

## **Containing Population Pressure for Accelerating Poverty Reduction in Bangladesh**

### **1. Introduction**

Over the last few decades, the Government of Bangladesh has been implementing various programmes primarily to achieve two broad goals: rapid socio-economic development and drastic reduction of poverty. The population pressure is a major obstacle to achieving the twin objectives. The population pressure, defined broadly as the high rate of growth and the large size of the population, affects the pace of development and poverty reduction directly, as well as indirectly, via its effects on a large number of intermediate variables and proximate determinants of development and poverty reduction. In recognition of the adverse effects of population pressure, the government has been undertaking, since early 1970s, various interventions to rapidly reduce fertility. Although the efforts have achieved considerable success, fertility has not declined to the desired level. Worse still, since 1994 the total fertility rate (TFR) has plateaued. The premature plateauing of TFR will have a serious impact on the society, since the size of population will continue to grow and is likely to cross the “carrying capacity level” of the economy in the near future. If the size of the population continues to grow, the efforts of the government will not yield the minimum expected outcomes in economic development, poverty reduction, or improving health status.

The increasing population pressure seems to be a major reason for the persistence of low growth rate of the economy and high absolute poverty over a long period of time. Some recent evidence show that lower health status of the poor is an important determinant of poverty, and some argue that increasing population pressure is a major obstacle to improvement of health status of the people. Therefore, the pertinent issues in respect of the effects of population pressure on development and poverty reduction are: exactly how does the increasing population pressure adversely affect the pace of development and poverty reduction, and what interventions are needed to break the plateauing of fertility. The Government of Bangladesh is currently finalising the PRSP to be incorporated in the next five-year plan. The above issues should be appropriately addressed in the PRSP.

This paper is an attempt to deal with these issues and put forward some recommendations. It is based on extensive review of secondary data and relevant research papers. Section 2 presents relevant facts about Bangladesh in terms of population, health, economy and poverty to depict the dynamic scenario of the country. Section 3 describes the conceptual framework, showing the linkages between population pressure and poverty and the determinants of population pressure. Section 4 briefly reviews the interim PRSP of Bangladesh. Section 5 identifies the important measures that need to be adopted to contain the population pressure. Section 6 presents an overall discussion on the issue.

### **2. Population, Health, Economy and Poverty in Bangladesh: An Analysis of the Dynamics**

This section analyses changes in Bangladesh over the past several decades in population, health, economy and poverty. The intent is to assess the possible effects of increasing

population pressure on the economy as well as the nature of relationship between population pressure and poverty in Bangladesh.<sup>1</sup>

## **2.1 Population**

Bangladesh is the eighth most populous country in the world with a population of over 130 million people. The annual population growth rate is about 1.6 percent. It is estimated that by 2020, the population of Bangladesh will be around 167 million people (GoB, 1997). Even with a slowing down of the population growth rate, the size of the population will continue to grow because of the young age structure of the population. As a result of the population momentum, the total population size will almost double in the next four to five decades. Consequently, the number of women of reproductive age will increase sharply during the coming decades. Also, there will be a rapid increase in the number of elderly people in the country. The population momentum will pose formidable challenges to the policymakers.

With about 147,570 sq. km., Bangladesh is the most densely populated country in the world, with the exception of some island states. Its population density is three times that of neighbouring India, four times that of the United Kingdom, seven times that of China, and over 30 times that of the United States.

Realising the serious adverse socio-economic consequences of the high rate of population growth, the government has, over the past several decades, intensified and strengthened the family planning programme efforts, although there is room for considerable improvements in the future.

Between 1975 and 2000, the contraceptive prevalence rate (CPR) increased by about seven times, rising from 7.7 percent in 1975 to 53.8 percent in 2000. However, the increase in the CPR since 1996 has been largely due to increased use of traditional methods. Also, there has been considerable change in method mix, with the relative share of longer-acting methods dropping and that of short-term methods rising. For example, pill accounted for 43 percent of all contraceptive use in 2000 compared to 35 percent in 1991, while the share of sterilisation dropped sharply from 26 percent in 1991 to only 13 percent in 2000.

Contraceptive use varies by women's characteristics. The CPR is higher in urban (60%) than rural areas (52%). It is higher among women with secondary schooling and above (59%) compared to those with no schooling (51%). (GoB, 2001). Also, use of contraceptives in 1996-97 was higher among the richest quantile (49%) than among the poorest quantile (39%) (Gwatkin, 2000).

A major concern for the Bangladesh family planning programme is the rate of discontinuation of use and the reasons for such discontinuation. Nearly half of contraceptive users in Bangladesh stop using the method within 12 months of starting use. Side effects is the most common reason for discontinuation (29%), followed by the desire to get pregnant (20%) and accidental pregnancies.

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<sup>1</sup> It may be mentioned that the relationships between the variables can not be reliably established without using appropriate econometric tools. An econometric analysis (using path recursive model) of the relationships among the variables, especially between poverty and important explanatory variables, including population pressure, is underway, and the results of the analysis will be presented in a forthcoming paper by the authors. See - Khuda and Howlader (Forthcoming), "Population Pressure, Health, Economic Development and Poverty Reduction in Bangladesh: An Econometric Analysis of the Relationships."

Fifteen percent of married women in Bangladesh have an unmet need for family planning services — 8 and 7 percent respectively for spacing and limiting births. That is, if all women with unmet need were to use contraceptives, the CPR would have increased from 54 percent to 69 percent, almost the level required to reach the replacement level fertility.

The current fertility level in Bangladesh is, on average, over three children per women of reproductive age, although it was twice as high over two decades ago. Between 1971-75 and 1999-2000, fertility almost halved, with the total fertility rate (TFR) dropping from 6.3 in 1971-75 to 3.3 in 1999-2000. There is a sharp differential in the TFR by wealth quantile of the population. For example, in 1996-97 the TFR was 3.8 among women in the poorest quantile compared to 2.2 among women in the richest quantile (Gwatkin et.al., 2000).

The pace of fertility decline was exceptionally rapid during the late 1980s and early 1990s, primarily as a result of a sharp increase in the CPR, with the family planning programme efforts themselves been largely facilitated by favourable socio-economic changes (Khuda and Hossain, 1996; Khuda et.al., 1996; Khuda et.al., 2000; Khuda, 2002; Caldwell et. al., 1999; Arends-Kuenning et. al., 1999;). However, the decline in fertility slowed down thereafter and plateaued at 3.3 during the 1994-2000 period.

During the past decade and a half, there have been considerable improvements in other demographic indicators; however, with scope for further improvements in the future. The infant mortality rate in Bangladesh declined from 105 deaths per 1,000 live births during the 1985-89 period to 66 deaths per 1,000 live births during the 1995-99 period. During the same period, the child mortality rate declined from 151.5 to 94. Notwithstanding these improvements, significant gender discrimination continues to persist. In the 1-4 age group, female mortality is about one-third higher than male mortality, and the difference has remained almost unchanged between 1993-1994 and 1999-2000. Both infant and child mortality rates are higher in rural areas, in Sylhet Division, among women with no schooling, among mothers under 20 years of age, at first birth order, and with previous birth intervals of less than 24 months (GoB, 2001, Tables 7.1, 7.2, and 7.3). Also, infant and child mortality rates are higher among the poorest quantiles of the population. For example, in 1996-97 the infant and child mortality rates were 96.3 deaths per 1,000 live births and 141.1 deaths per 1,000 live births respectively among the poorest quantile of the population compared to 56.6 and 76.0 respectively among the richest quantile of the population. In terms of gender, the poor-rich ratio is higher for male in the case of infant mortality, while it is higher for female in the case of under-five mortality (Gwatkin et. al., 2002).

## **2.2 Health**

The Government of Bangladesh (GoB) is committed to improving the health of its people, particularly of the poor. However, similar to other low-income countries, the GoB lacks the means to address all of the health needs of its citizens, with the health needs of the 'core poor' being the major concern. The poor have higher rates of illness as well as shorter lives than the rich. Also, poverty leads to greater financial risk associated with illness (Rahman et. al., 1996).

The provision of Essential Services Package (ESP) is a step in the right direction; however, the poor's health concerns go beyond the current package of ESP. The scope and coverage of ESP needs to be increased to include not only reproductive health and child health care,

currently being provided under the ESP, but also curative health services for the poorest and the most vulnerable (Yunus et. al., 2001).

Although Bangladesh has achieved remarkable health gains in terms of increase in life expectancy, decline in fertility and infant and child mortality, challenges still remain. Maternal mortality is still quite high. Bangladesh has the highest rates of low birth weight (with half of all babies born to be of low birth weight) and also ranks quite high in respect of malnutrition among children and women in the world. In terms of health outcomes, there are sharp inequities between men and women, between rural and urban areas and between the rich and the poor. Thus, the "inverse care" law operates in the health sector of Bangladesh (Gwatkin et. al., 2000). Also, the health of the rapidly increasing number of urban slum dwellers is a major concern. Furthermore, new public health problems are emerging, such as HIV/AIDS and arsenic contamination of drinking water. Early childhood development, adolescent care, nutrition and increasing injuries are all demanding increasing attention. Worse still, some of the outputs delivered by the health system do not appear to have kept pace with population growth. For example, immunisation rates have not improved significantly. Data on other indicators of health system performance also suggest that service growth is stagnating. For example, the number of pregnancies covered by ANC remains low, as also the proportion of deliveries that are attended by trained providers.

Seven diseases account for 75 percent of total DALYs: respiratory diseases, peri-natal conditions, diarrhoeal diseases, accidents, malnutrition, cardio-vascular diseases, and childbirth related complications.

Childhood infections have declined significantly in recent decades, partly due to the widespread immunisation (EPI) programme. Communicable diseases now account for about 38 percent of DALYs. However, respiratory and diarrhoeal diseases are still the most common cause of death in children under five years of age accounting for about 40 percent of all years of life lost and 30 percent of all deaths. Tuberculosis is the second most common cause of death amongst adults. Tuberculosis causes about 70,000 deaths annually, with 300,000 new cases each year.

Non-communicable diseases are also major causes of death in Bangladesh, accounting for half the Years of Life Lost. Deaths associated with complications of childbirth continue to be a major cause for concern. A leading cause of mortality is cardiovascular disease, including cerebrovascular disease, accounting for about 20 percent of deaths. Accidents are the next most common cause of death and of lost years of life.

With demographic transition taking place, the disease patterns of the past century are changing. An important point to note is that in the future, communicable, prenatal and pregnancy-related complications as causes of death will decline from about half of deaths to less than one-third of all deaths. By contrast, non-communicable diseases will account for over half of all deaths.

The child nutritional situation has been improving since the mid-1980s. However, there are socio-economic inequalities in child malnutrition. For example, in 1996-97, 51 percent of children under 5 years of age were stunted among the poorest quantile compared to 24 percent among the richest quantile. The corresponding figures for moderate underweight and severe underweight respectively were 60 percent and 28 percent and 29 percent and 6 percent (Gwatkin, et. al., 2000).

Maternal malnutrition, measured by body-mass index (BMI) less than the critical value of 18.5, is quite high in Bangladesh. About half of the mothers are malnourished. It is higher in rural than urban areas. Also, it is higher among mothers in the poorest quantile (64%) compared to mothers in the richest quantile (33%) (Gwatkin et. al., 2000).

### **2.3 Economy and Poverty**

The Bangladesh economy is characterised by resource scarcity and subsistence-level economic conditions. Predominantly dependent on land, agriculture is the major sector of Bangladesh which contributes about one-third of GDP, although its relative share to the GDP has declined over time (Govt. of Bangladesh, 1999).

The per capita income is US\$ 370. Bangladesh ranks 167<sup>th</sup> in terms of per capita income. The average annual growth rate of GNP is about 5 percent. However, there has been a considerable rise in the Human Development Index (HDI) measured in terms of life expectancy, literacy, and real GDP per capita. According to Bongaarts and Watkins (1996), the HDI for Bangladesh rose by 45.5 percent between 1960 and 1980, the second largest increase in HDI during that period in South Asia and the fifth fastest of the twelve Asian countries for which they prepared such an estimate.

The employment level has witnessed noticeable changes. About 65 percent of the population aged 10 years and above are in the labour force – 78 percent males and 51 percent females. The corresponding rates for urban areas are 51 percent, 72 percent, and 29 percent respectively; and for rural areas are 69 percent, 80 percent and 57 percent respectively. The last two decades witnessed a sharp rise in the number of females in the workforce, up from 1.6 million in 1980 to 21.3 million in 1996. The corresponding rise in urban areas is from 0.2 million to 2.8 million and in rural areas from 1.4 million to 18.5 million (GoB, 1999). In urban areas, over 1.5 million females, mostly in the age group of 15-29 years, are employed in garment factories and in electronic industries, the majority of whom are unmarried. While part of the increase in female labour force in rural areas is due to changes in definition, the change in urban areas is real.

There is evidence of poverty-driven female employment, resulting from poor household economic condition and high rates of female headship (Safilias-Roth-Schild and Mahmood, 1989; BIDS, 1990; Rahman and Hossain, 1991). A study found that between 8 and 24 percent of households send their women out in search of wage employment, with the proportion being considerably higher among poorer households (50-77%). The same study also found that female employment has increased since the mid-1970s, and argued that the pressures of poverty forced women to seek outside employment (Rahman, 1986). Employment opportunities have shrunk in the farming sector, and most new jobs are outside the agriculture sector. There has been an increase in off-farm rural jobs (Khuda, 1986), and considerable increase in the urban informal sector which are often subject to extreme exploitation (Khuda and Alam, 1993).

During the past two decades, the agricultural sector has also witnessed major changes. Because of rising population size, the land-man ratio continued to worsen. The average farm size is smaller now than before, with increasing landlessness and rise in the number of marginal farmers. This has reduced the demand for household labour, especially of child labour, on the farm. Between 1973-74 and 1996-97, the total cropped area increased from 29.4 million acres to 34.10 acres (15% increase). During the same period, area sown more

than once increased from 8.4 million acres to 14.7 million acres (74% increase). The cropping intensity also increased, and is now 176. Between 1987-88 and 1996-97, the total cropped area irrigated increased by 57 percent, up from 5.8 million acres to 9.1 million acres. Use of chemical fertilisers increased sharply, rising five-fold from less than half a million metric tons in 1989-90 to 2.3 million metric tons in 1991-92. The increase in cropping intensity and mechanisation of farming run in the opposite direction insofar as demand for additional labour on agriculture is concerned. There has been a considerable diversification in cropping with the acreage under cash crops (sugarcane, cotton, tea, oilseeds, fruits, etc.) increasing. Also, yields from cash crops increased quite appreciably (GoB, 1999). This process has accelerated the monetisation of the economy with more selling of crops and subsequent buying of food from the market than used to be the case before. The monetisation of the economy has altered the values and lifestyles of the people.

In terms of income distribution, the lowest 10 percent enjoys less than 4 percent of the total income while the highest 10 percent enjoys about 29 percent of the total income. About 40 percent of the rural population lives below the poverty line, and the proportion living below the poverty line is considerably lower in urban areas (14%). There has been modest progress in income-poverty reduction in the country over the past several decades<sup>2</sup>. For example, between 1991-92 and 2000, the incidence of national poverty declined from 58.8 percent to 49.8 percent, indicating about one percentage point reduction in poverty per year.

The progress in poverty reduction was faster during the 1990s compared to the 1980s. The faster pace of poverty reduction in the 1990s is attributable to the accelerated growth in consumption expenditure (income). The comparative progress was uneven between rural and urban areas. The pace of rural poverty reduction was slow in the 1980s but became faster in the 1990s, while the reverse is true for urban areas.

The level of inequality, as measured by consumption expenditure distribution, showed very little change during the 1980s. The picture changed during the 1990s as the Gini coefficient rose considerably, with urban inequality rising much more than rural inequality. Thus, during the period between 1991-92 and 2000, the level of consumption expenditure inequality increased from 30.7 to 36.8 percent in urban areas, and from 24.3 to 27.1 percent in rural areas. There is considerable regional variation in poverty, with Dhaka and Khulna divisions having much lower incidence of poverty than Rajshahi. The level of poverty is typically higher for the landless. The incidence of extreme poverty is generally higher for the female-headed households. Poverty and social deprivations tend to be higher in case of the hill people of the Chittagong Hill Tracts (CHT) and for tribal population.

Human poverty trends show considerable improvement. The human poverty index was 61 percent in the early 1980s and declined to 35 percent in the late 1990s. The index of human poverty declined by 2.54 percent per year compared with 1.45 percent in the national head-count ratio for income-poverty.

Available evidence indicates faster progress in rural poverty reduction in the 1990s than in 1980s. The incidence of rural poverty, which declined by less than one percentage point between 1983-84 and 1991-92, declined by 9.3 percentage points between 1991-92 and 2000.

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<sup>2</sup> For more elaborate discussion, see Govt. of Bangladesh, 2002, Interim Poverty Reduction Strategy Paper

Although the pace of poverty reduction has accelerated in the 1990s, the overall pace of reduction has been modest, as is evident from all survey data for the 1990s.

The head count index of urban poverty declined from 34 percent in 1991-92 to 26 percent in 2000. The entire decline in urban poverty during the 1990s took place during the first half of the 1990s. The second half actually experienced deterioration in urban poverty situation, although available information from other sources provides conflicting evidence, i.e., urban poverty actually declined during the second half of the 1990s as well.

### **3. Linkages between Population Pressure and Poverty, and Determinants of Population Pressure: A Conceptual Framework for Identifying Measures**

In order to identify the measures to contain the population pressure for rapid poverty reduction, we have to identify the variables which are involved in the chain of relationships between population pressure and poverty. This section shows the possible relationships among the variables. The relationships have been postulated, based on the facts and evidence presented in Section 2 and the facts and evidence discussed in the other documents as well as the *a priori* reasoning.

#### **3.1 Linkages between Population Pressure and Poverty**

Increasing population pressure accentuates poverty mainly in two broad ways: directly, via its effects on per capita income and per capita consumption, and indirectly, by reducing the positive effects of developmental interventions.

##### **3.1.1 Direct Effects**

At the aggregate level, if GDP increases over time at a lower rate than the rate of population increase, per capita income falls and poverty in the economy increases. Given the high inequity in income distribution and the high average family size in the lower-income households, per capita income declines more in the lower-income households, and they are increasingly pushed below the poverty line. Even if GDP rises at a faster rate than does population, per capita income in the poor households may decline if inequity in the income distribution increases. In the developed countries inequity increased as per capita GDP increased (Kuznet, 1955); however, in Bangladesh inequity started increasing even when the economy was stagnant at low per capita income (Wood, 1978).

This general relationship between population pressure and poverty actually involves a chain of intricate relationships which can be captured better at the disaggregated level. We can utilise a schema, as shown in Figure 1, to capture the relationship. Assume that the economy comprises three broad sectors: agriculture, services, and industry.

First, consider the agriculture sector. In the production function of agriculture, land and labour are the major inputs, and the function is of the fixed coefficient type. Own cultivation of land is not feasible for a household when its land-labour ratio falls below the required ratio. In such a situation, the household has to sharecrop out or sell land. Thus, with increasing pressure of population, the number of landless and near landless households increases. The problem is further aggravated by the fact that, given the limited opportunities for work in the agricultural sector, increasing number of labourers become unemployed and the real wage rate declines over time as landlessness increases. Thus, both land income and labour income decline for the agricultural households. On the other hand, the dependency ratio rises with change in the population age structure in favour of children and the elderly. As the number of dependents increases while household income falls, per capita consumption

rapidly declines. In such a situation, the process of agricultural involution operates and the increasing number of households adopt the strategy of “sharing of poverty” for survival (Geertz, 1963; White, 1996; Howlader, 1997). Involution accelerates the pace of poverty and hampers the prospect for development as well (Howlader, 1997).

In the other two sectors, industry and service, the supply-of-labour function continuously shifts to the right as landlessness and unemployment in agriculture increase. The equilibrium wage rate falls and gradually become less than the subsistence level<sup>3</sup>. As a result, per household and per capita income decline in all sectors.

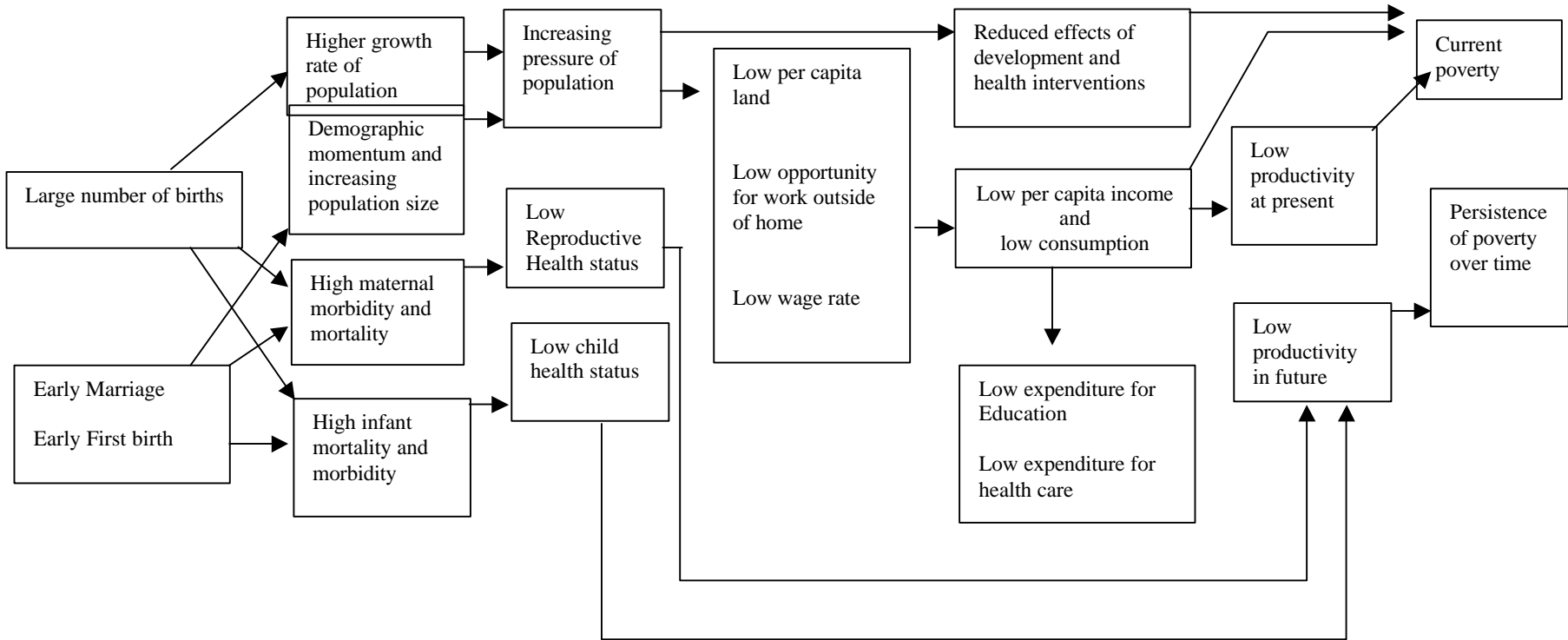
As per capita income falls, per capita consumption declines and increasingly large number of people are unable to have the minimum level of calorie intake. Thus, poverty of the already-poor households increases and increased number of non-poor households are pushed below the poverty line.

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<sup>3</sup> The question arises: can wage rate be lower than the subsistence requirement? The answer is affirmative in some situations. One such situation arises when the wage income of a household member is to complement that of another member in order to maintain the household. Larson considers this situation analogous to the behaviour of fixed cost and variable cost (Larson, 1981). This is true also in the situation of involution and sharing of poverty. Professor Howlader argues about this in detail in a forthcoming paper “Population pressure, determination of wage and Euler’s theorem: an analysis of poverty with labour market equilibrium”.



**Figure 1: Linkages Between Population Pressure and Poverty: A Schema**



In addition to accelerating poverty at present, the increasing population pressure contributes to further worsening of poverty in future in several ways. First, due to current poverty the households are not able to invest for the productive activities which could increase income in future. Second, due to current poverty, the households can not spend for health and education of children. Thus, the potential of raising household productivity in future is also lost. Third, factors such as large number of births, early marriage, and early first birth adversely affect the reproductive health status of women and health status of children, the former contributing to current poverty and the latter to future poverty. Thus, poverty persists over time and generations<sup>4</sup>.

### ***3.1.2.1 Population Pressure and Effects of Poverty Alleviation Interventions***

The poverty alleviation schemes in Bangladesh help the poor households by way of conducting behaviour change communication (BCC) campaigns and supplying credit and other facilities, organising the people for productive activities, and so on. It is now widely recognised that such schemes have achieved remarkable success in containing poverty, especially in rural areas. However, the interventions could have achieved much more and could have by now brought down the poverty to the minimum level, had the size of population not been continuously increasing.

As income falls due to increased landlessness and unemployment and reduced wage rate while consumption expenditure increases due to increased dependency ratio, all caused by increased population pressure, the households increasingly face the financing gap. They need increasing amount of support and subsidy from the interventions only to meet the financing gap and obtain food security. However, it is becoming difficult to provide the increasing amount of support and credit facilities required by the households to maintain themselves at the subsistence level. Hence, poverty persists, despite such interventions. Thus, the poverty alleviation efforts are greatly counteracted by increasing population.

Second, since most of the credit and other facilities provided by the government and non-government organisations though various interventions are used for bridging the widening financing gap, the households have little to invest for productive activities so as to permanently eradicate poverty.

Third, among the households covered by such programmes, some can still invest some amount of borrowed money for productive purposes. However, the amount (per household) being quite small, the households are capable to produce only the basic consumption goods. Increased supply of those goods gradually reduce the prices of the goods and the value of labour (and profit), which limits the reinvestment potential of the invested credit, thereby reducing the prospects for poverty eradication in future.

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<sup>4</sup> Population pressure contributes to persistence of poverty in another way too. Community resources comprising community land, water and forests in a society greatly benefit the poor and, in a sense, provide huge subsidy to them. However, with the increasing population pressure and the resultant increase in poverty, the households unscrupulously use the resources for survival and this reduces the amount of the resources. As a result, the poor households cannot derive any benefit from such resources in future. This will further worsen poverty in future. A vicious circle, thus, emerges.

### ***3.1.2.2 Population Pressure and Effects of Health Interventions on Poverty Reduction***

The key recommendation of the Commission of Macroeconomics and Health (2001) is that the world's low and middle-income countries should scale up the access of the poor people to essential health services focusing on specific interventions to reduce high mortality rates, control communicable diseases, and improve maternal and child health. Fortunately, most of the recommended interventions can be delivered at health centres and few require hospitals.

The report identified three main ways in which disease influences economic well-being and development of individual and household. The first relates to the direct economic loss of the individual, which can be divided into three parts: i) reduction in market income; ii) reduction in longevity; and iii) reduction in pain and sufferings. The second relates to the impact of disease on demography of the household. Societies with high infant and child mortality rates have higher rates of fertility. Evidences from 148 countries in 1995 showed that countries with an IMR of less than 20 have an average TFR of 1.7 children. Countries with an IMR of over 100 have an average TFR of 6.2 children. Indeed, a high burden of disease translates into large families with low investment per child in education and health. The third relates to the depressing impact of disease on society beyond the costs to individuals and families. A high prevalence of disease could undermine the whole industries, agriculture, mining, manufacturing, and tourism.

In an attempt to show how poverty can be reduced through improved health, (Howlader, 2002) argued that improved health status of the poor people will increase labour power in the rural economy by way of raising labour time and enhancing labour efficiency. As a result, income of the households will continuously increase over three generations till it stabilises. On the other hand, improved health will have dampening effect on household consumption expenditure since one important component of consumption expenditure, healthcare expenditure, will decline over time. Increasing time path of income, caused by improved health of labour, will surpass the minimum necessary income at a point in time in the current generation, when poverty will be completely alleviated. Then onward, households will generate surplus of fund.

The above mentioned report further maintained that provision of health care to the household members will affect household income in three different ways: (a) male adults will work more during the current generation; (b) female adults will work more for household production and will contribute more to male's production during the current generation, and contribute to children's health during the current generation and to their income in the second generation; and (c) improved health of the male children during the current generation will increase their production during the second generation, while improved health of the daughters during the current generation will increase production during the second and the third generations. It is evident that the effects of improved health of females are greater and more enduring than that of males, indicating that increased provision of reproductive healthcare (to women) is more effective in increasing income and reducing poverty of households. However, the report cautioned that improved health status of the poor will positively affect household income and alleviate poverty only if population growth rate is zero or low and/or the economy is below the 'carrying capacity' level. If these conditions are

not fulfilled, improved health of the poor will not increase income and alleviate poverty; it can even 'elevate' poverty level.

The effects of the health interventions will be greatly nullified by the increasing population pressure. With the increasing size of the population, the volume of health interventions has to constantly increase at a considerable pace, which is not financially feasible. Secondly, as evidence amply suggests, there is high inequity in the provision of healthcare and the "inverse care" law is quite operative in Bangladesh — the poor get a lesser share of service although they need it more (Gwatkin, 2001).

### ***3.1.2.3 Population Pressure and Effects of Education Interventions on Poverty Reduction***

Increased education, like improved health status, reduces poverty, but the effect of education on poverty reduction is more direct and much higher in magnitude. Increased education increases the opportunities of the people for productive work and enhances skill and efficiency in work, and thereby increases employment and earnings. In Bangladesh, the government has been devoting considerable efforts for expansion of education and the efforts have already achieved considerable success. However, the level of success of the education programme would have been much higher, if the size of the population had been contained. The increasing population pressure is reducing the effects of education interventions in several ways: First, as the size of population increases, the number of children eligible for obtaining education increases, and the amount of public resources required to cater to the rising demand for education increases enormously. It becomes increasingly difficult for the government to allocate the necessary fund. Second, the increasing population pressure at the household level reduces the capacity of the households to spend for education of their children. Third, with the increasing number of household members, the possibility of the currently poor households to send their children to school becomes limited, despite all assistance and support of the government.

## ***3.2 Causes of Persistence of Population Pressure and its Remedies***

The demographic transition in Bangladesh has been underway, in contradistinction with the experience in the developed world, i.e., long before the level of socio-economic transformation needed to bring about the transition. The demographic transition is manifest in the sharp decline in the TFR and in the population growth rate caused by sharp increase in the CPR and changes in the proximate determinants such as IMR, MMR, age at marriage, etc. The massive family planning programme, together with various health and development interventions, have brought about the changes. However, it can also be argued that the magnitude of success is lower than that expected from the volume of interventions and investments made. The population growth rate has declined slowly, using a long time span, and the rate of growth is still below the desired level. The problem is further aggravated by the facts that the TFR has plateaued over the past several years, before reaching the replacement level, and that demographic momentum is operative, which alone can expand the size of population even if the growth rate become zero, let alone when the growth rate is positive. In fact, the current population problem in Bangladesh can safely be attributed to the premature plateauing of TFR and demographic momentum. It is necessary to appropriately

identify the causes of the stagnation in TFR and operation of the demographic momentum in order to adopt appropriate measures for effectively containing the population pressure.

Figure 2 can be utilised to identify the causes of the persistent population pressure in Bangladesh.

**(i) Plateauing of TFR**

The puzzle that has emerged as a major concern to the policymakers in recent years is that despite continuous rise in the CPR, the TFR has plateaued at 3.4 in 1994. Several scholars have argued that use of less effective methods, high discontinuation rate, and increased incidence of method failures are the major reasons for early plateauing of TFR (Islam, et. al., 2001; Kamal, 2001). The arguments are quite tenable and realistic.

The apparent paradox can be looked into from another angle too. The following definitional equation holds true:

$$\text{Use of contraceptives (CPR)} = \text{UoC (1)} + \text{UoC (2)} + \text{UoC (3)} + \text{UoC (4)}$$

Where, UoC (1) = Use of effective methods for limiting number of births at or below 2

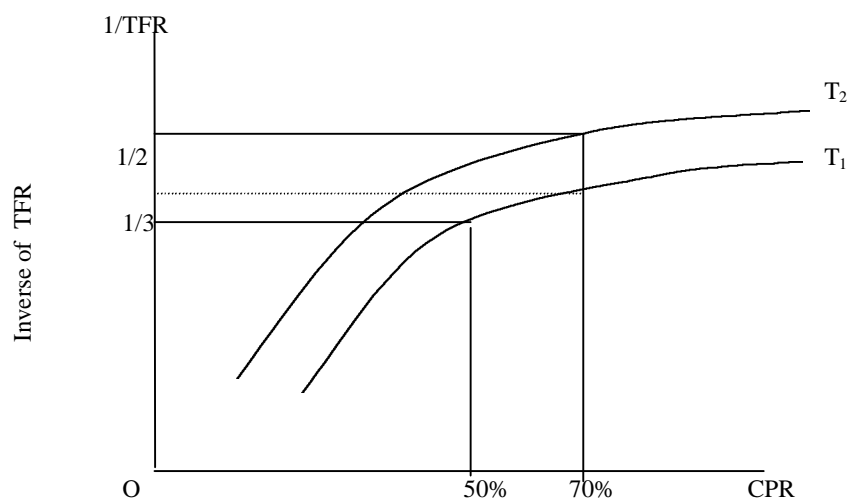
UoC (2) = Use of less effective methods for the same

UoC(3) = Use of effective and less effective methods for limiting children after already having greater than 2

UoC (4) = Use of any method for spacing births.

The CPR will increase if any kind of use, from UoC (1) to UoC (4), increases, but when TFR is already low it can further decline only if UoC (1) increases. Hence, early plateauing of TFR does not necessarily pose any paradox; rather, it is quite realistic in the present context. Any and every kind of use of contraceptive does not necessarily lead to TFR decline.

**Figure 3: Relationship between CPR Increase and TFR Decline**



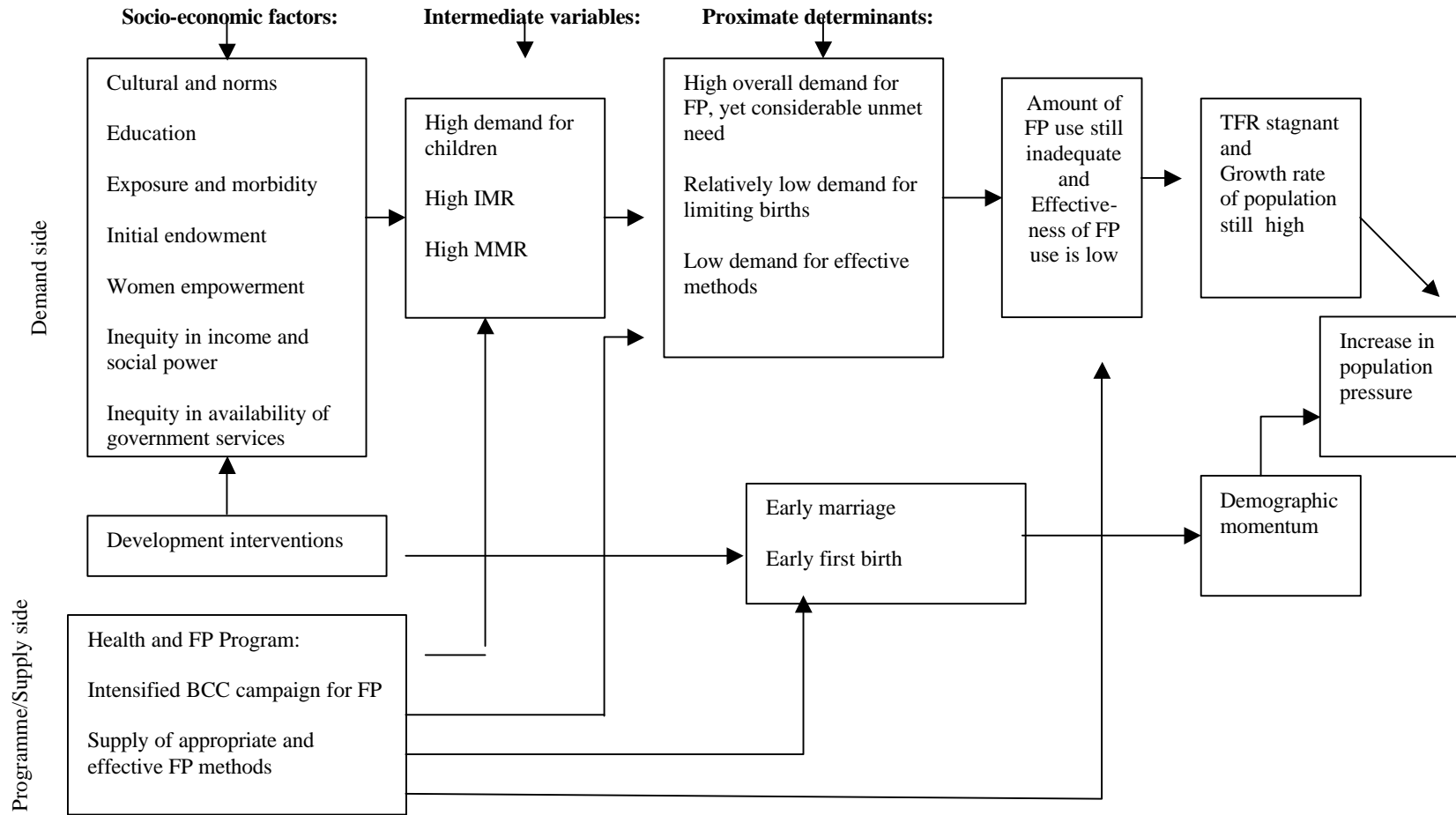
In order for further decline in the TFR, more couples should use effective methods and should contracept to limit the number of children at or below 2 (Howlader and Routh, 2002). It can also be argued that the law of diminishing marginal productivity is embodied in the contracepting behaviour of the couples. As the use rate rises, more and more couples use contraceptives for limiting children after having a large number of children and for birth spacing, and more or more couples use less effective methods. As a result, the marginal effectiveness of contraception in terms of TFR declines (or increase in the inverse of TFR) falls, and may become even zero, as shown by  $T_1$  curve in the Figure 3<sup>5</sup>. In such a situation, mere increase in the CPR will not reduce TFR to the desired level. The curve needs to shift upward, and then CPR should be raised. The curve can be shifted upward by raising effectiveness of method use – by raising use of effective methods and use of any method more effectively. However, as shown along  $T_1$  curve, substantial increase in the CPR can also reduce TFR to a considerable extent. In the present context of Bangladesh, substantial increase in the CPR requires that the unmet need which still exists should be met. This would require further intensification of programme efforts on the supply side, and may also require, on the demand side, further reduction in the demand for children. More and more people should be encouraged to be happy with at most two children. Some evidence show that the desired family size in Bangladesh is already quite low and, more importantly, it is lower than the TFR. Some observers consider this as another paradox.

However, it can be argued that there is a difference between the intended number and the realised number of children. A mother may want to have only two children, but may have in reality more if she is not adequately serious about limiting children at 2, or could not influence her husband and relatives to allow her to have the number of her choice, or if she experiences method failure. In such a case, her “effective desire” is higher than the “tentative desire”. TFR corresponds to the effective desire while the desire size is tantamount to the tentative desire. Hence, the difference arises. Increase in the effective use of CPR requires reduction in the “effective demand” for children, and not just in the fragile or tentative demand.

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<sup>5</sup> This portion is reproduced from Howlader and Routh (2002)

**Figure 2: Determinants of Population Pressure**



**(ii) Demographic Momentum**

As a result of demographic transition, the age structure of the population has been changing, resulting in increase in younger age population and the elderly. Also, the number of eligible couples is increasing. All these lead to an increase in the size of the population.

To counteract the momentum, age at marriage, which is still low, should be substantially raised. Also, the age at first birth should be raised (Islam, et. al., 2001). Socio-economic changes, especially female education, female employment, and enhanced role of women in the family and the society can help to raise the age at marriage and the age at first birth. Also, increased knowledge of adolescents about reproductive health can help to achieve these.

**4. Interim Poverty Reduction Strategy Paper (PRSP) of Bangladesh: A Brief Review**

**4.1 Background**

The Interim Poverty Reduction Strategy Paper<sup>6</sup> idea was initially conceived as an operational plan linked to the country-level Comprehensive Development Framework (CFD). The PRSP was, then, linked to debt relief under the enhanced Heavily Indebted Poor Countries (HIPC) initiative. Countries are expected to have a poverty reduction strategy, reflected in a PRSP, to show how they would use the funds released by debt relief to alleviate poverty. In September 1999, it was agreed that a PRSP would become the basis for all World Bank and IMF concessional lending as well as for debt relief.

The concept is that the country government will lead in the production of the PRSP. The process of preparing PRSP is time-consuming because of the emphasis on participation by civil society and representatives of the poor. It was agreed that countries could have an interim PRSP (I-PRSP), until a full PRSP is prepared.

Poverty reduction strategies (PRS) should include plans for rapid economic growth, macroeconomic policies, structural reforms and social improvement, and lead to outcomes of the poor sharing in the benefits of growth and having reduced vulnerability to risk. Three main steps are identified in the process of defining poverty reduction strategies: (i) understanding the nature of poverty within the country; (ii) selecting public policies and actions which will have the most impact on reducing poverty; and (iii) identifying and monitoring outcome indicators (which may reflect the international development goals).

For the health sector, many countries already have health sector policy documents and plans, and some have sector-wide programmes with planned resource allocations and/or have a medium term expenditure framework for the sector. Thus, the PRSP process should build on these existing efforts to address the priorities and plans for the sector, rather than to start afresh. Accordingly, the health sections of the PRSPs are brief and contain standard types of statements of policy and strategy. There is no detailed discussion of the poverty focus or the rationale for strategies. The strategy focuses on development of health services and disease control programmes, without adequate attention given to the issue of expenditure on health

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<sup>6</sup> For more elaborate discussion, see Walford, 2001.



care as a major cause of poverty. Yet, the poverty analysis often highlights the fact that paying for health care is a cause of poverty and debt, and a priority concern for the poor.

In most cases, there is lack of quantification, and therefore, no way of estimating the likely impact on the health sector. This is due to the limited amount of detail, and also because there are few targets or measurable indicators. There is a need to make the indicators more useful as measurements of progress on two counts: (a) whether the planned strategies have actually been introduced, and (b) whether they are reaching intended targets, e.g., whether services are being used or exemptions granted in poor rural areas. The PRSPs are not quite specific about the monitoring approach to be used, although there is a tendency to plan for household surveys.

#### **4.2 PRSP of Bangladesh**

The Government of Bangladesh is currently formulating the next five-year plan. It has already prepared the interim PRSP to provide guidelines to the forthcoming plan document. The PRSP reflects a major policy shift of the government and indicates that the government is seriously committed to rapid alleviation of poverty. The document is quite comprehensive, and, more or less, fully consistent and compatible with the major international papers on the issue, including the Report of the Commission of Macroeconomics and Health (2001) and the World Development Report, 2002. It can be reasonably expected that the entire spirit of the PRSP will be maintained and the appropriate measures required to achieve the PRSP goal will be devised in the next five-year plan and the subsequent operational plans.

According to the I-PRSP, the strategic elements of anti-poverty policies and institutions will cover five broad sets of policies: (i) accelerate and expand the scope for *pro-poor economic growth* for increasing income and employment of the poor; (ii) foster *human development* of the poor for enhancing their capability through education, health, nutrition and social interventions; (iii) support *women's advancement and closing of gender gaps* in development; (iv) provide *social safety nets* to the poor against anticipated and unanticipated income consumption shocks through targeted and other efforts; and (v) influence *participatory governance*, enhance voice of the poor, and improve non-material dimensions of well-being, including security, power and social inclusion by improving the performance of anti-poverty institutions and removing institutional hurdles to social mobility. The above interventions can have maximum impact on poverty, especially in minimising the severity of poverty, when these are targeted to the poor regions and with especial focus on the needs of the most disadvantaged population and ethnic groups (I-PRSP: 23).

Human development of the poor is a major area to be covered by the anti-poverty policies and institutions. The section on human development categorically recognises that the development of human capital has strong poverty reducing effects in Bangladesh, observes that addressing the pro-poor concerns in health remains an unfinished task, and suggests that "developing a pro-poor agenda within the rubric of a sector-wide approach" is the main challenge to the health and population sector (I-PRSP: 33). The control of communicable and improved maternal and child health should be the highest priorities, and the "package of essential health interventions with enhanced programmes of family planning" should be catered to the needs of the poor so as to have strong poverty reducing effects as the

improvements in health would translate into higher quality of children, lower income erosion due to health shocks, higher productivity, and higher economic growth. The document also recommends that the coverage of current ESP should be broadened to include some of the important non-communicable diseases and commits to strengthen the nutrition programmes, with especial focus on poor areas and communities, so as to address the malnutrition of children and mothers.

Human development area also includes education. The document is committed to increasing enrolment rate and reduction in the dropout rate, strengthening incentives for enrolment of children from the poor households and for girl's education, and giving more emphasis on improvement of quality of education.

While the section on human development has covered a number of relevant issues, issues such as reproductive health and child health, and population pressure have not received due emphasis and some other issues such as improvements in the quality of care, proper utilisation of the inputs, the unholy nexus among some providers, etc. have not been mentioned in the document, although these issues are largely relevant to increased provision of health to the poor and also in reduction of poverty.

Similar to the PRSPs of other countries, the PRSP of Bangladesh is too broad and also vague in stating most of the issues while too ambitious in addressing some issues, which is, however, not quite unusual on the part of any strategy paper. The critical issue is that the follow-up actions, including preparation of the plan document, are carried out fully in line with the spirit of the PRSP. It can be proposed, however, that in the final PRSP the discussion should be more specific on the crucial issues, and that the commitments should be realistic and based on the previous experience regarding plan implementation. Also, sufficient consideration should be given to the financial and political feasibility of implementation.

Two caveats are also in order. First, implementing a plan to substantially reduce poverty depending heavily on the external assistance can itself be counterproductive, accelerating poverty in the near future. Besides, a host of risk factors are involved in the expected flow of assistance from the external sources. The PRSP should take these in account. An acceptable alternative is to assess how much poverty reduction is possible based largely on domestic resources, and simulate to what extent and how mobilisation of domestic resources can be increased so as to increase poverty alleviation. Second, attaching emphasis on poverty reduction at the present stage of the economy beyond an optimal limit can exert excessive pressure on the resources and efforts of the society and cause distortion in the economy, thereby seriously reducing the growth potential of the economy and the prospects for industrial development.

On the whole, despite some omissions, the interim PRSP of Bangladesh is a good document, prepared based on the findings of relevant research and in line with the consensus of the international community. It demonstrates a major shift in the government policies toward rapid reduction of poverty and it can be safely said that if the next plan carries the spirit of PRSP and is largely implemented, even if not fully, poverty will be greatly reduced during the plan period.

### **4.3 Importance Attached to the Need for Containing Population Pressure in PRSP**

As already pointed out, the PRSP of Bangladesh has not addressed the issue of increasing population pressure in the country, except simply mentioning that enhanced family planning contributes to poverty reduction in several ways. The issue of containing population pressure or stabilising population stretches much beyond family planning. The document neither mentions the strategy of enhancing family planning, nor does it address the non-family planning issues such as further delaying age-at-marriage and age at first birth, further reduction in the effective demand for children, and rapid increase in the effectiveness of contraception.

The PRSP of Bangladesh is not alone in neglecting the population issue. The PRSPs of all the countries which are available have also largely ignored it. Even documents such as the *Report of the Commission of Macroeconomics and Health* have not considered the population issue, despite the obvious effects of rapid population stabilisation on poverty reduction. In some countries, such as Bolivia, increasing size of population is not a problem, at least not at present. However, Bangladesh faces the problem, notwithstanding the remarkable success of its family planning programme. The present paper has already argued, based on *a priori* reasoning and *posteriori* evidence, that rapid stabilisation of population alone can substantially reduce poverty in Bangladesh. It has also mentioned that further decline in the TFR and combating demographic momentum are now required to reduce the population pressure.

We propose that the final PRSP recognise, in more detail, the role of reduced population pressure in poverty reduction and identify the strategies needed for poverty reduction. Besides, we expect that in the next plan due emphasis will be given to reducing the TFR and countering the demographic momentum with the objective of rapidly containing the population pressure, and the plan document will appropriately devise the mechanism to that effect.

## **5. Measures for Containing Population Pressure**

Sections 2 and 3 have clearly indicated that reduction of the population pressure in Bangladesh requires further decline in the TFR and countering the demographic momentum. Appropriate measures are needed on these two fronts.

### **5.1 Decline in TFR**

Since 1994, the TFR in Bangladesh has plateaued at 3.3, although the CPR has been continuously rising over the years. Several measures are needed to break the plateauing of TFR.

#### **5.1.1 Increased Effectiveness of Contraception**

The effectiveness of contraception has to increase considerably. When the CPR is already high and the TFR is already low, the marginal effectiveness of contraception is likely to be very low or even zero. The evidence from Bangladesh on the relationship between the CPR increase and the TFR supports this hypothesis. As the CPR reaches a high level, it is quite likely that the proportion of couples who use less effective methods and the proportion of

couples who use effective methods for limiting children after already having a large number of children or who use methods only for birth spacing increases, while the proportion of couples who use effective methods to limit the number of children within two may remain constant. As a result, effectiveness of the use of contraceptives in terms of TFR reduction becomes quite low and the TFR plateaus before reaching the replacement level. Increase in the effectiveness of contraception requires the following:

- use of more effective methods (longer acting methods) should sharply increase, and
- methods should be used more effectively, i.e., discontinuation rates should decline and regularity of use should increase.

Increased use of effective methods and increased effective use of all methods, in turn, need:

- increased efficiency of the programme,
- enhanced quality of care, and
- proper management of side effects.

### **5.1.2 Further Increase in the CPR**

Although the marginal effectiveness of the CPR in terms of TFR decline is almost zero at present, it seems that if the CPR increases considerably the TFR will decline, at least to some extent. It is generally argued that if the CPR in Bangladesh becomes 70 percent, the TFR will decline to the desired level, even if effectiveness of method use remains constant. In order to raise the CPR from its present level, the following measures need to be undertaken:

- Family planning programme should be made more extensive. The programme has not yet effectively covered many remote and backward areas and many poor and backward households even within the relatively advanced areas. The effective coverage of the programme should be universal, and the campaign should be stronger in the hitherto uncovered areas and households. This will remove the unmet need that still exists.
- Family planning programme should be more intensified and dynamic. The programme should aim at increasing knowledge and attitude of the people not only about just family planning but also about the other related issues such as reproductive health, child health, general health, etc. so as to generate synergistic effects. The campaign should not be allowed to appear stereotyped to the couples, it should deliver the messages using as far as possible new techniques and also using multiple techniques. Besides, the campaign should continuously cover the new issues and messages emerging over time. All these require continuous training and improvement in skills of the field workers as well as innovation in devising newer techniques and approaches.

The home visits can still be very useful in many areas. It seems that while the community clinics can sufficiently do the job in the advanced areas, the home visits should continue alongside the activities of the community clinics in some areas and the home visits alone should be used in the remote and backward areas in order for the programme to be expectedly effective.

- Family planning programme should be more integrated not only with health interventions but also with other development and poverty alleviation interventions. This will attract and induce more couples to effectively contracept.
- The effective demand for children (and not just the desired family size) has to decline further. A number of measures should be adopted to reduce demand for children. Enrolment of children in schools should increase and dropout rate significantly decline. There should be provisions for old age security in the informal sector. The son preference should be reduced. Increased female education and employment and increased social and economic "value" of women can reduce son preference. Reduction of infant and child mortality will also reduce demand for children. Increased empowerment of women in general and increased role of women in the decision-making in the household and in the society alone will significantly reduce the demand for children.
- Above all, the inertia that prevails in the programme at the field level (which is not unusual during the transition phase) and the lack of sufficient motivation of the field workers must end, if the programme is to be rejuvenated.

## **5.2 Combating Demographic Momentum**

The following measures are needed:

- Age at marriage and age at first birth should be increased further. The female age at marriage is still quite low. Increased education and employment, especially of girls, and increased empowerment of women can significantly raise the female age at marriage. Special interventions to bring about such changes are required, especially for the backward areas and the backward sections of the population.
- Family planning programme should increasingly attach emphasis on delivering messages about the adverse effects of early marriage and early first birth.
- Efforts should be made in the programme to increase awareness and knowledge among the adolescents about family planning and health issues. The adolescents are the future couples, and increase in their knowledge will significantly affect their behaviour during the reproductive ages and will also induce them to delay marriage.
- Decline in the TFR will also further reduce the effect of demographic momentum.

## **6. Discussion**

That the increasing population pressure dampens poverty reduction efforts in a resource-constrained economy is a stylised fact. The pathways through which the socio-economic and demographic factors affect poverty are also well known. This paper has delineated the relationship between population pressure and poverty, and exhibited the factors which cause the population pressure to rise in the Bangladesh context. The critical issue for the health and population sector, however, is to effectively adopt the measures to bring about stabilisation of population as early as possible in order to reduce poverty. Over the past decades, the government has been implementing various interventions and has achieved remarkable success. However, much more needs to be done, if poverty is to be significantly reduced.

Notwithstanding considerable increase in the CPR and consequent decline in fertility, there is room for considerable improvements. There is a need for not only further increase in the CPR but also more effective use of contraceptives to be able to achieve replacement level fertility by the year, say, 2010. However, that, by itself, would not be enough because of the problems centering population momentum. Hence, major "beyond FP" measures such as increased schooling, especially of females, increased employment opportunities, improved child survival, ensuring safe motherhood, and enhanced status of women would be needed to raise female age at marriage and age at first birth. However, unless such measures can be intended to reach the poor and the disadvantaged groups, the effects will be minimal. Thus, unless adequate measures are undertaken to contain population pressure, poverty reduction, despite the government's poverty-reduction initiatives, can not be achieved at the desired level.

Preparation of the interim PRSP is the first step toward launching the re-inforced poverty-reduction oriented plan. The government has, more or less, successfully accomplished this. It should now prepare itself for formulating and implementing a poverty reduction plan (PRP).

In preparing the PRP, the government has to consider several factors which are involved in the poverty reduction issue. As the first step of preparing PRP, poverty has to be operationally and uniformly defined. It needs to be examined as to which one of the available definitions is most applicable in the rural setting of Bangladesh to capture the maximum number of the poor and the disadvantaged group. A composite index of poverty may be more useful. Second, an appropriate mechanism of identification of the poor and the disadvantaged people needs to be devised.

According to a WHO study (1998), an index of three indicators such as landholding, occupation, and housing condition can be used to identify the poor and the disadvantaged women. However, Howlader and Routh (2002) argued that this index has to be further tested so as to examine its general validity. It appears from observation that landownership is not a major indicator of the index in many rural areas, rather the amount of operated land and productivity (including cropping intensity) are more powerful indicators. Second, household's per capita income from all sources is arguably a strong indicator as well. Third, a permanent and feasible method of locating the poor households using the index is yet to be developed. This involves three important issues: who will identify, who will choose the identifiers, and how? Fourth, it is also important to know the need and demand for family planning in the poor households. The key issues in this respect are: what type of family planning and other reproductive health services are needed and demanded by different types of the poor and disadvantaged women, and what is the gap between need and demand? The need and demand would vary by level of poverty, age, education, location of households etc. of the poor and disadvantaged women. Fifth, identification of the major reasons for non-use of family planning and other reproductive health services and the important obstacles (financial, attitudinal, social, etc.) to use of family planning and other reproductive health services by the poor and disadvantaged women is needed. Finally, there is a need for identification of the mechanisms through which demand for family planning and other reproductive health services can be increased and supply of such services to them can be ensured. The possibility of implementing health insurance schemes, community financing schemes, and creating and

activating of community groups of the women, for the women, and by the women should be examined. The possibility of integrating family planning and other reproductive health services with the existing micro-credit, income generating and other socio-economic upliftment programmes needs to be strengthened.

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