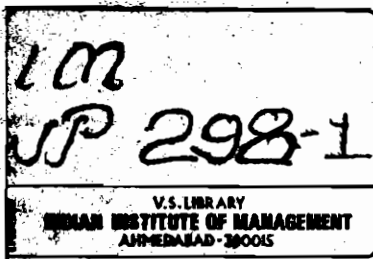


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POPULATION AND DEVELOPMENT:
INTEGRATING LINKAGES

BY

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Population and Development : Integrating Linkages

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The 1974 World Population Conference in which representatives of 137 nations and of the United National System took part may be viewed as a major event of a growing concern about population and development. This conference held in Bucharest decided on a World Population Plan of Action as a policy instrument within the broader context of internationally adopted strategies for national and international progress. This conference and the post-Bucharest regional consultations stressed on the need for overall development to reduce the population growth and thus put greater emphasis on the micro-dynamics of family size within the general socio-economic environment. They raised some fundamental questions on the meaning of development and the context of population policy in the light of development. Probably in an attempt to reflect the thinking articulated in Bucharest, several population programmes are experimenting with new approaches. The recognition that socio-economic development is the central factor is reflected in India's "basic minimum needs" of the rural and urban poor which was given high priority in the Fifth 5-year plan. Reducing population growth and increasing rural development are perceived as inter-related processes in many other Asian countries also. The Mothers' Club programme of Korea demonstrates how community resources may be mobilised for general social development

and at the same time exerting downward pressure on fertility behavior. Bangladesh is currently embarking on a comprehensive population effort. While such community-based, development-oriented and decentralized population programmes need to go through tests of their effectiveness, the overall underpinnings seem to be very sound and logical. In this paper, without specific reference to any one programme, we present such theoretical underpinnings and go on to suggest certain policy-relevant areas where population and developmental objectives converge. The theoretical framework here is essentially based on current state of the art.

Concern for Population and development issues has been a long standing one in the demographic literature. During early 1950's, the United Nations published an interesting book on determinants and consequences of population growth (UN, 1952). Since then the major focus of research and thinking in this area has been on the impact of population growth on development. The reciprocal relationship of the impact of development on population dynamics has however remained as a neglected area until recently. While the stimulus for initiating thinking on this reciprocal relationship might have been derived from the Bucharest conference, it is clear that understanding the two-way relationship within the overall national goals and perspectives will throw some light on the policy alternatives for intervention. It is the objective of this paper to focus on the current understanding of

how population variables namely fertility, mortality and migration affect and are affected by development processes. Though the evidence is not clear, it is reasonably certain that high levels of socio-economic development are conducive to low levels of both fertility and mortality with variable effects on migration.

Development Defined

The very nature of the word "development" calls for its definition in order to devise meaningful targets or measures of progress, to judge the relative importance of various problems encountered in its process and to derive contextual policies. The definition necessarily involves value judgments since we almost always understand development as synonymous with improvement. If we ask what is absolutely necessary for human existence, then the answer may be — enough food. This can be expressed in income terms since to be able to buy food, we need income. Since all the income is not always spent on food only, the other basic needs arise — namely, shelter, clothing etc. Thus under this logic, opportunities for income generation can be an index of development. The focus here is on individual income and not on percapita income. In fact, as we very well know, a rise in percapita income can be accompanied by and can even cause growin unemployment and poverty. Thus the direct link between percapita income and the numbers living in poverty is income distribution. Since a rapid way of eliminating poverty is through a declining concentration

of income, this equality is also an element of development, apart from the other two, viz., poverty and unemployment. Of course, there are a whole series of requirements that come under the definition. These include provision of adequate health and educational facilities, freedom of speech, economic and political independence and attributes of general human welfare. Thus development is something we intuitively feel we understand, but yet find it hard to provide one comprehensive definition.

Population Growth

The total number of people in a population changes as people enter the population through birth & in-migration or leave it through death & out-migration. Under most conditions in the contemporary world, migration between nations is negligible. However, when we talk of sub-national populations (like provinces or states or districts etc....) migration assumes greater importance. Population growth rates, which are largely the result of fertility and mortality patterns have serious implication over time. A population growing at 0.5% per year will double in about 140 years; a population growin at 3% per year will double in 24 years. In other words, during the time it takes for one population to double, the other will grow by a factor of about sixty. However, caution should be oxorcised in interpreting the growth rate comparisons. That is, similar growth rates may be observed in entirely different types of populations —

one with low fertility and low mortality and the other with high fertility and high mortality. The basic demographic difference between these two cases is the age distribution which is closely linked to development. The latter case will have much younger age distribution, a much smaller proportions of people above 55 or 60 years and a low expectation of life. Similarly, life patterns in a society in which the average woman who survives through the child-bearing years will have borne seven or eight children are in stark contrast to those in the former case. There is of course a whole spectrum of country cases which fall between these two extreme cases mentioned above. While a discussion of such cases cannot be included in this paper, it is worth mentioning that the trend of fertility and mortality has definite implications for development. Population size, growth, age composition and spatial distribution are basic determinants of production and employment, patterns of investment, private and social consumption. Population size and growth have been found to be one of the considerations in development programmes in many countries. For example, countries having a system of planned development, required quantum of services and investment is assessed based usually on the population projections in sub-national areas. Age composition and population distribution have been severely neglected, probably due to their complex relationships with developmental variables. We focus below on these two components.

Age Composition

The age structure of a population is an important evidence of the past trends in the main components of population growth viz., fertility, mortality and migration. While mortality will have lesser effect on age structure than fertility in the long run, it is the combination of these two demographic variables that explain differences in age structure. It can be seen that extreme differences in age structure occur between stable populations having similar mortality but different fertility levels. Also for a given mortality level, the differences in age structure become greater as fertility declines. In transitional populations with declining fertility, the percentage of population aged 0-14 years will decline by increasing amounts, while the proportion aged 60 and over will rise also by increasing amounts and the important factor here is the speed with which fertility declines. This speed and its effect on age structure obviate the need for administrative machinery to be geared up to face the consequences and requirements of progressive increases in pre-school population, school-age population, working age population and old age population. As for migration, it is the volume and age distribution of migrants that assumes importance. Since migrants are usually young, educated, risk-taking, dynamic type (apart from cases where push factors operate), migration may be selectively induced to redress the structural imbalances in population.

If behavior or attitudes did not vary with age, then a discussion of age structure would be redundant. But in reality, there seems to be a definite relationship of the age structure curve and the curve of age-specific behavior of individuals in relation to the production, distribution and consumption. Labor is a fundamental factor in production and the volume of labor depends on age structure and individual behavior in relation to employment.* Other things being equal, a population which has a higher ratio of persons in productive ages will have a higher percapita output, greater savings and larger investments available for developmental purposes. On the consumption side, the requirements of food, services, schools, houses, health care etc., depend on the age structure. Between production and consumption, there is a third aspect -- a system by which goods produced are evenly distributed. The heavy load of dependency and the relative deficiency of adult manpower inherent in a bottom-heavy age structure (like in India and other developing countries) increases the problem of distribution of goods produced by a small proportion of population in "productive" ages to a large proportion of population in "dependent" ages. Other things being equal, this leads to a reduction in output per head, standard of living, the savings rate and capital investments and a shift in demand pattern. Incidence of unemployment and adaptability of a nations labor force depend on age. Ryder observes that older organisations may reduce the

* However, the amount of manpower productively applied depends on labor force participation, utilization of such participants and the demand for labor on creative projects of the public or private sector.

productivity of young individual because discouragement and loss of interest may follow from the frustration of desire to advance. Also a workforce with youthful age distribution must pay the penalty of devoting a large proportion of its organizational resources to recruitment, selection and training.

High fertility and young age distribution can depress private savings also by reducing the volume of savings by individual families because of larger number of children they have to support. Social pressures towards a more equitable distribution of income may increase, the benefits of which (if at all any) will accrue mainly to low income families whose savings will remain negligible (Leff 1969). Coale and Hoover (1958) also argued that if some minimum standard of income per consumer existed, the age distribution will affect savings by influencing the dependency ratio and the wage bill. While prevailing low levels of savings make it difficult to create the productive assets needed to maintain the increased population at same levels of living, the unfavorable age structure may further tend to depress savings due to increased consumption needs. Also the need for productive capital increases at the same time since the larger number of workers have now to be provided with necessary machinery, tools, equipment and other infrastructures. The larger the proportion of dependents, the higher will be the share of certain non-directly productive investment.

In a macro sense, one may conclude that moderate population growth and a balanced age, geographical and occupational distribution will probably provide the most favorable combination of demographic factors for rapid economic growth.

Population Distribution

Where people choose to live is as important as the number of children they choose to have. Shifting patterns of population distribution together with changing rates of natural increase (excess of births over deaths), can produce significant effects on the need for housing, sanitation, health care, transport, nutrition, education — all of which are integral components of development. The process of providing services to meet this changing needs on the one hand and the mechanism of manipulating the variables that influence population distribution (and hence the changing needs) are essential elements of population policy. For instance, rural to urban migration resulting in the growth of primate cities, changing composition of labor force, excessive growth of tertiary sector and the unorganized sectoral activity etc.. are all concomitant to the process of development in predominantly agricultural countries. The resulting population distribution in such countries cuts both ways. It creates distortions due to a mere transfer of rural poverty to urban areas and cities and at the same time creates problems of declining rural areas which after all provide food to the non-agricultural urban areas.

This situation requires policies to cope with deteriorating conditions in urban areas due to transfer of rural poverty, or to stop further migration into the already over burdened urban structure or to control out migration from rural areas by making them more "attractive". These are far from being mutually exclusive and in fact the policy would become viable as a combination. For example, if a nation's large urban complexes are over crowded, this does not necessarily imply a need for policies to force-feed growth in lagging, and usually rural areas. There may be a large number of intermediate-size cities that may serve as growth centres benefitting people from lagging areas. Understanding the linkages between specific aspects of development on the one hand and population distribution on the other will help development of policies that would fill the gaps in a nation's regional and urban policy mix.

Variables Affecting Distribution

The existing size and composition of a population in an area is the resultant of entry into that population through births and immigration and exit out of the population through death and out-migration. And by this process the distribution of population over space gradually evolves itself. However, there are several decisions which can influence this evolution. An important aspect of this set of decision concerns the variables influencing migration. Most of these decisions are national or regional developmental policies behind which

lie an understanding of the dynamics of migration process.

Earlier attempts to study migration were based on the Newtonian concept of "gravity" since migration is hypothesized to be directly related to size of the relevant origin and destination population and inversely with distance. However, these models are given behavioral content to include variables influencing the decision to move. For example, the distance decay would be due to direct transportation cost of moving, the psychic costs of moving to a distant place and the general decline in information and hence the increased uncertainty with increased distance. Income, education, employment, availability of facilities, friends and relatives, connectivity through transportation etc... go into the calculation of returns to migration. It is through these variables that developmental efforts induce migration and affects population distribution over space. Myrdal (1957) argued that the selective nature of migration will result in additional increased demand in receiving regions and decreased demand in sending regions. Further the resulting differentials in wages and growth will cause still more migration. The negative externalities due to migration both at individual and macro levels should lead the planner to the realization that all developmental policies have spatial components. This component, apparent though migration induced by development cuts across structural (age, labor force categories etc.) as well as distributional (geographic, occupational etc.) aspects of population to provide a combination of

demographic factors conducive to rapid development. It is through changes in fertility behavior, explanation of such changes and linking it up with processes generated by developmental efforts that influence of such variations on population can be systematically studied.

Fertility Decline: Macro Explanations

Apart from these, there are large number of studies which associated fertility decline with various socio-economic variables -- and again these are very macro nature. They concern general statistical tendencies rather than the examination of decision processes in micro units. We are giving a very brief summary statement of these studies, for whatever it is worth. In general, fertility decline has been associated with 1) increases in education of women, 2) increases in urbanization, 3) increased female participation in labor force outside of agriculture, 4) increases in occupational and social mobility, 5) declines in infant mortality rate, 6) the general disappearance of the extended family system, 7) sustained increases in child rearing costs, 8) decreases in the significance of male preference for children and 9) the increased availability of contraceptive information and techniques. (Leibenstein, 1977). There are, of course, some exceptions to these associations and some variability in their strengths of association.

The general arguments have been as follows:

1. Health: Improving the level of health, particularly of children, insures the survival of a desired minimum of offspring, and provides parents with greater incentive for planning and investment for both their children and themselves. Since 1950, all substantial fertility declines in the developing countries have been preceded by substantial declines in mortality.
2. Education: Broadening the knowledge of both males and females beyond their familiar and local milieu enables them to learn about and take advantage of new opportunities, and to perceive the future as something worth planning for, including personal family size.
3. Broadly Distributed Economic Growth: Tangible improvement in the living standards of a significant proportion of the low-income groups in a society provides visible proof that aspirations for a better life can in fact be realized, and that a more compact family size can have economic advantages.
4. Urbanization: Despite the many problems connected with migration from the countryside to the city, it generally does offer greater accessibility to health services and education; increased familiarity with the more modern

economic sector; and new savings and consumption patterns: all of which tends to alter attitudes towards traditional family size.

5. Enhanced Status of Women: Expanding the social, political, occupational, and economic opportunities of women beyond the traditional roles of motherhood and house keeping enables them to experience directly the advantages of lowered fertility, and to channel their creative abilities over a much broader spectrum of choice. (McNamara, 1977)

Fertility Decline - Micro Explanations

These explanations hinge on the argument that the desired family size depends on the relative utilities of the benefits and the costs of children to the parents (Leibenstein, 1957). In this model, the children are valued i) for their own sake, ii) as a source of labour or income and iii) as a source of old age security. Against these benefits, the households have to consider the cost of children such as i) direct cost of child bearing and rearing and ii) the indirect costs in terms of economic opportunities that the parents have to forego as a consequence of the constraints children impose on the economic activities of the parents - especially the mother.

Decision to have another child may be conceptualised as a function of three systems: the preference system, the price system and the income system (Spengler, 1971). Briefly, the preference system describes the value a married couple places on an additional child relative to the value of goals they might otherwise achieve. The price system describes the cost of an additional child relative to the cost of attaining other goals that might be achieved were the decision to have another child not made. The cost includes not only direct monetary cost but also opportunity cost of time and effort. Income system is both monetary and the total amount of time and energy available to a couple in the pursuit of possible goals.

Given these, the probability of deciding in favor of another child will vary directly with the relative value anticipated from that child, inversely with the predicted relative cost and directly with amounts of resources foreseen as available for all goals. It is through these systems that development establishes a linkage with micro-level decision making regarding family size. In an interesting argument, Kuznets points out that the United States has a long history of increasing per capita income, declining hours devoted to gainful employment and increasing amounts of leisure time. These increases, ceteris paribus should have pushed up fertility but as fertility actually went down, changes in price and preference systems (concomittant to increase in per capita income and leisure time) must have discouraged fertility (Kuznets, 1973).

A change in preference system occurred probably due to declining mortality. Parents can be certain of having a specified minimum number of children to survive to maturity. Industrialisation also reduces the value of child labour. Compulsory education laws reduce the immediate utility of a child and lower the productive value to the parents of an additional child. Availability of old age security also tend to reduce the value of an additional child. The preference system may also be altered by declining social rewards for bearing large number of children. Development may also introduce (at least in the long run) a shift in the criteria for social status from ascribed characteristics to achieved characteristics. Urbanization, a concomitant of industrialisation and economic development, increases the price of land and living space and with it the cost of children also. Individual expectations and aspirations to educate children to a high level increases the period of dependency of children and this has a depressing effect on family size. Education also affects norms, beliefs and values in a way that a person starts questioning them. The age at marriage tends to increase with higher aspirations for education, employment and new patterns of savings and expenditures resulting from participation in the modern sector of the economy. Increased social and geographic mobility leads to breaking down of traditional family tends to depress fertility. However, socialologists have argued that equitable distribution of the benefits of development is important.

If not, those who have been by design or by accident left out of this phase, may tend to justify their status (vis-a-vis others in their community) by having a large family. Also, the development of birth control methods not only reduced the relative preference of children but also increased their price relative to that of other goals. While we have quickly enumerated the linkages, we should acknowledge that causality in development-fertility continuum is hard to strike.

While the theoretical underpinnings seem quite logical, any micro-level analysis will be inadequate without proper consideration of the existing local conditions. Mamdani (1972) brings out this aspect in relation to the Khanna Study in India. Sweeping remarks that excessive population is a social malady and birth control programme is the best remedy are questioned very critically. For example, the clients of the family planning programme were known to have been surprised why so much money and effort were being spent on family planning when "surely everybody knows that children are a necessity in life". It is this understanding of local dynamics of need and necessity that will have sustaining impact on programmes and policies in the long run.

Development as Means of Fertility Reduction

For a number of years there has been an on-going debate regarding the relative influence of development and family planning on fertility. Some argue that intensive development is the only effective means for

reducing fertility while others argue that meaningful social and economic development is impossible until population growth is first slowed by family planning programmes. On the one hand, the notion that "development is the best contraceptive" denies or at least minimizes the role of voluntary family planning as a useful means of achieving fertility reductions. On the other hand, the second position ignores any possible role of development efforts in contributing to the reduction of rapid population growth through family planning. On balance, it appears that the current thought appears to fall somewhere between these extremes. It is clear that advocates of FP approach are by no means opposed to development. Similarly, proponents of the development approach are generally not opposed to FP, but rather see it as a means of facilitating or accelerating fertility declines set in motion by development.

In the case of family planning, the effect on fertility is direct, causal and comparatively straightforward although the magnitude of the impact depends on the availability of services, method mix, efficient and effective management of delivery of services and a number of other factors. However, the effect of development on fertility is indirect and intricate. For example, what specific aspects of development exert the greatest negative impact on fertility? Are these relationships consistent across cultures? Through which intermediate variables do development variables affect fertility? What are the policy implications?

These are some important questions for which definitive answers are not available, even though some fragmentary evidences have been documented.

One of the sustained relationships observed in a number of studies concerns the inverse correlation between fertility and educational attainment, even though there are differing interpretations as to how education affects fertility. Delayed age at marriage, increased non-familial aspirations and decreased value of children, greater exposure to information regarding available means of family planning, female participation in labor force have all been observed as process mechanisms. Dynamics of income generating employment and urbanization also show consistent relationships with fertility behavior of a population. While all these and probably more come under the development umbrella, an issue that concerns policy makers is the time lag one can expect between a particular policy intervention and its measurable effect on fertility. What magnitude of policy intervention is needed to create a given change in fertility and to what degree are magnitude and time lag a function of each other?

Another theory currently receiving attention in the area of population as related to social and economic development is the threshold hypothesis. It is an attempt to link the demographic transition with concurrent and/or preceding socio-economic change.

According to this hypothesis:

In a developing country, the fertility is initially high. Improving economic and social conditions are likely to have little if any effect on fertility until a certain economic and social level is reached; but once that level is achieved, fertility is likely to enter a decided decline and to continue downward until it is again stabilised on a much lower plane (United Nations, 1963).

However, attempts to tie down specific cause-and-effect relationships to identify in more explicit terms the "socio-economic threshold" were unsuccessful and skepticism on this rather simple hypothesis was due to marked variations observed in demographic histories of different countries. At the same time, there were also striking similarities in some countries (South Korea, Taiwan, Sri Lanka and Singapore) where recent fertility declines have been correlated with distribution of socio-economic improvements. Rich (1973) argues that because of these evidences, it is useful to think in terms of a "development-fertility continuum" where an increase in volume and an improvement in the distribution of goods and services concurrently lead to a reduction in desired family size. According to this hypothesis, when a large majority of a population gains access to modern goods and services, a marked decline in birth rate will result. Components of this continuum are just the ones we mentioned earlier viz., education, health, urbanization, mobility, income, employment. While the continuum focus offers a theoretical framework, the difficulties of striking

cause-and-effect relationships still persist. Moreover, the cumulative effect of policies and intervention strategies seems to be the key to this theory despite relatively low levels of individual components of the continuum.

Links between Population and Development

Development in its broadest sense is the goal of planning rather than simply a means to achieve fertility reduction or manipulate other population factors. However, a development strategy is likely to be more successful if it also served to modulate population growth and distribution. In other words, planning for investment should consider the impact of demographic trends on economic and social development and vice versa. We have mentioned earlier that the proportion of income which a household could devote to savings depend largely on the level of income and the size and age structure of the family. Growth and distribution would also require planning for diversification of capital to building of schools, hospitals, houses and other infrastructural requirements at the expense of some other short-run productive activities. These very requirements have an impact on population factors. A classical example is planning for industrialization which require concomitant planning for urbanization, labour force structure and composition and strategy for development of human resources for efficient production. Another example is the planning for housing which might affect patterns of nuptiality and

family formation. While the conceptual linkages are obvious, one needs to break-down these linkages to the level of projects.

A broad-based family planning programme requires the development of physical infrastructure for programme operation. This has linkages with the construction sector. Development of human resources have linkages with education and training sector. Production of contraceptives and information materials have linkages with manufacturing sector. The programme requires some minimum communication and transport facilities. These have linkages with communication and transport sector. Thus like economic projects, the demographic projects also have their backward and forward linkages (Rao, 1978). This realisation calls for approaches to include other developmental agencies in population policy and planning for service delivery. For example in India, there are some programme which have broad objectives of upliftment of rural poor. The Small Farmer Development Agency (SFDA), the Anthyodaya Programme and the Food for Work Programme try to help the relatively poorer sections of the rural population, who also form the hard-core group in accepting governmental measures of health and family welfare. To the extent possible, these programmes may be linked without damaging the local traditions but by changing values attached to small family norm. Rural development programme will also sustain these linkages if proper checks are introduced to make sure that the benefits are derived by the target groups.

Considerations for Planning

Dynamics of population growth viz., fertility, mortality and migration have in general attracted the attention of most planners. Their concern with fertility is well-known to require further exposition. Mortality reductions are not generally viewed as aspects of population policy. They are perceived as health and welfare measures which are so universally valued that no policy to increase mortality, even to lower exceptionally rapid rates of natural increase, is conceivable. Infant mortality has been taken to be an indicator of quality of life and used to measure regional imbalances in such quality. Apart from this, the prevailing conditions of health status would be of importance in planning the components of health delivery system, but the lack of such data or their poor quality does not help such planning. Migration is of particular interest to planners as they seek a rough but often elusive balance between numbers in the form of demand and opportunities in the form of jobs, houses, schools, hospitals and other infrastructural services. Therefore, we will focus our attention on this aspect in relation to planning considerations.

Because heavy urban in-migration is associated with a host of urban and rural problems, policy makers should concentrate efforts in devising programmes for changing or controlling migratory flows. At least three broad questions are of relevance here:

- i) What factors influence a person's decision to move?
- ii) Is urban in-migration responsive to policy instruments?
- iii) Is deliberate interference with present migration flows justified?

Apart from these, policy on population movements should be based on the awareness of the inherent conflict in public interests and private interests. Under general conditions of push from the rural areas, migrants usually find their decision to move as beneficial to them. However, the public interests are not perceived to be beneficial because of their effects on areas of origin and destination. In theory migration is a mechanism of adjustment between areas of where jobs are scarce and areas where labour is scarce. But this is only upto a point and the above mentioned conflict sets in sooner or later. Firstly, since out-migration usually siphons off the more valuable and productive members of labor force -- the young, the more educated and the skilled -- the labour force left behind tends to be under-educated, under-skilled and overaged. Secondly, since people who stay are generally less likely to migrate in future, the remaining population also shows a gradually reduced potential for moving. This means that stronger and stronger economic incentives would be required to induce mobility in order to maintain any balance between population and shrinking employment opportunities. The area then gets less attractive to new industries looking for skilled workers. At the destination, the migrants squeezed out of

rural areas are, relative to the host population, under-educated, less skilled and more impoverished. Proliferation of slums and squatter settlements, excessive demand on the low quantity and quality of services and frustration of unmet aspirations etc. are the resultant consequences. Many of the costs of their improvement have to be borne by the institutions of destination areas. Hence policy makers need to realize that inequality, poverty and frustrations are not problems of cities but are actually located in them.

Policy alternatives for human settlements have relevance to the population-development framework. This is because the process of development has impact on mobility-both physical and social through which population factors get affected. Proposals to effect human settlement patterns through growth of cities have in the past included the following alternatives:

- i) Restrictions on growth of large agglomerations
- ii) Promotion of growth in rural areas and small towns in order to control out-migration from these areas to large metropolitan areas, and
- iii) Development of intermediate-size growth centres.

Efforts to carry out the first alternative by fiscal means, building permit restrictions, out-right prohibition of entry, restrictions on industrial licenses based on location and similar other devices have to face a stiff competition of natural economic forces. On the other

hand efforts to induce growth of industrial and high order service activities in rural areas through infrastructure development face the problems of inadequate resources to be spread too thin. Even if these efforts do result in some amount of decentralization, the type of industries that respond to such inducements may usually be in the slow growth, low-wage category. Hence the middle ground approach of developing intermediate size cities seems to be most promising. While these cities may have many external economies of agglomeration not found in small towns or rural areas, they do not have the external diseconomies found in metropolitan cities. This approach will tend to develop cities need not be specially favored by governmental policy because they are going to grow in any event. But the counter-argument is that if public policy can accelerate growth in medium-size growth centres and if significant portions of additional benefits go to increased numbers of migrants from lagging hinterland areas, then such a strategy is efficient from a national view point and spread the benefits of development faster over space (Hansen, 1977). This argument does not mean that small towns and rural areas and metropolitan cities for that matter should be neglected. Opportunities they provide should be fully utilized for human resource development and thus extend the range of settlement possibilities.

Conclusion

The study of relationship between population change and socio-economic development has been in the past guided by two notions. First, development was defined primarily in terms of growth in per capita income and second, population growth was treated as coming from outside the planning framework. However, the prevailing skewness in income distribution and in the beneficiaries of all the attributes of social development pitted against increasing population growth largely due to decline in mortality rates (largely due to imported technology in developing countries) has led to a need for a wider concept of development to include a number of variables representing quality of life, such as infant mortality, literacy rates, rural/urban residence, employment potential and so on. Historical experience of the developed countries and also the recent finding in a few developing countries, show that as development takes place there is a decline in birth and death rates, a change in the role of women, an increase in nutritional standards and general education, changes in the structure of production, employment and in the mix of technologies and an increase in the variety and utilization of natural resources. It has also been hypothesised that these very changes lead to a decline in population growth also. Be it health care delivery or adult education or social and occupational mobility or cost-benefit "calculations" governing the decision to have one additional child, the general goals and objectives need

to be broken down into small and manageable projects for proper implementation. The need for managerial inputs is felt predominantly at this level.

There are instances where population growth has declined significantly in spite of the lack of any appreciable increases in per capita incomes or levels of industrialization or proportion living in urban areas. In such cases, the developmental policies which have made a direct impact on the quality of life as well as on population appear to be the delivery of health care, spread of knowledge and availability of contraception, provision of primary educational facilities and awareness of nutritional requirements. However, the results of these policies are felt over a time perspective that matches with the time perspective of population change. In other words, since population changes essentially reflect inter-generational shifts in demographic variables, the policy impact studies should have an extended time horizon. While shorter time horizons might prove an insignificant relationship between development and population, longer time periods might help capture this phenomenon in both macro and micro levels of observation. Developmental policies leading to improvement in quality of life not only would affect the growth rate and distribution of population but would also be affected by the changes in the growth rate of population itself, and thus the wheel of population-development interactions keeps rolling.

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