, save one, the gross ratio is greater than 100 but not much above it.

**Table 3.2: Gross Enrollment Ratios (2000 & 2005)**

| Sex   | 2000     |       |       | 2005     |       |       |
|-------|----------|-------|-------|----------|-------|-------|
|       | National | Rural | Urban | National | Rural | Urban |
| All   | 102      | 101.6 | 103.7 | 105.1    | 104.4 | 107.5 |
| Boys  | 99.7     | 98.8  | 103.8 | 104.5    | 103.5 | 108.5 |
| Girls | 104.4    | 104.5 | 103.7 | 105.6    | 105.4 | 106.4 |

Source: BBS (2006)

### 3.5 Efficiency of the Primary Education System

#### 3.5.1 Indicators of Efficiency

We've just seen that enrollment in primary education has increased over the last few years but this is only the first step towards every child having at least primary education. For this to happen, they must complete the primary cycle which means completing education up to grade 5. This implies no drop out before passing out from the school. Note that the MDG indicator is slightly less restrictive. It calls for reaching grade 5, not completing it. But we believe that it is this spirit of primary completion that drives the MDG. In any case, both the indicators relate to efficiency of the education system. We shall discuss here several indicators of efficiency of the system although we shall deal mostly at length with the completion rate. But first we need to clarify the various concepts of efficiency of the education system.

In the education related literature, one finds the use of several types of indicators of internal efficiency. One is what is called *repetition rate* i.e., the proportion of students who have to continue in the same class for failing to achieve the minimum acceptable grade in the student evaluation (usually annual examinations) system. There is the *survival rate* up to a given grade or the *completion rate* which is actually the survival rate up to the passing out from a grade. One of the most common terms one hears is the *drop out rate* which reflects that fact some of the students never continue to the end and drop out of the system before completing it. Drop out and the completion/survival rates are opposite concepts of efficiency. Finally there is the *coefficient of efficiency* which indicates the effective number of years a student take to complete the

particular education cycle. Naturally this subsumes within it the repetition and drop out rates. The exact definitions of these rates are shown in Box 5.

**Box 5**  
**Measures of Efficiency of an Education System**

- Repetition Rate:** Percentage of pupils/students who enroll in the same grade/year more than once to the number of pupils/students enrolled in that grade/year during the previous year.
- Survival Rate:** Survival rate is the percentage of a pupil cohort that enters together in the first grade of primary education and that reaches a given grade (e.g. Grade 5) or the final grade of an educational cycle either with or without repeating a grade.
- Completion rate:** This the percentage of pupil cohort that enters together in the first grade of primary education and that pass out from the system after completing Grade 5.
- Drop out rate:** Drop out rate is actually the obverse of the survival rate/completion rate and relates to those of a given pupil cohort who discontinue their studies till they reach either a given grade or pass out of a given grade.
- Coefficient of Efficiency:** The coefficient of efficiency is a synthetic indicator of internal efficiency of an education system. It summaries the consequence of repetition and dropout on the efficiency of the educational process in producing graduates. The coefficient is estimated by dividing the ideal number of pupil-years required for the output of a pupil cohort to complete a level or cycle of education by the actual number of pupil years spent by the output (graduates) from the same pupil cohort.

*Source:* DPE (2006).

### *3.5.2 The Efficiency and Wastage of the Primary Education System*

Repetition rate: The average repetition rate for students in all grades in the primary education system is 10.5% with an average of 10.7% for boys and slightly lower rate of 9.6% for girls (DPE: 2006). There is a large geographical variation from 5.1% to 21.0% by district. Districts in Sylhet division top the list of repeaters mostly around 20% or so. Students in districts in Rajshahi and Barisal divisions are the least frequent repeaters. Boys almost everywhere are slightly more frequent repeaters than girls.

Survival and drop out rates to Grade 5: Only 54% or so students who enroll in grade 1 reach grade 5 i.e., 46% drop out before reaching the higher grade, a colossal waste, to say the least. The survival rate (drop out rate) for boys is 51.7% (48.3%) and for girls is 56.1% (43.9%). Again we find a slight edge of the girls over boys. Over districts, again we find major differences, varying as it does from 27.4 to 69.5%. Thus, there are districts where nearly two-thirds of those enrolled in primary schools drop out for one reason or another. Five of the top ten districts in terms of highest survival rates (lowest drop out rates) are in Dhaka division. The lowest survival and highest drop out rates have been observed in areas which generally suffer from river and other ecological and consequently economic dislocations. These include Sherpur, Netrokona, Mymensingh and Jamalpur in Dhaka division and Rangpur, Nilphamari and Gaibandha in

Rajshahi division. Thus, we find that within the same broad geographic location there may be wide differences in performance.

Years-input per graduate: The ideal number of years without repetition and drop out a student may complete the primary cycle is 5. However, because of repetition and drop outs, it takes them much longer to do that. The average number of years a student takes to complete the primary cycle is 8.2 years. That means an additional 3.2 years or 60% more time is needed by a student to complete the whole cycle. This is the composite wastage of the system.

### *3.5.3 Proportion of Enrolled Children Completing Grade 5*

#### General situation:

The information provided by the Directorate of Primary Education (DPE) for the period 1994 to 2002 indicate a slow rise in the primary completion rate from 61-62% in the early nineteen nineties but then remaining static during the later period up to 2002 at 67-68%. The HIES 2005 information may be used to estimate drop outs and completion rates. These portray a picture which is similar to that reported by the DPE. It indicates a drop out rate of 32% and a completion rate of 68% nationally.

The latest information from the Directorate of Primary Education for the year 2005 (DPE: 2006) provides no primary completion rate but it does provide survival rate up to grade 5, i.e., completion up to grade 4 as discussed earlier. As stated above, this is rather low, only 54%. The completion rate for grade 5 therefore would be even somewhat lower, perhaps no more than 50%.

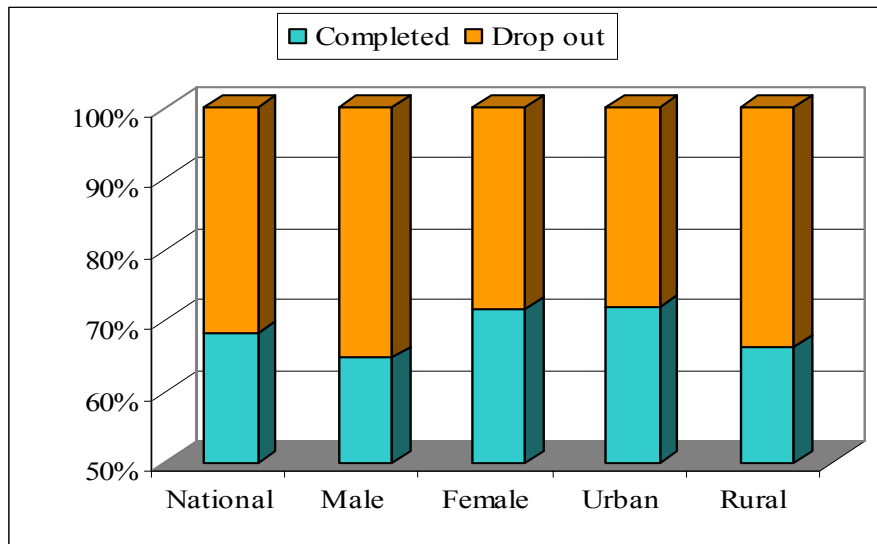
These figures lead to a few conclusions. First, while Bangladesh has succeeded in bringing children to school, she is not yet capable of retaining them up to the completion of the basic level of education. Secondly, there is thus a huge waste in the system. And thirdly, there is a wide spatial variation over districts in which case, even within the same divisions there are high and low achievers. The reasons behind such wide variation is not yet known with certainty but must be unearthed if we want to achieve the MDG targets related to education.

### *3.5.4 Some Correlates of Primary Completion Rates*

We now try to provide some of the correlates of the primary completion rates. These are based on the comparison of data from the household income and expenditure surveys for the years 2000 and 2005. Note that there may be other intervening variables behind the apparent relationships. The nature of our data, however, does not allow holding the influence of intervening variables constant. The conclusions arising out of the analysis therefore has to be interpreted with caution.

Gender differences: Figure 3.6 shows the male-female differences in primary completion rates. There is about 7 percentage point difference between the two. Thus, girls who enroll at a higher rate also pass out from the primary schools at higher rates.

**Fig. 3.6**  
**Gender and Rural-Urban Differences in**  
**Primary Completion Rates**



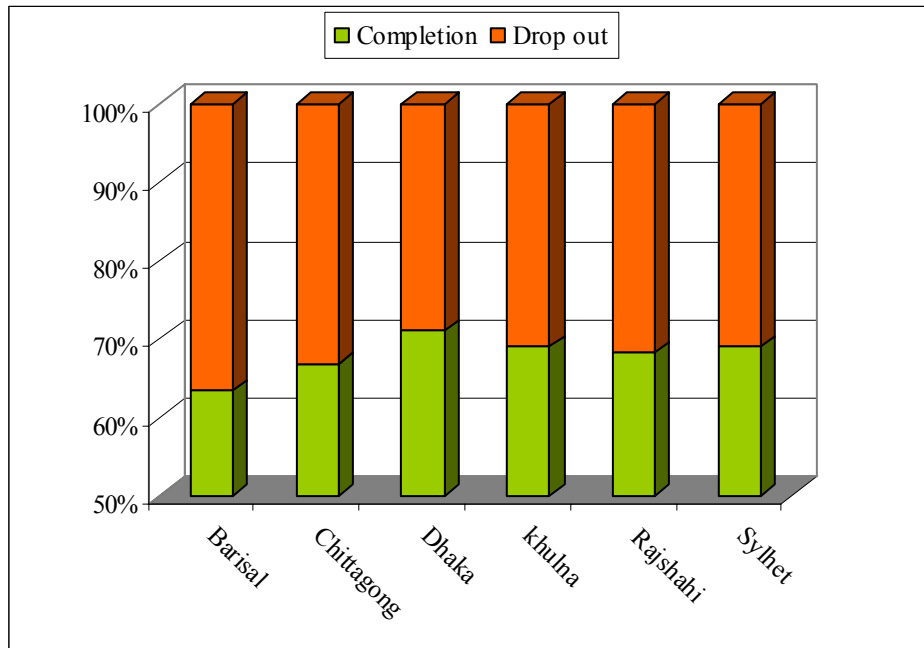
*Source: Based on analysis of unit records of HIES 2000 and 2005*

Regional differences: Rural-urban differences are also shown in Fig. 3.6. One observes a 6 percentage point difference in rural-urban completion rates, the urban rate being higher. Thus urban areas not only have higher enrollment rates, the pass-out rates are also higher there. If such a trend continues, it would mean a substantial drag in the rural areas in terms of employment and productivity rise and subsequently on income growth and consequently on poverty.

The other regional difference we examine relates to divisional differences. These are shown in Fig. 3.7. The pattern here is somewhat different from that for net enrollment rates. Barisal which appeared to have the highest enrollment rates now shows the lowest completion rate of 63% while Dhaka which appeared to have a rather low enrollment rate shows the highest pass out rate of 71%. These opposing tendencies thus partly offsets each other and makes the over-all situation not so positive in terms of acquisition of basic education and skill which is a major necessary condition for future growth.

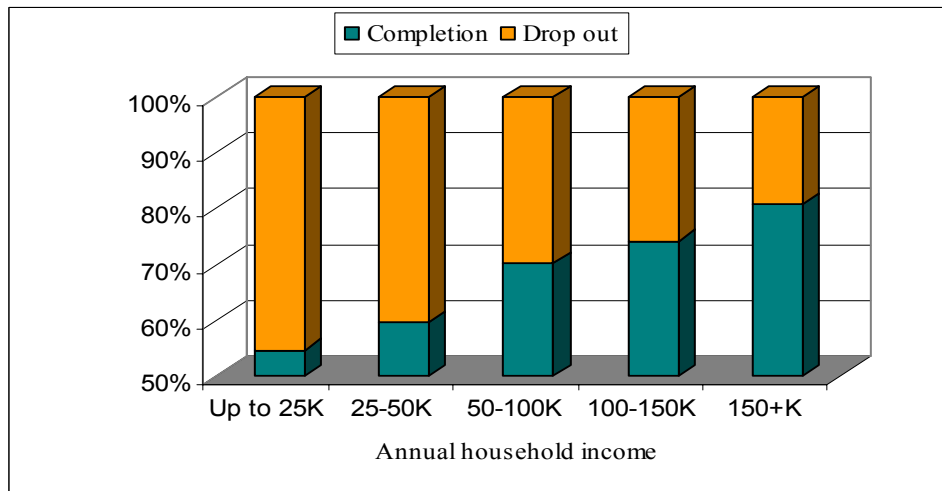
Household income-based differences: The differences in primary completion rates by level of household annual income appears to be substantial (Fig. 3.8). As income rises, so does the completion rate. Thus, while the completion rate is only 55% or so i.e., the drop out rate is 45% for the lowest income group, the corresponding figures for the highest income group are 81 and 19%. Much of the rise in the completion rate occurs at the middle of the income scale.

**Fig. 3.7: Divisional Differences in Primary Completion Rates**



Source: Based on analysis of unit records of HIES 2000 and 2005

**Fig. 3.8: Household Annual Income and Primary Completion Rate**



Source: Based on analysis of unit records of HIES 2000 and 2005

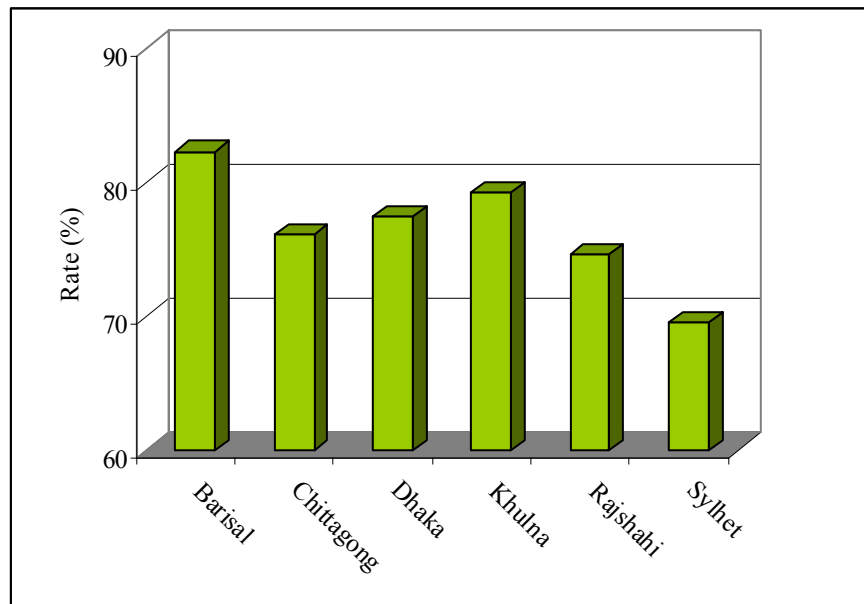
The rise in the completion rate by income is corroborated when we look at the rate by level of calorie consumption which is a rough indicator of income (or expenditure). Children aged 6-10 years from households consuming up to 2100 K calorie per person per day, has a primary completion rate of at most 66% or lower (not shown). In contrast, those with the highest calorie level show a rate of 76% or more.

### 3.6 Literacy Rate among the Young Persons (of 15-24 years)

For this issue we've done a calculation on the basis of unit record data of the HIES 2005 the results of which are given below. Here we have considered a person literate if he or she can read or write a letter. In 2000, 68.5% of persons in the age group of 15-24 years were literate according to this definition. By 2005, the proportion has risen to 76.7 percent.

There is hardly any male-female difference at present the rate for both being 76-77%. But the rural-urban differences are very substantial. The rural rate is only 73% while the urban rate is 83%. The regional differences in terms of divisions are also wide (Fig. 3.9). Thus Barisal has the highest rate of 82.3 while Sylhet has the lowest at 69.6%.

**Fig.: 3.9 Literacy Rate (15-24 years) by Division**



*Source:* Estimated from unit records of HIES data of 2005

### 3.7 Quality of Education

Quality of education has not been included as part of MDGs perhaps because it has been thought that education to be useful has to be of a minimum standard or quality. The usual system of judging competency in learning from study at schools is examination. If students pass out from the primary cycle, one may think that children have attained a minimum level of knowledge of several basic subjects. Unfortunately, if Bangladesh is a typical case, this assumption may not be correct at all. Students may complete a particular education cycle such as primary without learning much. The low quality of education that the students have received actually means that the achievements in net enrollment ratios is of little consolation despite this being flaunted by the officialdom in Bangladesh. Some ideas regarding the extremely disturbing situation regarding quality of primary education may be had from results of competency tests that have been carried out a few years back in Bangladesh.

Nearly 2500 primary graduate children had been tested for 27 types of competencies in language, mathematics, general science and social studies in 2000 (Nath and Chowdhury: 2001). Only 1.6 percent of children achieved competencies in all 27. The highest was in Bangla, the mother tongue of the children. Even this was only 36.5%. For other subjects the competency levels (i.e., percent of students achieving the desired level of skill) were 19.2 (in Social Studies), 17.3 (in General Science), 11.6 (in Mathematics) and 9.4 (in English). While this was certainly a very dismal situation, further analysis indicated that there had been no magic bullet to kill the lack of competency. Too many variables appeared to have some systematic influence on achievement of competency while the over-all variation that could be explained by them had been not even a third of the total.

Absence of teachers from class room some times has been alleged to be a major factor behind the lack of competence of students. Chowdhury *et al* (2004) tried to explain such teacher absence from classes and also if such absence has anything to do with competence of students. Their results echo those of Nath and Chowdhury (2001) in that while there had been too many variables that have been tried, very few had anything to do with explaining either teacher absence or student competency. What all these mean is that we really do not know which core factors influence teacher attendance or competency nor the dynamics of the processes involved leading to better learning skill in most cases.

### **3.8 Impression from the Field**

As in case of poverty we did get support for the broad observed trends based on secondary information during our discussion with stakeholders at the local level in six places. Thus, the trend towards higher enrollment over time, and high drop outs, particularly among boys, has been observed. More specifically the people made their observations in the following manner.

- i. From the secondary data we found that net enrollment in primary education has increased over the last five years. But still a lot of children do not go to school. We get a similar picture during our discussion with local people, school teacher, and education officials.
- ii. People know that of those students who are going to school not all are completing the primary cycle. And this tendency is pronounced among the boys. Female stipend programme has a very important role in keeping girl students in the schools as also found from our analysis of secondary data. Boys are in many cases employed in various income generating activities to help their family. Poverty is the main barrier to completion of the primary cycle as well as being enrolled in primary schools.
- iii. Awareness among the people has increased regarding children's education. Yet there are cases in which guardians do not send their children to school. Poverty is stated to be a major reason. But there are others, mainly socio-cultural. In some cases, girls' education is not thought to be necessary. Even if enrolled initially, girls do drop out in significant numbers. The main reasons for female drop out include early marriage, poverty, lack of physical security for adolescent girls, distance of school from their houses (see below), and various social and religious values and beliefs that militate against women's education.

- iv. In hill tracts and char areas people do not have schools close to their areas and problem of physical access debar prospective students from enrollment. In some cases where households have to move out due to river erosion, students cannot complete their primary education cycle.
- v. One of the major reasons for the prevailing situation relates to the price hike of education materials and the overall inflation. Even for many middle class families it is hard to bear educational expenses of two or more children.

### **3.9 Summary and Policy Implications**

#### *3.9.1 Summary of Achievements in Primary Education*

The provision of basic education is one of the major goals under MDG. A minimum of five years of schooling i.e. up to the completion of the primary level is accepted as the minimum level of education that everybody, particularly all children must have. In the primary education sub-sector the country aims to attain net enrollment rate of 100% by the year 2015. Peoples' perception indicates that the present status is satisfactory so far as the quantitative targets are considered regarding increased net enrollment, decreased drop out, increased number of teachers in the context of government incentives and supports, infrastructure development and expansion of girls' education.

Net enrollment in primary education has increased over the last five years and stood at 80 percent or so in 2005 according some estimate while according to others it stood at nearly 90 percent. But this provides only a partial picture of the over-all situation as still a lot of children still do not go to school.

Net enrollment ratios for girls in recent years are higher compared to those for boys. The urban ratio is higher than the rural ratios in both the years. The wider variation has been observed among districts as well as divisions and also by sex of the children. Khulna and Barisal appear to have fared best in recent years. But the performance over time has also varied. Chittagong, most interestingly, has actually faltered while Dhaka has (possibly because of inclusion of the capital city) done the best. Barisal and Khulna have progressed very little compared to say Rajshahi. Comparable figures for Sylhet were not available for 2000 yet note that it is the second worst performer. Everything remaining the same an urban area child is 68% more likely to go to a primary school compared to a rural child.

A clear positive and monotonic link between income level and net enrollment ratio for children at the primary level has been observed. This is corroborated by the significant role that provision of stipend plays in enrolling students in school. For every 100 stipend recipients who are studying at the primary level, among the non-stipend holders with exactly the same characteristics only 10 children are studying at the primary level. The influence of women's education has been found to be pervasive and strong. Women's education thus creates a very significant intergenerational positive externality.

The flip side of the net enrollment situation is that of those students who are going to school not all are completing the primary cycle. And this tendency is more acute among the boys. Female stipend programme on the other hand has a very important role in keeping girl students in the schools.

There is little apparent variation between boys and girls and between the town and the countryside in primary completion rates. Boys are in many cases employed in various income generating activities to help their family. Poverty is the main barrier to completion of the primary

cycle as well as being enrolled in primary schools. Girls do drop out in significant numbers. The main reasons for female drop out include early marriage, poverty, lack of physical security for adolescent girls, distance of school from their houses, and various social and religious values and beliefs that militate against women's education. Urban areas not only have higher enrollment rates, the pass-out rates are also higher there. If such a trend continues, it would mean a substantial drag in the rural areas in terms of employment and productivity rise and subsequently on income growth and consequently on poverty.

Barisal which appeared to have the highest enrollment rates now shows the lowest completion rate of 63% while Dhaka which appeared to have a rather low enrollment rate show the highest pass out rate of 71%. These opposing tendencies thus partly offsets each other and makes the over-all situation not so positive in terms of acquisition of basic education and skill which is a major necessary condition for future growth.

Quality of education is the other seamier side of the primary education scene in Bangladesh. The competency that students achieve is abysmally low and in critical areas such as general science and mathematics students fared very badly while tested for competency. Not even 2 percent of students could achieve all the competencies. These means that while enrolled and passing out, the students are not all equipped to use their knowledge, if they have gained any, in the practical life. One of the major findings is that there are many factors that impinge upon quality which makes it difficult to prioritise areas of intervention.

### *3.9.2 Policy Implications*

Five types of policy concerns and implications stand out regarding further advancement in primary education. First, net enrollment in general has increased while the internal efficiency of the system in terms of completion rates, drop out rates, repetition in the same class all remain major sources of colossal waste. Second, there are wide regional and even within regions between districts substantial variations in performance related to enrollment. Third, poverty or in other words, lack of income remains a major cause of non-enrollment as evident from the positive independent role played by provision of stipend as well as people's inability to send children to school because of high costs of various education materials. Fourth, female education plays a very positive and independent intergenerational and thus a snow-balling role in fostering education for children. Fifth, quality of education has become a major cause of concern, but may be very hard to achieve.

What all these mean is that the relevant authorities must try to find out the causes behind widespread variation in enrollment so that appropriate measures be taken to equalize performance over space. Secondly, stipends for children in general and for girls in particular must be continued, expanded, increased in terms of real value and its management streamlined for better efficiency and targeting. Third, apart from streamlining and expansion of the stipend programmes, vigorous awareness campaign must be made for not just enrolling girls in schools but also retaining them till completion of the full cycle.

Fourth, renewed efforts must be made to improve quality of education. The teaching methods may need to be reviewed. If necessary, new teaching methods may be introduced on a pilot basis for understanding their efficacy and if found suitable should be replicated. At the same time, the best schools in terms of students learning capability should be found out and studied for the possible replication of the teaching and other relevant environment. A strong political will in this regard must be shown by the government in terms of action plans for improvement of quality, and necessary budget allocations.

### Annex 3

**Table A3.1**  
**Logistic Regression**  
**Explaining Net Enrollment at Primary Level**  
 (Enrolled=1; not enrolled=0)

| Independent variables                      | Coefficient | Odds-ratio |
|--|-------------|------------|
| Receives stipend (ref)                     | -           | 1.00       |
| Receives no stipend                        | -2.312***   | .099       |
| Rural location (ref)                       | -           | 1.0        |
| Urban location                             | 0.521***    | 1.684      |
| Maximum female education – none (ref)      | -           | 1.0        |
| Maximum female education – up to primary   | 0.447***    | 1.564      |
| Maximum female education – up to secondary | 0.590***    | 1.804      |
| Maximum female education – secondary+      | 0.727***    | 2.069      |
| Barisal (ref)                              | -           | 1.0        |
| Chittagong                                 | 0.157       | 1.170      |
| Dhaka                                      | -0.907***   | .404       |
| Khulna                                     | -.0790***   | .454       |
| Rajshahi                                   | -1.024***   | .359       |
| Sylhet                                     | -0.563*     | .570       |
| Family size (1-3) (ref)                    | -           | 1.0        |
| Family size (4-6)                          | 0.394*      | 1.482      |
| Family size (6+)                           | 0.531**     | 1.700      |
| Constant                                   | 3.842***    | 46.614     |

*Source:* Estimated on the basis of unit record of the HIES 2005

*Note:*

1. The significance levels are based on Wald statistics which is distributed as chi-sq.
2. Odds-ratios show the probability of the event (enrollment) compared to the reference group
3. The enrollment considered is only for the 6-10 age groups of children

## **Chapter 4**

### **Women Are Half the People: Gender Equality and Empowerment of Women**

#### **4.1 Introduction**

Women constitute roughly half the people of the world. Development, to be meaningful, therefore must benefit both men and women in equal measures. The world is still far from achieving that goal. Gender-based discrimination and differentiation are widespread. While there are issues in case of which there may be differences between men and women on biological and other acceptable grounds, the opportunities for economic, social, political, legal and cultural advancement must be similar for both. This should apply among others more specifically to human development, being educated and healthy and in capability enhancement for taking part in the society with men on equal footing. Such ideas have led to the formulation of Goal 3 under MDG.

#### **4.2 Goal 3: Promotion of Gender Equality**

Box 6 below shows Goal 3 along with the specific target and the associated indicators. Note that the target is actually one of leveling the playing field in the public space. One may make two types of criticisms of this approach. First, it remains silent about women's position within the private space of the household. The process within the black box of the household may run quite counter to creation of opportunities within the public space. For example, while the burden of biological process of reproduction has to be borne, due to nature's choice, generally by women, the social process related to reproduction (rearing and caring for children) may be shared far more equitably by men and women alike. This hardly happens in most societies including Bangladesh limiting more often than not, women's participation in the labour force and employment and consequently their economic empowerment remains limited at best.

Even when women work outside home and earn an income and their economic advancement appears to have occurred, the fact remains that they actually do a "second shift" of work at home once they come back from work outside.<sup>12</sup> This, among other things, often tells upon their health, and obviously curtails their freedom of choice in enjoyment of life. We have already seen certain dimensions of gender-based differences in the discussion in the earlier two chapters much of which may have to do with such intra-household processes. It is these differences which ultimately spill over to the public space. Hence unless the household-based gender equality is ensured, the equality in the public space will remain by and large a mockery to such equality.

In the public space too there are certain aspects which need to be gender-neutral or there may be positive discrimination in favour of women for them to catch up with men. Access to productive resources and services such as land, credit, technology and market are some such issues. The specific MDG target and indicators on gender equality hardly look into these concerns. With these caveats, we turn to the discussion and analyses of the target and indicators.

The indicators can be divided into three categories. The first two refer to equality of opportunity in education. The second refers to the concern of women's opportunity to work outside home while the third may be likened to political empowerment. In our analysis we try to

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<sup>12</sup> This term was coined by Hochschild (1989) when she analysed the burden of work of American women at home along with that of paid employment outside.

somewhat expand the aspect of economic opportunities and discuss access to resources as a prerequisite for that.

## **Box 6**

### **Women's Opportunities for Advancement**

#### **Goal 3: Promote gender equality and empowerment of women**

##### **Target 4**

Eliminate gender disparity in primary and secondary education, preferably by 2005, and in all levels of education no later than 2015

##### Indicators

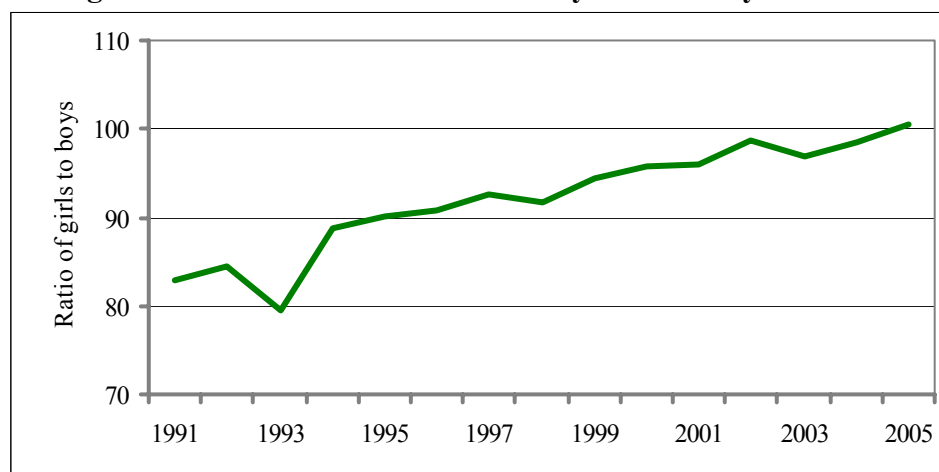
9. Ratio of girls to boys in primary, secondary and tertiary education
10. Ratio of literate women to men, 15-24 years old
11. Share of women in wage employment in the non-agricultural sector
12. Proportion of seats held by women in national parliament

#### **4.3 Equality of Opportunity in Education**

##### *4.3.1 Ratio of Girls to Boys in Primary Education*

The trend in the ratio of girls to boys since the 1990s is shown in Fig. 4.1. We see a steady increase in the ratio which stood at just over 100 in 2005. In that sense, the target for equality of opportunity by 2005 in primary education has been achieved. There are two questions, however, regarding this level of the ratio, particularly on the basis of information from the households. Furthermore, there is also the question as to who these girls are? We shall come back to this issue later in this sub-section. First the ratio as found in the HIES 2005.

**Fig. 4.1: Trend in Ratio of Girls to Boys in Primary Education**



*Source:* Official website of Directorate of Primary Education. <http://www.dpe.gov.bd>

The HIES 2005 has information on all the children in the households under the sample survey and their study status including the sex of all household members. Based on these, the girl to boy ratio in the primary level is 94 which is close to but not yet parity.

The girl-boy ratio varies by division and there appears to be 3 categories. Sylhet has the lowest ratio of 86 closely followed by Rajshahi at 88. Barisal, Chittagong and Dhaka fall in the medium category with a ratio at 94-95. The highest ratio is for Khulna which is 108.

The rural-urban differences are similarly quite wide. The lowest is for non-municipal towns where the ratio is 75 girls for each 100 boys. Municipal and rural areas are close to each other with ratios of 91 and 97 respectively.

Variation in the girl-boy ratio shows little pattern by level of household income or by poverty status (in terms of calorie consumption). If anything, the variation by income shows them to be somewhat negatively (though not monotonically) related. The highest ratio (of 102) is for the lowest income group while the lowest (of 83) is for the highest income group. Similarly, those consuming lower than 2100 Kcal has a girl-boy ratio of 105. For those consuming more than 2100 K cal per capita per day the ratio is only 85.

Previously we have seen the positive effects of women's education level in the family on net enrollment for children. In case of girl-boy ratio, no such clear pattern emerges. But compared to households with women having no education, the girl-boy ratio in net enrollment of children in households with women having primary education shoots up from 66 to 140. It comes down, though for the other groups to around 90.

The most important factor favourable to girls is access to stipend. Among those households where girls receive a stipend, the girl-boy ratio is 116. For those households not obtaining any stipend for their girls, the ratio is only 96.

What all these indicate is that the girl to boy ratio may not be much amenable to policy interventions except income supplements through stipends. Higher income or education in the family is not a guarantee for girls being sent to school as are boys. Nor do better school facilities as happens in case of municipal towns ensure this. A better understanding of the phenomenon is needed. Possibly sociological or cultural anthropological analyses may throw light on this issue.

#### *4.3.2 Ratio of Girls to Boys in Secondary Education*

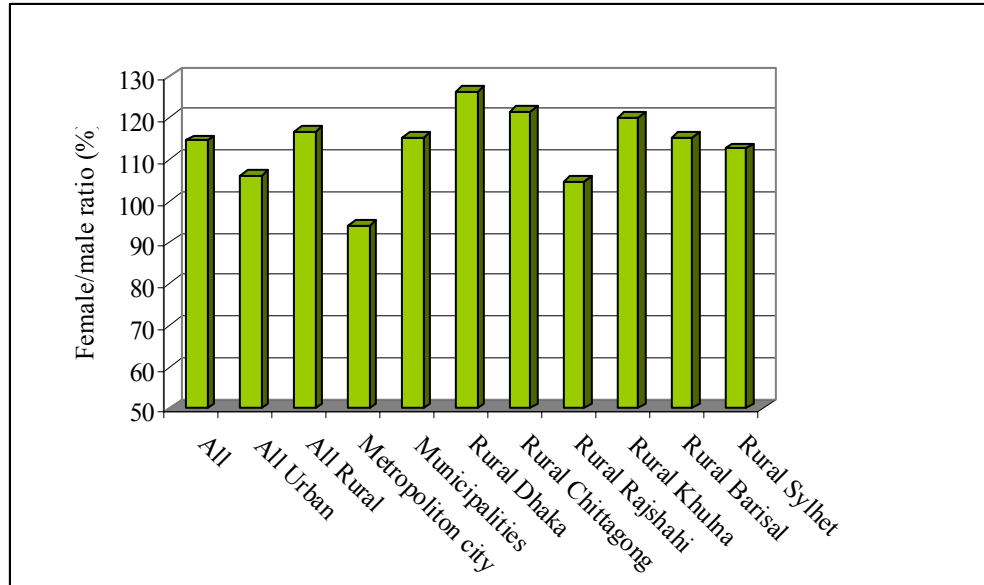
The parity between girls and boys in secondary level of education appears to have been achieved around 2001 when it stood at 108 girls to 100 boys. By 2005, this has risen very slowly to 110 or so. In any case, going by the MDG indicator Bangladesh has done well. What is more, the achievements appear to be more or less evenly shared by all the regions. The lowest and highest ratios are 106.5 for Barisal and 117.2 for Chittagong for 2005.

While looking up at rural-urban variations, however, one finds some surprising results (Fig. 4.2). Metropolitan cities have the lowest female to male ratios and the rural areas in general show a ratio which is almost 11 percentage points above the urban ones. Also one finds a wide variation among the rural areas. Thus, the apparent positive figures may hide some ugly facts. Indeed, the general rosy picture is marred also by the fact that while there may be aggregate girl/boy parity, the enrollment ratio for both are rather poor compared to primary level education.

From 2001 to 2005, the national net enrollment in secondary level education (for 11-15 year olds) has remained static at around 43%. For girls it had been somewhat higher but static at around 47% while for boys, it was lower at around 39% but again static at that level. So while on gender parity there may be some achievement, it is actually equality at the low level. The policy

attempt here, of course, may remain focused at gender parity but it should be steadily increasing higher enrollment ratios for both boys and girls.

**Fig. 4.2: Female-male Ratios in Secondary Education by Location**



Source: CAMPE (2006).

#### 4.3.3 Ratio of Females to Males in Tertiary Education

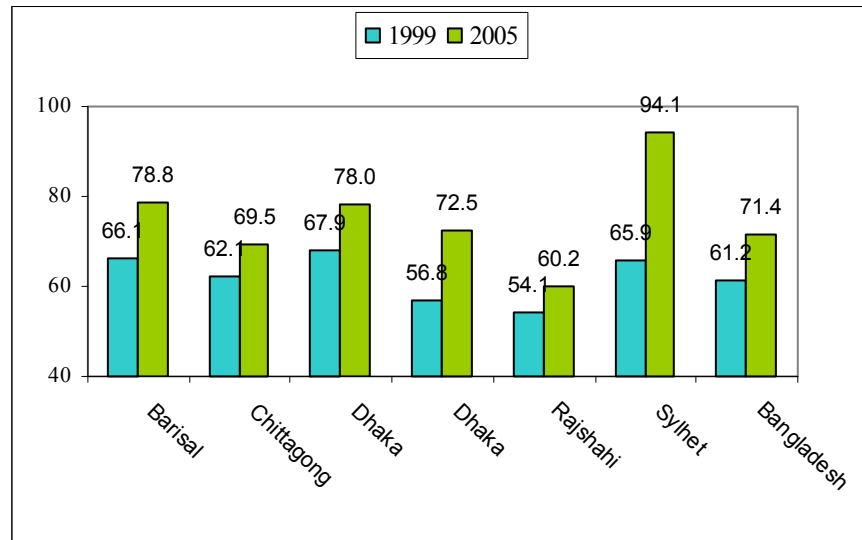
The above rosy pictures for girls' relative access to primary and secondary level education are not replicated in case of tertiary education at the college and the university levels. For college level the picture by division is shown in Fig. 4.3. Two observations can be made on the situation.

First, the over-all ratio is far lower than that for the secondary education. Second, although both the aggregate and divisional ratios have improved over time, there is a wide variation across divisions in both the years under observation. Some times certain divisions have been seen to have made spectacular progress as happened in case of Sylhet where the ratio shot up from 66 to 94, the highest ever attained anywhere in Bangladesh.

#### 4.3.4 Ratio of Literate Young Women to Men

Near parity has been achieved in this ratio. In 2005, for every 100 literate young men aged 15-24 years there had been 96 literate young women. Though there had been certain variations around this figure, these were not substantial. For example, across divisions, the variation was from 89 to 105. Similarly there had been no great variation across other factors that may influence literacy.

**Fig. 4.3**  
**Ratio of Females to Males in College Education by Division**



Source: BANBEIS (undated & BANBEIS (2006).

#### 4.4 Equality of Opportunity to Work

##### 4.4.1 Women's Access to Resources and Work

Equality of opportunity to work endows women with certain economic power although this in itself is no guarantee that such power may at all be allowed to be exercised freely in a basically patriarchal society. The MDG indicator of women's share of non-agricultural wage employment is thus a rather restrictive measure of progress of socio-economic empowerment of women both because the highly partial picture it provides and the social context which it avoids in considering the progress if any. Yet, this and other kinds of activities to limit the deprivations of women remain a first step towards economic empowerment.

Table 4.1 provides a graphic picture in a nutshell based on a large survey conducted in earlier during this decade. The sum total of the access or its lack to resources is provided by the share of incomes that women have in the household. Women's share in total household income is less than one-third of the income received by men. Even in female-headed households, men's income is higher than that of women whose share is only 62% of that of men.

In fact it is quite an irony that even in the readymade garments industry, the source of non-agricultural employment where women are most represented, the average wages of women are lower than those for men (BBS: 2007). Women on average get Taka 2596 per month as opposed to Taka 3549 for men i.e., 27% less. Even in sewing where women predominate, women get 8% less (Taka 2673 against Taka 2891 for men).

A major reason for women's income to be lower in general is that women have very limited access to productive resources such as land (Table 4.1). Women practically have no access to cultivated land while in case of homestead land the situation is only marginally better. Jobs, particularly paid employment, are out of women's reach, be it in agriculture or non-agricultural activities. BBS' Labour Force Survey of 2002 more or less corroborates such findings.

The ratio of women to men employees in non-agricultural employment is only 23 percent while their wages are only 55-60% of that for men. Their main arena is still home production

which is perceived by many as “no work”. Only in education, as has also been seen earlier, are they represented more or less equally as men.

**Table 4.1: Access of Women to Resources and Opportunities**

| <b>Indicators</b>                                       | <b>Male</b> | <b>Female</b> | <b>Female to male ratio (%)</b> |
|---|-------------|---------------|---------------------------------|
| <i>Average monthly income (Tk/month) of households</i>  |             |               |                                 |
| All   | 10439       | 3042          | 29                              |
| Agricultural  | 3289        | 457           | 14.0                            |
| Non-agricultural  | 4140        | 1072          | 26                              |
| Male-headed   | 3718        | 528           | 14                              |
| Female-headed   | 3087        | 1915          | 62                              |
| <i>Land holding/person (decimals)</i>                   |             |               |                                 |
| Cultivated (dec)  | 36.4        | 1.5           | 4                               |
| Homestead land  | 5.9         | 0.9           | 15                              |
| <i>First job (% of persons)</i>                         |             |               |                                 |
| Agriculture   | 23.6        | 1.1           | -                               |
| Non-agriculture   | 25.2        | 3.1           | -                               |
| Household activities                                    | 0.3         | 53.5          | -                               |
| Student   | 28.9        | 27.4          | -                               |
| <i>Share of benefits from public expenditure budget</i> |             |               |                                 |
| Targeted development                                    | 95.5        | 4.5           | 5                               |
| Non-targeted development                                | 55.3        | 44.7          | 81                              |
| Revenue   | 78.8        | 21.2          | 27                              |

*Source:* Evers and Siddique (2006).

One could think that where households have failed, the State would step in. No such luck. They are practically invisible when targeted development work is undertaken. In case of regular revenue expenditure too they are more often than not likely to be bypassed. Only in case of non-targeted expenditure is their share better.

#### *4.4.2 Political Power to Women*

Access to political power by women may be thought of as a redress mechanism for deprivation of women in the sense that if they have such power, they may be able to assert themselves. In that sense, possibly Bangladesh is unique as since 1990 women have headed successive governments. However, as stated earlier they also had to work within the over-all parameters of patriarchy and political power in itself really did not work well for the betterment of access of women to resources and opportunities. At the lower level of the legislative arm of the government, i.e., the Parliament, things were no better. ,

**Table 4.2  
Women in Politics**

| Indicators                       | 1996   | 2001   |
|----------------------------------|--|--|
| No. of women registered voters   | 27,96 mn   | 36,300,000   |
| No. of men registered voters     | 28.76 mn   | 38,500,000   |
| Percent women voters voted       | 78%  |  |
| Percent men voters voted         | 76.7%  |  |
| No. of women in local government |  | 12,828 in reserved seats ,<br>110 in regular seats and 20<br>UP chairpersons |
| No. of women in parliament       | 7 elected (2.3%of 300) , 45<br>will be nominated |  |

*Source: Evers and Siddique (2006).*

#### **4.6 Impression from the Field**

The field impressions appear to be less pessimistic than what the secondary information tends to indicate, particularly in relation to their employment and income earning. No body is suggesting that it has improved significantly, but the trends appear to be in the right direction. The views of the people may be summarised as follows.

- The most important factor behind women empowerment is women employment.
- All over the country, women are working outside home as wage labor although the extent differs from district to district and group to group. And the tendency is rising more or less everywhere. It is noticeable that poor women work outside more. The reason is obvious – they have to earn money for the family.
- It can be said that people’s attitude towards women working outside home is at least more positive now than before. However it does not mean that most yet generally welcome this change.
- Beating wives and other physical torture on women have reduced a little bit. Reasons behind the tendency include existence of strong law against torture on women and its implementation, rising awareness among women and other parts of society due to government and non-government campaigns and women’s empowerment through income earning activities.

#### **4.7 Summary and Policy Implications**

##### *4.7.1 Summary*

The MDG on gender equality is a rather limited goal as it restricts itself only the actions at the public space. It is widely known that in the private sphere of the household, there are many types of inequity that women suffer from, and indeed this is the well-spring of the inequality that women suffer from in the public space too.

At a superficial level, particularly in primary education gender parity of sorts has been achieved. But the over-all parity in education is still a far off prospect. Particularly the situation regarding tertiary education is highly unsatisfactory. In other areas in public space such as paid employment outside home, women are still at great disadvantage despite they being the major

workforce behind the whole export-based readymade garments industry. In this industry as elsewhere women earn far less than men.

A major reason for women's income to be lower in general is that women have very limited access to productive resources such as land. Women practically have no access to cultivated land while in case of homestead land the situation is only marginally better. Jobs, particularly paid employment, are out of women's reach, be it in agriculture or non-agricultural activities.

Violence against women is a major concern in Bangladesh. It is a widespread problem across the country that exists at the family, society and national level although beating wives and other physical torture on women have become slightly less common than before probably because of strong law existing against violence on women and its implementation.

Political participation of women is important as it enhance their position at the policy decision making level. Possibly Bangladesh is unique as since 1990 women have headed successive governments. Yet, the ground reality is that little have changed so far in terms of opportunities for women.

#### *4.7.2 Policy Implications*

Gender equality is an area where old mind sets have hardly changed. The attack against gender-based inequity therefore has to be three-pronged. First, there must be vigorous awareness-raising campaigns in favour of gender equality in terms of opportunities. Second, avenues have to be created in various manner including legal means, budgetary allocation for balanced gender-base development, and interventions in specific areas such as creation of facilities for women's education at tertiary levels. Add to these other measures related to some other goals such as Goals 2, 4 and 5 which also may create an expanded area for gender-related intervention.

## Chapter 5

### Protecting Children to Protect the Future

#### 5.1 Introduction

Three of the eight goals under MDG refer to health improvement. Why is this so much important? The basic reason is, first, like education healthy body and mind are themselves outcome and indicators of development. Secondly, without a healthy body and mind, the human productivity can not rise while substantial national and individual household resources have to be expended for treatment of illness and morbidity including the costly logistics that have to be maintained. This allows only a lower share of resources to investment for future growth and productivity keeping people poor for a period longer than absolutely necessary. While all kinds of positive outcomes and related intervention related to health care are desirable, 3 aspects have been chosen for specific attention under MDG. These are child health, maternal health and prevention of specific killer diseases. We shall treat these in three separate chapters. But for a better understanding all of them may need to be read together and some times along with the chapter on poverty (Chapter 2).

#### 5.2 Reduction of Child Mortality

Box 7 shows the goal, targets and indicators for reduction of child mortality. Note that the universal target is supplemented by the Bangladesh target which is derived from the global one based on the situation existing in 1990, the base year for MDG.

#### Box 7

#### Improvement of Child Health

#### **Goal 4: Reduce child mortality**

##### **Target**

Reduce under-five mortality rate by two thirds between 1990 and 2015

##### **Target for Bangladesh**

Reduce under-five mortality rate from 151 (in 1990) to 50 (in 2015).

##### Indicators

1. *Infant mortality rate ( deaths per 1000 live births )*
2. *Under five mortality rate ( deaths per 1000 live births)*
3. *Proportion of 1-year old children immunized against measles*

There are three indicators which are rather intertwined and will therefore some times be discussed together. Also as usual these are aggregates only. One expects substantial variations across income groups, regions and other socio-economic factors. We shall try to analyse them as far as available information allow.

## 5.3 Mortality of Children

### 5.3.1 Concepts of Mortality of Children

Several concepts and measurements are used to describe death of children depending on the stage of life when death occurs. These are as follows:

*Neonatal mortality:* The probability of dying in the first month of life.

*Post-neonatal mortality:* The probability of dying after the first month of life but before the first birthday (computed as the difference between the infant and neonatal mortality rate).

*Infant mortality:* The probability of dying before the first birthday.

*Child mortality:* The probability of dying between the first and the fifth birthday.

*Under-five mortality:* The probability of dying before the fifth birthday.

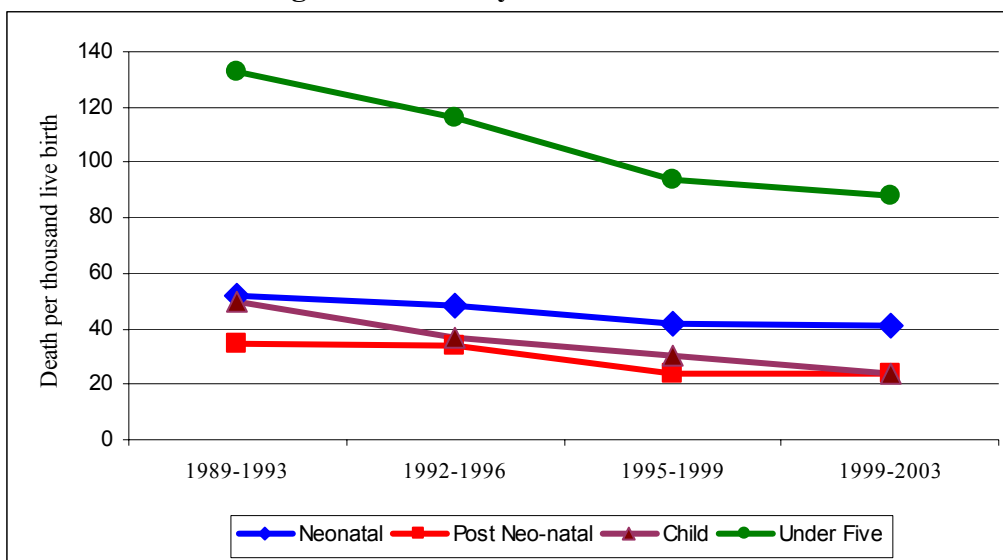
All of these are probabilities but are usually expressed as numbers per 1000 live births for ease of understanding. Obviously, infant mortality is the sum of the neonatal and the post-neo natal mortality while the sum of infant mortality and child mortality is the under-5 mortality (U-5M). The reason these are so disaggregated is that the causes behind death at different periods in life are quite different as will be apparent later on.

### 5.3.2 Current Aggregate Situation

Neonatal and post neo-natal rates have been falling over years (Fig. 5.1) but have stagnated of late. Child mortality rate, however, had continued to fall over these years and consequently, the average under-five mortality rate continued to fall and stood at 88 (deaths per 1000 live births) for the period 1999-2003. Yet, it is a matter of concern that a plateau appears to have been reached because of the stagnation in neonatal and post-neonatal rates.

Vaccination coverage has increased during last decade although about one fourth of 1-year old children are still out of reach. This may be a major cause of the stagnation of the early childhood mortality rates.

**Fig. 5.1: Mortality Rates of Children**



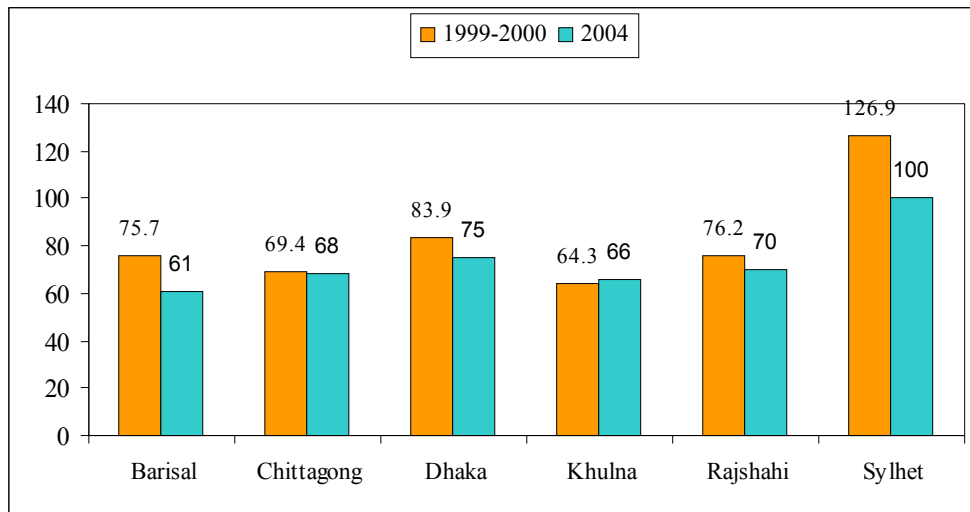
Source: NIPORT, Mitra Associates and ORCM (2005).

### 5.3.3 Regional Variation:

Infant mortality rates: There is a substantial variation in infant mortality rate by division (Fig. 5.2). Sylhet particularly stands out with the highest rate. Also note that the progress generally has been slow though here the situation is better in Sylhet. In Khulna the situation has deteriorated.

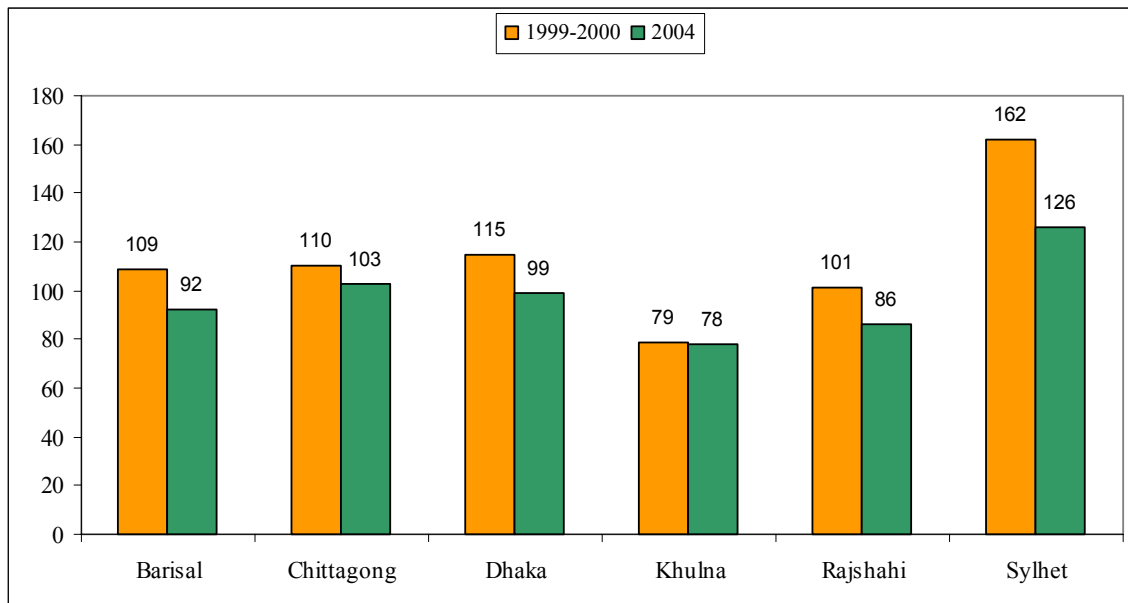
U-5 mortality rate: Similar substantial regional variation exists in the under-five mortality rates (Fig. 5.3). On the whole the situation of infant mortality is mirrored here as one subsumes the other. Sylhet division again is the worst case.

**Fig. 5.2 Inter-Division Differences in Infant Mortality**



Source: NIPORT, Mitra Associates and ORCM (2005).

**Fig. 5.3: U-5 M by Division (deaths/1000 live births)**

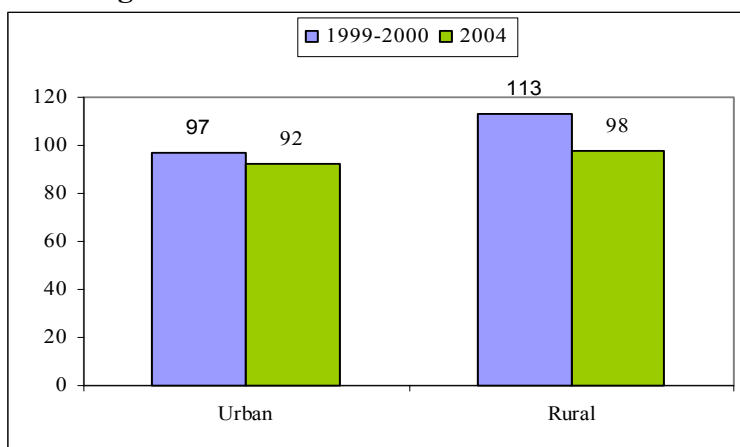


Source: NIPORT, Mitra Associates and ORCM (2005).

### 5.3.4 Rural-Urban Differences

Rural-urban differences indicate interesting changes. While in 1999-00, the rural under-5 rate was 113 and the urban rate 97, by 2003 the rural rate has fallen faster than the urban rate. Consequently, the rural-urban differential has narrowed down to only 6 percentage points (98 for rural and 92 for urban) (Fig. 5.4). The corresponding changes for infant mortality rate (neonatal and post-neonatal together) was even sharper for the rural compared to the urban areas. In fact the urban rate hardly fell (declining from 74 to 72) while the rural rate fell from 81 to 72.

**Fig. 5.4: Rural-Urban Differences in U-5M**

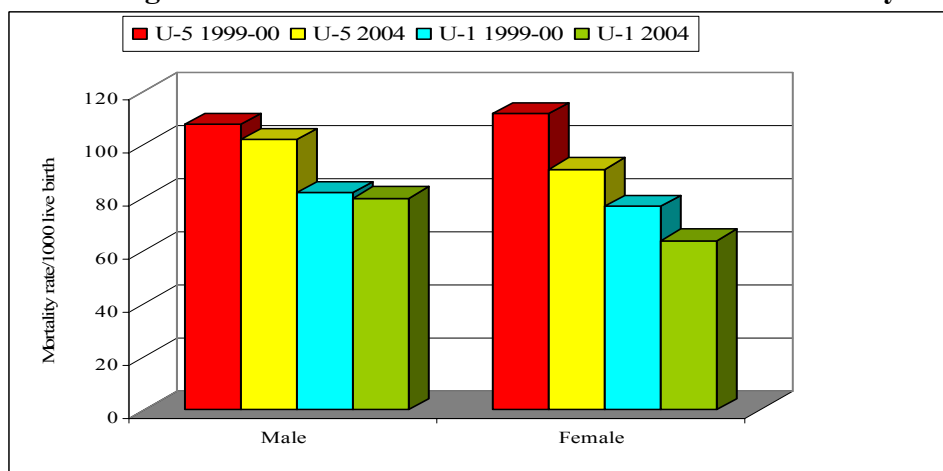


Source: NIPORT, Mitra Associates and ORCM (2005).

### 5.3.5 Sex Differences in Child Mortality

For gender difference, the bias now appears to be in favour of girl children (Fig. 5.5). For under-5 male children, the fall had been from 108 to 102 over 1999-2000 to 2004. The corresponding fall for girl children had been 112 to 91. Similar reductions have been achieved for infant mortality rates albeit at slower rates with the male rate not changing at all.

**Fig. 5.5: Trends in Gender Differences in Child Mortality**



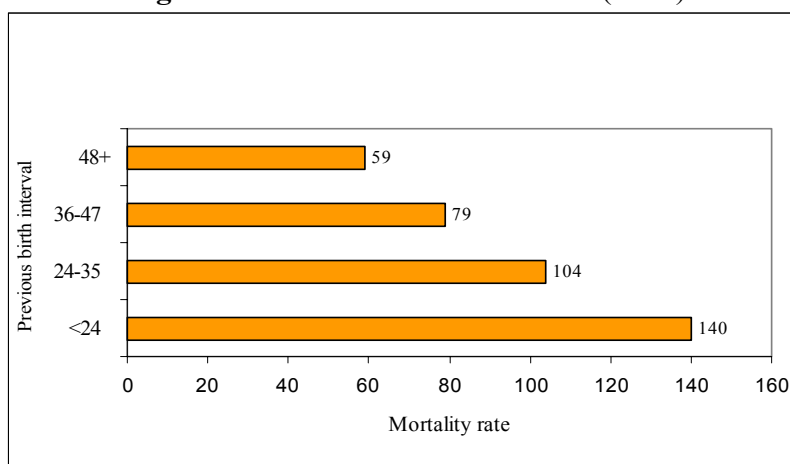
Source: NIPORT, Mitra Associates and ORCM (2005).

### 5.3.6 Factors behind Child Mortality

Several socio-economic and demographic variables appear to influence child mortality. Although the available data do not allow an analysis of their independent influence, these may be broad pointers to the changes in child mortality. We begin with demographic variables such as birth interval and birth order.

Birth interval: U-5 mortality appears to be inversely related to the length of the birth interval from the previous birth (Fig. 5.6). Mothers with no more than 24 months of interval have a mortality rate of 140 for their U-5 children. The corresponding rate for mothers with birth interval of at least 48 months is only 59. It is likely that more frequent births may not allow women to devote much time to earlier born children for their care which raises the likelihood of their death

**Fig. 5.6: Birth Interval and U-5 M (2004)**



Source: NIPORT, Mitra Associates and ORCM (2005).

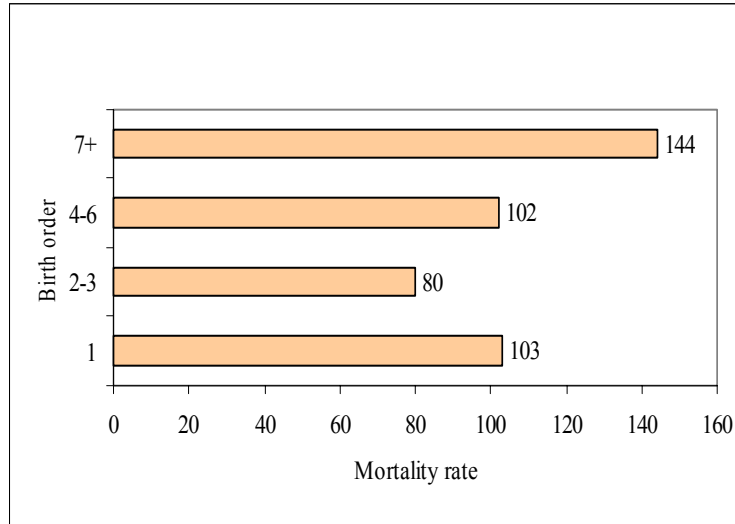
Birth order: Birth order also appears to have certain influence on child death (U-5). More at risk are the first borns and those who are born much later (after the 3<sup>rd</sup> child or so). Thus, the death rate for first born children among the U-5 is 103 per 1000 live birth which falls subsequently to 80 for 2-3 children and subsequently begins to rise and for children who are born in 7<sup>th</sup> or higher order the rate becomes 144.

We shall later see that the maternal mortality rate by parity behaves in a similar fashion i.e., women are most at risk of death during their first pregnancy and delivery which falls for subsequent pregnancies but rises again for higher order pregnancies. It is likely that as women die during their pregnancy or delivery, the babies born to them do not receive as much care as they should which may be one of the causes of their mortality.

Wealth and child mortality: Child mortality falls with rise in wealth. This is true for U-5 mortality (Fig. 5.8). Infant mortality also generally falls with higher wealth ranking but is not monotonic. More importantly, even for U-5, the mortality rate may be rising among the wealthier households (Fig. 5.9). Note that while for lowest quintile there had been hardly any change, for the middle order quintiles there had been a rise in the mortality. So the situation may become

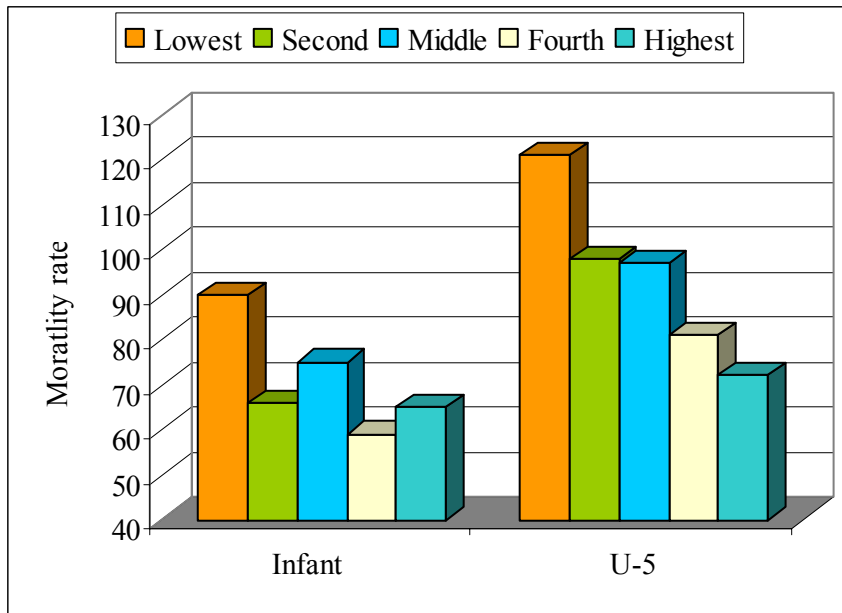
worse. Secondly, this means that something apart from wealth or income is important in determining mortality of children.

**Fig. 5.7: Birth Order and Child Mortality**



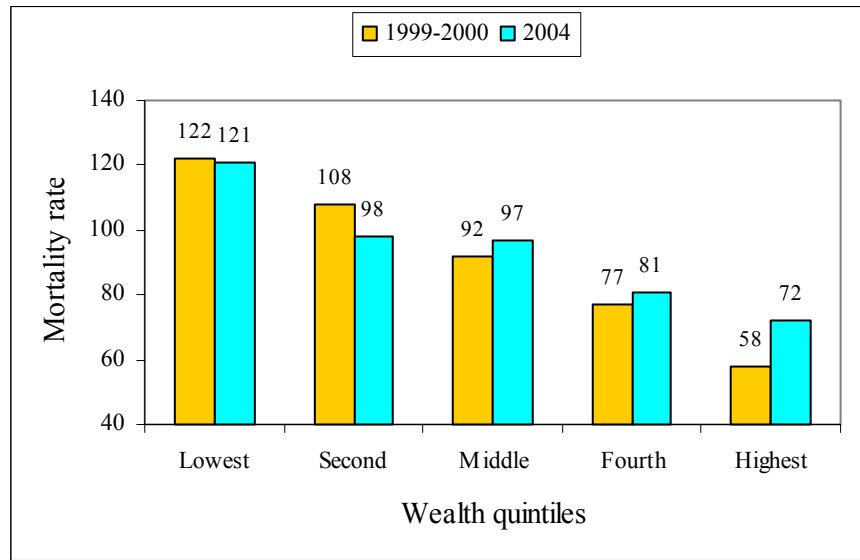
Source: NIPORT, Mitra Associates and ORCM (2005).

**Fig. 5.8: Child Mortality by Wealth Quintiles (2004)**



Source: NIPORT, Mitra Associates and ORCM (2005).

**Fig. 5.9: U-5 Mortality by Wealth Quintiles (1999/00-2004)**



Source: NIPORT, Mitra Associates and ORCM (2005).

Availability of adequate facilities for vaccination of children against diseases and other relevant medical facilities may be relevant factors which may determine the susceptibility of children to disease. In the next section we find that vaccination coverage may indeed have had some role in influencing child mortality.

## 5.4 Vaccination Issues

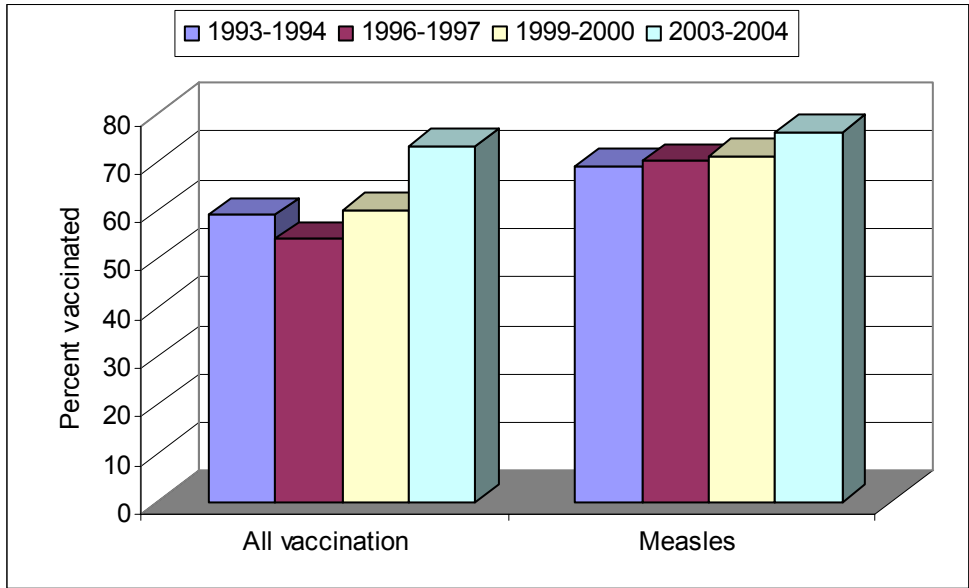
### 5.4.1 Coverage

Bangladesh has taken an Expanded Programme on Immunization (EPI) as one of her priority programmes and is trying to follow the recommendations of World Health Organization (WHO) in this respect. WHO recommends that by 12 months of age all children should receive a BCG vaccination against tuberculosis, three doses of DPT to prevent diphtheria, pertussis (whooping cough) and tetanus; three doses of polio vaccines and a vaccination against measles. According to NIPORT, Mitra Associates and ORCM (2005), 73.1 percent of children aged 12-23 months had received all recommended vaccines. In case of measles the rate is 75.7 %.

### 5.4.2 Trends in Vaccination Coverage

Vaccination coverage has improved but slowly over time (Fig. 5.10). Improvement was slow during 1993-2000. In fact, over-all vaccination coverage fell in 1996-1997 mainly due to a fall in vaccination of Polio 3. After 2000, the overall situation improved again. In case of measles vaccination there has been a very slow improvement.

**Fig. 5.10**  
**Trend in Vaccination Coverage of 12-23 Month Old Children**

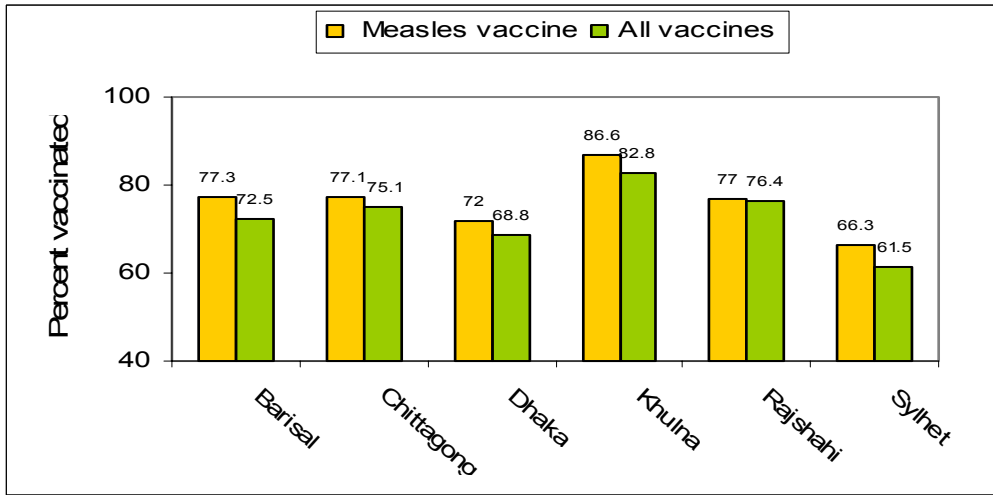


Source: NIPORT, Mitra Associates and ORCM (2005).

**5.4.3 Divisional and Rural- Urban Variation**

A wide divisional variation exists in the extent of vaccination coverage. Khulna is the best and Sylhet is the worst in vaccination coverage (Fig. 5.10). Rural-urban difference also exists but is mild. For example, urban and rural children immunized against measles were 82 and 74 percent in 2004. For all vaccines the respective proportions were 80 and 71.

**Fig. 5.10: Vaccination Coverage by Division (2004)**



Source: NIPORT, Mitra Associates and ORCM (2005).

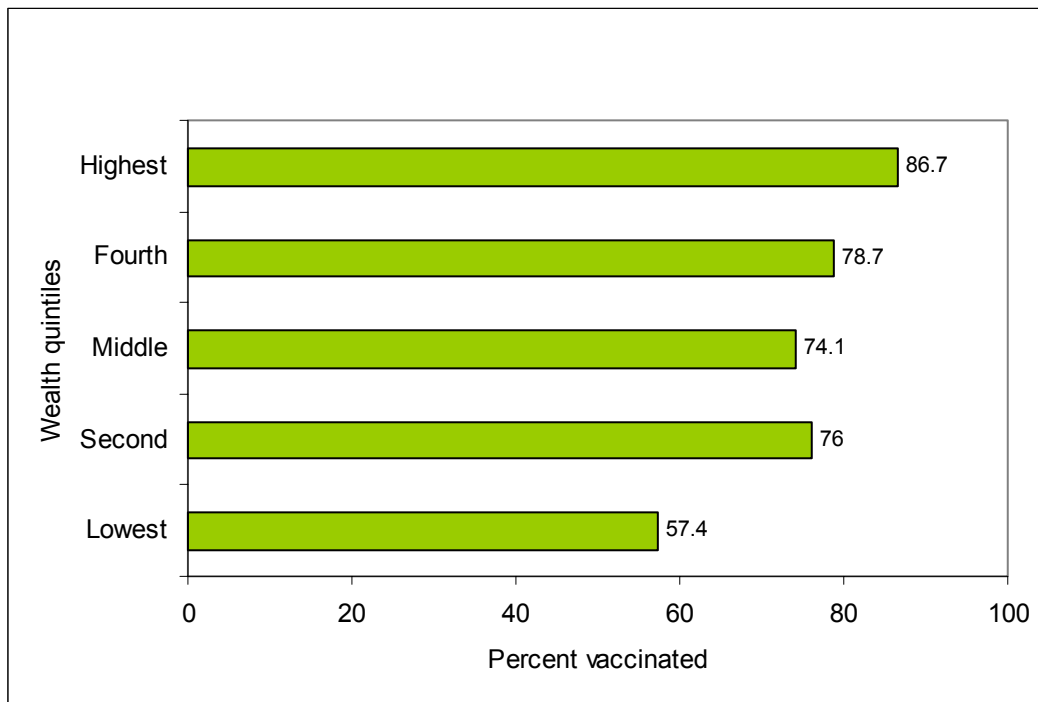
#### 5.4.4 Gender Variation

No clear gender variation was found. Just about three-quarters of all children, male and female, were immunized in 2004.

#### 5.4.5 Poor and Non-poor Variation

Household wealth appears to be positively but weakly correlated with proportion of children 12-23 months old who are vaccinated (Fig. 5.11). Thus, only 57% of such children from the least wealthy households were immunized. For the richest group the proportion is 87%. Note, however that for the middle wealth groups the change from one group to another is not that much remarkable.

**Fig. 5.11: Immunisation Pattern of Children by Household Wealth (2004)**

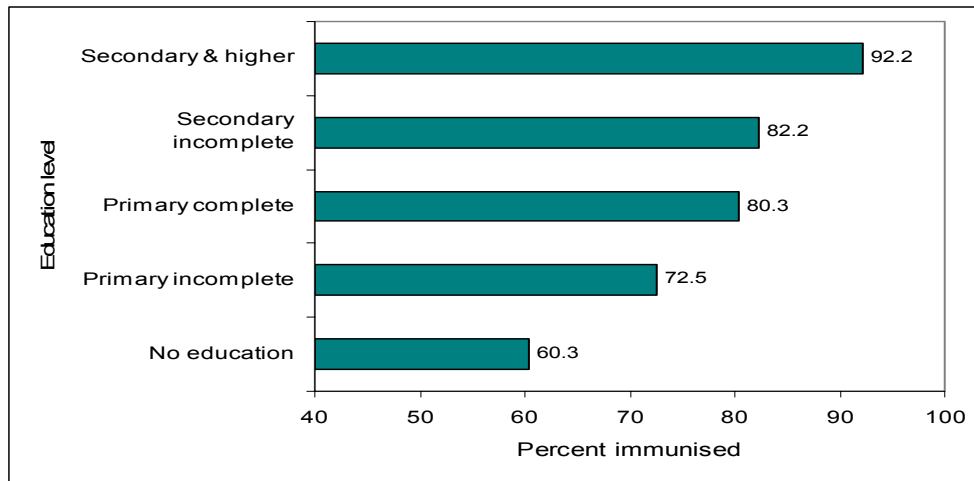


Source: NIPORT, Mitra Associates and ORCM (2005).

#### 5.4.6 Mother's Education and Child Immunization

The only clear and perceptible pattern of immunization relates to education level of mothers. The higher the education level, the higher is the immunization rate (Fig. 5.12). Thus, children of mothers with little or no education are immunized in only 60 percent cases. It then steadily rises with the level of education and reaches 92% for mothers with secondary level education or beyond. We thus again see the virtuous cycle a mother's education particularly up to high school level can create.

**Fig. 5.12: Mother's Education and Child Immunisation**



Source: NIPORT, Mitra Associates and ORCM (2005).

## 5.5 Immediate Causes of Death

### 5.5.1 Causes by Age of Child

Causes of death vary significantly by age. Possible serious infection, Acute Respiratory Infection (ARI) and birth asphyxia cause two thirds of under-five deaths (Fig. 5.13). These three remain the main causes of neonatal and post-natal death. ARI causes nearly 43% of post-neonatal death. Diarrhea no longer is a major killer disease. Note that more recent research have found that while the broad pattern remains valid, for children of age 1-4 years, drowning is a major cause of death (26%) (Rahman *et al.*: 2005).

### 5.5.2 Causes of Death by Division

Table 5.1 shows child death for U-5 by causes by division. Three types of causes appear to be important which are possible infection, acute respiratory infection and birth asphyxia across all divisions. But in certain divisions certain causes may be important. For example, premature birth or low birth weight are important causes in Barisal/Khulna, Rajshahi and Sylhet.

### 5.5.3 Rural-Urban Difference

ARI is a more common cause of death in rural areas while malnutrition is more common in the towns. Other causes have similar across villages and towns.

### 5.5.4 Gender Variation

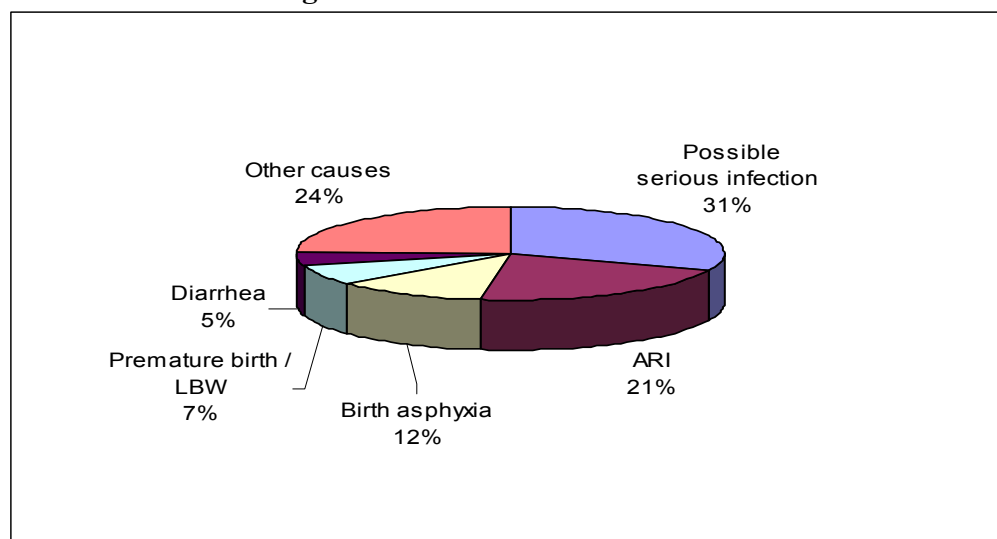
Boys and girls die due to somewhat different causes. Boys suffer more from birth asphyxia and possible serious infection than girls while girls suffer more from ARI. Malnutrition is also more common among boys.

### 5.5.5 Causes of Death by Mothers' Education

Congenital abnormality, injury, drowning, prematurity and birth asphyxia are more common as cause of death among children of mothers with at least secondary education compared to those with no education. On the other hand, children of mothers with no education die more from ARI, possible serious infection, diarrhea and malnutrition. It may be noted that the causes in the first case are more due to factors which are not preventable or less preventable with prior intervention

or precautionary activities. Cases of death due to infection, ARI, diarrhea, infection and malnutrition which are more prevalent in the latter case are better preventable with prior precaution against them.

**Fig. 5.13: Under-5 Causes of Death**



Source: NIPORT, Mitra Associates and ORCM (2005).

**Table 5.1: Causes of Child Death by Division**  
(Percent of death cases)

| Causes of death       | Chittagong | Dhaka | Barisal /<br>Khulna | Rajshahi | Sylhet |
|-----------------------|------------|-------|---------------------|----------|--------|
| Possible infection    | 33         | 30.8  | 31.2                | 29.8     | 31.4   |
| ARI                   | 21.3       | 22.3  | 20.3                | 17.5     | 24.2   |
| Birth asphyxia        | 8.8        | 10    | 20                  | 15.3     | 7.4    |
| Diarrhea              | 8.5        | 4.8   | 4.4                 | 2.1      | 6.2    |
| Drowning              | 5.6        | 0.7   | 1.2                 | 6.9      | 0      |
| Malnutrition          | 5.3        | 5.4   | 2.8                 | 1.1      | 0.6    |
| Premature birth / LBW | 1.4        | 4.5   | 9.6                 | 10.6     | 10.3   |
| Neonatal tetanus      | 1.6        | 3.2   | 0                   | 0        | 7.5    |

Source: NIPORT, Mitra Associates and ORCM (2005).

### 5.6 Impression from the Field

People often have been found to discuss child and maternal health and their mortality together. And they had been right as the two at certain stages are intertwined. Hence the reader is requested to read this part along with the one in the next chapter.

- According to people's perception, both infant mortality and under-five mortality have fallen in the recent years compared to past decades. Success of EPI and increased level of

awareness due to various GO / NGO activities are the underlying causes. But EPI has not been a success everywhere. One exception is the hill district of Khagrachari where more than half of the children have not been immunized. Reasons for this low performance include difficult communication, ingrained superstition, and lack of awareness campaigns.

- ❑ Still there is a huge lack in post-neonatal and delivery care which is consistent with the stagnation in infant mortality in the last decade.
- ❑ People believe that there is a wide rich-poor and rural-urban gap in respect of facilities for child health care.
- ❑ As has been found in the field, main causes of death of newborn babies are – asphyxia, pneumonia, complex delivery, malnutrition (immature /low birth weight baby), tetanus, jaundice and diarrhea. And main causes of death of babies aged one to five years are – malnutrition, pneumonia, tetanus, diphtheria, hopping cough, malaria, jaundice and diarrhea. Thus the causes of death may be many and varied rather than a few as indicated from secondary information.
- ❑ Proper preservation of vaccines should be a matter of concern, especially while being carried to distant places. People of char and hilly areas complained that vaccines which had been given in their areas were not always rightly preserved.

## **5.7 Summary and Policy Implications**

### *5.7.1 Summary*

Three of the eight goals under MDG refer to health improvement. These relate to child mortality, maternal mortality and prevention of certain killer diseases. And the success in one is to a considerable extent dependent on that in another field. Given this caveat, it may be noted that there are three indicators to analyze the progress towards the goal of reduction in child mortality. These are: Infant Mortality Rate (deaths per 1000 live births), Under-five Mortality Rate (deaths per 1000 live births), and Proportion of 1-year Old Children Immunized against Measles.

Neonatal and post neo-natal rates have been falling over years but have stagnated of late. Child mortality rate, however, had continued to fall over these years and consequently, the average under-five mortality rate continued to fall and stood at 88 (deaths per 1000 live births) for the period 1999-2003. Yet, it is a matter of concern that a plateau appears to have been reached because of the stagnation in neonatal and post-neonatal rates. Vaccination coverage has increased during last decade although about one fourth of 1- year old children are still out of reach. The partial coverage may be a major cause of the stagnation of the early childhood mortality rates.

There is a substantial variation in infant mortality rate by division. Although Sylhet remains the worst case, the situation may be improving there. In case of child mortality the bias now appears to be in favour of girl children. Also, U-5 mortality appears to be inversely related to the length of the birth interval from the previous birth. Birth order also appears to have certain influence on child death (U-5). More at risk are the first borns and those who are born much later. Child mortality falls with rise in wealth. Along with government initiatives, NGO's in health sectors contributed enormously in reducing child mortality through their intensive door-to-door services.

The main causes of death of newborn babies are – asphyxia, pneumonia, complex delivery, malnutrition (immature /low birth weight baby), tetanus, jaundice and diarrhea. And

main causes of death of babies aged one to five years are – malnutrition, pneumonia, tetanus, diphtheria, hopping cough, malaria, jaundice and diarrhea. There is a certain pattern of the causes by age and mother's education. Possible serious infection, Acute Respiratory Infection (ARI) and birth asphyxia cause two thirds of under-five deaths. These three remain the main causes of neonatal and post-natal death. ARI causes nearly 43% of post-neonatal death. Diarrhea no longer is a major killer disease. Note that more recent research have found that while the broad pattern remains valid, for children of age 1-4 years, drowning is a major cause of death (26%).

Children of better educated women die more from less preventable causes such as congenital abnormality, injury, drowning, prematurity and birth asphyxia. On the other hand, in case of illiterate mothers children die more from more easily preventable causes such as infection and malnutrition. This means that poverty and lack of awareness may be ultimate major causes of death.

In such a situation the EPI has helped somewhat. Most interestingly we again find here virtuous impact of mother's education. Indeed, the only clear and perceptible pattern of immunization relates to education level of mothers. The higher the education level, the higher is the immunization rate. Thus, children of mothers with little or no education are immunized in only 60 percent cases. It then steadily rises with the level of mother's education and reaches 92% for children of those mothers with secondary level education or beyond.

#### 5.7.2 Policy Concerns

The policy concerns in case of prevention and lowering of child mortality relate to several issues. One of these is immunization which still leaves out a substantial group of children. This means that the scope and extent of EPI has to be further broadened.

The other issue relates to the persisting regional differences which needs to be addressed more carefully, particularly as high income does not appear to have a clear one to one correspondence at least in case of infant death. The nature of relationship with birth order and the birth interval clearly indicates the role of awareness raising regarding such issues under a programme of population planning.

Death patterns by age indicate that infant death arise more due to environmental sanitation and hygiene apart from malnutrition due to various factors while immunisation does not protect against them. Better awareness is thus necessary and improved sanitation is essential for lowering infant death rates. This is an issue which is dealt under environmental sustainability under the MDGs. And finally the role of mother's education in preventing death through better immunization bind the progress towards greater gender equality and over-all improvement of the situation regarding women's education beyond the primary level.

## Chapter 6

### Making Motherhood Safe

#### 6.1 Introduction

High maternal mortality is a scourge particularly in developing countries which lack the proper health infrastructure including sanitation as well as the social environment and mind set of the people. In these countries women die during child birth most of which is preventable if proper maternal and health care is taken before, during and after birth of the children. Making motherhood safe is thus a major developmental objective under the MDG. Box 8 shows the goal, target and indicators for understanding the progress towards safe motherhood.

#### Box 8

##### Safe Motherhood

#### Goal 5

**Improve maternal health.**

#### Universal target

Reduce the maternal mortality ratio by three quarters between 1990 and 2015.

#### Target for Bangladesh

Reduce the maternal mortality ratio from 570 in base year to 143 by 2015

#### Indicators

1. *Maternal mortality rate (deaths per 100,000 live births )*
2. *Proportion of birth attended by skilled health personnel*
3. *Total fertility rate*
4. *Proportion of mother who are malnourished*
5. *Legally stipulated age at girls' first marriage*
6. *Proportion of maternal death caused by violence*

Motherhood is a socio-biological process the pains and risks of which are unfortunately borne almost exclusively by women, in some cases very young women. In any society dominated by patriarchy, such pains may not be thought to be worthy of observation and action even in the public space. As a result, despite so much talks as well as invoking the scriptures one is hard put to find good and recent data and information on maternal mortality and health.<sup>13</sup> The same is the case in Bangladesh.

There had been several periodic Demographic and Health surveys funded by donor agencies. But none collected information on maternal mortality or its causes or the contributory

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<sup>13</sup> The Holy Koran states that a son/daughter's salvation lies at the feet of his/her mother, if the mother is lucky to be alive that is.

factors which could shed light on the issue and indicate policy measures and the implementation problems in making motherhood a safe process and outcome. Only one special survey on maternal mortality was conducted in 2001 and so far the findings of that remains the only set of most recent and comprehensive information based on quality data. Our analysis is thus constrained by lack of recent information on most indicators related to maternal mortality. However, it is likely that the situation may not have changed much over the last 6 years to invalidate the analysis that follows.

We have tried to provide as much information and as much analysis of the prevailing situation. Unfortunately, we could not say much regarding how far the legally stipulated marriage age is observed in practice. Then again we have not been able to say anything regarding maternal death due to violence at home. Anecdotal evidence suggests that this may not be low. But we lack formal knowledge of this darker side of the society.

## 6.2 Maternal Mortality Ratio

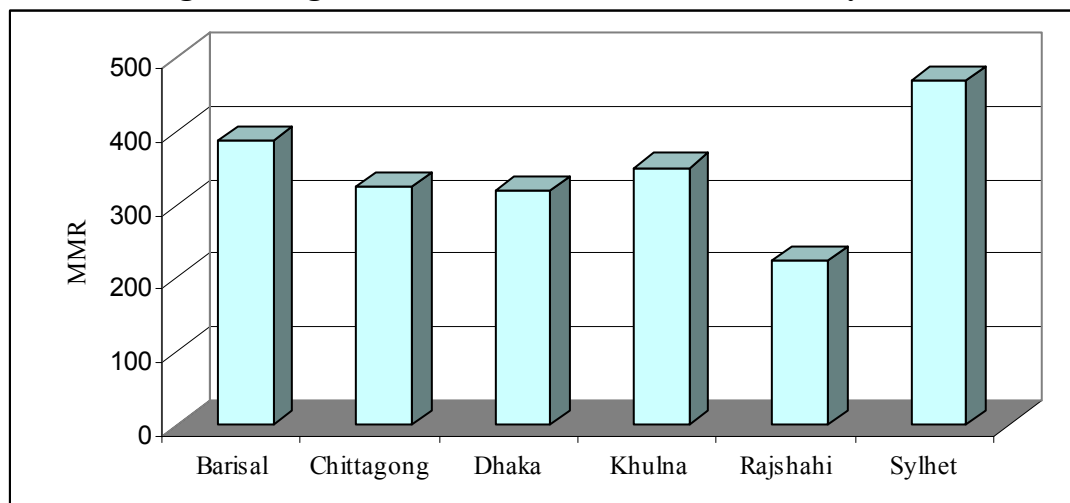
### 6.2.1 Aggregate Picture

There is little by way of up to date time series information except to an extent by BBS the quality of which is doubtful. According to BBS, after a period of decline maternal mortality ratio (MMR, deaths per 100,000 live births) rose significantly in 2001 to 417 from 326 the earlier year. Thereafter it declined a little but remained at a much higher level than the previous ones. Why the declining trend reversed significantly in 2001 remains unexplained and needs to be investigated properly. The other more comprehensive data apart from those by BBS refers to only 2001 as stated earlier. This data set indicates an MMR of 322 which is roughly similar to that claimed by BBS.

### 6.2.2 Regional Differences

There are major regional differences in maternal mortality ratio ranging from 223 in Rajshahi to 471 in Sylhet (Fig. 6.1). Chittagong, Dhaka and Khulna more or less kept pace with the national average.

**Fig. 6.1: Regional Differences in Maternal Mortality Ratio**



Source: NIPORT, Mitra and Associates, ORCM, JHU, and ICDDR,B (2003)

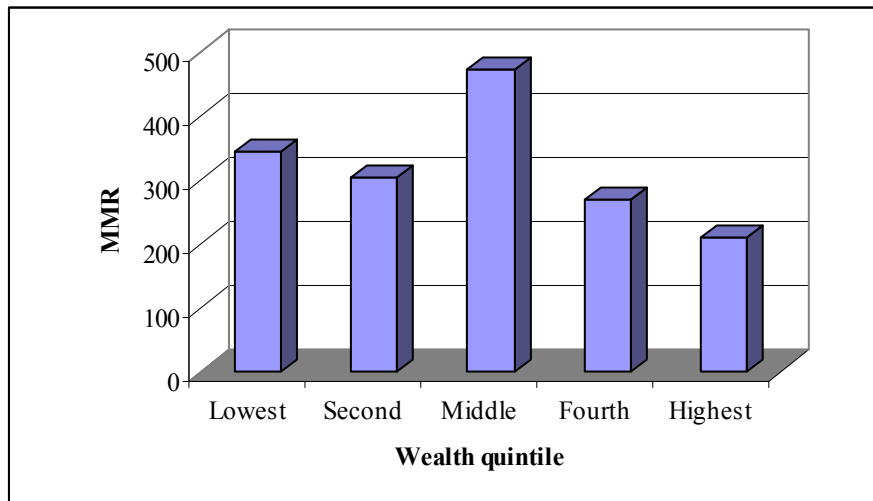
### 6.2.3 Rural-Urban Differential in MMR

Rural-urban variations indicate an interesting feature in that while metropolitan towns experienced the lowest maternal mortality ratio of 262, the rural figure (326) was actually less than that for other towns (344) although how far these latter differences are systematic remains doubtful.

### 6.2.4 Poverty and MMR

Poverty did not have a strong monotonic relationship with maternal mortality (Fig. 6.2). While the wealthiest group had experienced the lowest MMR of 208, the highest 473 was observed for the mid-level wealth group. Why there should be a spike for the middle group is not known. But note that the pattern also supports the lack of strong relationship between poverty and maternal mortality across the divisions. Sylhet is the wealthiest district (see Chapter 2) but also have the highest level of maternal mortality.

**Fig. 6.2: Household Wealth and MMR**



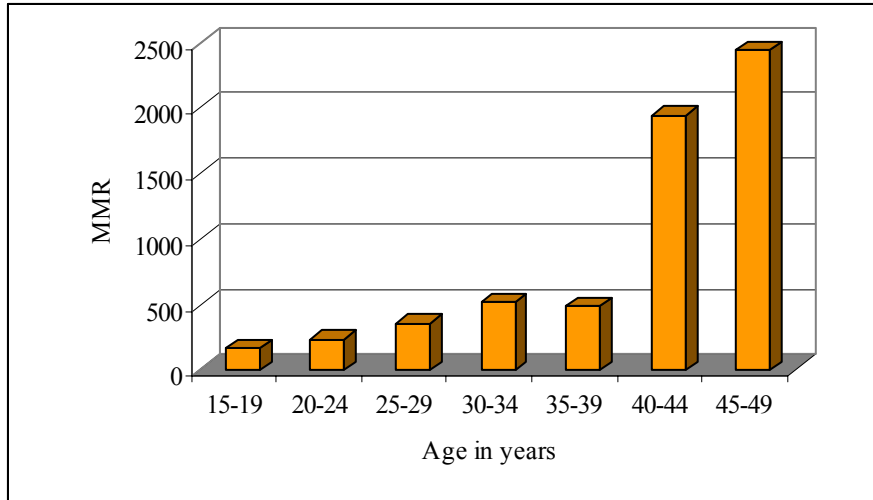
Source: NIPORT, Mitra and Associates, ORCM, JHU, and ICDDR,B (2003)

### 6.2.5 Demographic Factors and MMR

Mothers' age and MMR: Aged mothers are comparatively highly exposed to death risk than younger ones (Fig. 6.3). The risk particularly rises sharply at the age of 40 or thereabout. For the age group 45-49 maternal mortality ratio is about 14 times compared to that for the age group of 15-19 years.

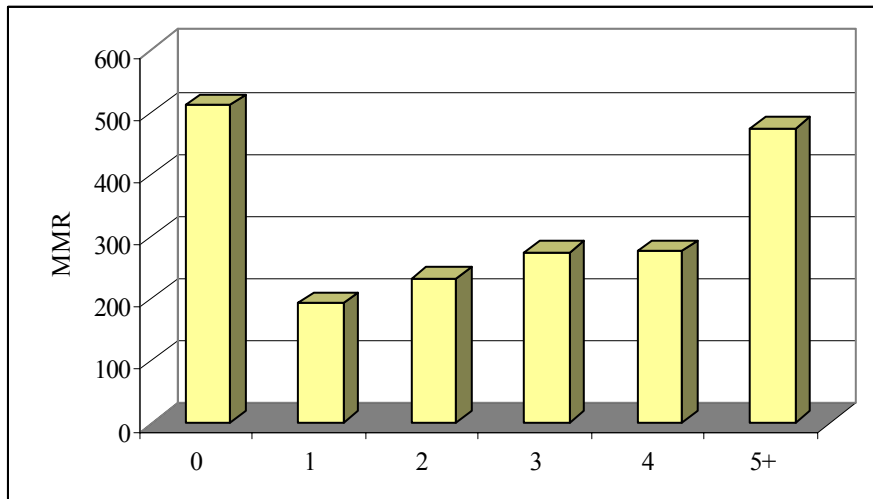
Prior parity and MMR: Maternal mortality ratio is much higher for those who are going to be mother for the first time and for those who already have five or more children (Fig. 6.4). Excluding these two extreme cases, maternal mortality ratio increases gradually with prior parity. Such findings do have clear implications for policy interventions.

**Fig. 6.3: MMR by Age of Mothers**



Source: NIPORT, Mitra and Associates, ORCM, JHU, and ICDDR,B (2003)

**Fig. 6.4 Prior Parity and MMR**

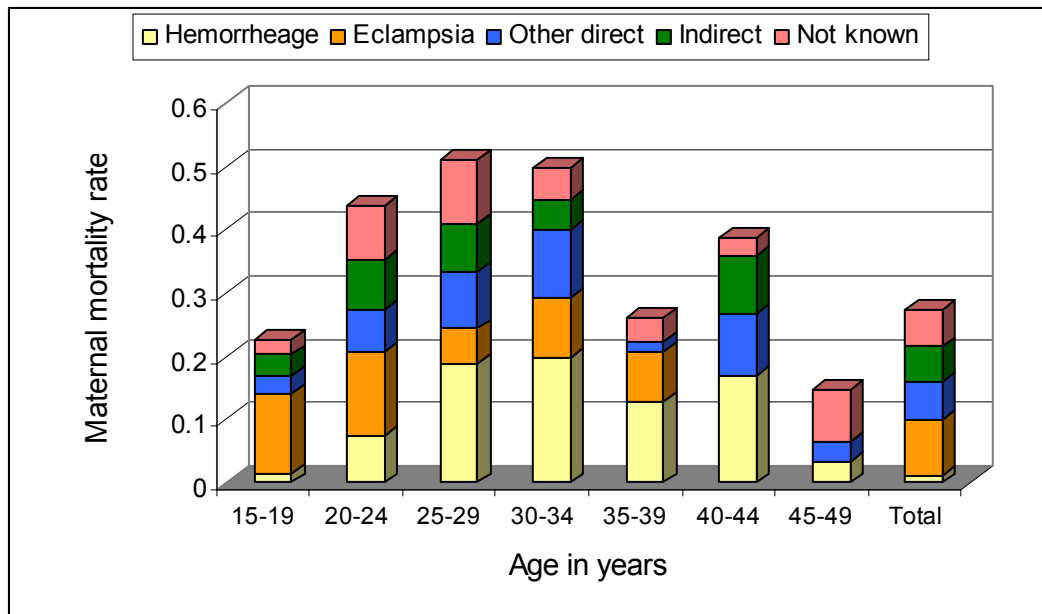


Source: NIPORT, Mitra and Associates, ORCM, JHU, and ICDDR,B (2003)

Timing and immediate causes of maternal death: Mothers die least during delivery period and most in post-partum period. Maternal death in post-partum period is more than three times of pregnancy period and more than six times that during delivery period.

Eclampsia is the single most important cause of maternal death (Fig. 6.5). Other major causes are hemorrhage, prolonged labor, abortion, anemia and respiratory problem. Note that the relative importance of the causes varies by age. Thus, hemorrhage is a more important cause of death in the middle ages while eclampsia is a critical factor for younger mothers.

**Fig. 6.5: Causes of Maternal Death Rate (per 1000)**



Source: NIPORT, Mitra and Associates, ORCM, JHU, and ICDDR,B (2003)

## 6.3 Maternal Care

### 6.3.1 Maternal Care Practice

Proper maternity care can play a vital role in reducing maternal death. Unfortunately, the coverage, not to speak of the quality, is not at all satisfactory. At present ante natal (ANC), post natal (PNC) and delivery care coverage are only 56%, 9% and 18% respectively. Only ante natal care coverage has increased significantly over years. Others remained almost unchanged.

Between 1999-2000 and 2004, only the ANC coverage<sup>14</sup> has increased significantly. Others show stagnancy or little progress. ANC coverage rose from one third in 1999-2000 to more than one-half in 2004. Delivery care situation is almost unchanged between the period 1999-2000 and 2004. At present less than one in ten births occurs at a public or private health facility and most of the rest occur at home as found by BDHS 2004. On the other hand PNC coverage<sup>15</sup> has slightly increased from 13.7 % in 1999-2000 to 17.8 % in 2004.

If we contrast the ANC, PNC and delivery care coverage changes with maternal mortality ratio shown by BBS, the situation becomes confusing. All types of maternal care have more or less increased. Why should then the maternal mortality increase? Whatever the answers are, there is one thing which deserves our concern. Mothers die more in post-partum period. At the same time the majority of under-five child mortality occurs during neonatal period (i.e. within one month of delivery). Also, the post-natal care (PNC) coverage is quite low. Definitely this is

<sup>14</sup> Percentage of last live births in the five years preceding the survey for which mothers received ante natal care at least once from a trained or untrained provider .

<sup>15</sup> Percentage of last live births in the five years preceding the survey for which mothers received a postnatal checkup within 42 days of delivery .

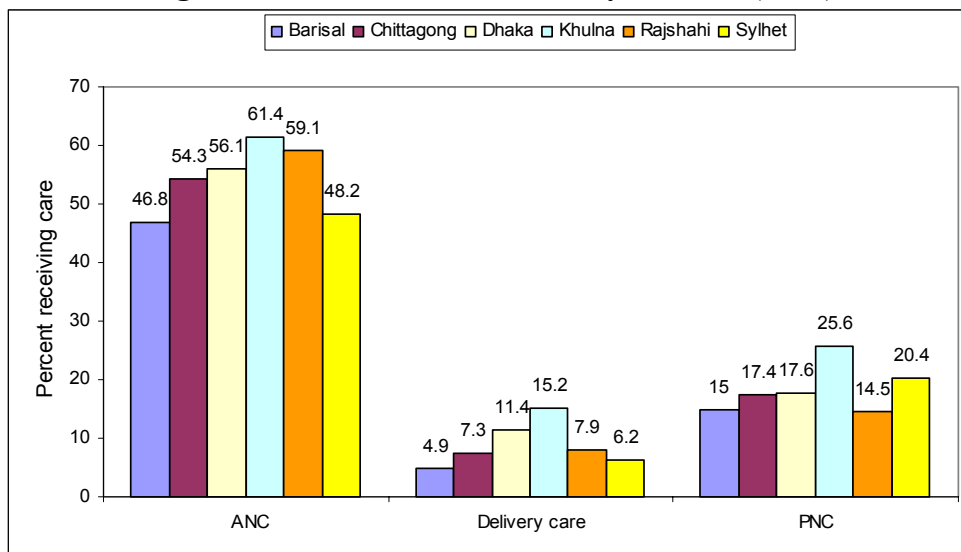
an important cause behind very slow progress in childhood mortality and retreat in maternal mortality. Policy interventions for fine-tuning mother care systems is thus necessary as the nature of health complications are different at different stages of pregnancy, delivery and after delivery.

### 6.3.2 Maternal Care Differentials by Region

Variation by division: Divisional variation in maternal care shows an interesting pattern (Fig. 6.6). Khulna is the best in all three aspects of care – ANC, PNC and delivery care coverage. Dhaka stands second and Chittagong stands third in overall ranking. Condition of Barisal is the worst while Rajshahi has the second highest ANC coverage and at the same time the second lowest PNC coverage. Sylhet shows just the opposite picture.

Why there should be such variations is difficult to speculate. But note that this tallies with the maternal mortality ratio in Barisal which is the highest. On the other hand, Sylhet MMR is also very high and this coincides with comparatively low scores on all three types of maternal care.

**Fig. 6.6: Maternal Care Pattern by Division (2004)**



Source: NIPORT, Mitra and Associates and ORCM (2005)

Rural-urban variation: One also finds major variations in maternal care by rural-urban location. As shown in Table 6.1, the difference in maternal care seeking behaviour is tremendous. The ANC seeking behaviour is much more widespread in both the rural and the urban areas. Yet, there is almost 50% difference in the percentage of women seeking such care. In other areas, the care seeking behaviour is less frequent but here the rural-urban gap is much wider. Thus, in urban areas delivery care coverage is about 3.5 times and PNC coverage is about 2.5 times of those in rural areas

### 6.3.3 Poor and Non-poor Variation

Wealth appears to affect maternal care seeking behaviour very significantly (Fig. 6.7). While the percent of mothers seeking any type of care increases monotonically with the household's wealth the difference between the highest and the lowest quintile is really striking. The relative

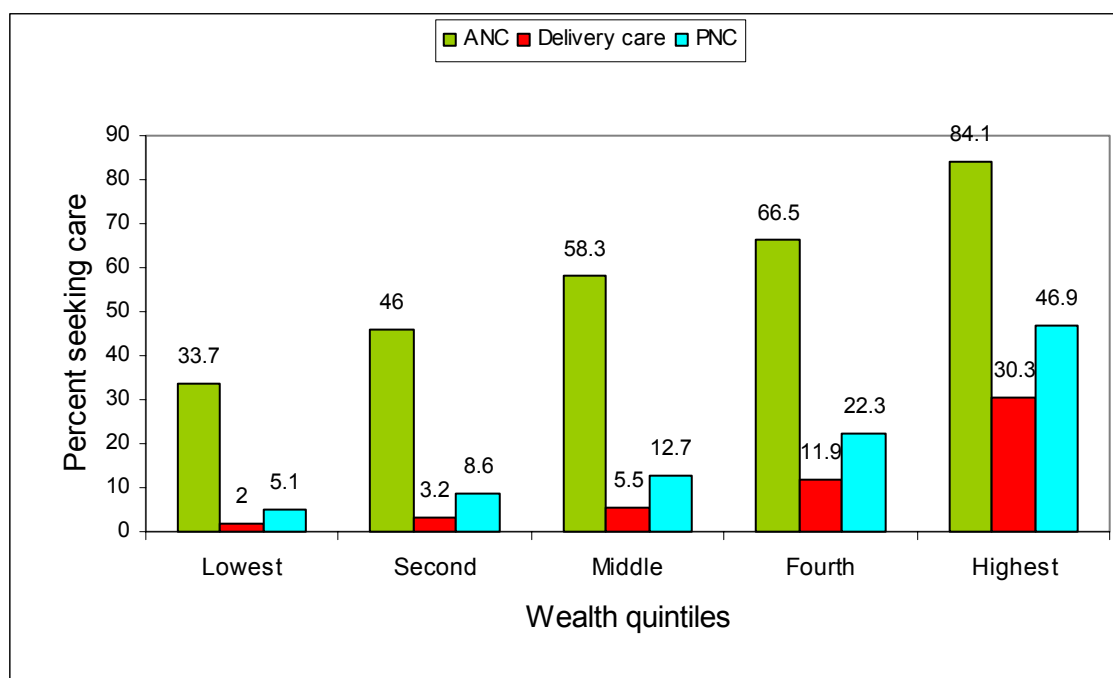
proportions of mothers seeking ANC, PNC and delivery care from the richest households are respectively 2.5, 9 and 15 times of those of the poorest.

**Table 6.1**  
**Rural-Urban Differences in Maternal Care**  
(Percent seeking care in 2004)

| Type of Care | Rural | Urban |
|--------------|-------|-------|
| ANC          | 50.9  | 74.8  |
| Delivery     | 6.2   | 21.9  |
| PNC          | 13.5  | 34.1  |

Source: NIPORT, Mitra and Associates and ORCM (2005)

**Fig. 6.7**  
**Rich-Poor Differentials in Maternal Care Seeking Behaviour**  
(2004)



Source: NIPORT, Mitra and Associates and ORCM (2005)

## 6.4 Delivery Care

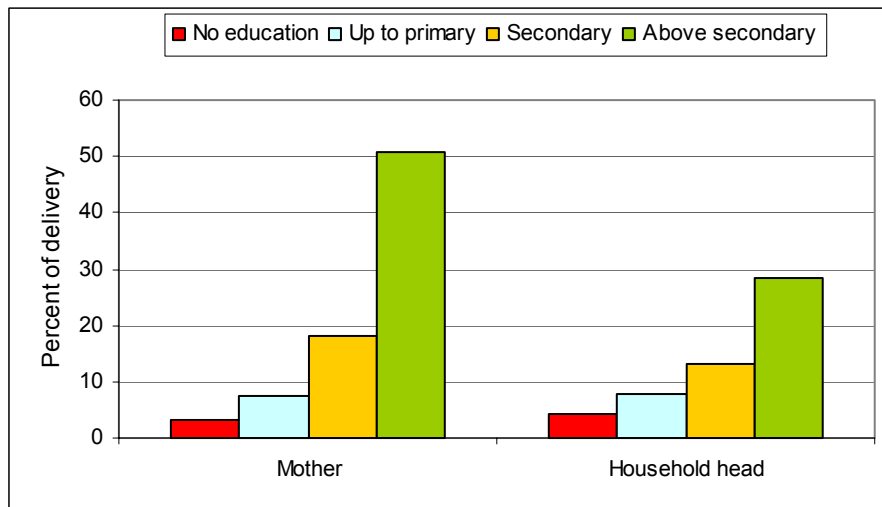
### 6.4.1 Birth Attendance by Skilled Health Worker/Midwives

Birth attendance by skilled midwives or health workers may reduce birth related complications and later the risks of post natal death as well as the need for post natal care. The BDHS data for 2001 does not clearly show such information. However, the HIES 2005 data of BBS does have information on where the delivery had taken place. While home delivery need not necessarily be

unsafe nor be unattended by a skilled midwife, delivery at clinics may be a safer practice although anecdotal evidence indicate that here too the conditions may not necessarily be totally hygienic and thus safe. Given this caveat, we find that 91 percent of delivery takes place at home and the rest in some kind of clinic or health centre. The latter figure tallies exactly with the proportion seeking delivery care as reported earlier based on BDHS 2004.<sup>16</sup>

There is hardly any difference among the divisions regarding delivery at clinics. In most cases, it is around 10% but is the lowest in Chittagong at 6%. Usually it is the younger women up to 30 years who go to a clinic (14-15%) and more so in urban areas (16%) compared to the rural (5%). The most important factor correlated with clinic delivery is education of mother and also of the head of the household (Fig. 6.8). In case of mother's education again being educated above secondary level makes a tremendous difference. The influence of household head's education is much milder in comparison.

**Fig. 5.8: Influence of Education on Clinic Delivery**



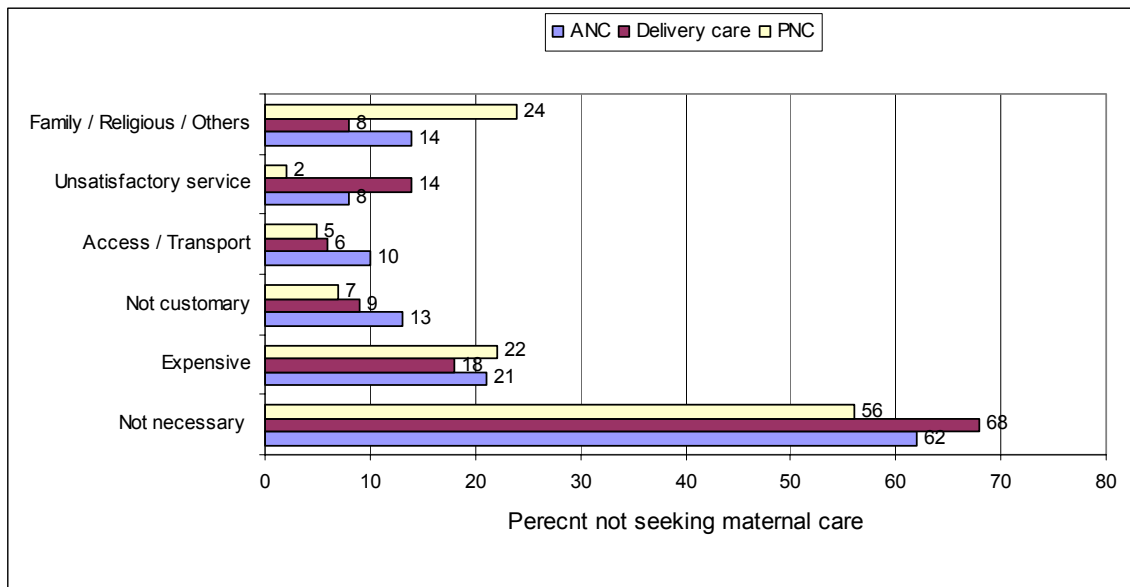
Source: Estimated on the basis of unit records of HIES 2005 data

#### 6.4.2 Reasons for Not Seeking Maternal Care

The analysis of reasons put forward by respondents in 2001 survey for not seeking maternal care indicates that most people do not think it to be necessary (Fig. 6.9). This as we found was almost certainly due to apathy on the part of the people and what we said earlier to be the apparent non-visibility of women's needs. A significant percentage also thought the care to be expensive while some people do not think the quality of service to be satisfactory. Family or religious objections also matter in some cases.

<sup>16</sup> The figures for births under the watch of a skilled attendant would be higher if there are good medical facilities as happens in the Matlab upazila, the laboratory for the ICDDR,B. Even there, during 1997-2001, at most 26% of births were assisted by skilled attendants while the rest 74% babies were born with the help of untrained, often illiterate midwives. See Anwar *et al* (2004).

**Fig. 6.9: Reasons for Not Seeking Maternal Care**  
(percent of live births in 2001)



Source: NIPORT, Mitra and Associates and ORCM (2005)

## 6.5 Total Fertility

### 6.5.1 Trend in Total Fertility

Total fertility rate (TFR) was about 6.3 in the early 1970s when it began to decline but stagnated at around 3.3 for most of the 1990s and again started falling after almost a decade long stagnation. But the rate of fall is much less than is needed to achieve the MDG target.

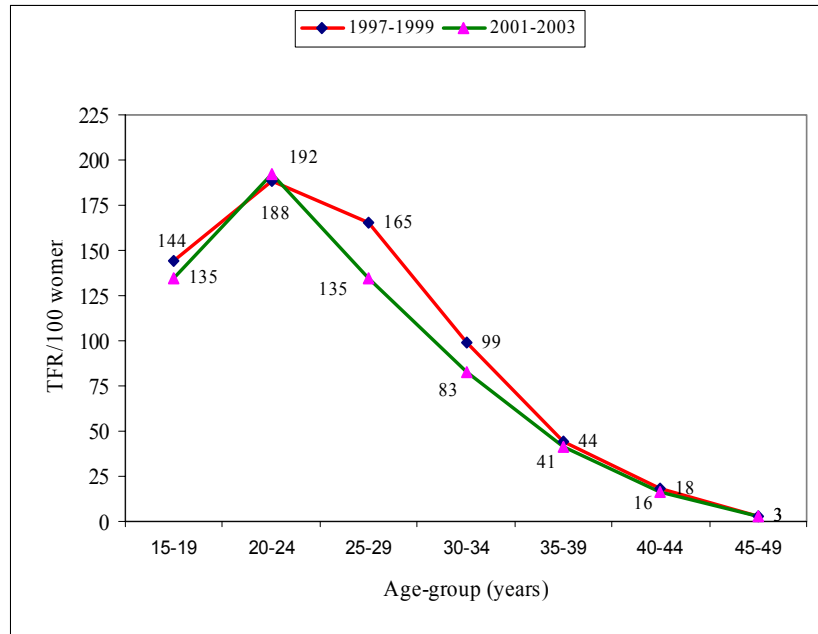
### 6.5.2 Age-specific Fertility Rate

In the whole period 1997-2003, fertility declined substantially in the middle age group (25-39) (Fig. 6.10). For the most fecund period and age groups (15-24), there had been no fall at all in the fertility rate. In fact, the fertility behaviour of this group was the stickiest with very little change over time (not shown). There has been downward tendency to bear children by the higher age groups although here too the progress is not very encouraging.

### 6.5.3 Regional Differentials in TFR

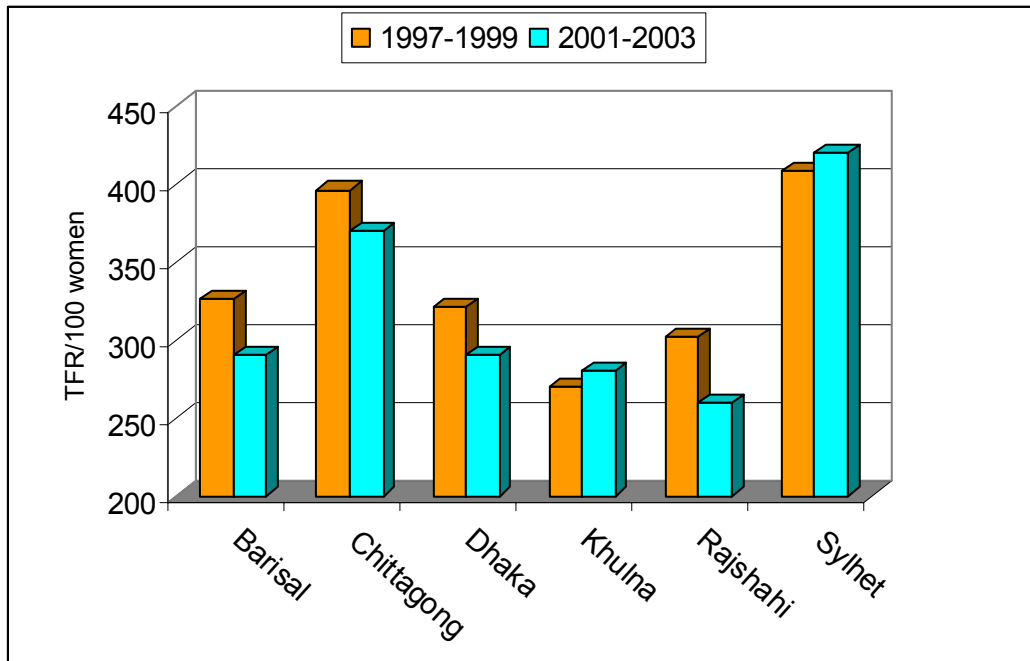
Divisional differences: Divisional differences again are important. Sylhet mothers are the most fecund in the list and most interestingly the rate has risen from an average of 4.08 to 4.2 per woman between 1997-99 and 1999-2003 (Fig. 6.11). Similar rise has been observed for Khulna. The lowest TFR is in Rajshahi for both the years. Thus, while on the whole there had been a substantial fall in the TFR, there is every danger of the trend being reversed or at least stalled. The reasons for these divisional differences are not known with certainty. Is it due to effectiveness of the supply side factors (family planning and health activities by various agencies) or due to demand side ones (of falling desire for children due to high cost of social reproduction). Unless these are known, we may not be able to progress further on this count.

**Fig. 6.10: Age-specific Fertility Rate**



Source: NIPORT, Mitra and Associates and ORCM (2001 and 2005)

**Fig. 6.11: TFR by Division**



Source: NIPORT, Mitra and Associates and ORCM (2001 and 2005)

Rural-urban Differential in TFR: Rural areas have higher fertility rate for every age group compared to the urban ones. More importantly, the urban rate is much lower than the rural rate for the younger women which if it persists will ultimately lead to lower TFR in the urban areas.

## 6.6 Socio-economic Factors and TFR

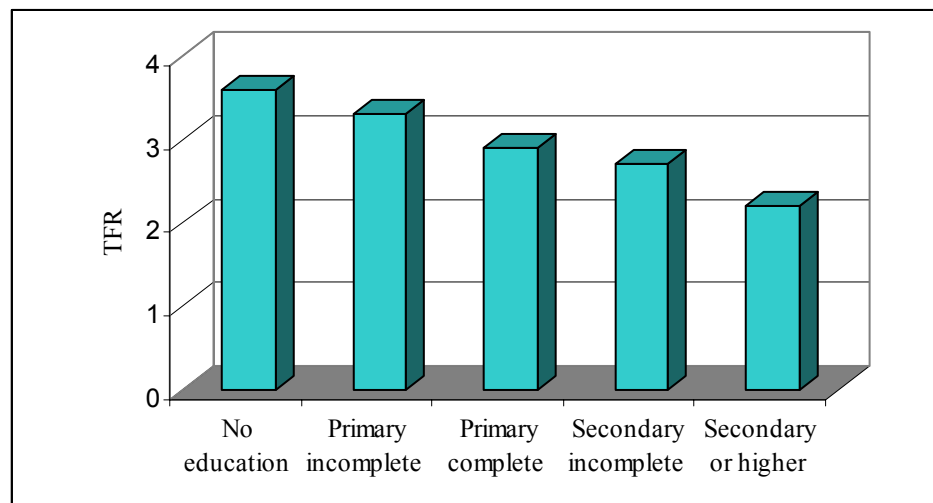
### 6.6.1 Poor-non-poor Variation

Wealthier households experienced lower TFR in 2004. The rates for successive quintiles had been 4, 3.3, 3, 2.3 and 2.5. This indicates a generally positive role of wealth but it may not be monotonic and secondly the influence is rather mild except for the first two groups.

### 6.6.2 Mother's Education and TFR

Mother's education again has the expected virtuous outcome in terms of the total number of children a woman bears during her reproductive period (Fig. 6.12). And the relationship is monotonic. Every two women with the highest level of education have 2 children less between them compared to two such women without any education at all. Indeed, even each of those with secondary incomplete education has one child less compared to those without any education.

**Fig. 6.12: TFR by Mother's Education Level**



Source: NIPORT, Mitra and Associates and ORCM (2005)

## 6.7 Maternal Nutrition

### 6.7.1 General Situation

In 2004, 38 % of mothers (with children under five years of age) were malnourished in the sense that their Body Mass Index was less than 18.5 (NIPORT, Mitra and Associates and ORCM: 2005).<sup>17</sup> About a decade back it was 52%. Mother's average nutritional status has thus improved in the last decade. But as usual there is a wide variation around the average.

### 6.7.2 Regional Picture

<sup>17</sup> Body mass index (BMI) may be said to be a measure of a person's body weight relative to the height of the person squared. In metric system it is calculated as (weight in kg)/(height in metres squared). The ideal BMI is 18.5. Those above it are obese or overweight and those below it are malnourished. Of course, in real life, a normal weight person having proper balanced nutrition will fall within a range a BMI around 18.5.

Most divisions indicate a prevalence of malnutrition to the extent of around 35% and thus symptomatic of the average situation. However, there are two outliers. Sylhet again lags much behind as in all other respects of maternal health as 48% of ever married women are malnourished. At the other end is Khulna where just about 30% of such women are malnourished.

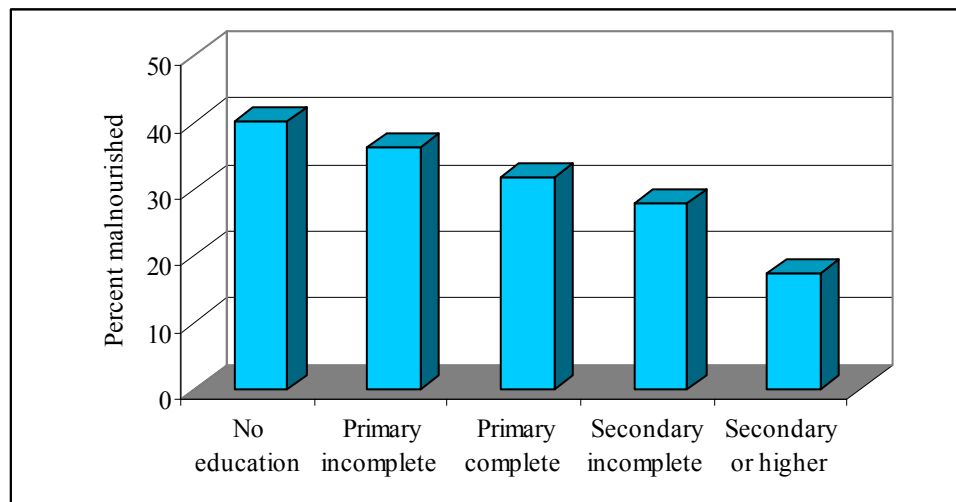
Rural-urban difference is also substantial. Among rural mothers 37% are malnourished. The urban figure is only 27%.

### 6.7.3 Socio-economic Factors

**Influence of Wealth:** There are major rich-poor differences. In 2004, the poorest households had a malnutrition prevalence of mothers of 47%. It monotonically falls to just 17% for the richest households.<sup>18</sup>

**Mothers' education:** The level of mother's education is found to have as usual the virtuous relationship with maternal malnutrition in that as the education increases the prevalence of malnutrition falls (Fig. 6.13). Thus, for the illiterate mothers, the prevalence of malnutrition is 40%. This goes down monotonically with a rise in the education level and finally comes down to only 17% for the highest educated. Again we find the substantial fall for the last group with education beyond the secondary level.

**Fig. 6.13: Mother's Education & Prevalence of Malnutrition**



Source: NIPORT, Mitra and Associates and ORCM (2005)

### 6.8 Legal Age of Marriage

The legal age of marriage for girls in the country is 18 years. However, it may be difficult to obtain information on actual age of marriage because, keeping count of age where birth registration system is weak while people have a tendency to report age in multiples of 5. Furthermore they may actually give inaccurate information as they may want to hide facts not sanctioned by law. Indeed, the HIES 2005 data of BBS indicates that of all women of age less than 18 only 1.9% are married or been previously married. If girls of age 15-19 have the highest

<sup>18</sup> Note that some of those with BMI above 18.5 may actually be obese in these groups.

fertility rate as shown earlier, almost certainly a high percentage of them had been married before the age of 18.<sup>19</sup> Indeed, around 70% of the girls aged 20-24 do get married before the legally stipulated age. The situation has remained unchanged over almost two decades.

### **6.9 Impression from the Field**

As indicated in the last chapter, these field impressions may be read together with those in that chapter. The views of the people may be summarised as follows.

- ❑ The stakeholder discussions in the field appear to confirm the worst fears of the research team in that people were found to be not as much concerned about mother's health as they are about child health.
- ❑ People are not aware of or can be said to neglect to take care of pregnant mothers in terms of food allocation and provision of nutritious food and prevent them from heavy work. It was reported by people that most of pregnant mothers don't get enough food due to poverty and negligence. Arranging for safe delivery has not been a practice yet. All these contribute to the slow decline or stagnation in maternal mortality. These are also important factors behind child mortality. It can be said that people are not as much concerned about mother's health as they are about child health. Hence decline in maternal mortality is less than decline in child mortality. But the findings of BBS that the maternal mortality rate is increasing have not been supported by people in the field. What is positive in respect of mother's health is that mothers themselves are showing increasing tendency to seek medical advice from doctors or health workers during pregnancy period. If the visit requires no fee, all mothers go to doctor / health worker. If fee is charged, poor mothers go to them more infrequently.
- ❑ There is a wide rich – poor and urban – rural gap in mother's health care during pregnancy. Poor mothers do not get enough or quality food during pregnancy period, have to do heavy works, cannot go to doctors / health workers and seek proper advice or treatment for want of money. As a result they are in high risk at the time of delivery and many do die. Naturally want of food and treatment is also true for their children. That's why people's perception is that poor mothers and their children die more than others.
- ❑ Due to various awareness raising campaigns and GO/NGO activities, traditional midwives are at least more informed than before about care of pregnant mother and newborn babies and about healthy delivery. For example, they do not cut the umbilical cord with a piece of sharp bamboo piece as before. Rather they now use blades sterilized in boiled water.
- ❑ Almost all deliveries take place at home with the help of a traditional midwife. Exceptions are only for a few well-off people in towns. Condition of a traditional delivery place (*atur ghar*) has not improved enough. Most of them are unhygienic.
- ❑ There is an acute shortage of trained midwives. Traditional midwives cannot handle cases which are somewhat different and complex from the normal ones.
- ❑ Yet, maternal mortality has fallen, although not satisfactorily. People mentioned about a wide rich – poor and urban – rural divide in facilities regarding maternal health.

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<sup>19</sup> This is so because while children may be born out of wedlock, this is not socially acceptable in Bangladesh culture.

- ❑ The underlying reasons of wide urban – rural gap are two fold. First, rural people are poorer than urban ones. Second, rural areas lag behind in healthcare and other facilities. In villages, there are scarcity of doctors, health-workers and well equipped health care centres. Long distance from hospitals / health care centres, inadequate and bad transport facilities (especially in remote areas) and lack of speedy vehicles add to their sufferings.
- ❑ Condition of chars and hilly areas are worst in respect of health facilities. These areas acutely lack in doctors, health care centres and communication. In hilly areas people's lack of awareness and negligence towards health care (for example, they don't go to hospital even if it is near and treatment is free of cost) is another great problem.
- ❑ Various misconceptions and superstition still exist in rural areas and among the poor regarding maternal health, particularly during pregnancy. For example, many believe that pregnant mothers should eat less as otherwise the baby will be big and caesarian operation will be needed. Again, superstition exists most in hilly areas due to lack of education.
- ❑ People are highly dissatisfied with the conditions and facilities in the health care centres. There exist a community clinic at each ward but most of those remain closed most of the time. Doctors / health-workers report for duty only once or twice a week. Doctors are more available at union level and most in district town level. But poor people and people of distant areas cannot reach them easily and so remain deprived.

## **6.10 Summary and Policy Concerns**

### *6.10.1 Summary*

Safe motherhood for women is the fifth of the eight goals under MDG. The target is to reduce by three-quarters, between 1990 and 2015, the maternal mortality ratio. For Bangladesh the specific target is to reduce the maternal mortality ration from 570 in the base year of 1990 to 143 per 100,000 live births by 2015. Because we are all a child of a mother, may be that is a good starting point to build up a socially sustainable society. Well-nourished mothers tend to carry, deliver and nurture children who are healthier and better developed, both physically and cognitively, both in childhood and in later life.

Maternal health care refers to the caring for women's health during pregnancy, childbirth and the postpartum period. If such care is proper and adequate, maternal mortality is likley to be low. It is therefore expected that safe motherhood shall refer to indicators not simply of the mortality rate but some of the proximate factors that determine it. There are thus 6 indicators which include those related to maternal care as well as maternal nutritional issues and also those which indirectly influence maternal health and thus maternal mortality. These include the age at marriage as well as total fertility rate.

Recent information on maternal mortality ratio or their correlates is lacking. the most comprehensive dat refers to those based on s survey conducte din 2001. At that time the national level mortality ratio was 322 per 100,000 live births. It appears that the MMR may have fallen somewhat over time, but not by much. There are major regional differences in MMR, the worst situation being in Sylhet where the ratio in 2001 was 471. There is no clear rural-urban difference in favour of urban areas. Nor is there a clear monotonic relationship between MMR and wealth.

While motherhood is often a positive and fulfilling experience, for too many women it is associated with suffering, ill-health and even death. Many women die each year in pregnancy and childbirth. Most of them die because there is not enough skilled regular and emergency care

because of an acute shortage of trained midwives. Condition of chars and hilly areas are worst in respect of health facilities. These areas acutely lack in doctors, health care centres and communication.

There is a wide rich – poor and urban – rural gap in mother’s health care during pregnancy. Poor mothers do not get enough or quality food during pregnancy period, have to do heavy works, cannot go to doctors / health workers and seek proper advice or treatment for want of money. On the other hand, education of mothers positively influence where the delivery takes place, at home or in clinics.

The deaths occur more not during delivery but afterwards. The major direct causes of maternal mortality include eclampsia, haemorrhage, anemia, infection, high blood pressure, unsafe abortion, and obstructed labour. On the other hand, aged mothers are highly exposed to death risk. Besides this, maternal mortality ratio is much higher for those who are going to be mother for the first time and for those who already have five or more children.

Total fertility has gone down from more than 6 to slightly above 3 over the last thirty years or so. But it has hardly moved for women of the most fecund periods in their lives. One again finds major divisional differences. Sylhet women are the most fecund and the total fertility in fact has risen slightly during last years of the 20th century. Better educated mothers have a much lower TFR than illiterate mothers. Every two women with the highest level of education have 2 children less between them compared to two such women without any education at all.

Nearly 40% of women suffer from malnutrition. While the regional variations may not seem much, at least Sylhet is again the outlier where just about 50% of mothers are malnourished. There is also substantial rural-urban gap in favour of the latter.

Women’s education has again come out to be the most consistent factor positively impacting upon nutritional status. While among illiterate mothers the incidence of malnutrition is 40%, it is only 17% for the most educated.

### *6.10.2 Policy Concerns and Implications*

There are several policy concerns and implications arise out of the information and their analysis. The very first of this is the acute lack of recent information on maternal mortality. This needs to be looked into for regular monitoring of the situation without which no informed policy making is possible. Secondly, it appears that despite some efforts, the MMR has hardly fallen and that there are major regional variations which again remain to be explained adequately.

Four groups of women are at high risk of maternal death, those who are rather young and those who are much older, and those who are giving birth for the first time and those who have already given birth to several children. The two findings mutually support each other as the younger ones are likely to experience child birth for the first time while the much older ones may already have several children. Given that the TFR has not fallen for the young and the most fecund groups, clearly awareness raising regarding population planning and prevention of under-age marriage are important from policy point of view.

Time and again the virtuous role of women’s education has been pointed out in all sorts of issues related to maternal mortality, be it TFR, or maternal care or delivery in the possibly safer clinics. What all these mean is that the issue of maternal mortality is linked to what happens to gender equality in education and elsewhere. Educated and healthy mothers are the ultimate well-spring of a healthier, educated and poverty-free nation.

## Chapter 7

### Prevention of Major Killer Diseases

#### 7.1 Introduction

Diseases and untimely death have several painful impacts on individual, households, community and nations. They cause sufferings and pain, ruin households and communities economically and socially. They impose direct and indirect costs on nations in terms of opportunities for growth foregone and thus lengthen the period under poverty than is absolutely unavoidable. The MDGs therefore, have in several of its goals raised the issues of disease, health and death. But most of these such as child and maternal health and mortality, although extremely important, are targeted to benefit specific groups. Goal 6 on combating certain diseases is the only general one and thus targeted to all irrespective of sex and age. The goal and the targets and indicators under it are shown in Box 9 below.

#### Box 9

#### Prevent Major Killer Diseases

#### **Goal 6: Combat HIV/AIDS, Malaria and Other Diseases**

##### **Target 7 (Universal):**

Halt by 2015 and begin to reverse the spread of HIV/AIDS.

##### **Target 8 (Universal):**

Halt by 2015 and begin to reverse the incidence of malaria and other major diseases.

##### **Target for Bangladesh:**

Reduce by 50 % the incidence of cases and the number of deaths from malaria by 2015. Also detect 70% and cure 85% of detected cases of tuberculosis by 2005.

##### Indicators

*18-20: HIV/AIDS incidence*

*21-22: Malaria incidence*

*23-24: TB incidence*

One point of note here is that the diseases explicitly mentioned here are all communicable diseases and thus have the risk of spreading in epidemic form once started. In the present world where travel is widespread and fast within the country and between countries, all countries are at risk of morbidity and death. Furthermore, while only HIV/AIDS, malaria and tuberculosis have been mentioned specifically, new communicable diseases has broken out in recent years. Some are still rearing their ugly heads off and on. Examples are SARS and avian influenza both of which have actually jumped the species barrier. Children particularly are at risk in such a situation.

## 7.2 Current Status

HIV prevalence is low in Bangladesh although the risks for future spread may not be small (see later). On the other hand, despite lack of information, it is known that malaria and TB are much more frequent and people do die from these. In this chapter, therefore, we first discuss the spread of malaria and TB and later HIV/AIDS.

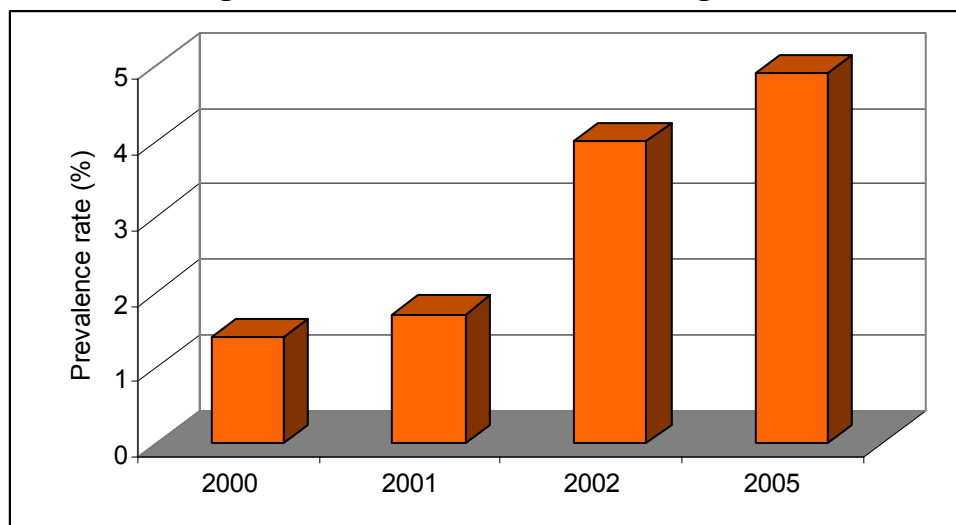
### 7.2.1 Malaria and TB Prevalence

Information on malaria and tuberculosis prevalence is sketchy while the reporting on deaths from these diseases is even sketchier. Whatever is available indicate that 0.61 percent of population suffer from malaria while 0.07 percent do so from tuberculosis (BBS: 2006). Men appear to suffer more from both diseases. The gender difference for tuberculosis appears to be doubtful as women are known to suffer more from ARI due to indoor air pollution.

### 7.2.2 HIV Prevalence

HIV incidence in Bangladesh is still relatively low. The prevalence rate is less than one percent among various most-at-risk population groups like female and male sex workers and truck drivers. But it is the highest among drug pushers, 4.9%. What is a matter of concern is that the rate is increasing rapidly and consistently among injecting drug users (IDU) in Central Bangladesh that includes Dhaka city (Fig. 7.1) which jumped to the present level in just four years from a low level of 1% or thereabout.. Based on the results using UNAIDS / WHO guidelines, at the end of 2004 the estimated number of people living with HIV and AIDS was 7500 and estimated vulnerable population was 2.2 to 3.9 million.

**Fig. 7.1: HIV/AIDS Prevalence among IDUs**



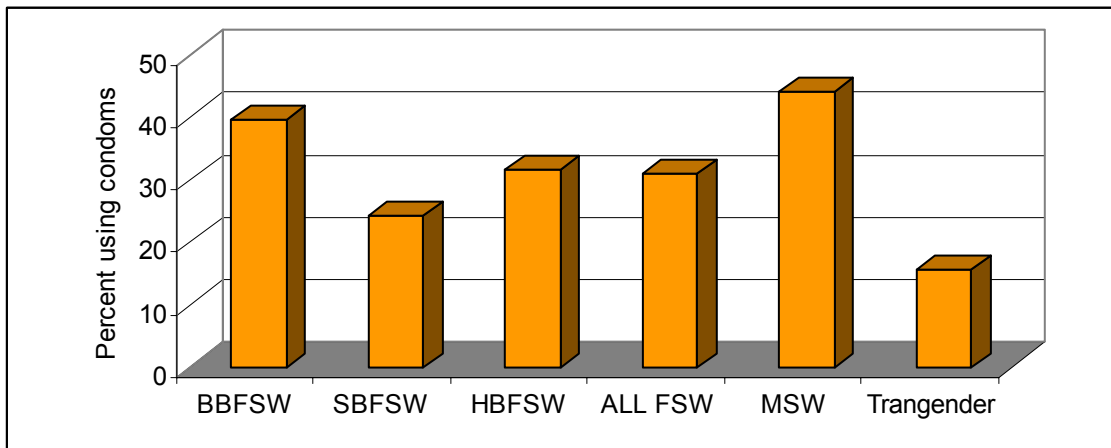
Source: Bangladesh National Aids Committee

### 7.2.3 Reasons for HIV/AIDS Spread

One major reason for HIV/AIDS prevalence could be the lack of protective measures such as condoms during sex. Earlier reports indicate that consistent condom use rate for brothel and street based sex workers are only 2% and 4% respectively while among their clients, only 25 % of truck drivers and 2% of rickshaw pullers reported using condoms. More recent information, however, indicate a much higher rate of condom use with clients (Fig. 7.2). Note that still a large

group of those at high risk do not use the cheap protective measure. Secondly, even among the sex workers there is a variation in the use of condoms, particularly those who are most mobile such as street based sex workers and the transgender the percentages using condom are among the lowest. Also note, however small, the higher prevalence of condom use among male sex workers compared to female sex workers. It could be that the men probably are better informed than the women about the problems caused by HIV/AIDS.

**Fig. 7.2: Prevalence of Condom Use among Sex Workers**  
(during the reference week)



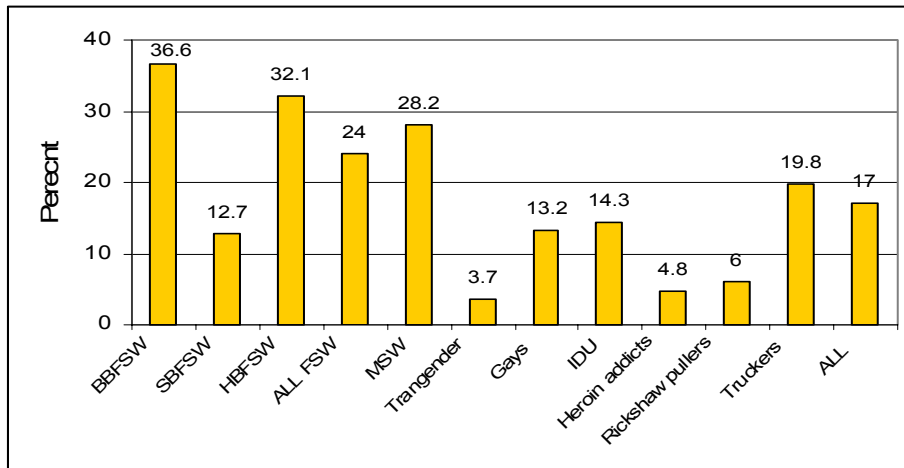
*Source:* Bangladesh National Aids Committee

*Note:* BBFSW – Brothel based female sex workers;  
SBFSW – Street based female sex workers;  
HBFSW – Hotel based female sex workers;  
All FSW – All female sex workers;  
MSW – Male sex workers

#### 7.2.4 Knowledge of HIV/AIDS

The available information shows that on the whole less than a fifth of all persons at high risk have correct knowledge of HIV/AIDS (Fig. 7.3). Also except for the street based female sex workers, the awareness level is higher among others. Why should then the female sex workers use protective measures less than men is difficult to understand. It could be due to financial problems but information on such aspects are lacking for a definitive conclusion.

**Fig. 7.3: Percentage of High Risk Groups with Correct Knowledge of HIV/AIDS**



Source: Bangladesh National Aids Committee

Note:

BBFSW – Brothel based female sex workers;

SBFSW – Street based female sex workers;

HBFSW – Hotel based female sex workers;

All FSW – All female sex workers;

MSW – Male sex workers

### 7.3 Impression from the Field:

- ❑ Field level discussion indicates that very few people know about HIV/AIDS.
- ❑ The picture regarding malaria is mixed. In some places incidence of malaria is rising while in other places it is falling.
- ❑ Tuberculosis appears to be rising in general. But it is more or less common phenomenon that women get less attention in the household in treatment of tuberculosis. People in tobacco cultivation and processing area suffer more from tuberculosis. Damp environment at home is another important cause of tuberculosis.

### 7.4 Summary and Policy Concerns

Information on major killer diseases is rather rare in the country. While one can understand the problems of information related to HIV/AIDS because of its recent inroads in the country, the lack of information on malaria and TB is surprising. This alone speaks volumes regarding the public health system in the country.

Give the above situation, the incidence of malaria, TB and HIV/Aids all may seem to be low. But actually it is not. Take for example, the incidence of TB. A 0.07 percent prevalence rate in the country means that at least 100,000 people are affected. Similarly, a 0.61% prevalence rate for malaria indicates that there are at least a million people who are suffering from malaria. These are no mean figures. In fact, the real figures may be several times of these numbers.

The policy concerns in such a situation should focus, among others, on collection of information at various levels for understanding the gravity of the problem. And this should cover other new threats such as avian influenza.

Awareness-raising is the most important task for combating HIV/AIDS. This has to be at both the individual and community level. Side by side, proper health care facilities need to be built up.

For malaria and tuberculosis, a nationwide screening drive is absolutely essential. Policy level awareness is the first priority as the treatments for malaria and tuberculosis is almost standard and new combination drugs are easily available. These do not yet happen to be priorities of the government.

## **Chapter 8**

### **Sustainable Natural Resource and Environmental Management for Common Good**

#### **8.1 Introduction**

Unlike MDGs related to income, poverty, health and education, the environmental goals and targets in MDG are not so clearly defined. Moreover, the global targets and indicators of progress cannot be directly adopted in Bangladesh, largely because of scarcity of hard data and/or official data being deliberately twisted in order to exhibit rosy pictures. Yet, we reproduce the targets and the indicators under them in Box 10 below so that these may be used as the reference points for the discussion and analysis that follows.

#### **Box 10**

### **Protecting Environment for Future**

#### **Goal 7: Ensure Environmental Sustainability**

**Target 9: Integrate the principles of sustainable development into country policies and programmes; reverse loss of environmental resources**

Indicators

- 25. Forested land as percentage of land area
- 26. Ratio of Area Protected to Maintain Biological Diversity to Surface Area
- 27. Energy supply (apparent consumption; Kg oil equivalent) per \$1,000 (PPP) GDP
- 28. Carbon Dioxide Emissions (per capita) and Consumption of Ozone-Depleting CFCs

**Target 10: Reduce by half the proportion of people without sustainable access to safe drinking water**

Indicators

- 30. Proportion of the Population with Sustainable Access to and Improved Water Source
- 31. Proportion of the Population with Access to Improved Sanitation

**Target 11: Achieve significant improvement in lives of at least 100 million slum dwellers, by 2020**

Indicators

- 32. Slum population as percentage of urban population (secure tenure index)

In a bid to understand and assess the achievements (and failures) in environmental aspects over the past five years (roughly between 2001 and 2006), one may therefore divide concerns under the MDG 7 into the following categories.

- A. Arresting/reducing damages to environmental resources including maintenance/enhancement of biodiversity;
- B. Bringing practically all of population (95.5% of rural and 100% of urban population) under 'safe drinking water' coverage by 2015;
- C. Bringing 100% population under improved sanitation coverage by 2010; and
- D. Mainstreaming sustainable development issues in national level policies and programmes

A brief account on each of these aspects is provided below which may, at the most, portray an indicative trend which is primarily based on qualitative information. While we try to provide the information related to the indicators under different targets, these have been analysed on the basis of whatever hard or qualitative data are available. In most cases, these are only indicative of the enormous environmental problems the country is facing. And indeed, here the inadequacy of the UN-MDG is most glaring. Simply the coverage under forest area or area protected under conservation programmes may not be enough for ensuring sustainable development. And certainly in Bangladesh, no environmental issue can bypass the problem of seasonal scarcity and abundance and quality which are major concerns permeating almost every sphere of life and economic activity. Yet, one finds only the issue of safe drinking water. That water contaminated with pesticides leached from agricultural land or laced with arsenic which is used to irrigate crops and thus enter the food chain of human beings need to be addressed as part of environmental targets and indicators. To properly contextualize the Environmental MDG, targets and indicators, one should therefore bring in the issue of water first. In the section following the next we therefore begin with the problem of water and water bodies.

## **8.2 Methodology**

The general methodology for assessing the progress towards other MDGs applies equally to assessment of environmental quality. However, the assessment is also based on informal as well formal participatory consultations. It is to be borne in mind that, despite the apparent small size of the country, Bangladesh exhibits a variety of micro-ecosystems and environmental consequences on different micro-ecosystems are generally different, subject to local level exposure and material usages.

Primarily, local information on people's perception regarding changes in environmental condition over the past five years is collected from six regional consultations as in case of other MDGs (see Chapter 1 on general methodology). These consultative meetings and workshops have been supplemented by a number of other informal consultative sessions conducted in 9 other places and also by information gathered under other processes such as 4 regional consultations on 'natural resources management' organized by CARITAS, Bangladesh. The national level workshops organized by both CARITAS and PFM allowed the first round of screening of environmental concerns and progressed being flagged.

## **8.3 Arresting/Reducing Damages to Environmental Resources**

There have been popular as well as research-based evidence on how environmental resources of the country are deteriorating, while in some specific cases new initiatives have also been observed to reverse the situation. This section deals with the following: (a) status of wetlands and

water bodies, (b) issues concerning water quality and pollution, (c) urban air quality, (d) land use change and top soil degradation, (e) status of soil quality and nutrition, (f) status of forest, (g) state of biodiversity, including fisheries, and (h) status of energy use, indoor air quality, and greenhouse gas emission. Note that these broadly consider the issues and some more listed under Target 9 above.

### *8.3.1 Status of Wetlands and Water Bodies*

Wetlands and water bodies of the country are in a precarious state and degrading rapidly. Rapid urbanization, fuelled by increasing population pressure and risks to rural livelihoods as well as rapidly expanding urban-based growth of service sector, has been taking its toll – the peri-urban wetlands and water bodies are degrading fast. Much reduced lean season flow in smaller rivers has been changing the hydro-morphological dynamics of the deltaic floodplains, rendering increased sedimentation on the river beds and ultimately choking a number of rivulets. In many a places, much raised river beds are utilized as paddy fields, which have been contributing to the eventual death of those rivers.

When local people are asked about the condition of the wetlands and water bodies, they equivocally commented that rivulets and water bodies have been dying. They also highlighted that in many cases powerful people have filled up peri-urban wetlands and water bodies because of lack of regulatory enforcement and poor governance (see sub-section later on land use change).

In the past, a significant shrinkage in wetland areas has occurred due to the pressure to transform wetlands into seasonal paddy fields to feed the ever-increasing population both at the national policy level and individual farm household levels. However, the environmental backlash of such ‘controversial’ national policies and subsequent implementation of projects have now been recognised by all. Unfortunately, the past trend is still continuing in some cases by the Bangladesh Water Development Board (BWDB) – the chief custodian of all the wetlands and water bodies of the country. In a bid to increase rice production in two adjacent *beel* areas in Narail District in the south-west, which have earlier been embanked for the same cause with limited success (ADB, 2005), new structural measures have been proposed which will eventually transform a predominantly wetland area into an ‘engineered dry land’. That too by defying the current policies against such physical infrastructure intervention. Similar ‘unauthorized’ and misguided moves by the ‘authority’ have may also have been designed, which will eventually destroy the characteristics of the wetland-based deltaic flood plain.

### *8.3.2 Issues Concerning Water Quality and Pollution*

In a hydrology-dominated landmass where there is ‘too much water’ in monsoon and ‘too little water’ in the dry season, water quality is expected to fluctuate with seasonal variability. Unfortunately, there has been little scientific effort to document such changes over time and within a year. Neither the BWDB nor the Department of Environment (DOE) collect and keep systematic databases on parameters, which can provide evidence how far water quality has changed for the worse (as popularly perceived) or remained much the same over the years. Box-11 provides a glimpse of Dhaleshwari, a lesser-known but polluted river by way of illustration of the nature of the problem.

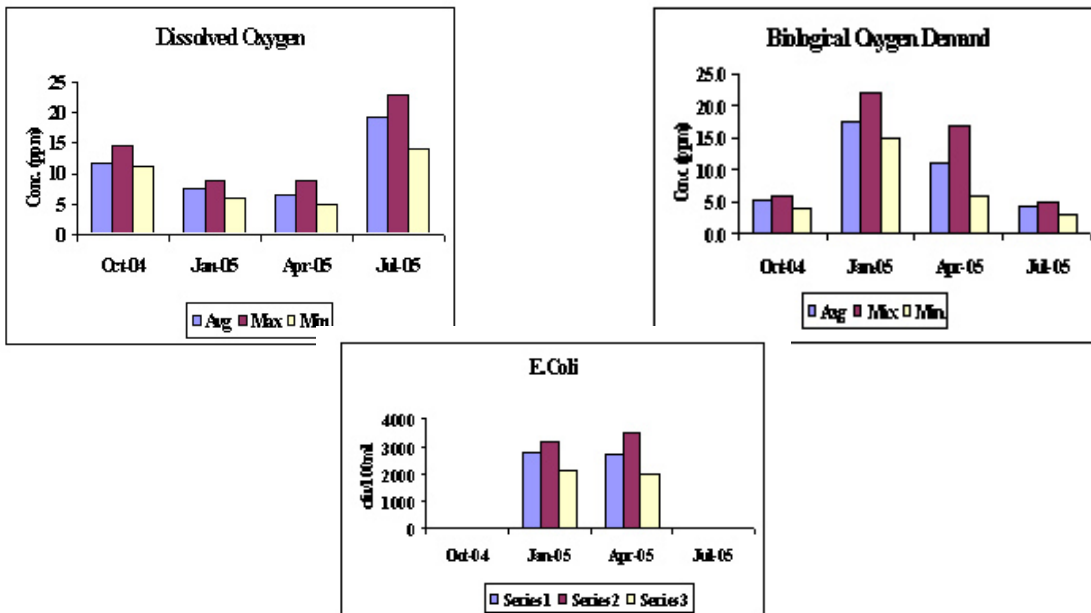
### Box 11: Quality of Water in River Dhaleshwari

Water is regarded as the most vital component among all natural resources, and crucial for the survival of all living organisms. In addition to the natural environment, people’s lives and livelihoods, national economic activities and development — all are highly influenced by water — its regional and seasonal distribution, availability, and the quality of both surface and groundwater. The quality of surface water of the country has been deteriorating due to a number of reasons and sources which include untreated industrial effluents and municipal wastewater, runoff pollution from chemical fertilizers and pesticides, and oil and lube spillage from motorized boats and the operation of sea and inland river ports.

Water quality also depends on effluent types and discharge quantity from different type of industries, types of agrochemicals used in agriculture and amount of residues left in the floodplains, and seasonal water flow and dilution capability by the overall hydrological system. Now-a-days, concerns have frequently been raised about river water pollution. Rivers such as Buriganga, Turag, Sitalakhya, and Karnaphuli are well known as polluted rivers (Rahman *et al.*, 2001). But rivers such as Dhaleshwari is not known as a highly polluted one. Alam (2006) examined temporal variability of quality of water from Dhaleshwari river and found the highest level of water pollution, as expected, in winter season. The concentrations of Dissolved Oxygen (DO) and Biological Oxygen Demand (BOD<sub>5</sub>) do testify to degraded water quality in winter. Similarly, concentration of potassium, phosphate, and nitrogen are also found to be beyond permissible limits in winter. There is a very high accumulation of *E. Coli* throughout the stretch of the river, which can easily be attributed to improper sanitation systems and practices by the people along the riverbank (Alam, 2006).

Islam (2006) examined the presence of a known carcinogen, poly-chlorinated bi-phynyls PCB), in samples drawn from the same river. Dhaleshwari river is found to contain PCB concentration (in terms of PCB-180) in the range of about 0.035 to 0.152 ppb. The presence of PCB in river water can be attributed to open air dumping of used transformer oils, where PCBs are generally used as heat-absorbing agents. Reportedly, about four lakhs (400,000) of transformers have been imported and used in Bangladesh and about 79 metric tons PCB-treated transformer oil is either already dumped or will certainly be disposed off in near future — posing an insurmountable management challenge to the environment officials as well as extreme health hazards to all other living creatures along the river bank and the river. Unless environmental management standards in power sector development are maintained properly, a human disaster is looming in the horizon.

Figures show seasonal changes in DO, BOD<sub>5</sub> and *E. Coli* in samples drawn from the Dhaleshwari river.



People in regional consultations have clearly claimed that they have been experiencing a rapid deterioration of water quality. Inadequate flow during the dry season has been mentioned as one of the factors. However, there are other causes which add to the pollution load. For example, unabated disposal of industrial and clinical wastes into open water bodies; rapid expansion of fabric dyeing industries which use azo-based dyes; disposal of urban sewage; wastes from tanneries, fertilizer & battery industries, and pharmaceuticals; household effluent carrying synthetic detergents (especially in urban areas); and residues of agro-chemicals – all have been contributing to pollute water bodies.

In the dry season the pollutants become so concentrated that water becomes unsuitable for aquatic creatures and human beings alike. There are popular reports that water quality of all the major rivers around Dhaka, Narayanganj, and Chittagong cities is so bad that many tend to recommend these rivers (viz. Buriganga, Balu, Turag, Tongi Khal, Sitalakhya, and Karnaphuli) to be called as biologically and chemically ‘dead’. Fortunately, the huge flow of water during the monsoon washes away most of the pollutants into the ocean, subsequently contributing to marine pollution.

Other than the rivers receiving urban wastes and industrial effluents, the pollution levels in the wetlands are also very high during the dry season. Newspapers often run stories regarding eutrophication and algal bloom – both are the results of chemical and biological pollution. There is a popular belief that accumulation of agrochemicals is one of the causes that is responsible for reduction in fisheries stock in beel areas. The outbreak of skin-lesion on beel fisheries has also been linked to agrochemical pollution. However, there is no systematic scientific effort which can prove such concerns. Box 12 provides a brief description of pesticide use in Bangladesh in recent years.

### Box 12: Pesticides Problem

#### Pesticides Consumption: Trend and Evidence of POPs in Natural Environment

Chemical pesticide use in Bangladesh started from mid 1950s and gained momentum in late 1960s with the introduction of HYV rice in the country (Rahman, 2004). Before this period, they were accustomed to use casually in stored products the hand-made coarse powder or chips of dried plant materials like tobacco leaves, *neem* leaves, *datura* leaves, and sometimes *neem* oils. In case of disease control, they were known to use the ashes and smokes. But with the introduction of HYV rice particularly the IR20 in the late ‘60s, the farmers were motivated to use insecticides which were given free of cost. Thus through the import of only 3 tons of insecticides, which included the chlorinated hydrocarbon like Endrin, the synthetic chemical pesticides entered the pest control scenario of Bangladesh in 1956. Since then pesticides use started gaining momentum and continued its upward trend during the 1960s to 1970s. The withdrawal of subsidy partially in 1975 and fully in 1979 initially caused a slight decrease in the consumption. But immediately after a short lapse of time the consumption again started gaining momentum. The pesticide consumption in the country reached 18,611 tons of Formulated Product (FP) in 2003 as against only 7,500 tons in 1993.

**Table-B2: Year-wise change in pesticide sales (1998-2003)**

| Pesticide category       | Year         |              |              |              |              |              | Cumm. Total  |
|--------------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
|                          | 1998         | 1999         | 2000         | 2001         | 2002         | 2003         |              |
| Insecticide              | 10514        | 12814        | 13753        | 12301        | 13977        | 13741        | 77100        |
| Fungicide                | 867          | 1228         | 1648         | 2457         | 2791         | 3465         | 12458        |
| Herbicide                | 239          | 315          | 271          | 839          | 964          | 1344         | 3972         |
| Rodenticide              | 92           | 120          | 122          | 70           | 36           | 19           | 459          |
| Sub-total (Agri.)        | 11712        | 14477        | 15794        | 15667        | 17768        | 18569        | 93987        |
| Public Health Pesticides | 0            | 0            | 7            | 24           | 0            | 10           | 41           |
| <b>Total</b>             | <b>11743</b> | <b>14503</b> | <b>15827</b> | <b>15709</b> | <b>17796</b> | <b>18611</b> | <b>94188</b> |

Source: Bangladesh Crop Protection Association

**Box 12***(contd.)*

It is interesting to note that the BCPA claimed that they haven't procured and sold POPs during 1998-2003 while scientists believe that POPs are being imported, sold and utilized in Bangladesh. PCBs are found in water samples (please see Box 1) taken from Dhaleshwari river, while there are many other published/unpublished scientific reports providing evidence that POPs are being found in natural environment. Considering the huge dilution effect of heavy downpour and runoff during every monsoon, the trace of POPs found in natural environment is alarming for both aquatic species and human beings.

**Scientific Evidence of POP Pesticides in Environmental Samples**

**Fish samples:** Fish is widely consumed in Bangladesh. If floodplains are contaminated by POPs, there is a chance that fish caught in the floodplains might also contain traces of them. Unfortunately, no comprehensive study has been conducted so far to examine the presence and extent of POPs in fish samples. Very limited studies have so far been carried out on both floodplain fish species and dried fish. Such studies reveal that the levels of total DDT (including DDE and DDD) in the amount 0.025 mg/kg and 0.0171 mg/kg while those of dieldrin within the Codex Maximum Residue Limits (MRLs of 0.3 mg/kg) were found in the most contaminated fish (Matin *et al.*, 1996).

**Water Samples:** A review of some sporadic studies conducted reveals that water of Meghna Dhonagoda Irrigation Project contained organochlorine at concentrations of 1.82, 1.91 and 2.39 ng/ml of water, while the water samples from some other locations of the same habitat contained residues of DDD, DDE, aldrin, dieldrin, endrin and heptachlor at concentrations ranging from 0.20 to 6.75 ng/ml (Alam *et al.*, 1999). Both surface and underground water samples collected from different regions of Bangladesh were also found to contain residues of DDT, heptachlor, lindane, and dieldrin within the WHO MRLs except the water samples from Begumganj irrigation project, which contained DDT residues at 19 µg/l, which is well above the WHO guideline value of 2 µg/l (Matin *et al.* 1998).

**Stored grain samples:** The stored products including fried fish are treated with different pesticides including DDT, lindane, heptachlor etc. for their protection against insect pests and diseases. Such products even after a long lapse of storage period may contain residues of pesticides. But no comprehensive study has been conducted so far in this regard also. However, reviews of some sporadic studies reveal that considerable amounts of DDT residues remained even after 150 days of storage. Thus the surface residues, extractable residues, bound residues and total residues of DDT in rice were 0.038µg (25%), 0.015µg (10.0%), 0.007µg and 0.06µg while those in wheat were 0.04µg (27%), 0.019µg (12.8%), 0.008µg (5.2%) and 0.067µg (45%) respectively after 150 days of storage (Rahman *et al.*, 1996). Similarly, varied quantities of DDT and its metabolites were detected in rice, wheat and pulses at different storage time interval. On the first day surface residues of DDT were 39.40 mg/kg, 37.73 mg/kg and 40.05 mg/kg in rice, wheat and pulse respectively, of which 60%, 80% and 92% respectively dissipated after 240 days of storage (Saifullah *et al.*, 1995a; Saifullah *et al.*, 1995b; Saifullah *et al.*, 1995c).

Pollution is also occurring in sources of drinking water, such as the ground water sources (Nickson *et al.*, 1998). This issue is dealt with in a separate sub-section below.

### 8.3.3 *Urban Air Quality*

One of the major environmental achievements in recent years in Bangladesh has been the improvement in urban air quality in Dhaka. The air quality of Dhaka Metropolitan City was bad enough in the late 1990s to compete with Mexico City to clinch the top spot as the worst polluted city in the world in terms of air quality. Following the scientific recommendations under the ALGAS (Asia Least Cost Greenhouse Gas Abatement Strategy) Study facilitated by the Asian Development Bank and relentless pressure from the civil society organizations and the media, the Government took a number of steps to improve urban air quality. The steps involved (a) a decision to import non-leaded finished petroleum products to reduce lead-emission, (b) a ban on two-stroke 'auto-rickshaws' and subsequent 'forced introduction' of environment-friendly alternative 'four-stroke' auto-rickshaw engines to lower the vehicular exhausts, and (c) popularizing CNG (compressed natural gas) as an alternative fuel. As a consequence, not only the risks from lead poisoning have been checked partially, the possibilities of emission of vehicular exhausts with black (unburnt carbonaceous) substances and pungent smell have been reduced to a great extent. Although the vehicular fleet within the city has been expanding fast, the air quality in Dhaka has improved significantly. It is interesting to note that the example has been followed lately in Chittagong, the second largest city of Bangladesh, and air quality there has started to improve.<sup>20</sup>

The other positive move taken by the Government is to enforce the legal provision for introduction of long chimneys in brickfields in a bid to disperse concentrated emissions in open air. Moreover, the use of biomass fuels has been banned for brick making and the industry is forced to utilize coal as an alternative fuel. As a result, large scale air pollution from this sector is reduced, despite rapid expansion of brick-making industries throughout the country.

In the six regional consultations, people could not comment on any significant changes in air quality in urban areas. However, people in both Dhaka and Chittagong metropolis commented that air quality has improved with respect to that a few years ago. In general, rural population could easily relate to the introduction of chimneys in brick fields with improving air quality in the neighbourhood.

### 8.3.4 *Land Use Change and Top Soil Degradation*

Since independence, the population of the country has doubled. The resulting pressure on the land is already visible and alarming. An increasing number of people are migrating from the rural to the urban areas. This has resulted in rapid urbanization. Dhaka alone now has grown into a city with more than 10 million people. As a consequence of urbanization at a very high rate, there has been increasing demand on urban housing and other facilities raising land prices. High land prices have encouraged many, especially those with political connections, to fill in urban and peri-urban wetlands, even rivers, and sell it to others. This has resulted in enactment of a new regulation that has prohibited land-filling in urban wetlands and canals. However, this legislation has little effect and the unscrupulous land grabbers have been converting all the peri-urban agricultural lands into urban 'concrete slums' with impunity. Even civil petition and subsequent legal procedures could not stop such a rapid land use change.

The rapid transformation of agricultural lands and wetlands into urban areas has resulted into loss of cultivable land at an alarming rate of 1% per annum during the past 15 years (Karim and Iqbal, 2001). Maintaining food (i.e., cereal) self-sufficiency is now completely dependent on

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<sup>20</sup> No hard data to provide evidence. Based on people's responses.

remainder of the ever-shrinking land area creating nightmares for the agricultural planners of the country.

If the above process of land transformation is not a potential risk to future food security, the rapid loss of top soils to ensure adequate supply of bricks – an essential commodity for urban development – will certainly add increasing challenge to agricultural planners. The 8000 plus brick fields<sup>21</sup> devour top soil of about 70,000 to 100,000 ha cropland<sup>22</sup> each year, resulting in irreparable damage to land ecosystem – a huge concern that might aggravate poverty in the long run. The rural poor, who are trying to eke out a living from their agricultural lands, are enticed by the brick-making industry to sell top soils at a hefty price (compared to annual potential income from the same land). Given that the top soil contains much of the nutrients for growing crops and it takes a very long time for good top soil to accumulate, such a practice of sale of top soil for brick-making and its removal from the crop field leave little scope to ensure long-term food security.

Despite rapid changes in land use and subsequent encroachment into urban rivers/wetlands and depletion of top soils from agricultural fields, there have been a few positive aspects of environmental management in relevant fields. Box-13 provides a story of conscious institutional attempt to give a river a second lease of life.

### Box 13

#### R. Turag gets a new possible lease of life

Turag means a horse. River Turag to earn the name must have been at one time a swift flowing river. For many years, however, it had been a dying river choked by land encroachment and sedimentation and all kinds of waste being dumped on the river. Concerns were raised. Eventually, the River Turag got a second chance.

Bangladesh Inland Water Transport Authority (BIWTA) took up a project for making the Turag river navigable and wider. The project has been completed in April, 2007 to make the river at least 400 feet wide and dredge the river bed. The excavation was necessary since the riverbed was raised by the earth and sand dumped by the sand traders for years. Pushing back the river banks at certain points was also necessary as parts of the river have been encroached over the past two decades. A number of non-government organizations have been tirelessly trying to create awareness over such encroachments in the Buriganga, Turag, Balu and Sitalakhya rivers. However sporadic limited efforts to remove structures from encroached riverbanks failed.

Despite the latest BIWTA efforts to clean up the Turag river, the contractor could not effectively maintain the desired width of the river at every point. It could only increase the width on an average of 12 feet although the target was to widen the river more. According to the contractor, obstructions created by the sand traders is the reason for not having the job completed as planned.

The cleaning up activity will probably give Turag river a second chance to flow permanently. However this should not be considered as a one-off attempt to maintain navigability of the river. Such activities must be continued once every few years, while other agencies must make provisions to do their bits as well. Along with efforts to enhance navigability, efforts must be made to improve water quality of the river. Moreover, the river should be kept under strict surveillance so that encroachers do not get another chance to choke it. Fig. 8.1 below shows the present much cleaner and wider status of River Turag.

<sup>21</sup> The figure is supplied by the Brick Manufacturers' Association, through personal communication.

<sup>22</sup> Considering an average removal of top soil profile up to about 18 inches and assuming that the volume of soil removed is in the same order as the volume of brick being made.

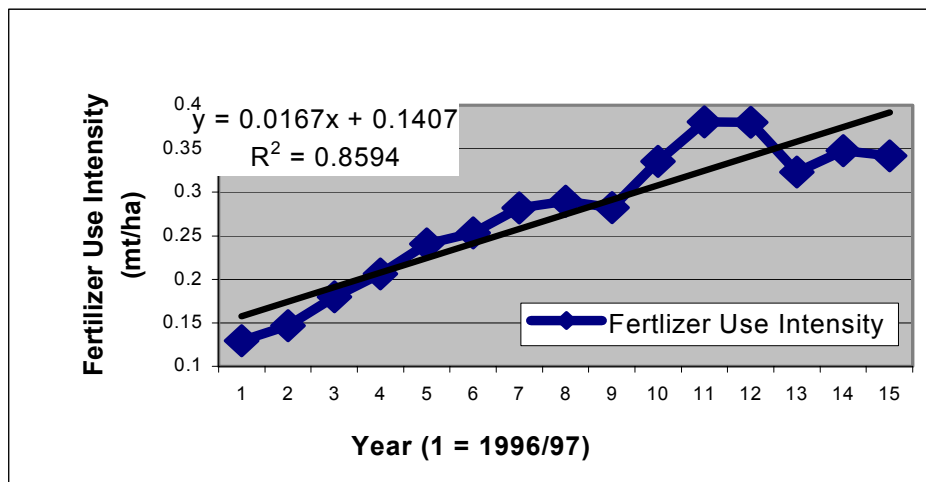
**Fig. 8.1**  
**Excavated River Turag**



### 8.3.5 Status of Soil Quality and Nutrition

According to recently published research, soil quality across the country is degrading rapidly (Karim and Iqbal: 2001). According to people's perception, soil nutrition has been deteriorating in all six divisions of Bangladesh, which is why the requirement of fertilizer supplements has been increasing. Such observations have been corroborated by the statistics<sup>23</sup> of quantum of various fertilizers being used annually (BBS, 2005). Indeed, the overall fertilizer use intensity has increased significantly during 1985-86 and 2000-2001, as shown graphically in Figure 8.2. In addition to depletion of major soil nutrients such as Nitrogen, Phosphorus, and Sulphur, there are growing evidence that agricultural soils are lacking micro-nutrients such as zinc, manganese, boron and molybdenum (Karim *et al.*, 1994).

**Fig. 8.2: Trend in Fertilizer Use Intensity**



<sup>23</sup> Statistics provided by the Bangladesh Bureau of Statistics (BBS) clearly demonstrate that the overall fertilizer intensity of crop cultivation in Bangladesh exhibits a positive trend during 1995-96 and 2000-01.

A few years ago, it was reported that the organic matter content of top soils had been depleting rapidly and apprehension surfaced that top soils in many areas might undergo peat formation, rendering soils unsuitable for current cropping practices and a sharp decline in productivity (Ahmad and Hasanuzzaman, 1998). For the loss of nutrients and micro-nutrients, concentrating on monoculture of paddy (91% of net cropped area is under paddy) is partly responsible. Lack of crop diversification, despite the past two decades of non-stop official encouragement, and unwillingness to intercrop amongst the farmers are responsible for rice monoculture, which in turn contributes to loss of nutrients and micro-nutrients.

A major problem in Bangladesh is drought which is more devastating than floods in lowering crop production and thus a major threat to livelihood of people. Very severe droughts hit the country in 1951, 1961, 1975, 1979, 1981, 1982, 1984, and 1989. See Box 14 for a description of how land degradation and drought are related.

#### **Box 14: Land degradation and agricultural drought**

Land degradation in Bangladesh may be considered as temporary or permanent lowering of the productive capacity of land. Natural processes that lead to land degradation in Bangladesh can be considered part of the ongoing land formation process. During 1983-84 and 1997 period, an 11% decline in total cultivable area, and specifically a 14% decline in cultivated area, has been observed. The estimates of the extent of land degradation in Bangladesh are that over 6.0 million ha falls below the minimum threshold for sustainable cultivation. In drier parts of Bangladesh, low soil fertility is recognized to be at the root of the land degradation leading to desertification. Among many environmental issues facing Bangladesh, land degradation due to aridity and loss of crops due to droughts have caused considerable economic losses and human suffering than many other problems in Bangladesh.

Bangladesh does experience long spells of dry weather and moderate to severe droughts are spread over a region of 5.46 million ha. The western-northwestern part of the country is generally considered as the drier region. The total precipitation in the dry regions is low. During the 7-month dry season in some regions, the evapo-transpiration often exceeds twice the amount of available rainfall. Between 1960 and 1991, agricultural droughts occurred in Bangladesh 19 times. Past droughts have typically affected about 47 percent area of the country and 53 percent of the population. An analysis of the relative effects of flood and drought on rice production between 1969-70 and 1983-84 shows that drought is more devastating than floods to aggregate production.

Soil quality has also been deteriorating in the coastal areas due to ingress of salinity. While only 0.83 Mha land was under various degree of salinity in the late 1980s (Karim *et al.*, 1990), soil salinity has since been spread to almost 3 Mha primarily due to reduction in lean season surface flow in many rivers, particularly along the southwestern coastal areas, (Karim and Iqbal, 2001). A significant reason behind the reduction in flow is the complete detachment of Gorai River from the Ganges River in every dry season during the 1990-1996 period (CEGIS, 2001). It is apprehended that if the flows of both the Ganges and the Brahmaputra Rivers are diverted during the dry season following the implementation of the proposed Indian River Linking Project, salinity will further creep in and salinize new areas in the Ganges Dependent Areas (Kamal *et al.*, 2004). Of course, sea level rise under global warming might also have similar effect, only the rate of change will not be that fast and the extent of salinization may be much less.

Salinization is also occurring in Noakhali, Bhola and Chittagong areas. Reduction in flow regime during the dry season is a major factor towards increasing salinity. However, there is almost no data to establish the trend in a scientific manner. In Jessore and Satkhira Districts, due to water-logging by saline water, increasingly new areas are reportedly being affected and the land are becoming increasingly saline – a claim that needs to be established scientifically.

#### 8.3.4 Status of Forest

The forests are shrinking in Bangladesh<sup>24</sup>, while the vegetation cover is perhaps increasing (see Figure 8.3). The perplexing situation is due, in one hand, to rather rapid denudation of forests under the direct jurisdiction of official agency – the Bangladesh Forest Department. On the other hand, people of Bangladesh has responded well to the annual campaign on afforestation, which have virtually become the second secular ritual of the nation following the observation of Bengali New Year. Even the poorest of the household tend to spend hard earned money to purchase saplings and plant them in and around the courtyard.

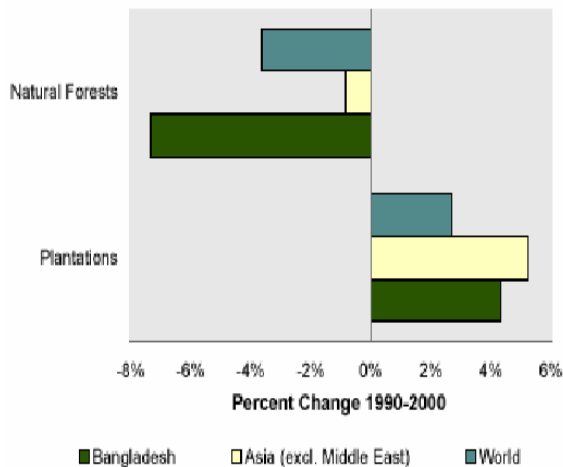


Fig. 8.3: Changes in Natural Forest & Plantation Areas

In the regional consultations, the participants equivocally informed that people are planting more saplings than they chop off for a variety of reasons. The imposition (and more importantly, the actual implementation or enforcement) of a ban on the use of fuel wood in brick-making industries and the autonomous introduction of enhanced commercial biomass fuels such as ‘charcoal briquettes’ have significantly reduced the burden on fuel wood, which in turn has kept the rate of forest depletion at a significantly lower level.

It appears that the continuous awareness raising campaign by the Non-Government Organizations (NGO) and the Government’s efforts have paid dividend in making tree plantation a habit for almost all, especially in the rural areas. However, people has generally preferred to plant ‘timber producing’ species, including exotic species such as eucalyptus and acacia. The mere resemblance of acacia wood to that of pricier teak made it a popular choice, while the possibilities of obtaining fast growing poles from eucalyptus made it popular. While the former has negative effects by spreading bronchial diseases, the latter reportedly has harmful effect on soil quality<sup>25</sup>. As in the case of paddy monoculture, a somewhat similar trend involving only a few species is being observed in forestry conservation efforts. Inadequate concerns regarding fruit bearing and medicinal species might not be sustainable in the long run – which might have detrimental

<sup>24</sup> According to official documents (GOB, 2005), forest areas have been declining at a rate of over 7% during the 1990s, far exceeding the average rate in Asia and even the global one.

<sup>25</sup> No nests of local bird species in such exotic variety trees clearly demonstrates that these are not particularly suitable for Bangladesh natural environment.

effects on other MDGs dealing with health and nutrition. Efforts must be made to rectify the trend<sup>26</sup>.

**Fig. 8.4: Village Afforestation in Jessore**



Compared to social or community forestry, the state of affairs in the State run forests is highly unsatisfactory. Denudation has been rampant as ever before. A recently analyzed satellite imagery revealed that a significant part of the remainder of the Madhupur natural forest has been denuded completely to accommodate a firing range for the Bangladesh Army (Islam, 2006). Satellite images have also revealed that in large parts of the

Sundarban mangrove forest, valuable trees have been taken out from the inner parts of every large section, while a layer at the outside is deliberately left as it is just to outwit any potential onlooker. A large number of denuded forest-hills in the Chittagong Hill Tracts (also in Habiganj and Sylhet) are leased out to grow rubber and eucalyptus. Such trends need to be reversed.

However, the Department of Forest has also done a few things right. For example, they have created green belts along the charlands and sea-facing coastal areas, to create a more stable land buffer against the tidal boars. Embankment strip plantation is also a success. The social afforestation programme has been initiated well – profit sharing arrangements with rural poor have given hope to many female headed households. More-over, the roadsides look a lot greener than ever before.

In Noakhali and Bhola Districts, the chars are now green, offering habitat for native birds. The mangrove plantations along Moheshkhali, Dhalghata and Sonadia islands are now ready to offer eco-tourism services. However, during the past five years, no new forest land could be declared as protected areas and/or sanctuary – an issue which needs to be considered for ensuring a balanced environment, especially if the national goal of extending forest vegetation to 20% of the land area is considered seriously. Box 15 provides a brief description of the status of protected areas in Bangladesh.

<sup>26</sup> Aranyak Foundation, an NGO promoting forest regeneration and conservation, has been providing financial support to grassroots-level nurseries to promote non-timber fruit and medicinal varieties of trees.

## Box 15 Protected Areas in Bangladesh

There are 18 Protected Areas in Bangladesh, covering 2,400km<sup>2</sup> and representing 1.63% of the country's surface area, but 9.14% of its forested area (Gani, 2003). The Forest Department has the mandate for management of these protected areas. The Bangladesh Wildlife Preservation (Amendment) Act, 1974, recognizes three categories of Protected Areas, namely National Park, Wildlife Sanctuary and Game Reserve. These are defined in the Act as:

“*Game Reserve* means an area declared by the Government as such for the protection of wildlife and increase in population of important species where capturing of wild animals shall be unlawful”.

“*National Park* means comparatively large areas of outstanding scenic and natural beauty with the primary object of protection and preservation of scenery, flora, fauna in natural state to which access for public recreation, education and research may be allowed”.

“*Wildlife Sanctuary* means an area closed to hunting, shooting or trapping of wild animals and declared as such under Article 23 by the government as undisturbed breeding ground primarily for the protection of wildlife inclusive of all natural resources, such as vegetation, soil and water”.

The Bangladesh Environment Conservation Act 1995 (Act I of 1995) deals exclusively with environmental issues. When ecosystem of any area has reached a critical state due to degradation of environment, the Government by notification may declare the same as ‘ecologically critical area’ under the provision of this act, where restrictions on economic activities are imposed. There are 8 Ecologically Critical Areas (ECA) in the country (see list below).

Under the Marine Fisheries Act, 1985, the Middle grounds and south patches of the Bay of Bengal have been declared to constitute a **Marine Park** in the year 2000. The Marine Park occupies a total of 698 sq. km area.

Despite declaring such conservation areas, very little efforts have so far been made to safeguard wildlife, even in these conservation spots.

### 8.3.5 State of Biodiversity, including Fisheries

Where state owned forests aren't doing well, one cannot expect that forest biodiversity would do any better. Experienced frequent visitors to the Sundarban mangrove forest often claim that, the number of wild animals such as saltwater giant crocodiles and pythons have actually decreased significantly. On the other hand, a survey based on ‘tiger foot marks’ revealed that the total number of Bengal Tigers (*Panthera tigris*) is about 350, which brought a sigh of relief among the environmental enthusiasts. The common deer of the forest has been found in the courtyards of a number of political thugs, which provide ample evidence that there is a gross tendency to violate legal provisions regarding wildlife preservation.<sup>27</sup>

There is a common belief that the Ganges (blind) dolphins (an endemic fresh water mammal species) has become endangered (IUCN, 2000). There hasn't been any conscious attempt to carry out a systematic census of such dolphins, which could have clarified the issue. However, people can easily see those dolphins playing around while passing through the Ganges

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<sup>27</sup> Sidr, the recent cyclone in November 2007 has brought widespread destruction to the Subndarban including loss of deers and other animal life as well as total uprooting and partial uprooting of plants. There are reports, however, that the plants have started to regenerate in natural manner.

on Mawa-Char Jingira riverine route and elsewhere. This means that it is at least not extinct yet and there are hopes that it may be preserved in future.

A news shook the country in 2005 when it was disclosed that a deadly invasive alien species piranha (*Pygocentrus piraya* and/or *P. nattereri*) has been released in the open water bodies in Bangladesh because of ignorance. It was reportedly brought in the country as a decorative species for aquarium. When adults exhibited resemblance with a common culture fish species Tilapia, it was bred commercially and the fries were sold to fish growers. During the flood of 2004, a large number of fish ponds have been inundated and their banks were breached releasing schools of captive piranha into the open water bodies. In the past, a number of other invasive species have been brought into the country, often to maximize private profit in the short run. Lack of knowledge and surveillance on the part of public institutions are largely responsible for the release of such invasive alien species in the country. Box 16 provides some of the known information on invasive alien species in Bangladesh.

Habitats for common birds have shrunk and the reversal has just started through social afforestation processes. However, artistic hanging nests of *Babui* (weaver birds) are no longer observed in every *Taal* (palm) tree – an evidence of its decline. Perhaps the worst affected species are the water fowls, primarily dependent on *beel* fisheries for its supply of food. The reason is simple: the *beels* are no longer *beels* and even if they are, those are almost devoid of fish. A poor *kani bok* is faced with an uneven competition for her meal with human beings in the neighbourhood. How can she feed her offspring in such adversarial condition?

### **Box 16** **Invasive Alien Species in Bangladesh**

Invasive alien species (IAS) compete and suppress the survival of native species, rendering habitats vulnerable to fire and deterioration. Important IAS in Bangladesh are the following:

*Eichhornia crassipes* (Kachuri pana), *Eupatorium odoratum* (Ayapan), *Mikania cordata* (Assam lota), *Croton bonplandianum* (Bon khira), *Lantana camara* (Nak phul), *Leucaena leucocephala* (Teli kadam), *Acanthospermum hispidum* (Katahara), *Cassia occidentalis* (Kasundi), *Ageratum conyzoides* (Goat weed, ghag), *Alternanthera flocoidea* (Hechi), *Atylosia scarabaeoides*, *Commelina obliqua* (Jotakansira), *Convolvulus arvensis*, *Evolvulus nummularius* (Bhuiokra), *Hyptis suaveolens* (Bon topma), *Ipomea carnea* (Dolkalmi), *Ludwigia adscendens* (Keshordham) and *Mimosa pudica* (Lajjaboti).

**Plants:** Hossain and Pasha (2004) provided a long list of alien and invasive alien plant species from Bangladesh, some of which are listed above. *Eichhornia crassipes* (Kachuri pana) is an notorious weed of fresh water ecosystems; *Eupatorium odoratum* (Ayapan) and *Mikania cordata* (Assam lota) are two invaders of terrestrial ecosystems that overtop the canopy of shrubs and young tree saplings. *Croton bonplandianum* (Bon khira) and *Lantana camara* (Nak phul) grow along the edges of forest and waste lands and invade local vegetations

**Animals:** Little information is available on invasive alien animal species in Bangladesh, although Rashid (2004) has given a brief review on this subject. The introduction of alien species of fauna, particularly fish, started in the early 1950s. The decision to introduce the alien species was primarily to increase productivity. Rashid (2004) reports that these decisions were either whimsical or deliberate and mentions that so far least 32 fish species have been introduced in the country. The impact of alien species on indigenous species has not yet been thoroughly studied. Among the exotics, tilapia, consisting of two species, *Oreochromis mosambicus* and *O. niloticus* are of greatest concern because these species have invaded all available habitats, including estuaries (Rasid, 2004).

Despite all these, the migratory birds still do come and spend the winter in the wetlands of Bangladesh. The Bird Watcher Association keeps track of overall number of such species and the results are generally satisfactory. Such birds winter in offshore islands, in the estuary, in the *haor* basin and charlands, and interestingly, in precious wetlands of Mirpur and Savar near the capital city.

Unfortunately, the level of awareness among high level policy makers regarding the biodiversity and its value as the preserver of life including human lives is some times horrendous. An influential minister once asked publicly if the migratory birds have entry authorization for Bangladesh!

Also, despite the legal ban against killing and catching wildlife, birds are sold in open in major urban centers and killing wildlife is still regarded as a display of human supremacy against nature! No wonder, living rooms of ‘capable households’ are full of processed skins, skulls and bones of tigers, elephants, reptiles, deer and what not. In spite of the fact that the Government has signed the



**Figure 8.5: Even the Smallest Fry Cannot Escape**

Convention on International Trade of Endangered Species (CITES), very little has so far been accomplished to curb ITES from Bangladesh. Lack of enforcement of legal provisions and extremely poor understanding of the importance of biodiversity and wildlife are the major causes for such an unacceptable insensitivity.

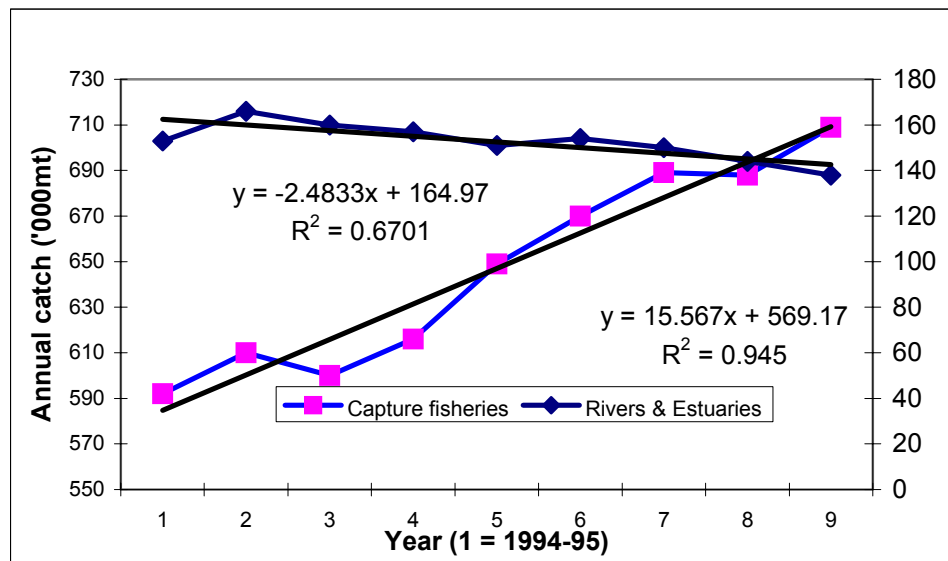
Monoculture be it in crops, fish cultivation or social forestry often promises a fast route towards increased income. The poor are therefore attracted towards such practices and become dependent on only a few paddy varieties or crops to maintain their household food security. But there are also fears that a viral epidemic can wipe out the potential production of any such variety in any given year, giving a decisive blow to the impoverished population – that too in tens of millions in number. On the other hand, there are positive signs of the awareness of the danger. As a result, there are now sporadic efforts to preserve rice varieties/species *ex situ* by a number of NGOs, while the Bangladesh Agriculture Research Institute is operating a gene bank in Joydevpur. Despite such efforts, it is apprehended that the overall agricultural systems in Bangladesh may have lost over 5,000 paddy strains/varieties over the past four decades due to continued monoculture.

**Fisheries:** Perhaps the worst victim of habitat fragmentation and drying up of wetland is the open water fisheries sector of the country. The current stock in *beel* fisheries has reached such a low level that unless new sanctuaries are created and maintained, a number of *beel* fish varieties might become endangered within a decade! With decrease in availability, the average market price has gone up very rapidly. Since an average catch is decreased significantly, the price hike could bring little benefit to the poor fishermen. The consumers on the other hand also suffer because of the high prices. A recently completed study reveals that among the low income and

poor households, consumption of fish has gone down alarmingly (Ahmed *et al.*, 2006). In the regional consultations, people equivocally commented that availability of fish has been decreasing in the wetlands. They identified the following reasons which were responsible for the decline:

- Loss (and fragmentation) of wetland habitat;
  - ◊ Drying up of rivers and khals;
  - ◊ Drying up of beel areas for rice cultivation;
- Fry and juvenile catching with ‘current net’ (fine meshed net that does not allow fries to escape);
- Use of agrochemicals of which a significant proportion is retained in the floodplains as residues, which can kill fish larvae soon after hatching.

It is gratifying to note, however, that the trend of harvest from capture fishery had been upward and quite fast compared to the downward trend in catch from open water fishery (Fig. 8.7). This may have partly compensated for the fall in wetland fishery, but it does not make up for the loss in fisheries biodiversity in rivers and wetlands.



**Fig. 8.7: Trends in Capture and Open Water Fish Catch**

### 8.3.6 Energy Use, Indoor Air Quality, and Greenhouse Gas Emission

As indicated earlier, the tendency to use fuel wood has decreased noticeably, despite increase in biomass demand. In rural areas, people still use poor quality biomass – mostly the residues of crops, cow dung (as dried cake), and tree fallings (leaves, creepers, twigs and branches after pruning, etc.). Since these biomass are generally poor quality fuel and burning them releases smoke, rural women are forced to endure that and face the risk of bronchial/respiratory diseases. Despite the introduction of improved fuel such as ‘charcoal’ (i.e., compressed paddy husks for details of which see Box 17), liquefied petroleum gas (LPG) and electricity, rural women are still struggling with poor quality biomass as cooking energy and facing adverse health consequences.

## Box 17 Compressed rice Husk as Improved Cooking Fuel

There was a time when rice husk was a popular biomass for rural cooking. Of course, rice parboiling industries have always utilized rice husk as a cheap source of energy. With the advent of new technologies, rice husk has now been converted into a much improved fuel where powdery husk is transformed into solid hollow sticks – known as ‘charcoal’<sup>1</sup>. Locally, it is known as charcoal, bamboo like coal, Saddam charcoal, etc. The product is solid and it is a perfect substitute of fuel wood. In general, rural women believe that 50% husk savings may be possible with charcoal. The price of charcoal is quite competitive (Tk. 120-150 per *maund* equal to 82 lbs or so) with respect to fuel wood, its closest competitor, and other cooking fuels such as kerosene, and LPG. Charcoal is extensively used in Chittagong, Sylhet, Habiganj, Bhairab, Ashuganj, Narayanganj and Mymensingh.

Characteristics of charcoal:

- It burns well (higher fuel efficiency)
- Heating capacity is better than fuel wood
- Hassle free and non-hazardous
- It makes no fume while it is burned, contributing to betterment of women’s and children’s health
- Cheaper than Kerosene and LPG

According to published sources (BIT, 1998), biomass briquetting has been popular in Bangladesh for the past few years. As of 1998, more than 900 heated-die screw press briquetting machines are in operation in the country.

Muhammaad Idu Miah lives in Habiganj. He has a small industry of charcoal briquette manufacturing. He has three machines to make charcoals. Generally, each machine is run round the clock. Mr. Miah collects rice husk from rice mill at a price of 40-60 taka per *maund*. In addition about 15 taka is needed as labor cost and 24 taka as electricity cost in the production of each *maund* of charcoal. It appears that the average production cost is about 90-100 taka per *maund*. He sells charcoal at a price of 120-140 taka. Each month he produces about 2,000 *maund* of charcoal which means that he makes 20,000 taka as net profit per month, a hefty sum by Bangladesh standards.

Apart from biomass for cooking, the other major use of energy is for lighting, mainly with kerosene as electricity, particularly in the villages still available to only a lucky few. No more than around 30% of the households have access to electricity in the rural areas and that too is highly skewed in favour of the comparatively well-off ones in the rural areas (Asaduzzaman and Latif: 2005).

The country has been experiencing the first few steps towards rapid industrialization. In a bid to cater to the requirements of the industrial sector for electricity energy, government-led efforts are supplemented by private electricity development, transmission, and distribution. However, increased provision of electricity goes hand in hand with emission of greenhouse gases which are responsible for causing global warming. Although there is no firm data to suggest how much GHG is being released now compared to past five years, one can safely conclude that the per capita GHG emission have gradually been increasing in Bangladesh.

There is no denying the fact that many industrial units have been using captive power generators to ensure round-the-clock supply of power even when there are frequent power outages. Although these units are smaller in size, these might contain oils with small quantity of PCBs in it. The Department of Environment (DOE) might look into it and take necessary measures to limit large scale PCB pollution in future.

In a country which is trying to achieve MDGs meaningfully, and therefore has to increase the use of fossil fuel based energy, an increase in GHG emission is bound to happen. Despite the recent growth in GHG emissions from Bangladesh, an average Bangladeshi still emits a quite insignificant amount of GHGs compared to an average global scale. The only question is whether the GHG efficiency of the overall economy has shown any positive trend or not. Lack of data in this regard allows little room to investigate the issue.

However, there are certain trends which are noteworthy as well as worrisome. The high intensities of exports and imports have led to the greater availability of used packaging materials for use as fuel by the poor, particularly in the urban areas. This is supplemented by changes in urban solid waste mix, which now contain increased proportion of combustible wastes. The poorest of the urban poor generally collect it from urban refuse sites and make a living by selling those used packing materials. The ultimate “beneficiaries” are millions of other lower-middle income and poor households, where people are not fortunate enough to have access to natural gas and pricier kerosene for cooking, and they can cook with such ‘alternative cooking fuels’.

From an environmental point of view, such a change in fuel type can be interpreted in two ways, one good and one bad. First, energy efficiency of cooking is increased due to utilization of “better” cooking fuel compared to poor quality biomass (or even fuel wood), which eventually contributes to the environmental cause by reducing GHG emissions. However, in the process items such as styrofoams are also burned in poor urban households, which cause emission of toxic gases. Inhalation of toxic gases such as dioxan and other POPs can lead to cancer, which can put the poor women in severe health distress in possibly not too distant future. On one hand the pressure on biomass fuel is reduced while on the other women are being put to greater health risks.

#### **8.4 ‘Safe Drinking Water’ Coverage of Rural Population**

By the early 1990s Bangladesh increased its coverage of providing tubewell or piped water to 97% of her population, which was regarded as a major success. However, with the widespread contamination of shallow groundwater aquifers with labile arsenic, the early success has turned into a nightmare. If one carefully analyzes the ‘safety’ concerns in supply of drinking water, Bangladesh is required to do much more than what it has been doing in recent years in a bid to achieve its goal to bring 95.5% of her rural population (currently, some 102 million) under ‘safe drinking water’ coverage by 2015.

It is to be borne in mind that the rural people has very limited alternative choice towards collection of ‘safe drinking water’, especially when over 25% or thereabout of all tube wells are already dyed ‘red’ to signify arsenic content higher than the national threshold limits of 50 ppb. According to Department of Public Health Engineering (DPHE) sources, some 29 million people are exposed to arsenic contamination exceeding 50 ppb and 49 million to levels exceeding the WHO threshold of 10 ppb.

As open water sources are mostly laden with health-threatening pathogens and disease-vectors and relatively ‘safer’ tubewells are drawing water with high iron content and high salinity (location-specific), rural people hardly have a viable alternative. In the regional

consultations, concerns have been raised regarding the fact that rural poor households are forced to drink water from arsenic contaminated wells. People are left to choose from two deadly evils: either risk immediate health disorder by using pathogen and vector contaminated water or risk arsenicosis in the long run by using arsenic-contaminated drinking water. Of course, availability of cheap fuels could enable the rural poor households to get rid of pathogens/disease-vectors by boiling water. However, lack of affordable rural energy services leaves little room to escape environmental health consequences.

## **8.5 ‘Safe Drinking Water’ Coverage of Urban Population**

Currently, over 26% of 140 million people are living in urban centers and it is expected that over 50% of all Bangladeshi will be living in urban centers by the year 2020. Currently, more than half the urban population has access to piped water supply (World Bank, 2006). The populous urban centers such as Megacity Dhaka and other Metropolises such as Chittagong, Khulna and Rajshahi do enjoy piped water supply in individual households, in 70, 55, 51 and 40% households respectively. In addition, 100 out of 250 municipal towns have piped water systems. It has been observed in a number of cases that affordability of piped water systems in urban areas is not a constraint at all. Rather, 100% of water bills have been paid even in slum areas when NGOs were involved in management of the system. Such experiences in Bangladesh raises hope that, if a proper management system can be installed, reaching the target in urban areas might not be difficult.

However, one has to deal with service quality as well. Even in 2007, Dhaka Water and Sewerage Authority offices in a number of areas have been raided by local mob in protest of supplying awfully poor quality water. In Chittagong, people complained about high chlorine content in water supplied by the Chittagong Water Supply and Sewerage Authority. From an environmental point of view, one might therefore infer that even if the goal of bringing 100% urban population under the coverage of safe drinking water is achieved by 2015, the ‘core safety’ issue might not be fully realized given the current level of practices by concerned authorities.

## **8.6 Improved Sanitation Coverage**

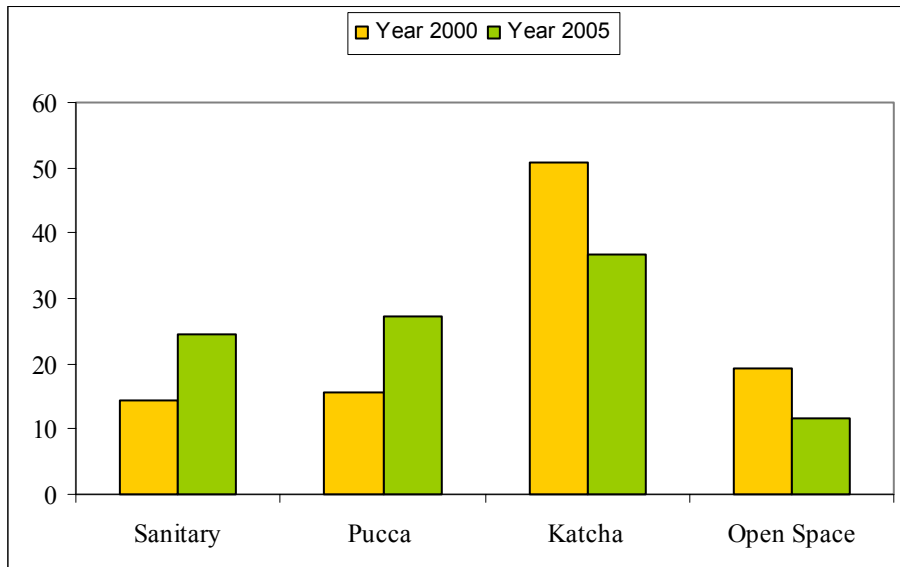
### *8.6.1: General Situation*

HIES data indicates that during 2000, only 30% households had access to hygienic (*pucca plus* sanitary) sanitation facilities (Fig. 8.8). Since then the access to such facilities has increased by 2005 to about 52% of households. Correspondingly the unsafe sanitation practices have fallen in nearly 70% to 48% households.

### *8.6.2 Rural-Urban Differences*

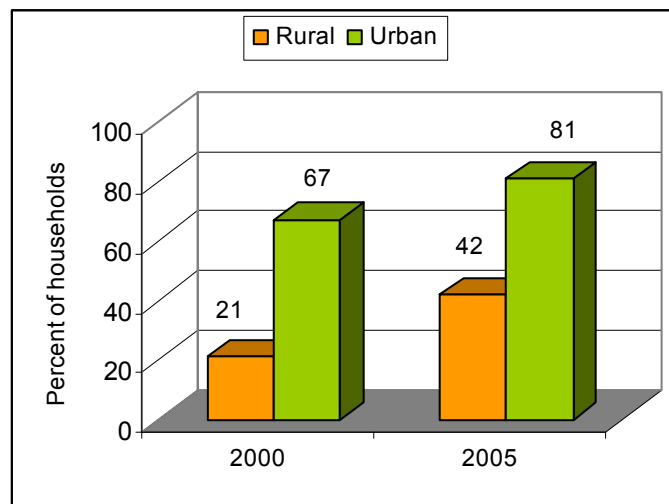
Rural-urban differences in sanitation coverage had been, however, very wide (Fig. 8.9). In 2000, only 21 percent of households had hygienic facilities. The corresponding urban percentage had been three times as much. By 2005, the coverage has doubled in rural areas but moved up much slowly in the urban areas.

**Fig. 8.8: Nature of Toilet Facility**



Source: Based on unit records of HIES of 2000 and 2005

**Fig. 8.9: Rural-Urban Differences in Toilet Facility**

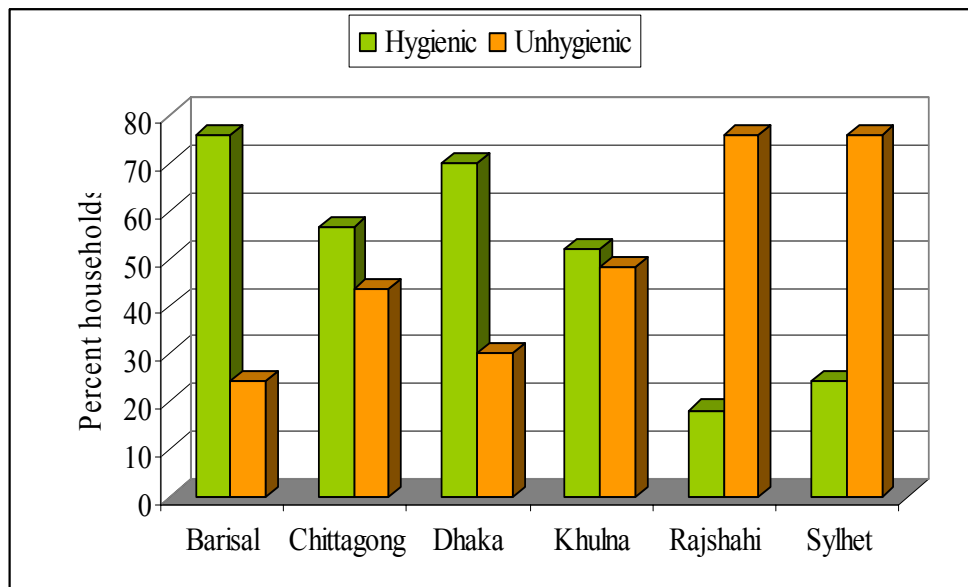


Source: Based on unit records of HIES of 2000 and 2005

### 8.6.3 Divisional Differences

Regional differences by division are very wide in the spread of hygienic facilities (Fig. 8.10). Again we find Sylhet to be a villain of the piece where less than a quarter of households use hygienic toilets and 74% use unsanitary toilets or defecate in the open space. Rajshahi is also in the same league. Barisal has the lowest incidence of use of unhygienic toilets, only 24% or so. Other divisions fall in between.

**Fig. 8.10: Regional Differences in Types of Toilet Used**



#### 8.6.4 Service Quality

While there is some improvement over time on the whole, the service quality has remained unsatisfactory. A recent survey found that only 17% of the urban households are satisfied with the quality of sanitation services (GHK, 2003).

### 8.7 Mainstreaming Sustainable Development in National Policies & Programmes

Generally speaking, Bangladesh public authorities have been rather prolific in pronouncing policies, be it for promoting sustainable development, safeguarding natural environment, or new extension policy in agriculture. On the surface the policy regime thus looks extremely promising. However, the country fails miserably when it comes to implementation of specific policies. Unacceptably poor implementation often makes a policy pronouncement into a mere rhetoric. In some cases, inconsistencies within and between policies have been found due to very strong sectoral and sub-sectoral biases. A major reason is that the policy pronouncements are often not backed by diagnostic studies behind the particular issues that these policies are pronounced to address, nor are these backed by time bound and budgeted plans of action. Weak institutional arrangements often act as deterrent factors that further weaken implementation procedures. Lack of adequate human and other resources (in terms of skills, number, equipment, surveillance capacity, etc.), wide-spread lack of coordination among relevant government institutions (such as ministries, departments, directorates, boards, etc.), and inter-ministerial hierarchy are the major constraints towards implementation of environmental as well as other related policies.

In the backdrop of such realities, one can only hope that the target of mainstreaming sustainable development in national policies and programmes will be reached within the MDG time-frame. In addition to the aforementioned barriers of implementation of the current policy regime in relation to environmental management and sustainable development, one observes an institutional tussle over establishing authority and mandate on relevant issues. Generally, all MDG related activities in the country are primarily directed by the Ministry of Planning (MoP).

Of course, it has the mandate to coordinate with all other relevant ministries and concerned agencies towards designing activities and projects. The Ministry of Environment and Forest (MoEF) is the national institution which is supposed to spearhead all activities related to environmental management and assume the lead role towards mainstreaming environmental concerns towards achieving MDGs. It was expected that MoP would coordinate with MoEF in relation to any activity under MDG 7. Although it must be added here that not all the activities under MDG 7 actually fall within the ambit of either of the ministries. The lowering of dependence on solid fuel, for example, is actually the mandate of the Ministry of Energy and Power.

Given such multiplicity of actors with mandates over achieving MDG 7, the MoP and the MoEF remain the major agencies. Yet, in reality very little efforts have been made to coordinate MDG-related activities between the two institutions. The PRSP which is expected to be the embodiment of the actual implementation of policies and programmes for achieving MDGs does contain an elaborate chapter on environment and sustainable development along with a policy matrix about how to go about putting the ideas into practice. In reality nothing of substance has happened. No noticeable programme under MDG has been considered by the Department of Environment (DoE), the technical agency on behalf of the MoEF to deal with environmental issues.

The DoE Officials are busy with their ‘regular’ business-as-usual activities. In a bid to mainstream environmental concerns in development processes, EIAs have been made compulsory by the DoE. But the DoE totally lacks the technical competence to judge complex projects. Yet, it happily goes about approving them. The Phulbari Coal Mine project is a case in point. No wonder, the ‘open mining’ of the controversial coal mining project get DoE nod as being environmentally benign (or having very little adverse impacts) while there had been fierce opposition against it by the local people, experts and civil society activists to the point that all work on the mine has stopped.

Again, the Divisional Commissioner’s Office in Chittagong Metropolitan City has been issuing permission to cut hills in a bid to expand residential areas for high level officials of the government, totally disregarding the adverse environmental consequences.<sup>28</sup> Similarly, the Ministry of Industry never bothered to impose conditions on polluting industries, despite ‘letters’ from the DoE. The operations of ship breaking industries have been continued in full swing, again disregarding the adverse environmental implications.

Against many lapses and glaring examples of violations of environmental regulations, there have been a few sporadic good practices during the past few years. The latest attempts to relocate tanneries from Hazaribagh, establishing Dul Hazra National Park near Cox’s Bazar, establishing Madhutila Eco-park, etc. raise hope against the backdrop of many failures.

The goal of achieving total sanitation by 2010 was announced in 2003 by the GoB as the objective of its Total Sanitation Campaign. It also received adequate political blessings. Providing subsidized latrines by involving local government institutions (e.g., Union Parishads) and NGOs has become a major rural development activity in recent years. Under the Total Sanitation Programme, community-wide performance-based incentives have been offered for sanitation coverage achievements.

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<sup>28</sup> This happened soon after this draft was made when land slides occurred in several places destroying lives and property.

However, there is no point to be complacent regarding the success stories. The national institutions need to work even harder to ensure noticeable improvements in managing environmental concerns.

### **8.8 Summary and Policy Concerns**

Sustainable development as a part of policy has not been pronounced anywhere in so many words. But the PRSP has a major chapter on environment. On the whole there had been major degradation of the natural resource base (land, wetlands, forest) for all kinds of economic activities as well as for life support natural systems (such as biodiversity) while pollution has choked the ecosystems in some areas such as around Dhaka. Yet, there also some success stories such as road side plantation, near stoppage of polythene shopping bags and improved air pollution in Dhaka by banning two stroke vehicles and introducing 4-stroke ones in their place.

In general, Bangladesh showed high inclination in pronouncing policies, but not so much capability to implement them. The level of implementation is unacceptably poor, making a policy pronouncement a mere rhetoric. In some cases, inconsistencies have been found due to very strong sectoral biases. Weak institutional arrangements often act as deterrent factors that further weaken implementation procedures. Lack of adequate human and other resources (in terms of skills, number, equipment, surveillance capacity, etc.), wide-spread lack of coordination among relevant government institutions (i.e., ministries, departments, directorates, boards, etc.), and inter-ministerial hierarchy are the major constraints towards implementation of pro-environmental policy regime in Bangladesh.

As a result, while the aim was to reverse the loss of natural environmental resources, one can find a host of reports on how environmental resources of the country have been deteriorating despite some new initiatives to reverse the situation. By analyzing the current trends, one can infer that the reversal of degradation of natural resources might not be achieved unless the current institutional weaknesses are adequately addressed, administration is made pro-active to arrest encroachment and pollution, urbanization is properly guided with a possible enforcement of zonation, and inter-ministerial coordination is enhanced with increased awareness on environmental values and norms. Just by pronouncing policies would not lead the country to environmental sustainability.

Unless a viable water treatment modality to remove labile arsenic can be found out and disseminated amongst millions of rural households, the target in relation to safe rural water supply might not be achieved. Since urban water supply is predominantly dependent on ground water resources and by 2015, over 40% of the population will be residing in urban areas, the target for 'safe water supply' in urban areas might not be achieved either. The piezometric surfaces of groundwater aquifer in most populated cities (i.e., Dhaka, Chittagong and Khulna) have been declining rapidly, which have already posing risks to long-term sustainability of the resource base itself. Moreover, frequent drainage congestion leading to urban flooding and potential to recharge groundwater aquifer with pathogen laden filthy water might increase the risk further. The quality of supplied water in these cities is already questioned, which is manifested by increasing demand for bottled mineral water. Such a trend would further limit the access of urban poor to safe water and might put them under severe threat of health disorder.

It is heartening to note that the sanitation coverage is indeed increasing, though there is deficiency in service delivery in urban areas. The target might still be achieved by 2010. However it would require strong collaboration between concerned government agencies and NGOs operating at the grassroots. Involvement of local government institutions is also necessary

to achieve the target. The level of financing needs to be reinforced in order to facilitate the process of implementation.

It is important to note that the gradual degradation of natural resources such as land and water would eventually lead to loss of overall productivity, which in turn adversely affects other targets in the long run. Similarly, degradation of water quality will adversely affect health condition of urban poor. Integration of the principles of sustainable development in a sense becomes not simply an integral part of MDG but rather an essential part because without this quite a few of the other MDGs including possibly the most important one of what an activist termed as “making poverty a museum piece” will probably never happen. Unfortunately these intricate web of intertwining relationships are hardly understood by the fence mending policy makers who are in charge of specific ministries. That we think remains a major challenge to be overcome in the future.

## **Chapter 9**

### **Effective Partnership for Equitable Global Development**

#### **9.1 Introduction**

Goal 8 on global partnership for development includes 7 of the total 18 targets and 16 of the 48 indicators under MDGs. This only reflects the importance attached by the global comity of nations to equitable partnership. Several, though not all, of the targets and indicators relate to net flow of resources from the developed to the developing world including the least developed countries (LDCs). And it is these targets and indicators which have generally drawn attention and much of the hand wringing on the part of the developed countries and the blames of lip service against them heaped by the developing country activists pile up. And this situation is not unique to MDGs for which there is only a pledge. Other global treaties, conventions and protocols which are legally binding and where the developed and developing countries have banded together for global good suffer from similar malaise. We do firmly believe that the developed countries have reneged on much of their promise. But at the same time part of the blame also lies on the part of the developing countries or rather their governments. When the charges of nepotism and corruption in developing countries are raised, these are often sidelined. On the other hand, if we wish to have partnership for global progress, the same should be true for partnership within the country for national development. Unfortunately this is yet to be true in many cases. Furthermore, as we shall show later on, even on a narrow consideration of aid flows and similar other issues, part of the fault lies on our part that the committed flows have not been disbursed.

#### **9.2 Targets and Indicators: Some Observations**

Box 18 shows the 7 targets and the 17 indicators under them. There are five types of targets. These are

- Ensuring flow of financial resources through a non-discriminatory aid and trade mechanism keeping in mind the special needs of LDCs, SIDS and landlocked countries;
- Debt sustainability
- Help in decent work for youth;
- Engage the pharmaceutical companies for supply of essential drugs;
- Involve the private sector for development of ICT based digital communication infrastructure

The indicators have been developed accordingly.

Not all the indicators may be relevant for Bangladesh (such as those for landlocked countries and SIDS), we shall try to discuss the issues in the order of the typologies described above to put some semblance of order. Yet, it would not be out of place to point out one or two problems with these targets and indicators.

The first type of target is more or less applicable to all countries receiving aid and also involved in trade. There are, however, as indicated earlier other treaties, conventions and protocols where additional financial resources are expected to be pledged and disbursed. How far these flows are blended together with general aid is difficult to understand. One would have liked to know the substitution or complementarities among these flows for understanding the ultimate quality of aid. The Paris Declaration of 2005 is particularly relevant in this context (see later).

## **Box 18**

### **Partnership for Equitable Development**

#### **Goal 8: A Global Partnership for Development**

**Target 12. Develop further an open, rule-based, predictable, non-discriminatory trading and financial system. Includes a commitment to good governance, development, and poverty reduction — both nationally and internationally**

- 32. Net ODA as percentage of OECD/DAC donors' gross national product (targets of 0.7% in total and 0.15% for LDCs)
- 33. Proportion of ODA to basic social services (basic education, primary health care, nutrition, safe water and sanitation)
- 34. Proportion of ODA that is untied
- 35. Proportion of ODA for environment in small island developing States
- 36. Proportion of ODA for transport sector in landlocked countries

**Target 13. Address the special needs of the least developed countries Includes: tariff and quota free access for least developed countries' exports; enhanced programme of debt relief for HIPCs and cancellation of official bilateral debt; and more generous ODA for countries committed to poverty reduction**

- 37. Proportion of exports (by value and excluding arms) admitted free of duties and quotas
- 38. Average tariffs and quotas on agricultural products and textiles and clothing
- 39. Domestic and export agricultural subsidies in OECD countries
- 40. Proportion of ODA provided to help build trade capacity

**Target 14. Address the special needs of landlocked countries and small island developing States**

**Target 15. Deal comprehensively with the debt problems of developing countries through national and international measures in order to make debt sustainable in the long term**

- 41. Proportion of official bilateral HIPC debt cancelled
- 42. Total Number of Countries that Have Reached their HIPC Decision Points and Number that Have Reached their Completion Points (Cumulative) (HIPC)
- 43. Debt Service as a Percentage of Exports of Goods and Services
- 44. Debt Relief Committed Under HIPC Initiative (HIPC)

**Target 16: In cooperation with developing countries, develop and implement strategies for decent and productive work for youth**

- 45. Unemployment of 15-24 year-olds, Each Sex and Total

**Target 17: In cooperation with pharmaceutical companies, provide access to affordable essential drugs in developing countries**

- 46. Proportion of Population with Access to Affordable, Essential Drugs on a Sustainable Basis

**Target 18: In cooperation with the private sector, make available the benefits of new technologies, especially information and communications**

- 47. Telephone Lines and Cellular Subscribers per 100 Population
- 48. Personal Computers in Use and Internet Users per 100 Population

The issue of debt sustainability particularly for highly indebted countries is a major cause of concern. But this is not so much a problem in Bangladesh although it must be added that the issue of sustainability depends as much on domestic policies and practices as much on donor behaviour, particularly in cases where the debt is more to the foreign private sector than the governments.

The third type of target is actually dependent more on domestic policies and their implementation rather than on international help. There is no doubt that finding employment for youth is absolutely essential. It would have been better to have not only the level of unemployment as an indicator but also how many have received employment under the system of GATS (Mode 4, particularly) could have been a good measure of international collaboration (see later). Similarly, one could use the level of employment in foreign owned companies from the developed countries within developing countries.

The fourth and fifth relate mainly to collaboration with the private sector operating at the global level. On the supply of essential drugs issue, the stipulated indicator should have been supplemented with the need for tagging support to R&D in domestic pharmaceutical companies by the developed countries to supply of drugs at cheaper prices. Or, the intellectual property rights in the processes for producing drugs could be amended in a way so that developing countries can produce these drugs at a much lower rate of licensing fees.

On the ICT issue, this again actually becomes a part of GATS under the Mode 3 on commercial presence. If so, adhering to only one of the modes under GATS while not practicing the others such as Mode 4 is actually moral dishonesty particularly by the signatories to WTO.<sup>29</sup> With these observations we now turn to discuss the targets and the indicators under them.

### **9.3 Rule-based, Non-discriminatory Aid and Trade Flows Committed to Development**

#### *9.3.1 Commitment to Development Index*

The Center for Global Development, Washington has been publishing a *Commitment to Development Index* for the past few years. The latest in the series is that published in 2006 based mainly on 2004 data. These are reproduced below as Fig. 9.1.<sup>30</sup>

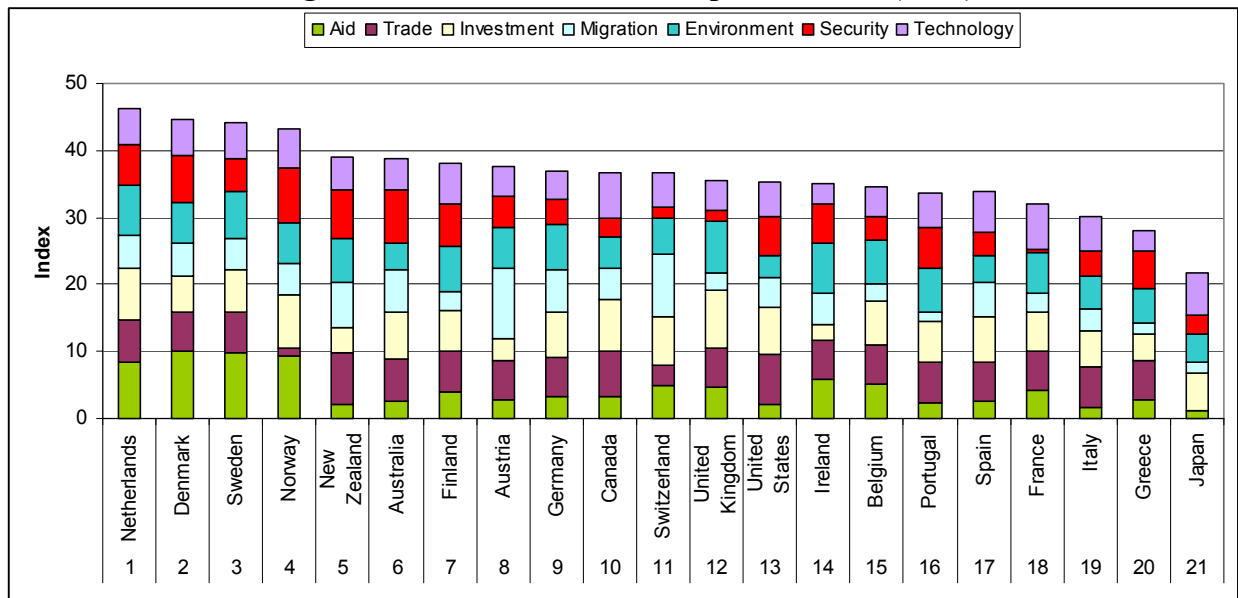
The index shows the commitment by the developed countries to the development of developing countries. The index has 7 components 5 of which are related to several targets under Goal 8. These include aid quality, quantity and quality of trade and investment flows, migration policies and technology access. Environment is under Goal 7. Only the issue of security is not formally a part of the MDGs. Thus, the indices may reflect the relative commitment of the members of DAC and OECD countries. The indices are standardized for size of the economy. Several observations can be made on the basis of these indices.

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<sup>29</sup> The practice under GATS or the Generalised Agreement in Trade in Services as stipulated in the legal text of the WTO can take place under four types of modes. Of these Mode 3 relates to commercial presence under which foreign telephone companies may do business in a country. There is also Mode 4 under which people from one country can migrate, temporarily, for jobs to other countries. Finding jobs for youth could be under Mode 4.

<sup>30</sup>For details of the estimation methods and the components of the indices and their limitations, see Roodman (2006a).

**Fig. 9.1: Commitment to Development Index (2006)**



Source: Based on indices in Roodman (2006a).

First, most countries have a lukewarm commitment and these include, among others, UK, USA, Australia, Germany and Canada. The best of the lot appears to be generally the Scandinavian countries while the worst set includes Japan and France. Component-wise, it seems that the most committed ones have aid as a major component, but not others. Trade, investment and environmental concerns appear to be generally common across most countries. Save for one or two, most are touchy about migration. So much for help in finding jobs for the unemployed youth. Security issues are important for some but technology transfer appears to be mostly a sticky matter. However, it seems that given the size of the total index only Japan has a better commitment to technology access compared to others (not shown).

On the whole, therefore, the pious wish of the UN that the rich nations will commit themselves to development of the poorer ones has received mainly a lip service. Those who are most committed have smaller economies compared to others who are less so and thus their best intentions may not mean much in aggregate for the developing countries.

### 9.3.2 Commitment to Aid

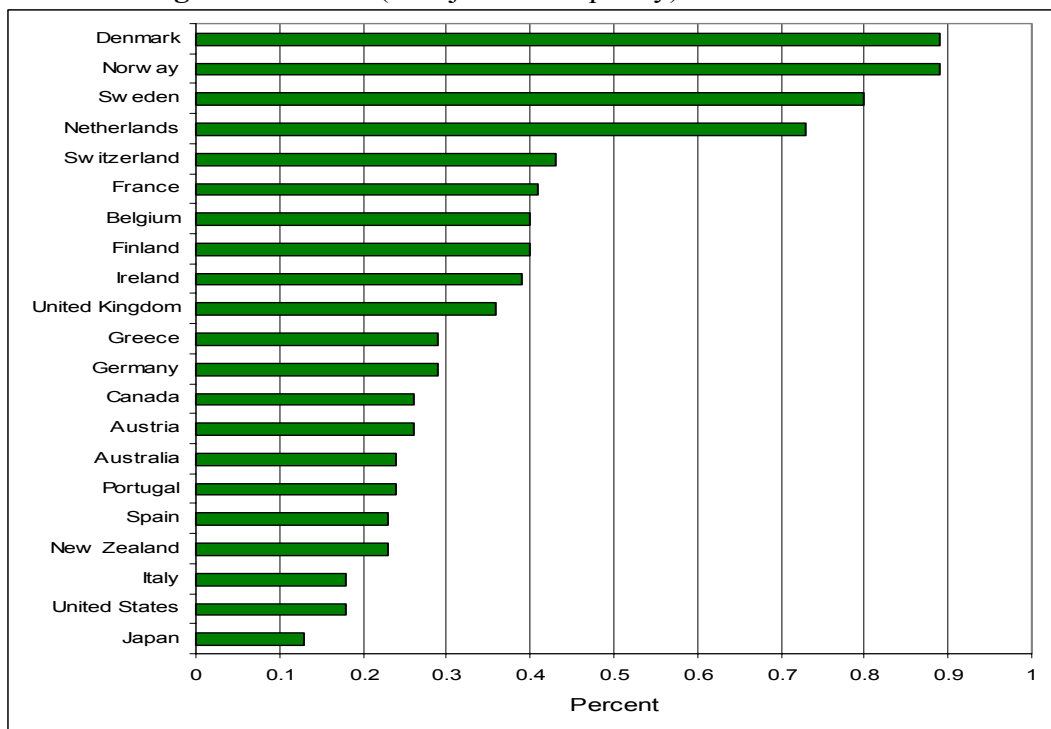
Part of the aid (a misnomer) has to be paid back with interest because these are actually loans not grants. Gross aid therefore is not a reflection of a country's largesse while net aid may be. Then again the quality of aid is as important as its quantity. If aid is tied, it often means that the goods and services to be bought internationally can not be purchased as cheaply as possible. Also if aid packages are small and many that may not be of much help. Several large packages are often better as that allows a more comprehensive development effort to be undertaken. For judging the effectiveness of aid, adjustment for such qualitative aspects may be needed. The Center for Global Development, Washington made such adjustments for aid by donors.<sup>31</sup> A donor

<sup>31</sup> See Roodman (2006b).

performance score has been prepared based on net aid and quality adjusted net aid. These are reproduced below.

Net aid as proportion of GNI: These are shown in Fig. 9.2. One finds that again it is the Scandinavian countries which have done better than others. However, some of those whose standing in commitment to development appeared to be better now fare worse in the aid performance index. USA and Japan are the worst performers.

**Fig. 9.2: Net Aid (unadjusted for quality) as Percent of GNI**



Source: Based on indices in Roodman (2006b).

### 9.3.3 Quality of Aid

One of the indicators of aid effectiveness is how much of aid is tied or untied. Such information is not easily available. We have later reproduced the results of a more comprehensive attempt to adjust for quality of aid and its effect on net aid flows. Therefore we provide here only a quick summary of the practice of tying by some of the major players among the donors. The relevant information is reproduced in Table 9.1.

**Table 9.1: Extent of Tying of Aid (2004)**

| <b>DAC/OECD members</b> | <b>Gross aid (US\$ mn)</b> | <b>Tied aid (US\$ mn)</b> | <b>Tied as % of gross aid</b> |
|-------------------------|----------------------------|---------------------------|-------------------------------|
| Canada                  | 1697                       | 521                       | 31                            |
| Denmark                 | 1217                       | 148                       | 12                            |
| France                  | 5460                       | 489                       | 9                             |
| Germany                 | 4751                       | 570                       | 12                            |
| Japan                   | 10190                      | 588                       | 6                             |
| Netherlands             | 2712                       | 401                       | 15                            |
| Norway                  | 1326                       | 0                         | 0                             |
| Sweden                  | 1785                       | 145                       | 8                             |
| UK                      | 4401                       | 0                         | 0                             |
| USA                     | 15588                      | 8121                      | 52                            |

*Source: Roodman (2006b)*

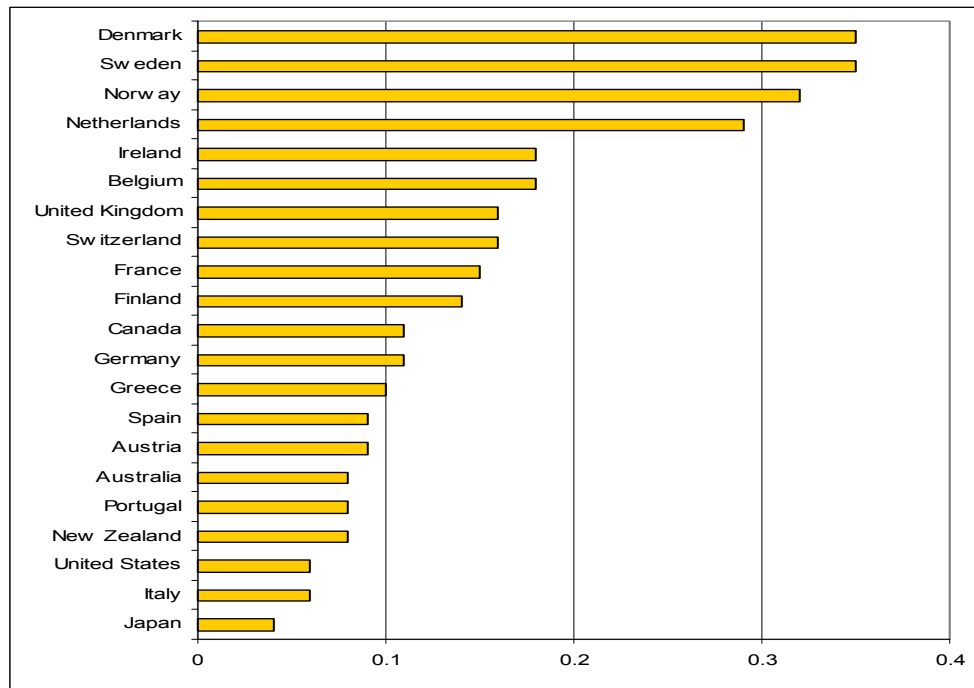
While quite a few of the donors tie aid to various conditions, the extent does not appear to be excessive with one or two exceptions. Indeed, there are some such as Norway and UK which together provided US\$ 5.7 billion in 2004 which was completely untied. Others provided aid with around 10% under tying arrangements.

Most of the donors impose conditionality in providing aid to the tune of around 10% or so. The worst performers in this case are Canada and the USA. More than one-half of US aid in 2004 was tied. And they excelled themselves while providing humanitarian aid which is expected to be free of conditionality. Of the total US\$ 3051 mn in emergency aid provided by USA in 2004, fully 71.5% was tied.

Quality adjusted net aid as proportion of GNI: When adjusted for quality on a more comprehensive basis, net aid as proportion of GNI shows remarkable changes from the unadjusted ratios shown in Fig. 9.3. While at least 4 countries had achieved the 0.7% promised target of GNI to be disbursed as aid when the net aid is not adjusted, now with adjustment none do. The top four are still on the top of the list but the proportion comes down to almost one-half of the previous figure. Furthermore, USA and Japan are still among the most laggards.

Adjustment for quality in fact lowers the value of net aid by nearly 60%. The average for the countries in the list is 63%. The highest reduction due to adjustment is for Japan which is 72%. Note that this is due to other factors apart from aid conditionality which as we have seen earlier quite low for Japan. The lowest reduction is for Ireland (54%) with UK closely following behind (56%). USA as usual is among the worst performers with quality adjustment lowering the value of net aid by 64%.

**Fig. 9.3: Quality Adjusted Net Aid as Percent of GNI**



Source: Based on indices in Roodman (2006b).

## 9.4 Bangladesh Experience

### 9.4.1 Total Aid Flows

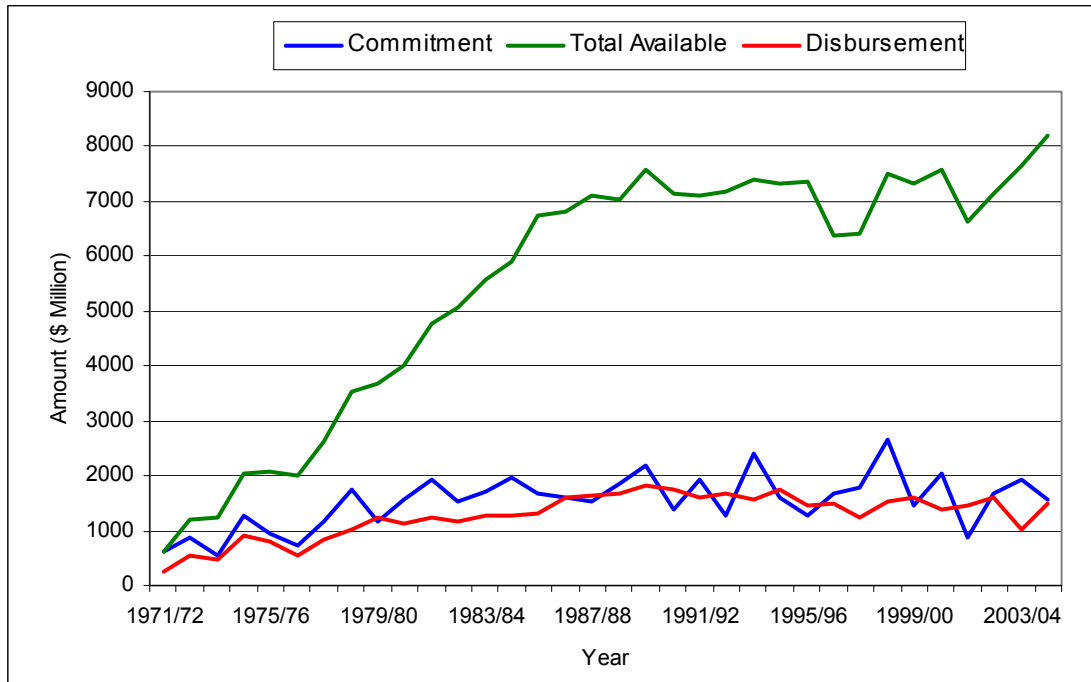
The above provides the over-all global aid situation from the donors' side. What about that from the recipient's side such as Bangladesh. Fig. 9.4 provides the picture of aid commitment, aid disbursements and (cumulative) aid in pipeline since 1972 i.e., for more than three decades. What we find is a stable picture of aid commitment and aid disbursement at least for the last two decades. During this period, the total commitment and total disbursement fluctuated around US\$ 1500 mn. But in general disbursements have lagged behind commitment. As a result the theoretically available pipeline amount of aid has increased to US\$ 7 bn by mid-eighties and has remained at that level till recently when the lag between disbursement and commitment has raised the money further to US\$ 8 bn. Even if a quarter of this could be available, that would have resolved many of the development finance issues in Bangladesh although whether these are actually at all available now is difficult to judge for paucity of information..

### 9.4.2 Aid Composition

Aid is provided to developing countries for basically three stated purposes. Food aid is provided to those countries which are unable to produce domestically enough of the basic food grains or staples. Commodity aid is provided to meet shortfalls of supply of critical commodities which may include food items such as edible oil or non-food such as raw cotton which may be processed domestically into yarn and later into fabric. Finally, there is project aid which is provided for development purposes of taking up specific investments or for technical assistance for project related or stand alone services. There is a fourth kind of aid which goes by the name of technical assistance to provide advice on project management and is used for various kinds of

consultancy services Fig. 9.5 shows the Bangladesh situation on the first three types of aid since liberation.

**Fig. 9.4: Aid Flows to Bangladesh (1972-2005)**



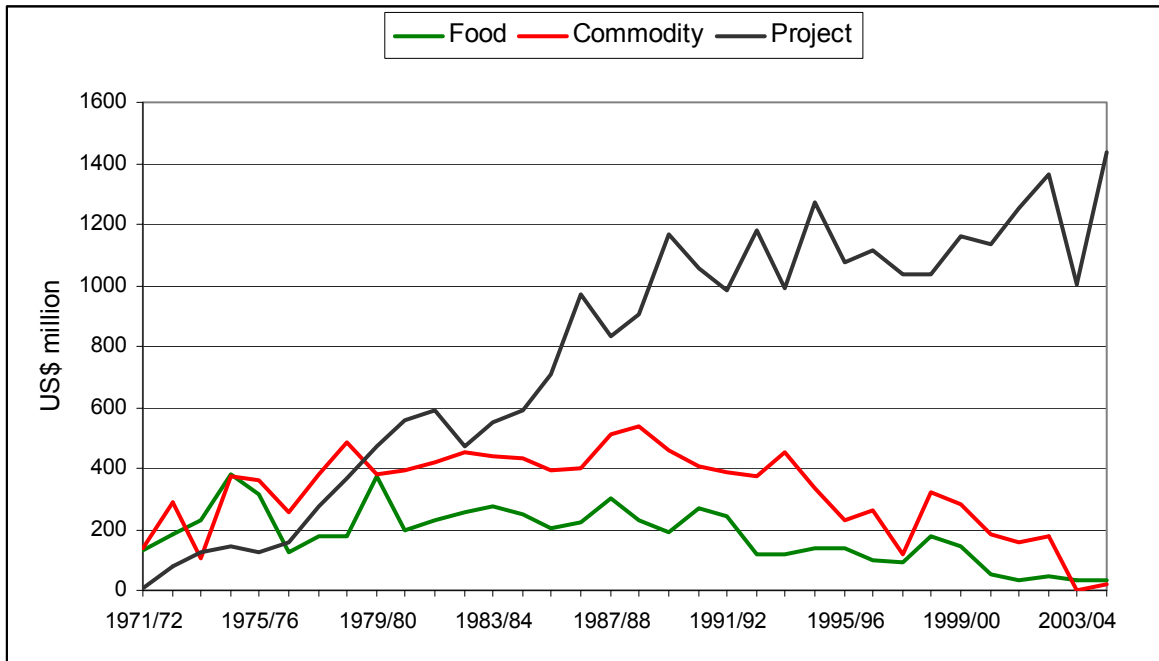
Source: GoB (2006)

What we find is highly interesting in that it shows how Bangladesh has progressed from a so-called “basket case”. Food aid had been high during the early years, remained stable at around US\$ 200 mn in the eighties and began declining since the early nineties. At present it has dwindled to very low levels.<sup>32</sup> This has been possible on two counts. First Bangladesh has been able to grow much of the basic food stuff she consumes and secondly, she has been able to generate foreign exchange through exports (both commodity and services).

Commodity aid disbursements showed trends similar to food aid though it had been higher than food aid all along. At present it has also reduced to very low levels. What has gone up very substantially is project aid. The trend had been from the early years but has somewhat stabilised during the last one decade and a half which probably is explained by Bangladesh’s own capacity to import essential inputs and machineries and other investment goods. Year to year fluctuations are there but the trends are unmistakable. Whether Bangladesh had been able to utilise the resources well is, however, open to question.

<sup>32</sup> The situation has, however, apparently worsened in recent months.

**Fig. 9.5: Composition of Disbursed Aid to Bangladesh**



Source: GoB (2006)

#### 9.4.3 Grants, Loans and Debt-servicing

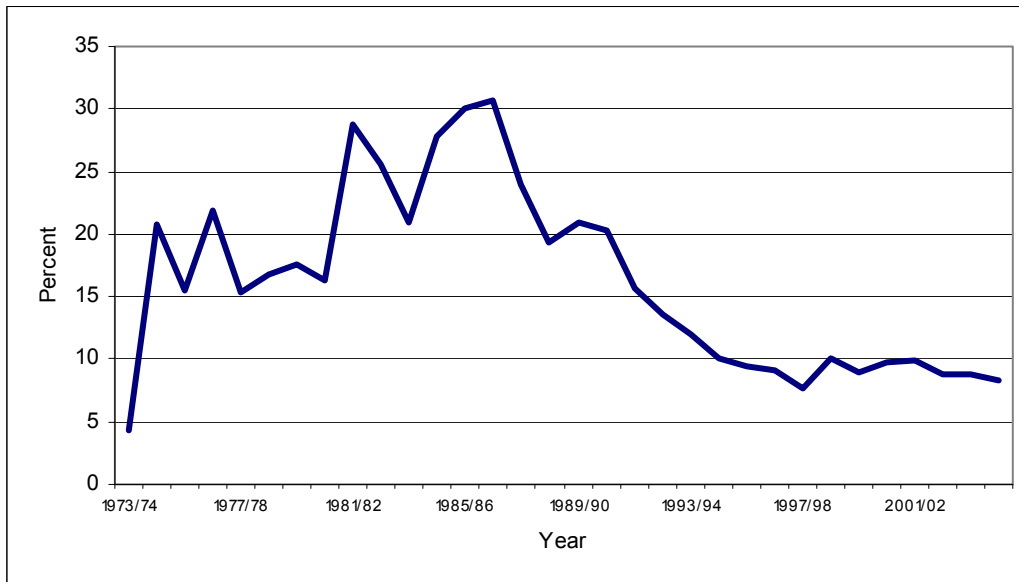
Bangladesh is an LDC. As LDC she could expect concessionary aid as grants. It did not happen that way. And there had been years when up to 80% or more of aid received had been loans. Except for the first few years of her existence, the highest proportion of grant received in any given year had been only 46%. Naturally this meant that Bangladesh had to be careful in aid negotiation and avoid hard term loans as far as possible. Apparently she managed to be somewhat successful. But as the next figure (Fig. 9.6) shows she had been successful only in more recent years not earlier. Of course, this may also mean more the capacity to export rather than the good aid management.

Fig. 9.6 shows the proportion of exports that is used to service debt. During the mid-eighties, the ratio went up to as high as 30%. Now it has come down to far more tolerable 10% or less. Still this is probably too high. In 2004-05 more than US\$ 1 bn had been paid as debt service. Bringing down the ratio to 5% or so may be a national target.

#### 9.4.4 Sectoral Composition of Aid

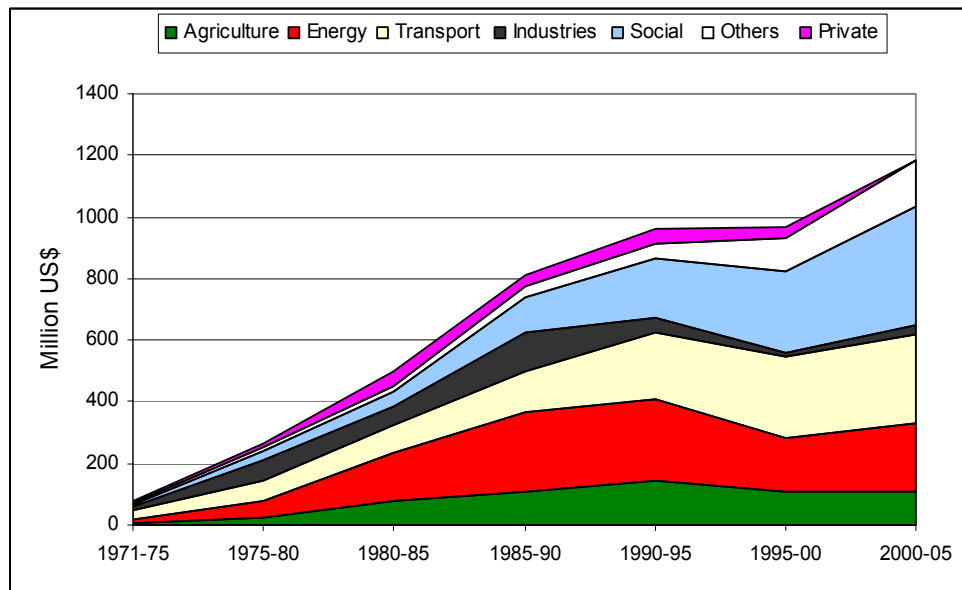
Much of the aid that has been received has gone to three types of sector. These are energy (power, oil, gas etc.), transport and communications and lately social infrastructure (education, health) (Fig. 9.7). Directly productive sectors such as agriculture and rural development (inclusive of water resources development) have received comparatively much less while industries have received only a little.

**Fig. 9.6: Debt Service as Proportion of Export Earnings**



Source: GoB (2006)

**Fig. 9.7: Project Aid flow by Sector**



Source: GoB (2006)

While the part of the amount of resource flow depends on the nature of the sector (for example, building a power plant is rather costly compared to setting up a textile plant), the fact is that while energy has remained a perennial problem along with transport and communication which received bulk of the project aid and which are cited *ad infinitum* as the major constraints to investment in the country, agriculture has performed far better and is now credited with supplying the basic staples from domestic production. Furthermore, readymade garments industry is the sterling performer in terms of export earnings. While there may be various explanations for the degree of performance by sector, on the whole sectors receiving much of the aid has failed to fulfill people's aspirations while those which did not and left alone to people's ingenuity have performed far better. So much for effectiveness of aid.

#### *9.4.5 Quality of Aid*

According to an OECD survey (OECD: 2006) on monitoring of the effectiveness Paris Declaration, 90% of aid to Bangladesh is untied. In that sense, Bangladesh is in a better situation than most countries receiving aid. However, when one looks at the issue of technical assistance, the situation is dismal, to say the least. Only 31% of technical assistance can be said to be aligned with country programmes, i.e., consultants fielded by most donors in most cases have little or no relevance. And the worst cases in this situation are USA and UK (0%), World Bank (6%), Netherlands (5%), Japan (11%). UN (29%) and Germany (33%) are in the lower middle range while Canada (62%), ADB (69%) and Denmark (99%) are high achievers. These figures indicate that the Government should be wary of proposals for fielding consultants by most donors.

#### *9.4.6 How Critical is Aid*

Given that Bangladesh is an LDC, and that almost half of her population even now barely ekes out a living her capacity to finance essential imports such as food, other commodities and inputs and raw materials for productive activities is likely to be influenced by the volume of aid, particularly project aid. Indeed, as Fig. 9.8 indicates more than a third of her import payments were financed by aid money during the mid 1980s. No longer. From around the beginning of 1990s, the aid to import ratio has begun to fall and at present stand at just around 10%. Foreign aid is no longer essential for Bangladesh's survival. It is not a basket case.

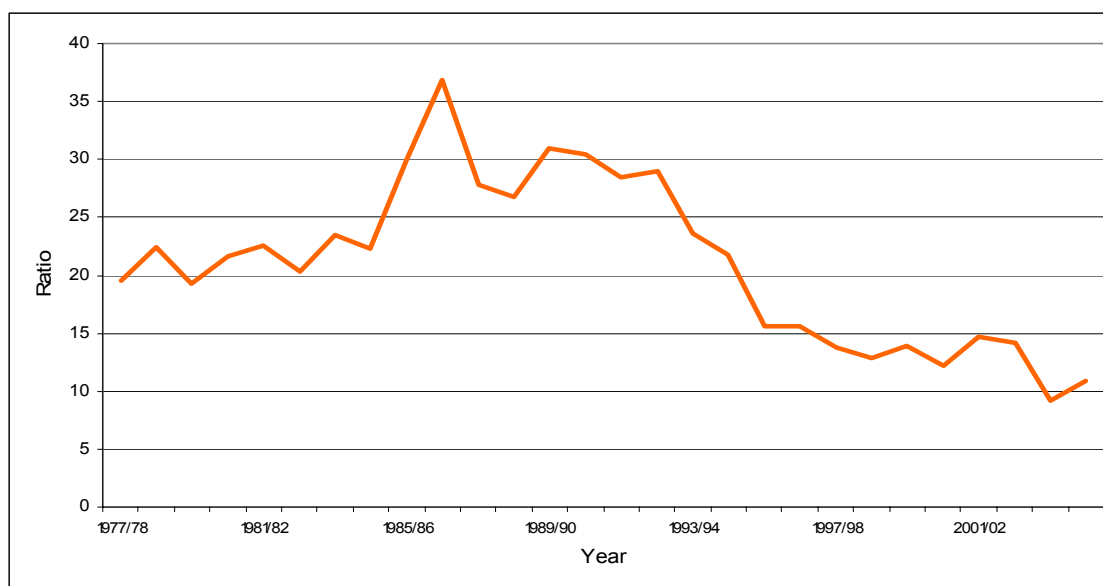
### **9.5 Global Trade Relationship**

#### *9.5.1 Trade Related Issues*

Several trade-related issues are important in understanding the nature and extent of global partnership. First and foremost from the viewpoint of developing countries and LDCs is how much of their exports are guaranteed duty free or low tariff entry into the developed countries. Secondly as most of the developing countries depend substantially on agriculture and agricultural commodity exports, it becomes an imperative on their part to get low duty or duty free access. Furthermore LDCs has a special safeguard in terms of provision of subsidy to agriculture. Unfortunately while in many such countries subsidy has been withdrawn or reduced very substantially particularly at the behest of the World Bank and IMF which share the same parentage with WTO, WTO rules itself are much more lenient. On the other hand, the developed countries have continued their huge subsidy in agriculture in one manner or other. This affects the competitiveness of developing country agriculture as they do not enjoy the same level playing field with developed country agriculture. The trade related indicators under Goal 8 are

based on these concerns. First we look at the duty free access of developing country (incl LDCs) exports into the developed countries.

**Fig. 9.8: Aid to Import Payments Ratio (%)**



Source: GoB (2006)

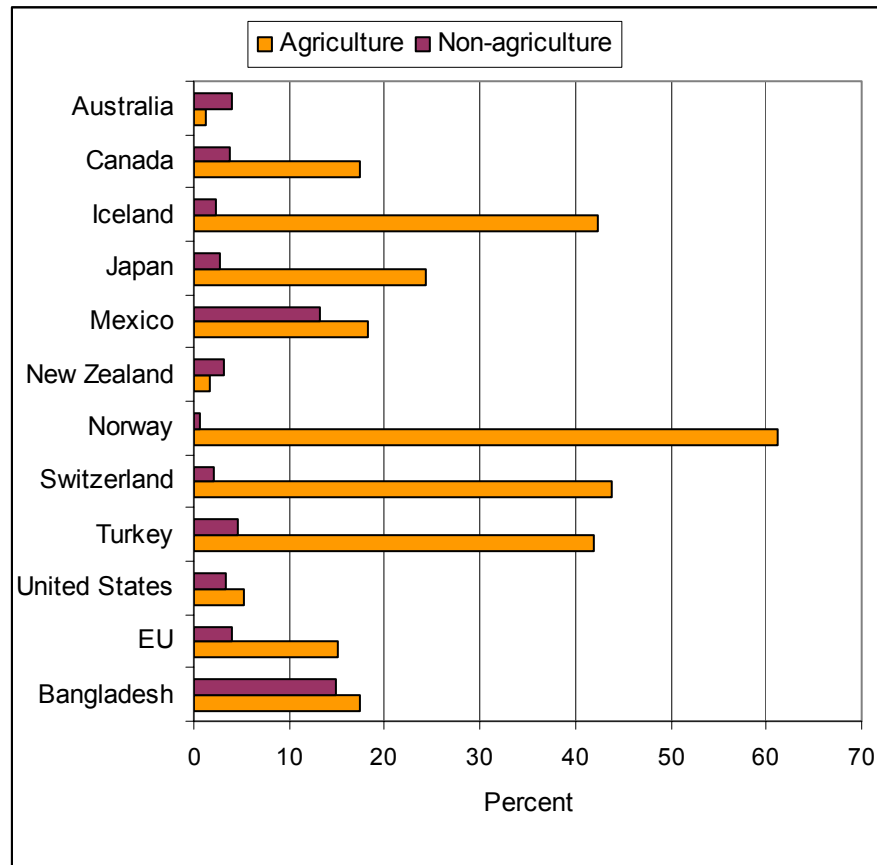
### 9.5.2 Duty Free Developed Country Imports from LDCs

Figures for 2003 which constitute the latest available and comparable set of information show that except Japan and USA most other developed and OECD countries allow almost total duty free access to LDC exports (WTO: 2006). For Japan, just about 51% of imports is duty free. Here, however, 90% of the dutiable figure is imports of oil. In case of USA, only 62% of imports from LDCs is duty free. On the other hand, six LDCs (Bangladesh included) account for 37% of total imports and 92% of total dutiable imports. It may also be noted that among developing countries several provide duty free access to imports from LDCs. These include China which provides 93% of imports from LDCs duty free access although if oil is excluded it falls to 48.4%. But measures announced in 2005 are expected to raise these proportions to 95.2 and 62.3 percent. One of the most restrictive developing countries is India which provide no more than 5% as duty free imports from LDCs. On the other hand, India imposes an average of 25-27% tariffs (depending on the system of weight used) on such imports.

### 9.5.3 Average Tariffs on Agricultural and Non-agricultural Commodities

Average tariffs on agricultural goods are in general higher than those on non-agricultural commodities imported from developing into the developed countries (Fig. 9.10). Note that the tariffs on agricultural goods are comparatively higher in Canada, Iceland, Japan, Norway, Switzerland and European Communities. It is much lower in USA. But as we shall see below USA is one of the high agricultural subsidy countries. It may be noted that Bangladesh average tariffs are comparable to those in many of these countries.

**Fig. 9.10: Levels of Tariff in 2003 (simple average)**



Source: Based on information in Roodman (2005).

#### 9.5.4 Agricultural Support in Developed Countries

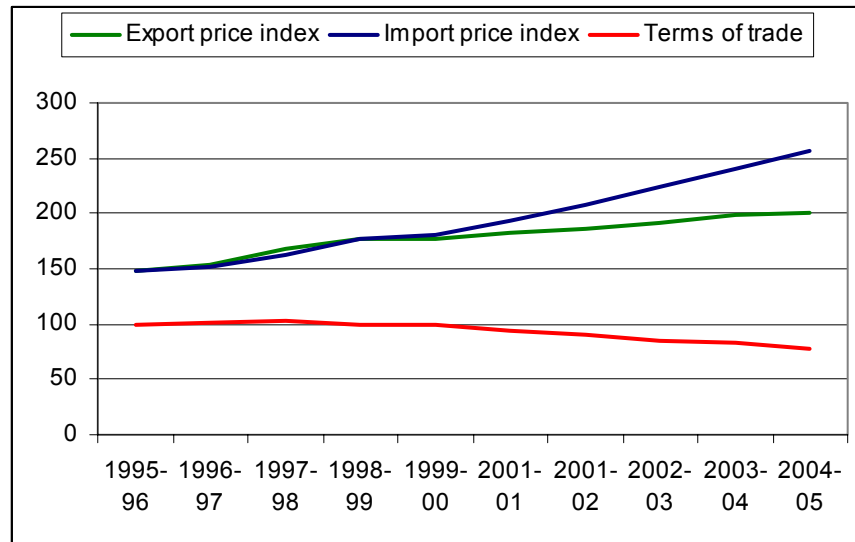
Subsidy for agriculture comes in different forms, guise and pretexts in the developed countries. The absolute figures of subsidy for some of the countries are huge.<sup>33</sup> The estimated value of domestic support to agriculture in EU over 1995-2001 was US\$ 96.1 billion. Comparable figures for USA and Japan were US\$ 66.2 and 41.8 bn. Switzerland, Norway and Canada (1995-2000) forked out US\$ 4.6, 3.0 and 2.6 bn respectively. As percent of total agricultural output, these were large for USA (36.3), EU (34.3), Japan (37.6), Canada (14.5) and R. Korea (22.2%). Bangladesh proportion is just 1.2%. These figures indicate the competition the LDC agriculture exports have to face in the world market.

<sup>33</sup> The MDG indicator of agricultural subsidy as proportion of GDP is flawed because in terms their own GDP these are not large but in terms of value of agricultural output or the value of agricultural output of competing developing countries these are very substantial. These latter types matter more in understanding the loss of competitiveness by the developing countries

### 9.5.5 Terms of Trade

The above discussion on aid and trade suggest that Bangladesh is probably in a better situation than before. It may be. But everything is not in order. Terms of trade for Bangladesh, for example, has remained static for quite some time but has begun to deteriorate in recent years (Fig. 9.11). As a result since 1999-2000 Bangladesh the terms of trade or the prices of Bangladesh exports relative to the prices of her imports have fallen by 22% in the span of 5 years. That means the same export earnings are fetching 22% less in terms of imports.

**Fig. 9.11: Changes in Terms of Trade**



Source: GoB (2007)

### 9.6 Employment Creation for Youth

Global partnership has little relevance for much of the employment in the country including that for the youth. The basic reason is that agriculture which employs the bulk of the labour force is not much dependent on aid or trade. The major export earner is readymade garments industry the success of which has depended not on developed country policies. If anything, these have harmed the country's interest and the employment of youth particularly young women because of discriminatory trade practices by countries such as USA and Japan.

### 9.7 Technology Flow

Two aspects of technology have been emphasized by MDG as issues which may help in improving people's lives. One is telephones and the other the development of ICT services including the internet. Bangladesh has progressed quite a bit on the first front due to the operation of mobile phone companies. In 2003, there were only 682 thousand fixed phones in the country. The number of mobile sets was almost double somewhat more than 1.11 million. By early 2007, the respective numbers have grown to 1.08 million and 21.78 million. As a result the over-all tele-density has increased from 1.45 to 16.85 per 100 persons during 2003-07.

Internet use capacity and connectivity in the country is very low and confined mainly to the two largest cities. Technological change, however, has created a possibility of raising internet use much faster than before as mobile sets are now increasingly configured to run internet.

## **9.8 Summary and Policy Concerns**

In global partnership for development we find that it has received mainly lip service both in management of aid and trade. However, Bangladesh does not appear to be in a hopeless situation. In fact, it is in a rather comfortable situation in terms of foreign exchange earnings thanks to remittances and export earnings. Aid is no longer a major critical factor for Bangladesh development. Terms of trade remains a problem, however.

The problem lies elsewhere. This is in aid management and fixing our priorities. Secondly, part of the problem is in the mindset of the policy makers. The country's basic economic policies are still guided by preferences expressed by some of the big bilateral and multilateral donors. Taking policy initiatives in one's own hands have never been a hallmark of policy making so far. Agriculture is a case in point.

While subsidies should be avoided as far as practicable as spoon-feeding creates dependency syndromes, it can not be a policy that it would not be given under any circumstances. If agricultural subsidies are so large in EU and USA, a level playing field demands that Bangladesh too shall provide subsidy if the case can be made. And we think that the case is there. Where exactly and how the subsidy should be given may be a matter of debate but not principle of subsidy, if the need so arises. Otherwise food prices will not remain within the reach of the poor and attaining the MDGs will remain an elusive dream. We will not be free of the bondage of poverty, ignorance, disease and death which are preventable in this age of science, technology and fast communication.

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