

# **Studies in Population and Development**

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The Rationale for Two Child Norm**

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## **Background**

It is more than 200 years ago that the British clergyman Thomas Robert Malthus put forward his famous thesis about the mismatch between the growth of population and the growth of subsistence that continues to haunt the world even today (Malthus, 1798). Malthus raised serious concerns about the well-being and prosperity of the mankind in view of the fact that the pattern of human population growth was radically different from the pattern of growth of subsistence necessary for the survival of the mankind. Malthus concluded, on the basis of the limited evidence, human population growth followed the geometric progression while the growth of subsistence, especially food, followed the arithmetic progression. Malthus, accordingly argued that there would ultimately be a gap between the demand and supply of the subsistence. Malthus was also of the view that the capacity of the planet Earth to produce subsistence necessary for the survival of growing number of people was limited but there was no biological limit to human reproduction. On the basis of these findings, Malthus concluded that, ultimately, there shall be misery and vice throughout the world if the growth of population is not checked. To counter the situation, he elaborated, at length, two types of checks to control rapid population growth - preventive checks and positive checks.

Malthus thesis and Malthusian thoughts on population growth and how it affects the well-being and prosperity of the mankind have been the subject of some very heated debate during the last two centuries. There is no sign of dying out of this debate. Over the time, two schools of thought have emerged - one supporting Malthus and other denouncing it. Both the schools have positive arguments along with a number of misgivings. Malthus was concerned primarily with the misery and vice resulting from the perceived shortage of subsistence, especially food, due to the growing number of the people on the planet Earth. Although, technological innovations following Malthus, contributed significantly in avoiding what is known as the Malthusian Trap, yet misery and vice of different and earlier unknown forms and nature continue to haunt the world and all these misery and vice definitely have some population element in them. Malthus raised concerns about food shortages in the context of rapid population growth. Today, concerns related to rapid population growth generally centre around the decay of the natural environment which is crucial for sustaining the life and fast dwindling natural resources.

The believers of anti-Malthusian thesis, on the other hand, continue to pin their hopes on the Man as a rational animal and its prowess of innovations and inventions to meet out its needs - essential and preferred - as well as to adapt itself to almost all kind of changes in the environment. This school of thought argue that the Man is the 'ultimate resource' and because of its sheer ingenuity and intellectual capacity, it will be able to effectively address 'all' concerns related to its survival as well as sustenance of life on the planet Earth. This school

of thought also argues that there are no dearth of resources on the planet Earth if they are used rationally and astutely by the Man. As such, this school advocates building the capabilities of the Man as a productive asset rather than controlling or curbing the growth of this 'ultimate resource' (Simon, 1981). The historical evidence, incidently, supports this line of argument.

The reason behind the continued debate on the role of population in social and economic development processes and well-being of the people is that the relationship between population size, growth and structure and the well-being of the people is very complex in structure and dynamic in nature. Many dimensions of this complex relationship are yet to be fully understood as they vary over time and place. The contexts and contents of population and development interactions keep on changing as the result of both demographic transition and movement of the population, and social and economic development leading to better livelihood opportunities and quality of life. Population and development interactions are also influenced by a host of cultural, religious, environmental and even political considerations which have often been found to be resistant to social and economic progress. This complexity calls for evidence-based analysis of population and development interactions at regular intervals under varied social, cultural and environmental settings and integration of the findings of the analyses in the development planning processes. It is also imperative that this analysis and integration should be done at the local level - the interface with the people. Macro level analyses are of little help in understanding the construct of population and development interactions at the local level because macro level analyses are, at best, aggregation of micro level experiences which obscure both positive and negative aspects of any population and development relationship. The situation is compounded further by the fact that the macro analyses rarely capture the wide diversity in cultural, religious and environmental settings that, in themselves, are so critical in defining population and development interactions.

It is interesting to observe that although, the Malthusian perspective could never withhold empirical scrutiny during the last 200 years, yet this perspective always dominated the discussion and debate on population issues as they affect development and well-being, especially in the context of the developing countries. This politics of population has dominated and continues to dominate, even today, other issues related to population and development. The crux of this politics is that population growth in the developing, countries has been repeatedly singled out by the developed countries as one of the main reasons behind mass poverty and gross underdevelopment that these countries are experience. This line of argument advocates for strong action for curtailing population growth and cautions, more or less in the tone of Malthus, that if population growth in the developing countries continues unabated, the World is 'doomed'. The impact of this reasoning has been so strong that for many years, development support from the developed to developing countries has been associated with a caveat of introducing and supporting official population control programme. It is only

recently that the developed countries have stopped emphasizing population control and population stabilization as a condition for social and economic progress and improved well-being of the people. These countries now view large rapidly growing population in the poor countries as the potential market for their produce. Population concerns, especially growth, and their linkages with social and economic development have now been relegated to a residual environment at the international level. This may be judged from the simple fact that the Millennium Declaration adopted by the United Nations and its many agencies has no reference to population control and population stabilization as part of the development agenda.

India was the first country in the world to adopt an official policy directed specifically towards curtailing population growth by limiting the number of births per couple through the use of family planning methods and launching the first official family planning programme way back in 1950s. The proponents of this line of thought advocate population stabilization - achieving zero population growth - as one of the essential conditions for an accelerated social and economic progress. Since then, the context of population control in India has changed repeatedly but the solution remains unchanged - it is always better off with a smaller population than with a large rapidly growing one. Jawaharlal Nehru, the first Prime Minister of India also raised these concerns in his famous 'Discovery of India' where he argued that the eastward sweep of modern medical technology would result in significant decrease in the number of deaths. He was of the view that if India was to advance on the social and economic development front at a brisk pace then keeping the growth of population under check was a necessity of highest priority and the only alternative was to reduce the number of births (Nehru, 1946). Even Mahatma Gandhi advocated strongly for moral restraints in matters related to procreation necessary for nation building although he was dead against contraception. The wisdom of Jawaharlal Nehru constituted the basis for the formulation of policy on population and launching the official family planning programme at the time of independence. Since then, population control or stabilization has remained one of the priority development agenda of the nation and the strategy of universal adoption of small -two child - family norm constituted the basis for population stabilization.

The family planning programme, now known as family welfare programme, in India has gone through phases of ups and down during since independence. One of the discerning features of the programme has been the lack of consistency in the efforts towards the universal adoption of the small family norm. There has been a tendency to search for ideal solutions within a short duration. This tendency has resulted in the practice of polarization - drifting from one solution to the other - but none offered a complete or near to complete solution. The rush towards achieving pre-stated demographic goals without giving any consideration to the felt family welfare needs of the people and the social, cultural, religious and family dimensions of reproductive behaviour often resulted

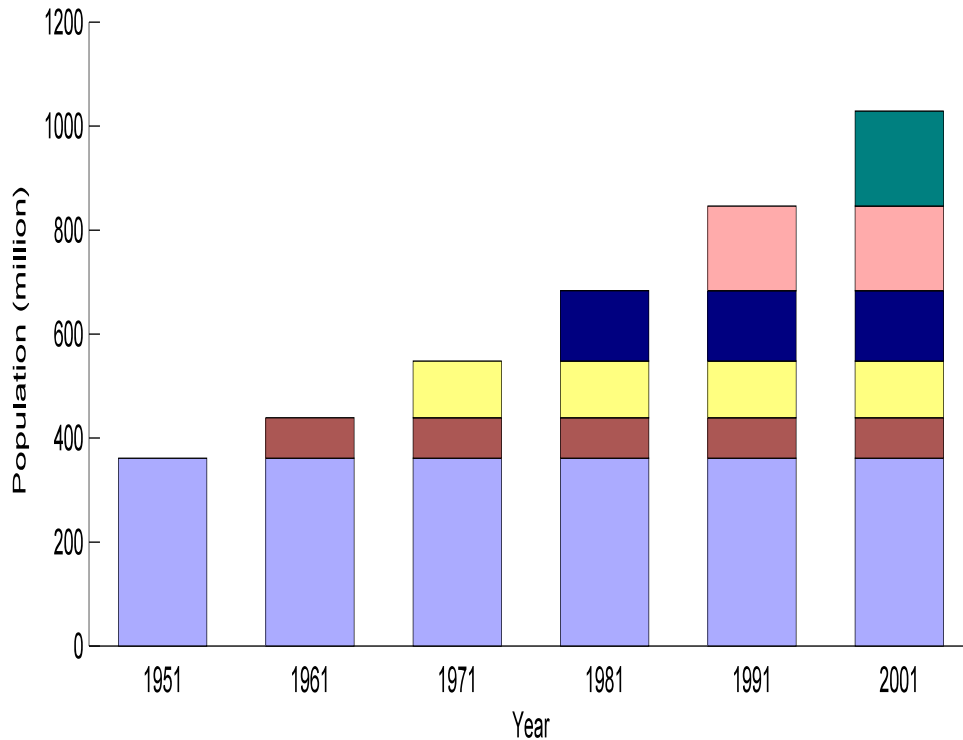
in coercion and force in the implementation of the programme despite the fact that the policy always professed voluntary adoption of the small family norm. The approach to programme implementation resulted in political sensitiveness to the programme and to population related issues in general and contributed even to the fall of the popular government in 1977.

During the 1990s, a number of states in India enacted laws related to two child norm for elected representatives of Panchayat Raj Institutions. These laws, essentially, debarred a person having more than two living children in contesting elections for the local bodies - third tier of democracy in India. A similar Constitution (Seventy Nine Amendment) Bill, 1992 was also introduced in the Parliament (Rajya Sabha) by the then Minister for Health and Family Welfare. This Bill proposed to add an additional schedule in the Constitution under which a person shall be disqualified for being a Member of either House of the Parliament or either House of the State Legislature, if he or she has more than two children. Although, this Bill is yet to see the light of the day primarily because of the reluctance of the democratically elected representatives of the people to discuss and debate population related issues, yet many constituent states have gone ahead to enforce similar conditionalities in the election of local bodies.

The enactment of these laws created a lot of furore in the country. These laws were argued to run counter to the objective of bringing women, weaker sections and younger members in the Panchayat Raj Institutions (Mohan Rao, 2003). Although the Supreme Court of India upheld the constitutional validity of these laws, yet criticism of these laws and protest against them continues. In 2003, the National Human Rights Commission organized a colloquium on Population Policy, Development and Human Rights and adopted a declaration which, among others, noted that the propagation of the two child norm and coercion or manipulation of individual fertility decisions through the use of incentives and disincentives violated the human rights of the people, particularly the rights of the child (National Human Rights Commission, 2003).

In this paper, we argue that universal adoption of the two child norm does not violate the principle of voluntary informed choice and human rights of the people as emphasized by the National Human Rights Commission in its declaration. Rather, we show that universal adoption of the two child norm is necessary to achieve population stabilization, which, in turn, is an important contributing factor in striking the balance between population, resources and environment. This is necessary as the declaration adopted by the National Human Rights Commission equates the propagation of the two child norm to the coercion and manipulation of individual fertility decisions through the use of incentives and disincentives. We begin with a brief account of population growth in India in the past and prospects of future growth under different assumptions related to future fertility transition.

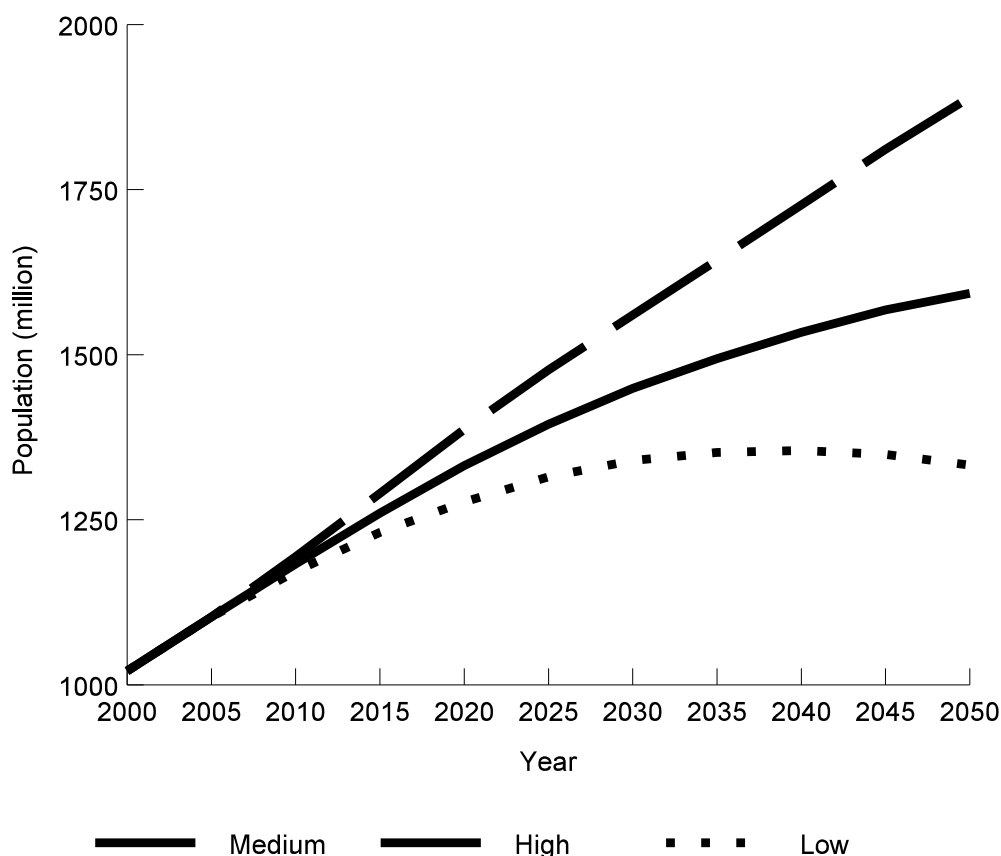
## Population Growth in India: 1951-2001



### Population Growth in India

At the time of independence, the population of India was estimated to be around 345 million (Dyson, 2004). At the 1951 population census, the first census after independence, the population of the country was enumerated to be 361 million which increased to more than 1028 million at the 2001 population census (Government of India, 2001). During the decade 1951-61, total increase in the population of the country was of the order of 78 million. During the decade 1991-2001, net addition to the population of the country was of the order of 182 million. This massive increase in the population of the country was primarily the result of the decline in mortality. The crude death rate in India decreased from around 30 deaths per 1000 population per year during 1951-61 to just around 9 deaths per 1000 population per year during the decade 1991-2001. By comparison, the crude birth rate was more resistant to change. The decrease in the birth rate has been slower than the decrease in the crude death rate during 1951-81. It was only during the decade 1991-2000 that the crude birth rate decreased faster than the crude death rate (Bhat, 1998, Government of India, 1999).

### Future Population Growth in India: 2000-2050



The rapid decline in mortality in the post-independent India was the result of many factors. First and the foremost, even the poorest of the poor experienced some improvements in their living conditions. In addition, control of communicable diseases primarily through the increase government expenditure on health and expansion of health care services delivery system also contributed significantly.

Future population projections prepared by a number of agencies including the Registrar General of India, United Nations and the World Bank suggest that India's population growth is likely to remain unabated at least during the first half of the present century. By the year 2050, India is projected to become the most populous country in the world surpassing China. The projection exercise carried out by the United Nations suggests that the population of the country is likely to reach almost 1593 million by the year 2050 which implies that around 600 million people will be added to country's population between 2000 and 2050 (United Nations, 2004). Similarly, the projections carried out by the World Bank suggest that India's population will be about 1572 million by the year 2051 (World Bank,

2000). The projection exercise carried out by the Registrar General of India indicates that country's population will be around 1400 million in the year 2026- an increase of about 36 per cent over a period of 25 years (Government of India, 2006).

The pace of decline in fertility during the first half of the present century will largely determine the net addition to the population of the country in the coming years. Projection exercise carried out by the United Nations suggests that if India is able to reduce its total fertility rate to 1.35 births per woman by the period 2030-35 from the estimated level of around 3.0 during 2000-05, then India's population might never exceed 1360 million. However, if total fertility rate falls to only 2.35, and remains there, then the population of the country will be approaching 1900 million by the year 2050. The two scenarios may be viewed as the upper and lower limits of population growth in India. Both the scenarios, however, appear unlikely. The most probable scenario, according to United Nations, is that total fertility rate in India would decline to around 1.85 births per women by the period 2030-35 and will stabilize at that level. In any case, the pace of decline in fertility and its eventual level will be a very crucial factor in deciding the future population growth of the country.

By all accounts, the implications of future population growth of the country on the resources availability and environment sustainability as well as on social and economic development processes are going to be serious. The substantial increase in the population will result in a significant increase in the demand for resources for meeting even the basic needs of the increasing population. This will put substantial pressure on natural resources such as land, water, etc. At the same time, the increase in the wastes generated out of increased resources use will be a major challenge to environmental sustainability. It has also been estimated that the burden of the increasing population will significantly hamper the social and economic progress and improvements in the living conditions as a substantial proportion of available resources will have to be diverted to meet just the basic needs of the population that will be added every year. At the same time, additional productive opportunities will have to be created to ensure the productive utilization of the labour force that is bound to grow rapidly as the result of the growth in population. Obviously, population growth will have important implications to India's development in the years to come.

### **The Dynamics of Population Growth**

An understanding of how population factors affect social and economic progress and quality of life of the people first requires an understanding of how population increases or decreases. The growth of population in a given time period has three components: births, deaths and migration. The most basic method of estimating the growth in population in a given time period is the 'balancing equation':

$$P_2 = P_1 + (B - D) + (I - E).$$



Where  $P_2$  is the population at the later date;  $P_1$  is the population at the earlier date; B is total number of births; D is total number of deaths; I is total number of immigrations; and E is total number of emigrations between the two dates. Note that deaths and emigration result in a decrease in population whereas births and immigration result in an increase. Thus if the quantity  $B-D+I-E$  is greater than 0, the population increases; if it is less than 0, the population decreases; and if it is equal to 0, there is no increase in population. Moreover, more the quantity  $B-D+I-E$  deviates from 0, more rapid will be the increase or decrease in population.

Of the four factors responsible for the change in population stock over time, two factors - births and deaths - are the result of the natural processes of fertility and mortality whereas the remaining two factors - immigration and emigration - are man made factors. Assuming, man made factors are at the discretion of the mankind, change in population stock due to natural factors, known as natural increase in population (NI), is defined as

$$NI = B - D.$$

This equation suggests that if migration is ignored, the population will neither increase nor decrease in a given time period only when total number of births during this period are equal to the total number of deaths. Obviously, the essential condition for population stabilization is to reduce to zero the gap between average annual number of births and average annual number of deaths. Historical evidence suggests that with social and economic progress and associated improvements in living conditions, the risk of death decreases that results in a decrease in the number of deaths. However, in the absence of deliberate fertility regulation, there is no such relationship between fertility and social and economic progress. This means that in the era of social and economic progress, deliberate regulation of fertility is a necessity to keep a check on population growth.

The average annual number of births in a population depend upon the size of the population and the levels of fertility which is measured through the birth rate (b) but which is a very crude measure of fertility. A more refined measure is the total fertility rate which is the total birth performance of all women in the reproductive age in a year. Similarly, the average annual number of deaths in a population depend upon the size of the population and the death rate (d) which is also a very crude indicator of mortality. In other words,

$$NI = P * (b - d)$$

Thus, the increase or decrease of any population closed to migration is the result of the difference between the birth rate and the death rate. The larger this difference deviates from the limiting value of 0, the more rapid will be the increase or decrease in population. A population, closed to migration, will neither increase nor decrease in a given year if the annual birth rate and annual death rate for that year are same. This situation can occur when both birth rate and death rate are either very high or very low. The first situation is termed as the situation of high stationarity while the second is termed as the situation of low stationarity. The driving force for population stabilization, in situation of high stationarity is the

high mortality which is an indication of under-development, poverty and misery of the extreme order. Such a situation prevailed in India at the end of the 19<sup>th</sup> century and in the beginning of the 20<sup>th</sup> century. No responsible citizen of the country would agree that this situation should prevail again to achieve population stabilization.

On the other hand, in the situation of low stationarity, fertility, not the mortality, is driving force behind either zero or very slow population growth. Since, fertility is basically a response to prevailing levels of mortality, low fertility coexists only with low mortality. This situation is an indication of an advanced level of social and economic development and high to high levels of living.

It is obvious that the situation of high stationarity cannot be accepted from the development perspective. Mortality is one of the end result of the state of health of the people. High mortality is an indicator of the poor health status and hence poor quality of life. When mortality is high, a very high proportion of deaths are premature deaths, a fact which is contrary to the basic philosophy of social and economic development. The only way out, therefore, is to strive for the situation of low stationarity. This means that reduction in both fertility and mortality is critical to population stabilization and hence to development and environmental sustainability.

### **The Two Child Norm**

The concept of Two Child Norm is essentially a theoretical concept. It can be explained through a hypothetical but easy to understand example. Suppose, a population consists of just two couples who have just completed their reproductive life span. This means that the couples have virtually zero probability of having another birth. Also suppose that both the couples have two children - one male and one female - and the population is closed to migration. The marriage market in this hypothetical population consists of two boys and two girls and so they marry each other to form two young couples - one to each of the older couples. When the older couples die, they are exactly replaced by the younger couples and the population neither increases nor decreases; it is stabilized.

Suppose, on the other hand, that instead of having only two children during their entire reproductive period, the two couples have four children each - two males and two females - during their reproductive life span. In this hypothetical situation, there will be four young couples - two to each of the old couple - and the new generation will be two times the old generation. Alternatively, if one couple has only a male and the other only a female child during its reproductive life span, then the next generation will consist of only one couple and the new generation will be half of the old generation. This means that, in the present hypothetical example, the population will neither increase nor decrease only when each of the two couples constituting the population have only one male and the other female child. It is obvious that if the number of couples are increased but all of them have only two children - one male and the other female - the new generation will

exactly replace the old one subject to the condition that all couples - old as well as new - survive at least up to the end of the reproductive period so that there is no probability of any additional birth.

The above hypothetical example clearly shows that population growth is directly related to the average number of children couples have on average during their entire reproductive period. In the given hypothetical situation, the population will neither increase nor decrease if all couples in a population have exactly two children - one male and one female. Although this is a theoretical and most improbable proposition, yet, this simple example provides the norm necessary to achieve population stabilization. This norm is the two child norm.

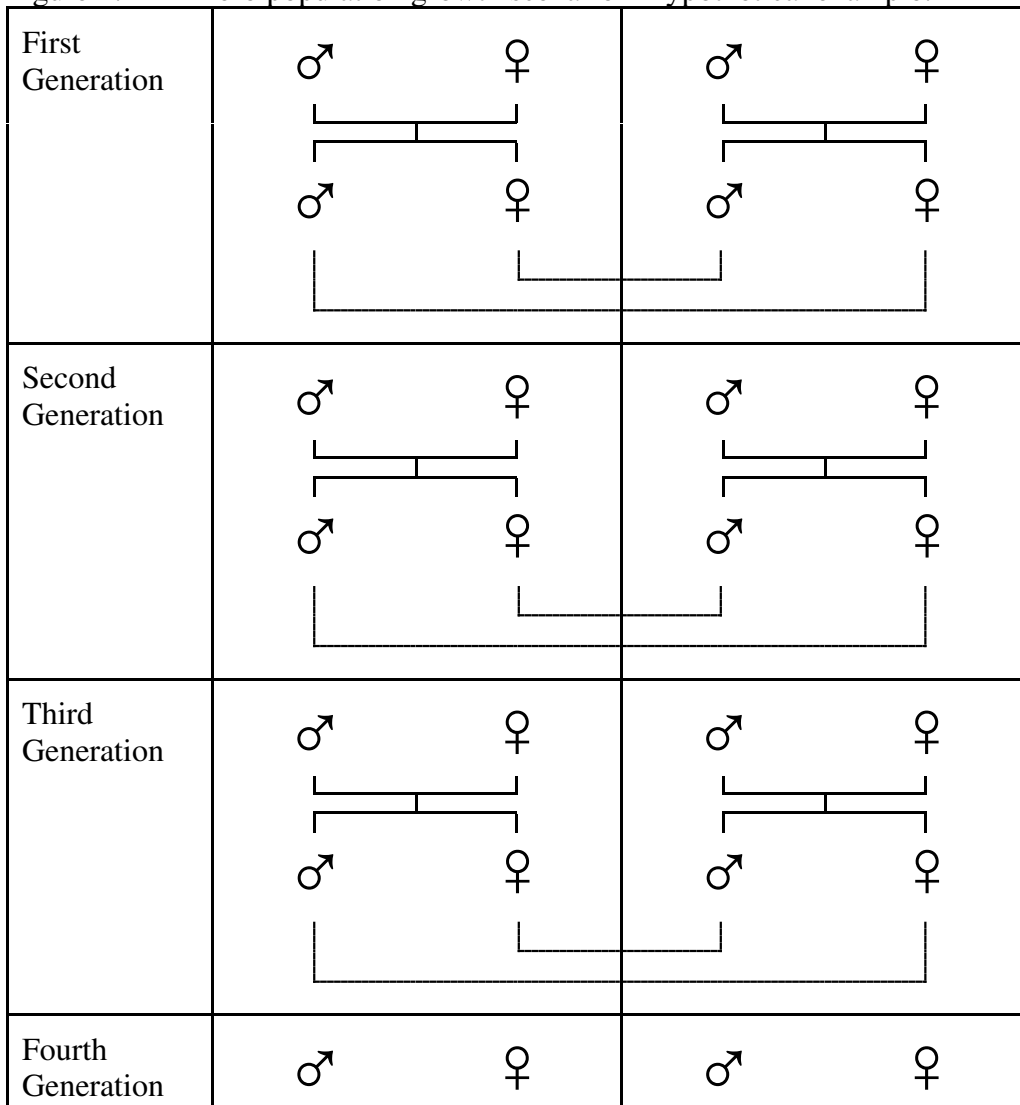
The number of children, a couple is expected to have during its entire reproductive life span is commonly known as the total fertility rate. To achieve population stabilization, therefore, it is necessary that the goal of a total fertility rate of 2 children per woman is achieved. If the total fertility rate remains higher than this level, population will continue to increase and higher is the total fertility rate, the more rapid will be the growth of population and vice versa.

The above hypothetical example may be regarded as incomplete in the sense that it does not take into account the dimension of mortality. It is naive to believe or assume that all couples in a population will survive throughout their entire reproductive period and that all children, these couples produce, will also survive throughout their reproductive period. Similarly, it is also naive to believe that every couple will have an ideal sex composition of children that they produce. Bringing the mortality dimension into consideration requires some allowances to be given to the deaths during early childhood and during the reproductive period in estimating the average number of children a couple should have during its entire reproductive period so that population remains stationary. Obviously, higher is the level of the mortality, higher is the allowance to be given in terms of the total number of children a couple should have during the entire reproductive period. The total fertility rate, a couple should have to ensure population stabilization after taking into consideration the levels of mortality, is termed as the replacement fertility. Replacement fertility helps us see plainly that we are not in the business of counting people or blaming them for bearing or being children, but rather of helping the people, especially women, to assure life, health gender equity and environmental sustainability.

Since levels of mortality, particularly, levels of infant and child mortality, vary widely across populations as well as across different population sub-groups, the replacement fertility - fertility required to exactly replace one generation by another - is not a constant number. It has been observed that the replacement fertility varies with the level of mortality (Espinshade, et. al 2003). Unlike the total fertility rate which is basically a hypothetical measure, replacement fertility also tells about the state of public health, child survival and gender disparity. This is why mortality comes so dominantly in the framework of population stabilization. Recent estimates suggest that the replacement fertility varies widely

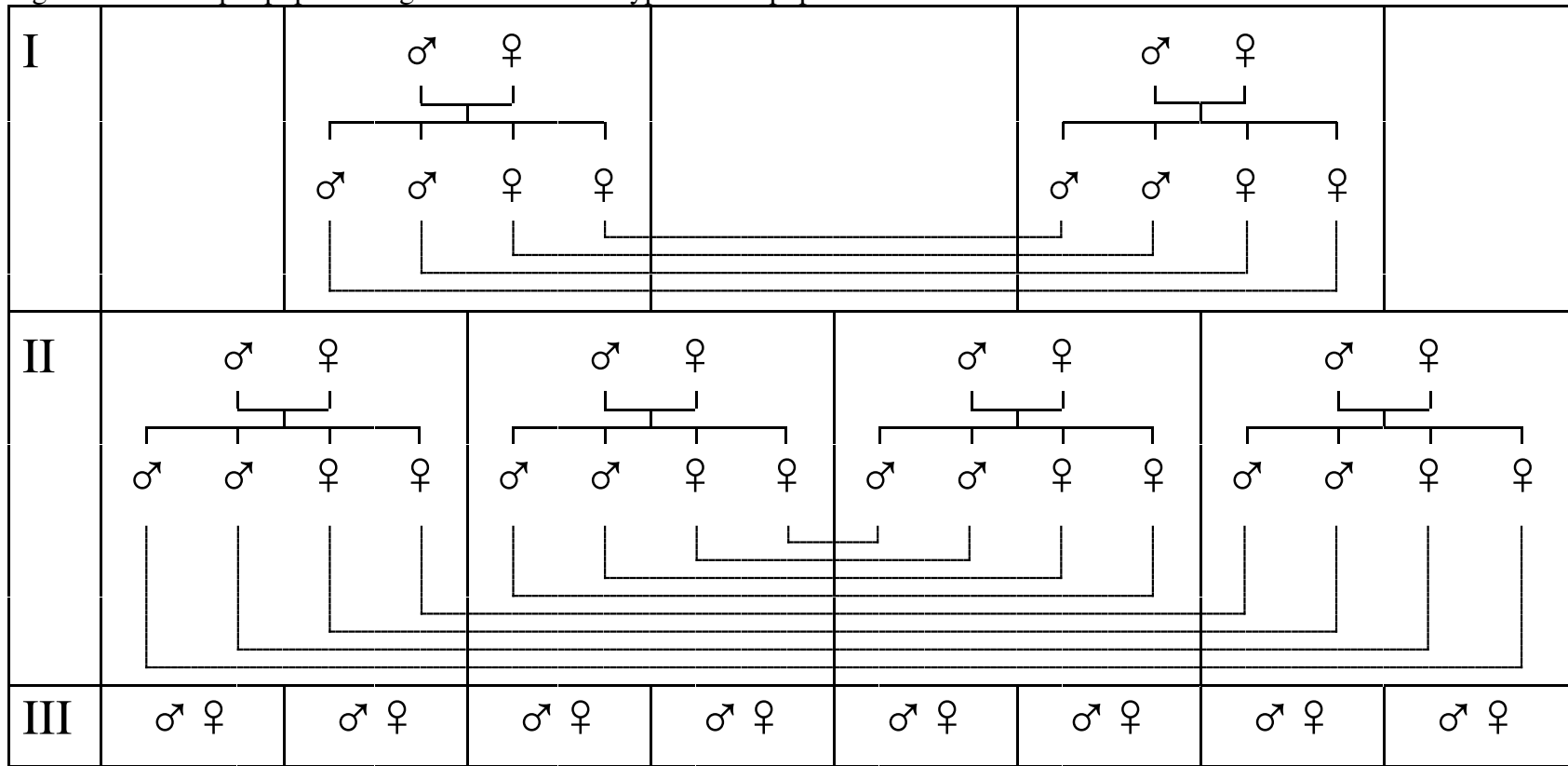
with the levels of mortality, especially mortality of infants and young children. It has been estimated that the replacement fertility is highest amongst the most poorest and least developed countries of the world with Swaziland topping the list with a replacement fertility of 3.35 children per woman. On the other hand, in the developed countries of the world where infant and child mortality rates are at their lowest and where a very advanced stage of social and economic development has been achieved almost 40-50 years ago, the replacement fertility is just around 2.05 - couples in this part of the world appears to have almost achieved the small family norm, on a national average.

Figure 1: Zero population growth scenario - Hypothetical example.



Remarks: For details, see text.

Figure 2: Rapid population growth scenario - hypothetical population.



Remarks: For details, see text.

### **Is Two Child Norm Necessary?**

It may be pointed out that when mortality, especially infant and child mortality, remains high, replacement fertility can be achieved even if couples, on average, have more than two children. The reason is that high levels of mortality compensates for the additional than two children that the couples have, on average. This means that when mortality is high, population stabilization can be achieved even without universal adoption of the two child norm. However, keeping mortality levels high is contrary to the basic philosophy of social and economic development. It is basically in-humanitarian. In fact, the most commonly used indicator for measuring the levels of social and economic development is the longevity or the average life of the people. The longevity is measured in terms of the expectation of life at birth which is determined directly by the levels of mortality at different ages. This is the reason why the rate of decline in mortality or, equivalently, the rate of increase in the expectation of life at birth is probably the best indicator for measuring the effectiveness of social and economic development process.

Therefore, under the regime of mortality and health transition initiated and accelerated through social and economic development processes, it can be assumed that, sooner or later, low levels of mortality will be a universal phenomenon. As such, limiting the average number of children per couple to just around two will be necessary to achieve replacement fertility and hence population stabilization. The answer to the question “Is two child norm necessary?”, therefore, lies in the answer to the question “Is achieving population stabilization necessary in the quest for social and economic progress and improvements in the quality of life?” The considered view is that a restraint to procreation is necessary for accelerating national progress in terms of improvements in the quality of life and levels of living of the people. If this is the unanimous view than universal adoption of the two child norm is a necessity. Population stabilization can be achieved by keeping the two child norm at bay only when mortality remains high - well above the acceptable levels but no one would accept this prescription of population stabilization. It is also worth pointing out that when mortality remains high the poor and the weakest sections of the community are the main sufferers. Moreover, when mortality is high, majority of deaths are pre-mature deaths, mostly confined to the first five years of life. Incidentally, premature mortality - mortality at very young ages - itself is a very strong motivating factor for couples to keep their fertility high.

### **Is Two Child Norm Sufficient?**

We now come to even wider question of the sufficiency of the universal adoption of the two child norm in addressing, issues related to environmental sustainability. Unfortunately, achieving population stabilization, alone, cannot ensure environmental sustainability, although population stabilization can contribute substantially in this direction. Equally important concerns are per capita

consumption of resources and per capita wastes generation. The first is related primarily to affluence while the other is related to both affluence and technology. It is however possible to separate the impact of population growth on the environment from the impact of affluence and technology. It is argued that the increase in the energy use and the resulting increase in carbon dioxide emissions are the root causes of the environmental problems like global warming, ozone layer depletion, etc. that the world is facing today. Since, increase in population is a contributing factor in the increase in the energy use as well as in the increase in the emission of carbon dioxide, it is stressed that curbing population growth and achieving population stabilization is essential to environmental sustainability.

We illustrate how population, resources use and wastes generated impact upon the environment by analyzing the trend in the energy use and in the carbon dioxide emission. It is well known that most of the environmental problems that we are facing today are the result of some rapid increase in the use of energy, primarily fossil fuels and resulting carbon dioxide emissions. Increase in the energy use may be taken as a proxy for the resources demand resulting out of both increase in population and increase in per capita energy use. On the other hand, increase in carbon dioxide emission may be taken as the proxy for the wastes generated as the result of the energy use resulting out of both population growth and per capita carbon dioxide transmission.

Total energy use is the product of population size and per capita energy use. Total energy use is an indicator of the total resources demand. Similarly, total carbon dioxide emission is also the product of the size of the population and per capita carbon dioxide emission, on average. This implies that the increase or the decrease in the energy use and the carbon dioxide emission over time is the result of the increase or decrease in the size of the population as well as increase or decrease in per capita energy use and per capita carbon dioxide emission. This shows that population increase or decrease has an impact of the total energy use.

On the basis of the estimates of pre capita energy use and per capita carbon dioxide emissions prepared by the World Bank (2005), it is estimated that total energy use in the world increased from 8777 million metric tonnes of oil equivalent in 1990 to 10556 million metric tonnes of oil equivalent in 2002 or an increase of more than 20 per cent (Table 1). Similarly, total global carbon dioxide emissions increased by more than 13 per cent - from 20303 million metric tonnes to 23035 million metric tonnes between 1990 and 2000 (Table 2). In India, total energy use increased from around 366 million metric tonnes of oil equivalent in 1990 to around 538 million metric tonnes of oil equivalent in 2002, recording an increase of more than 47 per cent over a period of 12 years. Similarly, total carbon dioxide emissions increased by more than 64 per cent between 1900 and 2000. Increase in energy use in India between 1990 and 2003 accounted for almost 10 per cent of the increase in the energy use in the world as a whole whereas increase in the carbon dioxide emissions in India accounted for more than 16 per cent of the increase in world carbon dioxide emission between 1900 and 2000.

Table 1: Patterns of energy use in the world and in India: 1990 and 2002.									
	Total energy use (million metric tonnes of oil equivalent)		Per capita energy use (Kg of oil equivalent)		Population (million)		Increase in total energy use (million tonnes of oil equivalent)		
	1990	2002	1990	2002	1990	2002	Total	Due to increase in per capita use	Due to increase in population
World	8777	10556	1686	1699	5206	6213	1779	74	1705
India	366	538	430	513	851	1049	172	79	93

Source: World Bank (2005)

Table 2: Patterns of carbon dioxide emissions in the World and India: 1990 and 2000.									
	Total carbon dioxide emission (million metric tonnes)		Per capita carbon dioxide emission (metric tonnes)		Population		Increase in carbon dioxide emission (million metric tonnes)		
	1990	2000	1990	2000	1990	2000	Total	Due to increase in per capita emission	Due to increase in population
World	20303	23035	3.9	3.8	5206	6062	2732	-563	3295
India	680	1118	0.8	1.1	851	1016	438	280	157

Source: World Bank (2005)



It is possible to estimate the relative contribution of the increase in population and the increase in per capita energy use to the increase in the energy use by using the decomposition methodology of Kittagawa (1950). This decomposition exercise suggests that, for the world as a whole, increase in population accounted for more than 95 per cent of the increase in energy use between 1990 and 2002 while increase in per capita energy use accounted for the remaining 5 per cent. In case of carbon dioxide emissions, increase in the world population is estimated to have resulted in an increase of 3295 million metric tonnes between 1990 and 2000. By contrast, there has been a marginal decrease in the per capita carbon dioxide emission at the global level with the result that the decrease in the per capita carbon dioxide emissions actually accounted for a decrease of about 563 million metric tonnes of carbon dioxide emissions during the 1990s. The decomposition exercise clearly shows that universal adoption of the two child norm can definitely contribute very significantly to addressing the global environmental concerns.

In India, the role of population in addressing the issues of environmental sustainability is however not so significant. It may be seen from table 1 that increase in population in the country accounted for almost 54 per cent of the increase in the energy use between 1990 and 2002 while increase in per capita energy use during this period accounted for around 46 per cent of the total increase in the energy use. Similarly, almost 64 per cent of the increase in carbon dioxide emissions in India during the 1990s was due to the increase in per capita carbon dioxide emission whereas about 36 per cent of this increase was due to the increase in population. Obviously, population growth is not the only concern in environmental sustainability in India, although the impact of population growth on environmental sustainability appears to be a dominating one. There is an equally compelling need to curb the unregulated use of resources and improvements in technology so as to minimize the wastes generated.

### **Achieving Two Child Norm**

The real challenge is how to achieve the cherished goal of the universal adoption of the two child norm once it is clear that this goal is imperative to national development. In this context, it will be useful to analyze the reasons why a couple desires as well as act to have more than two children. The reasons that a couple has more than two children can broadly be divided into two categories. One, the couple has more than two children by intention because of a host of reasons and factors most of which are well known and widely discussed. The most dominating of these reasons is the risk of death during infancy and early childhood. It is very well known that high infant mortality and high child mortality contributes to high fertility through what are known as the child survival and the child replacement hypotheses.

The group of reasons why an average couple has more than two children is the couple's inability in regulating its procreative behaviour. According to the

National Family Health Survey, the total fertility rate in India, during the period 1996-98 was around 2.85 children per woman. This means that an average couple in India was likely to have around 2.85 children during its entire reproductive period. Against this number, the total wanted fertility rate was 2.13 children per woman which means that the total unwanted fertility rate in the country was around 0.72 children per woman (International Institute for Population Sciences, 2000).

The gap between the total fertility rate and total wanted fertility rate suggests that a major issue in the universal adoption of two child norm is to enable couples to regulate their procreative behaviour so that they can avoid the unwanted fertility. This is possible through programmatic interventions and the focus should be on all the proximate determinants of fertility, not just on family planning, as is the case at present. There is also a need of enhancing the capacity of the average couple so that it can take rational fertility decisions.

At the same time, a total wanted fertility rate of 2.13 children per woman indicates that there is still some demand for more than two children in the country. This demand is largely the result of development factors, particularly, high to very high infant and child mortality. This demand can be addressed only through accelerating social and economic development processes and reducing income and class inequalities thereby inducing a change in the reproductive decision making of average couple. Family planning, per se, has little role in reducing this demand.

The above considerations mean that the universal adoption of the two child norm should be viewed as a broader development goal and not just a narrow demographic imperative. Universal education, especially of females, significant reductions in mortality, especially in infant and child mortality through improvements in efficiency and effectiveness of the health care delivery system, availability of safe drinking water and sanitation facilities, improvements in the living conditions, creation of necessary infrastructure and facilities, especially at the grass-roots level, building up the capacities of the individuals, particularly the poor and the weak, etc. are critical to the universal adoption of the two child norm. There is enough empirical evidence to suggest that even for family planning to be effective in regulating fertility, a certain minimum threshold of social and economic development is necessary.

Given the very complex and mutually interacting nature of the different dimensions of the two-child norm, it has repeatedly been advocated that universal adoption of the two child norm is possible only through integrating population issues and concerns with the broader social and economic development processes. Unfortunately, this integration has not taken place in India despite the fact that the linkages between population issues and concerns with the processes of social and economic development have repeatedly been stressed, at least at the policy level. Efforts towards the universal adoption of the two child norm continue to remain largely government initiatives and are highly vertical and bureaucratic at the level of implementation with only a symbolic involvement of the community and its

representatives. It is well known that government initiatives and efforts, alone, cannot lead to the universal adoption of two child norm. Behavioural change crucial for achieving and sustaining two child norm can be ensured only through imbedding population related issues and concerns in the social and cultural wisdom of the society and the community.

One approach that has repeatedly been professed for the universal adoption of the two child norm is building a popular movement for the cause of population stabilization. Building popular movement and that too for the cause of population stabilization, however, requires leadership that is astute, effective and committed to the cause. That is to say, we need role models who can set examples for the people at large in terms of a particular kind of procreation behaviour that contributes to the national development, national progress and national prestige. Preaching has been found to be the most effective only when the preacher practices what he or she preaches. In this context, it would have been most appropriate if the popular movement for the cause of population stabilization would have been led by the political class - the democratically elected representatives of the people - to set example for the rest of the community. This has, unfortunately, not happened in India even after more than fifty years of investments and efforts. Perhaps, a major fallacy has been that the universal adoption of the two child norm has been treated synonymous to family planning, especially, sterilization. This can be exemplified by the fact that all efforts towards the universal adoption of the two child norm have been reduced to just achieving certain numerical targets in terms of new acceptors of different family planning methods to be recruited every year in every town and village with little consideration to social, economic, cultural, family and psychological factors associated with individual reproductive behaviour. Of late, the system of allocating numerical targets from the top has been abolished but, even today, the entire official programme continues to be driven by numbers and that too in a typical top down, bureaucratic manner.

The continued emphasis on sterilization as the method of choice for achieving for population stabilization and the way the official National Family Planning/Welfare Programme is being implemented, especially during the period of emergency, and the political backlash that followed has resulted in political sensitiveness to population related issues, especially issues related to family planning and birth control. The political class, today, is not committed to the cause of population. In fact, the political class remains indifferent to population related issues as they influence the social and economic development processes. In the absence of the political leadership, population related programmes and activities are driven by the bureaucracy and, therefore, remain largely counter-productive. The role of political leadership in the universal adoption of the two child norm is universally recognized but the policy and institutional frameworks necessary for securing and sustaining the leadership and the support of the political class are sadly missing. Population control continues to be very much a government baby,

depending upon government investments and government initiatives and driven by the bureaucracy. The government, either by design or otherwise, has virtually relegated universal adoption of the two child norm to the universalization of the use of family planning methods.

Buch (2005), on the basis of a field study in five of the seven states which adopted the two child norm till 2001, has observed that these laws have the potential of affecting both the democratic rights and reproductive choices of individuals and have serious consequences for the status of women. There may be some substance in her field based observations. However, the Supreme Court of India has rightly remarked that fundamental rights are not to be read in isolation. They have to be read along with the Directive Principles of State Policy and the Fundamental Duties enshrined in the Constitution of India. Obviously, there is a need to maintain a balance national interests and individual rights and choices. Universal adoption of two child norm is not a rhetoric. It is the need of the time. The sooner we achieve this norm, the better it will be.

## References

- Bhat, Mari PN (1998) Demographic estimates for post-independent India. A new synthesis. *Demography India*, 27(1): 23-57.
- Buch N (2005) The law of two-child norm in Panchayats. Implications, consequences, experiences. *Economic and Political Weekly*, June 11: 2421-2429.
- Dyson T (2004) India's population - The future. In T. Dyson, R Cassen, L Visaria (eds) *Twenty First Century India. Population, Economy, Human Development and the Environment*. New Delhi, Oxford University Press.
- Espinshade TJ, Guzman JC, Westoff CF (2003) The surprising global variation in replacement fertility. *Population Research and Policy Review*, 22:575-583.
- Government of India (1999) *Compendium of Vital Statistics in India*. New Delhi, Registrar General of India.
- Government of India (2001) *Census of India. National Summary Data Page*. [www.censusindia.net/results/population.html](http://www.censusindia.net/results/population.html). Accessed on 7 November 2006.
- Government of India (2006) *Census of India 2001. Population Projections for India and States: 2001-2026*. Report of the Technical Group on Population Projections Constituted by the National Commission on Population. New Delhi, Registrar General of India.
- Kittagawa EM (1955) Components of the difference between two rates. *Journal of American Statistical Association*, 50(272): 1168-1194.
- Malthus TR (1798) *An Essay on the Principles of Population*. Accessed [www.ac.wmu.edu/~stephan/malthus/malthus.0.html](http://www.ac.wmu.edu/~stephan/malthus/malthus.0.html) on 8 November 2006.

- Mohan Rao (2003) Two-child norm and Panchayats. Many steps back. *Economic and Political Weekly*, 2003.
- National Human Rights Commission (2003) *Declaration Adopted at National Colloquium on Population Policy, Development and Human Rights*. New Delhi, National Human Rights Commission.
- Nehru Jawaharlal (1946) *The Discovery of India*. Calcutta, Signet Press.
- Simon, J (1981) *The Ultimate Resource*. Princeton, Princeton University Press.
- United Nations (2004) *World Population Prospects. The 2004 Revision*. New York, United Nations.
- World Bank (2000) *World Development Indicators*. Washington DC, The World Bank.
- World Bank (2005) *World Development Indicators*. Washington DC, The World Bank.