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POPULATION IN INDIA'S DEVELOPMENT

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The views and interpretations expressed in this report are those of the author and should not be attributed to the U.S. Agency for International Development.

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POPULATION IN INDIA'S DEVELOPMENT

JOHN KANTNER*

Population and Poverty:

The General Case:

Underlying the Indian Government's efforts to reduce the rate of population growth is a basic commitment to the reduction of poverty. Poverty has been the principal problem at which successive Five Year Plans have been aimed, indirectly by measures to expand the national product and directly, by a series of programs to increase the ability of the poor to exercise an effective claim on that product. The results have been discernible but disappointing when compared against expectations. The Fifth Plan aimed to reduce the percentage below the 'poverty line' from around 50 percent to around 25 percent. It missed badly. The just completed Sixth Plan (1980-85) aimed for "less than 10 percent by 1994-95". It too failed to make much headway. With poverty still conceded to be in the range of 40 to 50 percent, the Seventh Plan has re-enunciated the goal of achieving the Sixth plan target in the coming" decade 1/.

1/ The Approach to the Seventh Five Year Plan 1985-1990, Govt. of India, Planning Commission, p5.

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The continuing debate over the definition and measurement of poverty 2/ need not detain us. By anyone's definition poverty in India is pervasive, deep, and resistant to attack. It is increasing in absolute terms and involves something in excess of 300 million persons. It is thus a problem of formidable proportions 3/. The question here is whether a reduction in the rate of population growth would assist the alleviation of poverty 4/. To answer this question requires a brief review of demographic-economic linkages.

/ Poverty and its extent has long been an instrument of political warfare. The party in power tends toward a minimum measure; those out of power and those of the left committed to the direst diagnosis possible of the capitalist condition, stretch the level to its upper limit of credibility. A well regarded time trend analysis by Dr. Montek Ahluwalia, currently Economic Advisor to the Prime Minister's Secretariat, shows no discernable trend in the prevalence of poverty over the 21 year period from 1956-57 to 1977-78. There may have been some decline in the more recent period.

/ Despite the prolonged concern in India with the problem of poverty, less is known about it than one might expect. Not only is the definition and the level a matter of debate, but information is generally lacking on the incidence of poverty by geographic-administrative subdivisions below the level of the state and by characteristics such as age, sex, caste or community. The factors that affect the risk of falling into (or remaining in) poverty as these vary over the life cycle are similarly unknown. For want of data, the analysis of poverty generally stops at the boundary of the household; how the burden of poverty is distributed within the household and how households cope with it, are matters that need investigation.

/ Too many answer in the affirmative may seem obvious. The matter is a complex one however and defies a simple analysis.

The view of the demographic-economic nexus in vogue twenty or so years ago has not withstood the test of developments since its early formulations, although it has become firmly lodged in popular thinking on the subject. The first generation formulations of the problem held that population growth discourages savings by diverting them to consumption; moreover the composition of investment itself is affected. Part of it is used to equip a larger labor force with the same tools and equipment and infrastructure as are in current use. There would be less advance in productivity than if the same investment had gone for "capital deepening" for a smaller labor force. The potential for productive investment would be reduced to the extent that "welfare" or "demographic" investments were made to maintain things as they are.

Not only do these theories predict a dilution of physical capital per worker as the result of diversions of savings to various kinds of welfare expenditures, but the consequent reduction in per worker income and the high dependency burden of the average household are assumed to have a negative impact on household savings rates and on tax revenues derivable from the household sector. This latter effect is postulated to bring about a dilution of human capital both because of pressure on government resources relative to the demand for education and because of the inability of parents with more surviving children to devote the same amount of time and other resources to rearing their children.

As developed by economists this line of reasoning focussed on the capital investment - productivity nexus and assumed, in the time honored practise

in such matters, that natural resources or environmental constraints either are not a problem or can be overcome by price adjustments, assuming, of course, that prices are free to adjust. From a different quarter a voluminous literature, much of it popular and overwhelmingly pessimistic, came forth on the question of the impact of rapid population growth and population density on the habitat.

The most recent and most comprehensive presentation of the case for the detrimental effect of population growth on development is made in the World Bank's 1984 World Development Report which, rejecting the temptation to take an agnostic position on a subject of such complexity, concludes that "population growth at the rapid rates common in most of the developing world slow development"5/. According to the Bank's analysis, which is fully in line with earlier views on the subject, population growth reduces the time and money parents can devote to each child's development thus making the problem of poverty more intractable "when public services cannot keep pace with population growth"6/. Looked at in broader societal perspective, overall development suffers because population growth hampers "the investments in education and infrastructure that ensure sustained economic growth"7/. Population growth is indicted also for contributing to environmental damage.

5/ International Bank for Reconstruction and Development, World Development Report 1984, Oxford Univ. Press p 105

6/ ibid

7/ ibid

Although it "is not always the main culprit ... it almost always exacerbates the problem" 8/ and as in the case of deforestation and desertification, can become a threat to economic life.

Most experts on development, especially those who confront development problems head on in fast growing populations, accept the view that population growth is a "drag" on development. Thus, it may come as a surprise to some that "there are very few hard data and very few good studies directly measuring economic consequences of population growth".9/ The question cannot be answered by the usual method of subtracting the population growth rate from the rate of economic growth since it is not known whether the contribution of the additional population is negative, zero or positive 10/. The persistence of this state of ignorance over the years since the problem was first taken up some 30 years ago may be due to the plausibility of the "neo-Malthusian" arguments put forward and also, as Leibenstein has pointed out, to the difficulty of studying the impacts of observed changes in population on observed changes in economic variables.

Perhaps the argument might have remained at its comfortable angle of repose had it not been for a few scholars who pointed out the lack of association in cross-national studies between the rate of population growth and the growth of per capita GNP. This is not a strong

8/ op cit p 95

9/ Leibenstein, Harvey in Population and Development Review Vol II, No. 1, March 1985 p 136

10/ ibid

criticism since the deficiencies of cross-national studies are well known. Still, it may seem odd not to find some association. More to the point, however, are observations that capital dilution effects of population growth appear to be small, even in theory, and easily overcome by moderate increases in savings rates. Moreover, savings rates themselves appear to be little influenced by population growth and, in any event, development theory has gotten over its preoccupation with capital accumulation as a central concern 11/.

Perhaps the most direct challenge was put forward by those who called attention to the possible, positive benefits deriving from population growth: a young, technologically malleable labor force and, more basically, forced occupational and technical transformations in agriculture engendered by population pressure. While these revisions of the conventional wisdom are fairly made, it should not be overlooked that scholars of this persuasion face the same data constraints as the 'neo-Malthusians' they are challenging and, perforce, they deal with these constraints in the same fashion, i.e. by simulation, projection and illustrations to fit their argument. Empirical data do not exist to settle the issue. The World Development Report for all its thoroughness and erudition is subject to the same limitations. The relationship between population growth and economic growth is, in fact, indeterminate as a general proposition. It may be detrimental to economic advance or it may not, depending upon resource endowments and the capacity to use them effectively.

11/ See Lee, Ron, "World Development Report 1984: Review Symposium", Population Development Review, op cit p. 128

The Indian Case:

The doubt that surrounds the population-development relationship in terms of broad theoretical and empirical regularity does not negate the value of examining the question in specific cases. In fact this is the only valid approach. In the case of India, itself a dauntingly diverse universe for analysis, the negative effects predicted by conventional capital-accumulation theory appear to have been of minor importance. Savings, a large proportion of which are in the form of household savings, have risen to exceptionally high levels. Labor, though redundant and relatively underendowed, has nevertheless contributed substantially to development, especially in agriculture where technologically induced innovations, such as multicropping, have required additional labour input. The "welfare investments" that the theory postulates as required to compensate for population growth are sometimes not made (and therefore are not a direct cost chargeable to population growth), while some, such as investments in education or in health, may contribute to productivity 12/.

All of the above granted to some degree, there is little doubt that in the Indian case, the high rate of population growth has helped to bring about changes which have had adverse consequences for many groups in

12/ "welfare investment" (sometimes called demographic investment) need not mean merely adding more units (teachers, classrooms, doctors, dispensaries etc.) of the same kind to serve a larger population, but may lead to radically revised approaches as, for example, substituting primary care and preventive health services for expensive curative services, restructuring education to serve the needs of development while cutting back on a type of education that is appropriate for a more developed society.

society 13/. Population growth combined with India's systems of inheritance and its failures at land redistribution have caused many owner-cultivators to lose their land. For the first time a shift out of agriculture may have begun 14/. This shift is only in part a response to opportunities in the secondary and tertiary sectors. For many it represents defeat in the face of indebtedness, poor access to credit and ultimate land alienation.

One of the most significant aspects of social change in India has been a deterioration of patron-client relations in rural areas and the substitution of contract relations for customary ones. This process is, in part, a consequence of population growth. The way it works can be illustrated by changes observed in Rampur, a village in Haryana first studied by Oscar Lewis in the early 50's 15/ and restudied twenty years later 16/. The underlying dynamics of change in Rampur are classically Malthusian: steadily growing population with fixed land resources expandable chiefly through multi-cropping. As family size has increased, due largely to improved life expectation, the principal land

13/ A society undergoing fundamental change will always be subject to disturbances whose effects tend to fall unevenly on the population. The question is whether these disturbances and the society's ability to mitigate them are affected by population growth.

14/ The 1981 Census shows a decline of 4 points in the percentage of the labor force devoted to agriculture. There are reasons to question these figures. Perhaps an even more significant shift is that from owner-cultivation to part-time non-agricultural employment and to tenancy and contract labor, neither of the latter being known favorably for its productivity or resource management practices.

15/ Lewis, Oscar, Village Life in Northern India, Vintage Books, 1958

16/ Das Gupta, Monica, unpublished Ph.D. dissertation, University of Sussex, 1981

owning caste, the Jats, have been able to perform for themselves many of the services traditionally rendered by subordinate castes. This involves substituting the labor of family members, even though in some instances this entails performing tasks such as sweeping which formerly were regarded as inappropriate in terms of caste notions regarding pollution. Some subordinate castes, in particular the Chamars, have responded by taking up new lines of work.

Similar alterations in the village division of labor, traceable in part to changed demographic balances, are documented in another time lapse study, this one in South India. In a village in Karnataka first studied in 1955 by Scarlett Epstein and revisited in 1970 and again in 1978/79, the dynamics of change resemble those in Rampur even though the character of the castes and the basic ecology are different. The village economy has become implicated in the external cash economy to a significant degree, not only through the import and export of commodities, but also through the export of workers as day laborers to surrounding areas or to urban occupations in Mysore. However, the transformation of the rural occupational structure eludes simple, uniform description. The uncoupling of caste from occupation and the loosening of traditional obligations for allegiance and service have, in some instance, involved the wholesale abandonment of caste occupations, especially those such as leatherworking or weaving, that signify low status. Thus released from the bonds and bounds of caste-associated crafts, some rural labour has sought employment in the expanding urban-industrial sector; others, for example those in arid zones historically devoted to grazing, have found

opportunity in crop farming as land reform, population growth and mechanization, have reduced common grazing lands. 17/

The underlying process in Rampur and in the Karnatic village is one in which cultivator households, increasingly able to meet their own routine labor requirements, take on tasks traditionally performed by others - usually by lesser castes. Simultaneously a process of progressive indebtedness and land alienation forces some small cultivators to hire out as agricultural labor. Dependent artisans may either abandon their craft or diversify their activities. Universally valued as a means of escape from these conditions is nonagricultural and wage employment, especially for sons. If urban employment is not too distant, those who find jobs there generally prefer to live in the village - a long, arduous daily journey to work being preferable to the expense, insecurity and squalor of urban life.

The changes in village life taking place throughout India are in part a response to a new demographic regime, enhanced survivorship in particular. They contain the seeds of their own ultimate resolution since the diminished value of many forms of family labor, especially child labor, and the desire for the educational credentials demanded for

17/ For a discussion of displacement into urban occupations see Rao, Sudha V., "Rural Labour: Case Study for a Karnataka Village", Economic and Political weekly, May 5, 1984. For a description of the expansion of opportunities for crop farming coincident with the rapid decline in "common property resources", the traditional economic base for arid zone livestock raising, see Jodha, N.S., "Population Growth and the Decline of Common Property Resources in India", Population and Development Review, Vol. II, November 2, June 1985.

urban employment will eventually shut down the demographic taps. In the meanwhile, social turbulence, sometimes severe, will accompany this transitional process. Added to inter-caste and communal tensions, to social protest organized along lines of class interest and the inevitable political exploitation of discontent, is the fact that rapidly growing populations are inevitably young populations. In periods of instability and tension, cohorts of idle or underemployed youth are readily mobilized in struggles to advance one cause or another and to vent their rage against a system which appears to offer them reason neither for hope nor compliance.

Economic dislocation and social unrest are to be expected during periods of social change. To dwell on these consequences is to complain that the ship, finally underway, makes waves. One might more properly consider the undeniable accomplishments that have occurred. For example, the high performance of Indian agriculture 18/ might appear as overwhelming

18/ Indian industrial development rests in major part on the success of Indian agriculture in producing a surplus. However many of the shortcomings of industrial development result from the failure to channel these surpluses into productive investment. Government policies with respect to prices, taxes, production incentives, regulations have fouled the channels whereby agricultural surpluses can be captured for industrial development. See George Rosen, Peasant Society in a Changing Economy, Univ. of Illinois Press, 1975 pp 198-9. Industrial development has suffered also from lack of demand, foreign exchange shortages, inadequate infrastructure, especially in power and transport and politicization of the organized labor force. See Robert Cassen, India: Population, Economy, Society, Macmillan, 1978 pp 214-216. More recent studies stress in addition, the paralysing effects of the government's industrial policy and the dissipation of government revenues through the "privatization of public resources", the latter being the outcome of competition among proprietary classes (industrial capitalists, rich farmers and the professional class) for the advantages to be had through political maneuver in a 'soft state'. See Isher Judge Ahluwalia, Industrial Growth in India : Stagnation Since the Mid-Sixties Oxford Univ. Press 1985 and Pranab Bardhan, The Political Economy of Development in India, Oxford Univ. Press 1985.

confirmation of the thesis that the effects of population growth are neutral with respect to development. However, this would be a hasty conclusion. The increases in agricultural output, particularly in cereals, which have enabled India to achieve self sufficiency in food grains, have been achieved by increasing yields and have required significant amounts of capital and foreign exchange. Since food production is postponable only through a liberal import policy or shortages, the Government, favouring neither alternative, has responded to population growth with policies to encourage investment in food production. The continued growth of agriculture, at increasing costs, has been India's response to a growing population.

Indian agriculture has been an inefficient generator of public revenue and has required subsidies for the disposal of its output and expensive programs to deal with the displacements and dislocations associated with expanded output. High cost public works projects have been undertaken in order to extend the area under irrigation and to get the crops to market. This has all been done in the interest of "self reliance" in food production and in the context of the Government's determination to limit the foreign debt through a stringent import policy 19/. The drive for self reliance in food production and its associated public works projects have been major factors, as has population growth itself, in the high rate of environmental exploitation which poses a threat to India's

19/ This policy is changing. The Seventh Plan projects more than a doubling of net external borrowing as compared to its predecessor (For Eastern Economics Review, 2 May 1985 pp 54-56)

long term development. The problem is, perhaps, less one of ultimate development potential than of the pace of development. With the incubus of a growing population propelling the country toward policies for self sufficiency, policies have been adopted and programs launched more rapidly than measures for environmental protection could be instituted and traditional practices modified. In time, India can have both an adequate agricultural base and an ecologically healthy environment. The all out pursuit of self sufficiency in food may have moved the country too rapidly in one direction at the cost not only of environmental damage, social displacement and heavy drains on public revenues but also of more balanced development in other sectors.

Jobs and Unemployment

Interwoven with the question of poverty is the level and nature of employment. In the classical formulation of the economic development process, workers from traditional rural occupations are transferred to jobs in the modern sector. In the process, the rural labor force is transformed and an urban-industrial work force created. The primary linking mechanism for this transfer is rural to urban migration, the determinants of which are vigorously argued among demographers and economists. In theory, rural to urban migration is an equilibrating process in which rural labor, responding to the expectation of better wages in the urban labor market, increases overall productivity by moving from occupations with a low or negative marginal product to those with a higher and increasing marginal product. The process is regulated by the relative demand for labor in urban and rural labor markets which in turn depends upon changes in the relative productivity of labor in these two

markets and the elasticity of demand for agricultural products 20/.

Such is the long run view. In the short run, which often falls within the range of government planning horizons, there are many variations on the theme. The well charted transition in which the composition of the labor force shifts progressively from agriculture to manufacturing and ultimately to service occupations - the 19th and early 20th century Western model - appears not to fit many LDC countries. In the case of a country such as India where the labor force is growing rapidly due to past population growth, a decline in the proportional size of the agricultural labor force, comparable to that achieved historically by the developed countries over a comparable period, "would still imply rapidly growing absolute numbers in agriculture" 21/. This result follows from the predominant size of the agricultural labor force relative to the non-agricultural labor force. The slight decline in agriculture's share of the total labor force is the net result of two opposing factors. On the one hand the greater rate of increase in demand for non-agricultural products relative to change in demand for agricultural products leads to a transfer of labor away from agriculture. On the other hand, a greater rate of growth in labor productivity in the non-agricultural than in the agriculture sector tends to slow the growth of non-agricultural

20/ See Booth, Anne and R.M. Sundram, Labor Absorption in Agriculture, Oxford University Press, 1984, Ch.2.

21/ Booth and Sundram, op cit pp.4.

* For discussion of changes in Indian work force see J. Krishnamurthy EPW 19, no 50 (15 Dec. 1984) and J.N. Sinha, EPW 17, no 6 (6 Feb. 1982)

employment 22/. For the period 1960 to 1980, the outflow of labor from the agricultural sector, slight in relative terms, reflects the near balancing of these opposing tendencies. As gains in agricultural productivity in the future become more widespread and approach the productivity gains of the non-agricultural sector, the outflow from agriculture will intensify 23/.

For India in the near term, given the environmental overload, inadequate housing stock and lagging administrative capacity of its urban areas, maximum retention of labor by the agricultural sector is desirable. This will necessitate further intensification in the utilization of agricultural labor since, as Dandekar has argued, "the non-agricultural sector ... is usually organized on the capitalist principles and hence does not permit workers in unless they can contribute to the production more than the wages they receive in return. Consequently, the entire residual population is thrown on to agriculture which by its nature and tradition employs or accommodates whatever population is thrown on it without reference to the marginal productivity of labour" 24/. The capacity of the agricultural sector to accommodate the labor presented to it is not infinitely elastic and may have to be supplemented by rural works schemes of one kind or another.

22/op cit. pp 49-53. For discussion of changes in the Indian work force see J. Krishnamurthy EPW 19 no 50 (15 Dec. 1984) and J.N. Sinha, EPW 17, no 6, (6 Feb 1982)

23/This is the path followed by the middle income countries of S.E. Asia which, with the exception of Thailand, have experienced in relative terms substantially larger transfers out of agriculture than have the countries of South Asia. See Booth and Sundram, op cit. Table 2.7

24/Dandekar, V.M. "Economic Theory and Agrarian Reform", in Eicher, C and L. Witt. Agriculture in Economic Development, Mc Graw Hill, 1964, p 170

There are several factors that contribute to the expansion of rural employment opportunities. With respect to employment in agriculture, the most important of these are cropping patterns, cropping intensity, production technology (especially mechanization and irrigation)^{25/} and post harvest technology. These do not all operate in the same direction ^{26/}.

Land fragmentation, a frequent outcome of population growth, often increases labor intensity - at least in the short run ^{27/}. In the long run, however, excessive fragmentation leads to the surrender of small holdings often to uses that are less labor intensive, as for example

^{25/} Mahesh Kumar Sahu, Impact of an Irrigation Project on Labor Force and Migration, Ph.D. Thesis, Institute for Social & Economic Change, Bangalore

^{26/} See Bardhan, Pranab K. "On Labour Absorption in South Asian Rice Agriculture, With Particular Reference to India", in Labour Absorption in Indian Agriculture, I.L.O., Asian Regional Programme for Employment Promotion, Bangkok 1978. See also, Jodha, op cit., for discussion of conversion of craftsmen to agriculturalists. Conversion does not imply expansion of the rural occupational structure; it does, however, ease the pressure toward out-migration. An analysis of labour demand in the Punjab concludes that family labor may have increased marginally while a strong demand for hired migrant labour has developed - these trends being the net outcome of the positive (demand creation) effect of changes in cropping patterns and cropping intensity and the negative affect of mechanisation. See Chaudhri, D.P. and and Ajit K. Das Gupta Agriculture and the Development Process, Croom Helm, 1985, Ch.II

^{27/} Bardhan, op cit. Reasons for this phenomenon are not well understood. Among the reasons sometimes given are differences in the quality of land, owner cultivators in the process of dispossession tending to hold on to their most productive land, land suitable for intensive cultivation. Another possible explanation is the tendency to discount the value of family labor, thus encouraging its relatively lavish application on small household plots. It is obviously a complex matter since owners of very small plots are known to "hire-in" as well as to "hire-out" labor.

through consolidation into larger holdings suitable for machine cultivation. For India the optimal management of its fast growing labor force requires a halt to the process of land fragmentation and alienation and the simultaneous expansion of the agricultural and rural non-agricultural labor force at a pace sufficient to prevent a nonabsorbable urban inflow. To do this will require, according to one student of the problem 28/:

- (1) transfer of land ownership or effective control to small farmers in parcels large enough to permit mixed farming safely above the subsistence level
- (2) creation and extension of effective support systems (credit, extension services, storage and marketing facilities, roads and transport) and correct pricing policies for both inputs and output
- (3) attention to the development of human resources through education, health and nutrition programs and social services

Such a program, if attainable, would go far toward producing a workable balance of urban and rural employment opportunities and "creating the conditions for the broad popular participation in national development

28/ See Todaro, Michael, Economic Development in the Third World, Longman, 2nd edition, 1981, Ch 10

efforts and rewards ... " 29/. It is an undertaking, however formidable, to which the Indian Government is committed in principle and toward which some steps have been taken.

Whether employment has grown at a rate commensurate with the growth of population is difficult to determine. The data from the employment exchanges, which are the figures most often cited, present a picture of growing unemployment, particularly among the urban educated. However, these numbers cannot be interpreted in a straightforward fashion since not all who are looking for work register with the exchanges and a large percentage of those on the lists actually have jobs. Trends in unemployment as determined by the National Sample Survey (NSS) vary depending on the definitions used. Weekly status unemployment, i.e. those who were idle on a given survey week, declined during the sixties but increased sharply from 1966-67 to 1977-78 except among rural women. Further evidence of deficiency in the labor absorption capacity of the economy is the fact that the worker participation rates (employed workers as a percentage of given age groups) for males declined between 1971 and 1981. This was accompanied by a rise in the proportion of workers who work less than full time ("marginal workers"). Some of this decline in full time employment is undoubtedly due to an increase in the

29/ Todaro, op cit, p 280. There is no guarantee that if all of Todaro's conditions were met, the desired results would follow. The Indian village is a heterogenous, factionalized politically mobilized, competitive entity which can distort, divert and, sometimes, defeat the programs designed for collective betterment. Case studies to this affect are legion.

number of young men enrolled in school but the high levels of unemployment among the educated young is evidence of slow absorption by the economy of its trained manpower. It is evidence also of what has been called "credentialism", the overcertification of would-be entrants to the labor force in response to the fact that employers, in the face of surplus labor supply, fall back on educational qualifications as a winnowing device.

The exact measurement of unemployment takes on an academic flavor in light of the underutilization of labor among those who technically are employed. Symptoms of the inadequacy of the economy to employ its labor force include not only conventional open employment but various forms of disguised unemployment. "Typists in government offices playing cards during working hours, members of large families laboring at snail's pace on tiny plots of land" and the countless loitering peons and messengers are all expressions of the same phenomenon - an underutilized labor supply 30/. Unemployment also takes on a special meaning in a country like India which has no program of unemployment insurance to sustain workers between jobs. For those who lack the means to remain unemployed there is no viable alternative except to find work of some kind.

To what extent has population growth contributed to the growth in unemployment in India? The answer to this question depends on the

30/ Basu, Kaushik, *The Less Developed Economy: A Critique of Contemporary Theory*, Oxford Univ. Press, 1984, p 25

measure of unemployment and on the factors taken into account. Professor Raj Krishna has decomposed the growth in weekly status and daily status employment into the effects due to population growth, to changes in labor productivity, labor force participation, growth of capital stock and to change in the intensity of capital utilization and to growth of output (net domestic product) 31/. Population growth, increases in labor productivity and in capital intensity are conducive to an increase in unemployment; population growth by affecting the supply of labor and the latter two by dampening demand for labor. The growth of capital stock and of output both increase demand for labor and thus have a beneficial effect on employment (negative on unemployment). Purely as a matter of definition, a decline in participation rates can diminish unemployment since those who do not participate in the labor force are, by definition, neither seeking nor available for work 32/. Professor Krishna's analysis indicates that the effect of population growth on unemployment (weekly status) over the period 1959-1978 was to increase it by 42 percent per year, the increase in the population of working age being large relative to the number of unemployed. This tendency was, as expected, reinforced

31/ Krishna, Raj, The Growth of Aggregate Unemployment in India, World Bank Staff working papers No 638, 1984

32/ Participation rates can and do fall because workers become discouraged from seeking work or announcing their availability. Thus declining participation rates, while they have the effect of diminishing measured unemployment may, to a degree, reflect a worsening of the economy's capacity to provide acceptable employment to those not in the labor force.

by changes in labor productivity and capital intensity. Offsetting increases in the growth of capital stock and output kept the annual growth of unemployment at just under 2 percent 33/. If the growth of the Indian economy can be "raised and kept up at 6.5%, ... mass unemployment can be absorbed even if population and productivity growth remain at present levels" 34/. Failing that or a significant increase in capital stock, or a significant reduction in the capital-output ratio, a strategy combining efforts to check the growth of population and to soak up unemployment through employment schemes will be necessary 35/.

With a real long term rate of economic growth of approximately 3.5 percent, the famous "Hindu rate of growth", and with fast rising capital output ratios, it has not been possible to create jobs at a rate sufficient to keep up with the growing numbers of job seekers much less do anything about the backlog of underemployed. To the extent that population growth contributes to a drain on capital resources and

33/ Krishna, op cit Tables 13 & 14

34/ Krishna, op cit p 18

35/ While it has been stressed by several authors that labor needs to be absorbed in rural areas, the fact is that unemployment has become urbanized. Both as a rate and in absolute terms, weekly status unemployment declined in rural areas between 1958-59 and 1977-78; in urban areas over the same period the rate more than doubled and the volume of unemployment quadrupled. (Krishna, op cit Table 2 p 25)

confronts the nation with costs arising out of the sheer size and complexity of a society that has outgrown the capacity of its traditional systems of administration and social control, full, productive employment will remain a distant goal and poverty relatively undiminished.

The Government hopes that its recent efforts to stimulate a higher rate of economic growth through regulatory liberalization, by capturing some of the black economy for productive investment, and by resort to deficit financing, will stimulate growth and thereby create jobs in sufficient quantity to work off the backlog of unemployment 36/. This is a gamble and one that could be lost if these tactics prove seriously inflationary, lose jobs to foreign competition, deplete foreign exchange reserves, or fail to entice black money into the open. In any event, the problems of Indian society are more deeply rooted and cannot be dealt with fully through macro-economic manipulations or adjustments in economic policy. As in most developing countries "the major bottleneck to higher output and employment levels typically is not insufficient demand but structural and institutional constraints on the supply side. As some have put it, the problem of development is development. Shortages of capital, raw material, intermediate products, skilled and managerial human resources, combined with poorly functioning and inefficiently organized commodity and loan markets, poor transport and communications, shortages of foreign exchange and import-dominated consumption patterns among the

36/ Observors of the planning process in India point out that human resources planning is ad hoc and not, fortunately perhaps, geared to economic planning. See Agarwal, op cit p 9ff. of the relationship between economic planning and job creation are in short supply.

rich ..." 37/. While this list fits the African situation better than the Indian case, it suggests the nature and extent of the problem reasonably well. Add to it a rapidly growing population, a high degree of social change and consequent disorganization, and a rapidly degrading habitat, and one begins to appreciate the scope and complexity of India's national agenda. In this situation a reduction in the rate of population growth, possibly, though not necessarily, through direct government intervention, is a mandatory part of social policy. Very few in India doubt this although some leftist commentators, while not challenging the view directly, nevertheless chide the Government for blaming its failures on population growth in order, they say, to distract attention from its many faults and deficiencies in the realm of policy and administration. We may count that as left handed, grudging assent to the general proposition that population growth in the Indian context has negative consequences for development.

The relationship of population to development is no more generalizable in India than elsewhere. In the Punjab, for example, population growth may have been part of the mix that touched off the Green Revolution. The result is that today agricultural production increases more rapidly than population or the local demand for food. Seasonal shortages of agricultural labor occur which are met by migration from neighbouring states. Accompanying the growth of agriculture has been a rapid expansion of ancillary non-agricultural activity and a growth in non-agricultural employment.

37/ Todaro, op cit p 215

In many other parts of India population has not acted as a stimulus to economic growth. Instead the resulting high population densities and already intensive systems of cultivation frustrate further growth of agricultural employment. This promotes an outflow of surplus population to towns and cities, thus dampening urban wages often without affecting the demand for industrial labor because of weak demand for industrial products or because of administered restraints on production. Elsewhere population growth has been a major factor, along with failure of policy and policy enforcement, in the rapid depletion of resources and land use conversions that can have irreversible negative consequences for future development.

In the long run India's problem of population and its problems of development are solvable. Left alone, many will solve themselves. Yet there are avoidable costs, dislocations and breakdowns in social functioning that a wise, well administered society should try to prevent. More than by its rate of population growth, India's course of development will be determined by its capacity to formulate and implement sound policy including a policy to moderate the rate of population growth.

Future Population Growth

Future growth of the Indian population depends on the course of mortality and fertility. The regional and urban-rural balance of population will be determined by migration as well. Of these components of growth, the first two, mortality and fertility, have received the greatest amount of official attention.

Mortality

Strategies for mortality reduction- The death rate in India today is only about half the rate that obtained at the time of Independence. The urban death rate is about 60 percent of the rural death rate, although some of the difference is due to differences in age composition. Substantial variation in mortality exists between the States, ranging from a low of 6.6 deaths per thousand population in Kerala to 16.3 in rural U.P. Deaths of infants and children under age 5 account for more than 2 out of every 5 deaths and it is toward this problem that much of the Governments' health program is directed. Excess mortality of women due to pregnancy associated causes is exceptionally high in India, making the whole process of generational replacement a costly one in human terms. Thus the priority given to the health of mothers and children in the Government's health program can be fully justified in simple demographic terms.

The prospects for further decline in Indian mortality are encouraging. Population projections produced by the Registrar General 38/ assume

approximately a thirty percent decline in mortality by the end of the century - about the same rate of change as in the recent past. What has to be done to achieve further improvements in mortality is reasonably clear. Of great interest are the infectious diseases of childhood which are more readily prevented and treated than the chronic diseases that are the afflictions of later life. The leading causes of death in the first year of life 39/ are well identified and effective interventions are known. However, for specific health interventions to have their intended effect, it is important that there be a general improvement in health conditions 40/. For example, a campaign against measles will have little long term benefit if those who escape or survive an outbreak of measles shortly die of some other disease. Interventions aimed at specific diseases have their best chance for success in a population that is otherwise healthy.

39/ Tetanus, diarrheal diseases and prematurity are the three leading causes of death among Indian infants. Diseases of the respiratory system collectively also rank among the leading causes. The proportion of Indian births classified as low birth weight is high by international standards even though short gestational period are not more frequent among Indian women than among women elsewhere. See Puffer, Ruth. Mortality in Infancy and Childhood in India, a Report to USAID, New Delhi, New Delhi, Oct 1985. For a comprehensive review of research on infant mortality in India, see M.M. Gandotra and Narayan Das, "Infant Mortality Research in India, A Status Study" Pop. Res. Centre, Baroda 1984.

40/ Mosley, W. Henry, (1983) "Will Primary Health Care Reduce Infant and Child Mortality? A critique of Some Current Strategies, with Special Reference to Africa and Asia".

This is not the case in India and thus health interventions need to cover a broad spectrum of diseases and, most significantly, need to coincide with effective efforts to improve levels of nutrition, water supply and sanitation. "Selective intervention strategies" focussing on "key" measures such as growth monitoring, oral rehydration, immunization, breastfeeding and birth spacing have become standard international recommendations for developing countries. Such selective approaches using known methods of primary prevention are recommended for their feasibility, cost-effectiveness and for the salubrious effect such programs are believed to be capable of having on low performance health systems. This approach enjoys the endorsement and patronage of leading international agencies. It also has had a major impact on their patterns of funding which have shifted from old public health standbys like malaria control, water and sanitation, that is from emphasis on environmental factors in health, to an emphasis on services rendered by health providers to various "target" groups. That there is no convincing large scale demonstration of the efficacy of this latter approach is seldom noted, but the fact is that the largest, most comprehensive and well documented projects, Lampang (Thailand) and Bohol (Phillipines) "very clearly showed that the projects had no measureable mortality reducing effect" 41/.

Mortality can be reduced by planned intervention as the case of China

41/ This issue is developed in extenso in William R. Goldman "Application of a Strategy to Reduce Infant and Young Child Mortality in Asia," Agency for International Development, May 3, 1984

demonstrates. But what the critical blend of interventions should be has not been established. It is hardly surprising that these matters remain in doubt since the factors responsible for the decline of mortality in western countries is still a matter of debate among medical historians. None of this is to say that primary health care initiatives are not worthwhile, but rather to raise a question about the content of such programs before thought gives way to convention.

Nutrition and Child Survival - A major concern in any strategy for mortality reduction, especially one aimed at the survival of children, is nutrition. Nutritional deficiency is an associated cause of most deaths among young children. According to data from the National Nutrition Monitoring Bureau (NNMB), 85 percent of children under 5 years were suffering from varying degrees of undernutrition in 1981 42/. Female children in India are especially prone to undernutrition, a fact which is evident in direct measures of nutritional status by sex and is suggested by the higher mortality of female children 43/. Involved in this childhood malnutrition syndrome is the so-called 'maternal factor'. Malnourished mothers deliver babies with increased susceptibility to disease and perpetuate their child's poor nutritional status through

42/ C. Gopalan, "The Mother and Child in India", Economic and Political Weekly, Vol XX, No. 4 Jan 26, 1985.

43/ ibid.

vitamin deficient breast milk, failure to sustain lactation, and greater exposure to infection.

Basic to efforts to improve nutritional status is an adequate food supply at affordable prices. Food output, especially of food grains, is an Indian success story. With only a 17 percent expansion in the area under foodgrain cultivation between 1970-71 and 1981-82, foodgrain output increased by 22 million tons or 26 percent. However, the per capita net availability of cereals has not shown a consistent upward trend and the per capita availability of pulses has had a downward trend 44/.

Nevertheless, surveys of the rural population in ten states conducted annually between 1975 and 1981 by the National Nutritional Monitoring Bureau, show generally rising levels of food consumption, especially among low income households 45/. The increases were largely in consumption of food grains rather than in protective foods like pulses, milk and vegetables or "refined" calories from fats and oils. There is evidence in these surveys also of some improvement in the nutritional status of children - a reduction in the percentage suffering from "severe" undernutrition and an increase in the percentage of children with "normal" body weight.

44/ The Economic Times Statistical Survey of the Indian Economy, 1984, Table 47. Note that importation of grain has fallen off sharply since the 60s and early 70s.

45/ Rao, N. Pralhad and J. Gowrinath Sastry "Nutrition Profile in India over a Decade", paper presented to National Seminar on "The Implementation of a National Nutrition Policy in India", Srinagar. Oct 28-30, 1985, National Institute of Nutrition, Hyderabad.

A major factor in the food balance for infants and very young children is breast milk. Breastfeeding in India, compared to developed countries, is still quite prevalent. However, it appears that the advance of modernization may be having an adverse effect. For example, it has been reported that the percentage of exclusively breastfed children at the end of 4 months of age had declined to 66 percent in Bombay, 35 percent in Calcutta and 45 percent in Madras 46/. The practice of delaying the start of breastfeeding until several days after delivery is reportedly widespread although data on this are non-existent. The consequences of this practice are serious because it is through this initial flow of colostrum that essential immunities are transmitted from the mother to her child. The growth faltering of infants due to inadequate nutrition and infection attendant on the consumption of frequently adulterated breast milk substitutes is the genesis of "a considerable part of the problems of pre-school child undernutrition" 47/.

Over the years since independence, the Indian Government has instituted a number of nutrition programs to combat specific nutritional deficiencies, e.g., iron and folic acid for pregnant mothers, the distribution of high potency Vitamin A to prevent blindness in children. For protein energy malnutrition, food distribution programs have been tried with resources from the state governments, CARE Title II and the World Food Program.

46/ Gopalan, op cit. A study by Dr. D.K. Guha, Dept. of Pediatrics, Kasturba Hospital, Delhi, reports a 5 to 6 fold difference in continuation of breastfeeding at 6 weeks between those who had been given encouragement and simple instructions about breastfeeding and a group of controls. D.K. Guha and Sadhana Sharma, "Restoring a lost practice" in Future, 13 winter 1984-85

47/ Gopalan, op cit.

The intended beneficiaries of these programs have been moderately to severely malnourished children, pregnant women and nursing mothers. Evaluation studies indicate that these programs are poorly run, often fail to reach the target populations and have little demonstrable impact 48/.

Nevertheless, the logic of supplying the malnourished with supplementary food is so straightforward and plausible, that the Sixth Plan renewed the Government's commitment to the idea with the inauguration of Integrated Child Development Services (ICDS). This program, which now operates in over 1000 Development Blocks, is again aimed at malnourished children, pregnant women and nursing mothers. Besides supplementary food distribution, the program includes preschool education, immunization, nutrition and health education, health services and non-formal education for women. Mothers of preschool children also receive nutrition education. The scheme is run by the Ministry of Social Welfare operating, at the local level, out of neighbourhood centers staffed by young, local women with an 8th or 10th grade education known as Anganwadis. The Anganwadis are supposed to be recruited locally and are paid a modest monthly honorarium for their services. The program focusses on backward areas.

Water and Health - At least since Hippocrates the relationship between water and health has been recognized. Cholera, typhoid, diarrheal

48/ Food distribution programs have been used also to provide jobs and develop infrastructure (Food for Work) and to increase school enrollment (the School Feeding program). The nutritional benefits of these programs have generally been inconclusive although such analysis as has been attempted has faced formidable methodological problems.

disease can be reduced significantly by improvements in the quantity and quality of water. For example, in seven villages in Uttar Pradesh, the introduction of piped water through household taps was followed by declines in the prevalence of diarrhea and dysentery of more than 75 percent. The introduction of public standpipes was associated with about a 50 percent reduction in these diseases 49/.

As of April 1982 there were 180,000 villages in India classified as "problem villages" in that they were without an assured source of drinking water within a reasonable distance or had only water unfit for human consumption due to biologic or toxic contamination 50/. Cities also have serious water problems. Except for Delhi and Ahmedabad, all of India's major cities have water supply deficits (demand greater than supply) ranging from 17 percent in Lucknow to 65 percent in Bangalore 51/.

Finding additional water is not an easy matter since most rivers are polluted from direct discharges of sewage and industrial effluents. Fresh water lakes are polluted with sewage, pesticide and fertilizer run

49/ Misra, K.K. "Safe Water in Rural Areas, An Experiment in Promoting Community Participation in India", International Journal of Health Education, 18(1), 1971

50/ Basic Statistics Relating to the Indian Economy, Vol 2, States Centre For Monitoring Indian Economy, Sept 1984. Table 2.4

51/ Bowonder, B. and Rahul Chettric "Urban Water Supply in India: Environmental Issues", Urban Ecology, 8(1984) Elsevier Science Publishers.

off, choked with weeds and silting up 52/. In some states (U.P., Rajasthan, Orissa, Kerala, J&K, Haryana and Assam) little or no effort is made to treat waste water, even in the major cities.

Public health as a recognized field came to maturity largely through the advances it pioneered by establishing the links between water, sanitation and disease. The control of illnesses spread by the ingestion of contaminated water or by contact with carriers or vectors which spend part of their life cycle in water, make epic chapters in the chronicle of public health achievements. The fact that water and sanitation receive less attention today from the public health profession may be due in part to the availability of low cost alternatives such as oral rehydration therapy for the treatment of diarrheal disease, residual spraying for malaria control, and efforts to alter health beliefs and health behavior.

Social factors in Health - Attempts to sort out the relative effects of various mortality determinants suffer from the total absence of data for a number of crucial variables 53/ and chronic measurement compromises in

52/ Bowonder B., Rahul Chettri and C. Ravi Environmental Degradation of Fresh Water Lakes, Centre for Energy, Environment and Technology, Administrative Staff College of India, Nov 1983

53/ Of six factors commonly thought to be important determinants of infant mortality - nature of prenatal medical care, prenatal nonmedical care such as maternal nutrition, type of medical care at time of delivery, postnatal nonmedical care such as breastfeeding practices, postnatal preventive child care such as immunization, and postnatal curative child care - useable data covering all states are available in India for only two: medical attention at birth and immunization/vaccination. See Jain, Anrudh, Determinants of Regional Variations in Infant Mortality in Rural India, Population Council Working Paper No 20, June 1984

the case of variables for which less than ideal information is available. Moreover, when analyses are carried out with respect to area units, it is often difficult to identify the mechanisms that may be at work in producing the observed associations between, say, education or availability of medical facilities and some measure of mortality. To compound these difficulties, the factors that affect mortality differ depending on the characteristics of the population at risk. For example, the factors which account for regional variations in mortality among newborns in their first month of life are not the same as those that affect subsequent mortality among infants who survive that period.

Despite severe data constraints, there have been several efforts to identify the causes of regional differences in Indian mortality. One such study has stressed regional differences in kinship structure and degree of female autonomy as these get translated into differences in child care practices 54/. Others have emphasized the importance of social development, particularly education, compared to economic development 55/.

54/ Dyson, Tim and Mick Moore "On kinship structure, female autonomy and demographic behavior in India", Population and Development Review, 9(1), 1983

55/ Nag, Moni "Impacts of Social Development and Economic Development on Mortality: Comparative Study of Kerala and West Bengal", Economic and Political Weekly XVIII (19, 20, and 21), 1983.

Perhaps the most comprehensive analysis done so far is the attempt by Jain 56/ to separate the influence of factors that operate at the individual level, variables such as child care, literacy of the mother, immunization, from factors that operate at the household and village levels. Household level variables in Jain's analysis include the nature of the water system, crowding, household income, use of electricity; village-level variables refer to the water supply, road connections, medical and educational facilities. Data problems are formidable and the model constructed by Jain fails to fully specify some of the relationships. Nevertheless, some useful conclusions come out of the exercise. For example, Jain finds that almost two thirds of the variation in neonatal mortality, which ranges from a low of 27 deaths per 1000 live births in Kerala to 93 in U.P., is explained by whether the birth was medically attended 57/ and by the poverty status of the household. Female literacy affects neonatal mortality through its effect on the way the birth was attended 58/. Surprisingly perhaps, the

56/ Jain, op cit

57/ In the absence of direct information on prenatal care and breastfeeding, it is possible that these influences are picked up through their association with the way the delivery itself was handled.

58/ The failure of immunization against smallpox, tuberculosis, DPT or polio to reduce infant mortality or either of its two components, neonatal or postneonatal mortality, may be due to failure of the immunization campaign (including non potency of the vaccine) or to deficiencies in the data. For example, data on immunization were not collected about children who died. If these were predominantly unimmunized children, the impact of immunization would be underestimated. The immunization index used was heavily weighted toward smallpox vaccination which at the time of the survey had been virtually eliminated as a cause of death.

presence or absence of medical facilities had no independent effect on mortality in the first month of life.

Postneonatal mortality in Jain's analysis is lower in villages that have medical facilities and where children have received triple vaccine. However, these variables together account for less than half of the variation in mortality among infants who already have survived the first month of life. Variation in female literacy, while correlated with deaths among such children, seems not to have an independent effect on deaths beyond one month. Such effect as female literacy has is by way of its positive correlation with the use of the services provided by local medical facilities. There is little indication in these data that female literacy enhances the chances of child survival in the postneonatal period through general enhancement of maternal competence, apart from the mother's greater reliance on available medical care facilities 59/.

Thus while the current strategy of dealing with mortality by emphasizing measures to reduce infant and child mortality is sound, the tactical measures rest on an insubstantial empirical base. First, as noted earlier, there is the question of the 'critical minimum effort' that, in a context of relatively high mortality, is needed to make a difference.

59/ Jain, op cit pp 28-29

What the range and mix of interventions needs to be is not clear 60/. Second, as we have just seen, the primary factors responsible for mortality decline are not fully identified nor are the mechanisms by which they work well understood. Thus we proceed by faith and stout resolution.

There is the further problem of the effective implementation of any strategy for reducing mortality. Widespread disenchantment with government programs is freely acknowledged, even confessed to, by officials of government as well as its critics. At the same time, there is perhaps unjustified enchantment with the potential of the private and voluntary sector which by and large has not solved or yet faced the problems of 'scaling up' to operational levels sufficient to have extensive impact. The voluntary sector is not a homogenous entity nor is there unanimity within it on the subject of 'scaling up'. As the movement has progressed from charitable works to a professional interest in development, scale of operations and perpetuation have become goals of the organization. Some organizations have expanded on the basis of funds from government and external donors. Others have resisted this path, being ideologically opposed to serving as agents or subcontractors of

60/ The analyses we have reviewed raise many questions of interpretation with respect to the variables with which they deal. To make matters worse, there are variables left out of the analyses for lack of data. For example, effective fertility regulation could be expected to reduce the death rate by 10 to 15 percent but this variable doesn't appear in the analyses here reviewed. See Trussell, James and Anne Pebley, "The Potential Impact of Changes in Fertility on Infant, Child and Maternal Mortality," Studies in Family Planning, Vol 15, no. 6

government. "Being small and independent of bureaucratic constraints, voluntary agencies can afford to experiment with ideas, technologies, organization and anything else"61/. Health officials at the Centre speak hopefully of utilizing the voluntary sector; of various forms of partnership. These are encouraging signs, but to date there have been few concrete developments.

Social marketing, which employs the techniques of consumer marketing to promote products and services intended to advance public welfare and which cannot be afforded at full cost by the intended beneficiaries, undoubtedly should have a major role in the delivery of health services. The GOI is currently attempting to develop a new modus operandi for cooperating with private firms in this area. In so far as the voluntary sector is concerned, major impediments to action and expansion are found at state and local levels which cannot be addressed successfully from New Delhi 62/.

61/ See Verghese, B.G., "Voluntary Action: A New Mission for New Missionaries," Catalysts for Development.

62/ See Ninan Sevanti, "Co-opting voluntary agencies", Indian Express Sept 21, 1985

Fertility

Trends and Differentials: The birth rate in India has fallen by about one third since the first decade of this century when life expectation at birth was less than half what it is today and only about half the children born made it to adulthood. Such conditions called for early, universal marriage and relatively unimpeded reproduction within marriage which was often cut short by the death of a spouse.

By the time of Independence in 1947, mean survivorship had surpassed 40 years and the birth rate had come down by almost 10 points, to around 40 per thousand population, largely, it is thought, due to delay in marriage. A birth rate of 40 was still a high rate, especially in view of the fact that due to a more rapidly declining death rate, the growth rate was nearly twice as high as it had been a generation earlier.

Since Independence the birth rate has shed only about 7 points. It currently (1983) stands at over 33 per thousand population, a level at which it has been stuck over the past seven years. Significant upward pressure on the birth rate results from continued increase in the proportion of women between the ages of 15 and 30, the years of highest reproductive output. Since 1971 the percentage of women in this age bracket has increased by seven and a half percent. This upward, purely demographic, pressure will continue into the next decade after which proportionately smaller cohorts, the result of the slightly lower birth rates of the seventies, will start to come of marriageable age. There are other fertility increasing effects that work against a rapid decline in the birth rate. In their study of changes in fertility in Mysore

state between 1951 and 1975, Srinivasan et al attribute the relatively small decline in the birth rate to such fertility enhancing effects of modernization as the decline in the extent of post partum abstinence, greater remarriage of widows and improved health. These changes offset to a considerable degree the substantial rise in the increase of contraception, most of which generally took place in India among older women 63/.

The pattern of change in fertility since the early seventies has not been uniform. In some states the birth rate declined throughout the decade, on average by less than 1/2 of a point per year. This was the best performance and was contributed by six states: Andhra Pradesh, Kerala, Tamil Nadu, Gujarat, Punjab and U.P. 64/. In the rest of the states the birth rates either remained almost stationary in the second half of the seventies or showed an actual increase.

A birth rate is a per capita measure of reproductive output and like all such measures, is affected by compositional factors which may mask and distort the underlying process. As we have seen, the birth rate is

63/ Srinivasan K., P.H. Reddy and K.N.M. Raju. "From One Generation to The Next: Changes in Fertility, Family Size Preferences, and Family Planning in an Indian State Between 1951 and 1975", Studies in Family Planning, Vol 9, No 10-11. Oct-Nov 1978.

64/ The U.P., Bihar, Madhya Pradesh, and Rajasthan, have birth rates that are close to the level for India as a whole at the time of Independence.

influenced by changes in age composition 65/ and by the proportions married at given ages. Refined measures of fertility on the other hand are based on the population directly responsible for producing live births, e.g., on married women of reproductive age. The analysis of fertility, whether measured in crude or refined fashion, attempts to weigh the influence of factors that directly determine reproduction, factors that is that relate to the likelihood that a conception will occur and subsequently result in a live birth. Thus the analysis of fertility in demographic terms involves the consideration of marriage, contraceptive use, frequency of sexual exposure, abortion and fecundity 66/. These are the so called proximate determinants of fertility. Variation in these determinants is analyzed ("explained") by reference to factors such as income, economic opportunity, literacy, infant mortality, the availability of services and other social and economic variables.

65/ Sex composition can also be important in so far as it affects the marriage market. Under conditions of falling mortality which is not offset by contrary movement of the birth rate, each new cohort will be larger than its predecessor by a margin greater than would normally be the case due to differences in survivorship. If such a trend continues, a relative surplus of those seeking older partners will develop. This phenomenon, known as the "marriage squeeze", influences "prices" in the marriage market, for example a switch to dowry from bride price, a demand for educated brides and so on.

66/ Fecundity refers to the capacity to reproduce which varies throughout a woman life cycle from 0 before menarche and following a birth to maximum values in the early to mid twenties. Fecundity generally increases as levels of nutrition improve. From an examination of the age patterns of fertility in 11 states, Srinivasan and Jejeebhoy conclude that the biological capacity of Indian women to bear children has increased. See K. Srinivasan and Shireen Jejeebhoy, "Changes in Natural Fertility in India 1959-1972, in Dynamics of Population and Family Welfare, 1981 Himalaya Publishing House, Nov 1981. Of primary concern in the analysis of fertility is the diminution in fecundity due to lactation.

As in the case of mortality, the analysis of fertility in India suffers from severe data constraints. There are no data sets of national scope that contain information on all the proximate determinants 67/. Some large scale studies of contraceptive use do exist but the demographic information in them is seldom adequate for an analysis of fertility or fertility determinants. Virtually nothing is known about abortion, the persistence of breastfeeding, the continuation of contraceptive use, abstinence within marriage, etc. The best that can be done at present is gross analysis of regional differences in birth rates in relation to differences in some of the proximate variables and of some of the less proximate ("background") variables that may be responsible for these differences.

One such analysis 68/ attempts to explain differences among 10 major states in their 1981 birth rates in terms of two proximate determinants 69/, age at marriage and contraceptive use, and three social factors, infant mortality, literacy and urbanization. The results indicate that "adult female literacy, infant mortality and contraceptive use are found to be the three most important determinants of fertility in India" 70/.

67/ The 1981-82 Round of the Rural Income Survey conducted by the National Council for Applied Economic Research contains such data and is now being readied for analysis. While useful, the sample in this study is too small to withstand detailed analysis.

68/ Jain, Anrudh, "The Impact of Development and Population Policies on Fertility in India," Studies in Family Planning Vol 16, No 4, July/Aug 1985

69/ There are no state data on abortion or on breastfeeding. The latter, if available, would be a reasonable proxy for temporary infecundity.

70/ Jain, op cit p 195

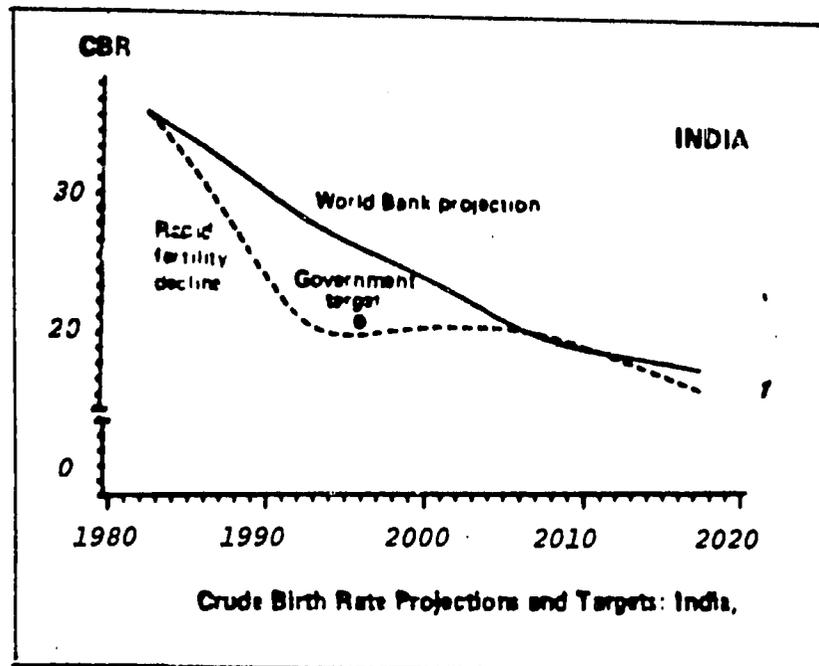
Female literacy operates by its effect on infant mortality (negative), on the female age at marriage and the use of contraception (both positive). In combination these three factors account for 90 percent of the variation in the birth rates of the ten major states included in the analysis 71/. All these have been recognized as matters for official policy although, beyond legislating minimum age limits for marriage (widely ignored), nothing is being done to raise the age at marriage.

Future Trends - The future trend of Indian fertility in the short and long run will be downward despite some countervailing tendencies. The question is, by how much and how fast? Until recently 72/ the Government's stated goal was to take about 12 points off the birth rate by the end of the present century, i.e., by a bit less than one point per year. Even that seemingly modest goal represents a dramatic departure

71/ The effect of a number of social development measures and a measure of poverty show no effect on the birth rate in the presence of measures of female literacy and infant mortality- singly or together. Jain, op cit Table 3.

72/ The recently published Seventh Five Year Plan 1985-90, has scaled down the various demographic objective somewhat. The goal is now to take 10 points off the birth rate. Seventh Plan, Vol II, p 281

from performance in recent years. The average annual decline from 1970 to 1981 was a mere one third of a point. As the chart indicates, the Government's target projection for 1996 is well below the World Bank's projection, lying just above the curve traced by a very rapidly declining birth rate.



Source: Rodolfo A. Bulatao, "Fertility Targets and Policy Options in Asia", Asian And Pacific Census Forum, East-West Population Institute, Nov. 1984.

The projected decline in the birth rate is to be accomplished primarily by increasing the prevalence of contraceptive use to 60 percent ^{73/} of eligible couples from its present level of around 32 percent or by about two percentage points per year. The number of acceptors of contraception that will be required for this transformation of fertility will depend on

^{73/} This is dropped as an explicit objective in the most recent (Seventh) Plan.

the methods which are adopted. Depending on the emphasis given to sterilization, the estimated annual number of required acceptors will vary significantly:

Adopters required to reach N.R.R. of 1 by 2001 by priority given to sterilization

Years	Priority to Sterilization		
	High	Medium	Low
	(in millions)		
1985-86	10.1	14.3	20.0
1990-91	12.2	17.5	26.1
1995-96	13.8	19.9	30.0
2000-01	13.4	19.7	30.4

Source: Census of India, Population Projection for India, 1981-2001, Series T, Paper-I of 1984, p 31

The 'high' sterilization priority assumes that one half of all new acceptors will opt for sterilization - a significantly greater emphasis on sterilization than even now is the case. The medium priority puts sterilization cases at one third of new acceptors - similar to the current pattern. The low priority use profile puts sterilization at 20 percent of new acceptors. Most observers of the Indian program and the Government itself have long recognized that the contraceptive mix will inevitably have to shift away from sterilization toward greater reliance on other methods since sterilization may be approaching an upper bound among couples who by age and parity can be considered the market 74/.

74/ Approximately one-third of married couples in India in which the wife is 30 or more years of age are sterilized, a high figure by international standards. Operations Research Group, op cit Table 7.15

Some perspective on these numbers can be gained by looking at recent performance statistics. In the latest year for which such figures are available in final form, 1982-83, there were 11 million acceptors, of which 4 million were sterilizations 75/.

Impressive as these numbers are in absolute value, they fall far short of what is needed for the "low" sterilization option which many regard as the one the Government will have to adopt. The "low" option implies a goal of 4 million sterilizations for 1985-86 which appears to be within easy reach of the program as now operating. This would leave 16 million couples to be recruited as users of spacing methods. This is a goal that could easily exceed the program's grasp. Indeed it is clear that the targets have been revised downward for spacing methods and increased for what the program does best, sterilization. This can be seen by examining the targets for the Seventh Plan:

Required Acceptors of Family Planning Methods

Year	Sterilization	IUD	Other	Total
1985-86	5.5	3.2	10.5	19.2
86-87	6.0	3.8	11.5	21.3
87-88	6.2	4.2	12.5	22.9
88-89	6.5	4.8	13.5	24.8
89-90	6.8	5.2	14.5	26.5

Source: Seventh Five Year Plan, Table 11.2. Figures have been rounded.

75/ Provisional figures for 1983-84 indicate an increase of 35 percent to nearly 15 million acceptors. Of this increase, 86% was attributable to spacing methods.

The goals set earlier for the total numbers of adopters under the "low" sterilization option remain essentially unchanged. But the composition by method of contraception has shifted in the direction of the "medium" option. In other words, the current emphasis on sterilization will be moderated only slightly if this plan is fulfilled. In practise, the program, despite efforts to do so, will not quickly change its character since it is much better organized for achieving its sterilization targets than for securing adopters of spacing methods.

The task the Government has set itself is thus a strenuous one. To reduce the birth rate to the low twenties by the end of the century will, by the Government's reckoning of what is required, necessitate a contraceptive prevalence rate similar to those so far achieved only in the developed world, the Chinese cultural periphery of S.E. Asia and in one or two countries (Costa Rica, Thailand) which not only have efficient family planning programs but also much higher female literacy and life expectation than India.

To increase the contraceptive prevalence rate, couples will have to be recruited for contraception more rapidly than the stock of married couples grows and the stock of current contraceptors dwindles due to the

discontinuance of contraception and attrition due to age 76/. At present, about 2.6 new acceptors are needed for 1 net addition to the contraceptive stock 77/. These are problems of the numerator; the denominator also changes since the stock of married couples is growing at about the same rate as the total population, i.e., by around 2 percent per annum.

Whether the Government's family planning objectives can be achieved by continuing the past emphasis on sterilization is important to consider. The implication of the "high" sterilization option is the annual recruitment of between 5 to 7 million cases for sterilization between now and the end of the century. That would seem to be well within the capacity of the present system to deliver while at the same time improving the quality of the sterilization services that are offered. The "low" option calls for between 4 and 6 million sterilizations per year over the same period. If either of these options is followed, and assuming that the contraceptive prevalence rate rises on a smooth course from 32 to 60 percent, sterilized couples, instead of constituting nearly

76/ Attrition due to aging can be heavy in a program with a strong emphasis on sterilization. Sterilized couples in the Indian population are of relatively advanced age in part because about 45 percent wait until after the 4 or higher pregnancy to be sterilized (O.R.G. op cit. Table 7.13) and in part because of the large intake of such couples 8 or 9 years ago.

77/ Govt. of India, Min. of Health and Family Welfare, Yearbook 1983-84, pp. 109 and 147

three quarters of contracepting couples as at present, would account for somewhere between one half and two thirds of all couples protected through contraception. This would represent a significant modification in the Government's program even though sterilization would remain the predominant method. However, it should not be overlooked that such a change would imply a three-fold increase in the number of couples using spacing methods. A change of this magnitude in the use of spacing methods will be difficult to achieve unless the deep set opposition to most of the currently available methods is overcome or unless a new, more acceptable contraceptive technology appears on the scene. So long as the present course continues to yield results in the form of a rising prevalence rate, there may be a temptation to put major emphasis on finding new recruits for sterilization among lower parity couples since the system is geared for this kind of service activity. It would be unfortunate if such a strategy delayed all out efforts to make spacing methods an important part of the program. To do so will take time, not only for the improvement of the delivery system, but for reorientation of the thinking of those responsible for delivering these services. To depend on the achievement of a "small family norm" by extending sterilization to lower parity women does little for the well being of mothers and children who stand to benefit from longer interbirth intervals.

Prospects for Fertility Reduction - As the previous section has stressed, reduction of fertility in India at the pace set by Government planners implies a reorientation of the program and a qualitative change in the

public's response to it. There are a number of signs that may be read as favorable to a turnaround in the present situation.

Attitudes towards Family size - The demographic transition has already occurred in India - among the urban middle class. A rough estimate for 1980 of the number of children an urban woman would bear by the time she completes childbearing is less than three. Among middle class urban families the size of the completed family would be considerably smaller than this since contraceptive use increases markedly as income rises 78/. The existence of this urban model of moderate to low fertility has considerable bearing on the prospects for future change as the urban-rural interchange becomes increasingly active. It is noteworthy also that to the extent spacing methods have caught on in India, it is among the urban educated population. Sterilization accounts for only 20 to 30 percent of use by such couples in contrast to two thirds or more of contraceptive users with no more than primary education 79/.

More significant than changes on the urban scene are changes that are occurring in the countryside. The rural family is under considerable strain as population pressure on the land requires new strategies for survival. An aspect of the new strategy that is emerging is to balance dependence on agricultural employment with off-farm and urban employment, one of the consequences of which is that greater value is put on the

78/ ORG op cit Table 7.19

79/ O.R.G. op. cit. Table 7.15

education of children. Education places a burden on the family but families in many parts of the country are increasingly determined to meet these costs. Caldwell reports for an area of South India that 28 percent of land sales in villages were to finance either children's education or their marriages 80/. Education and urban employment also are becoming important considerations in marriage negotiations. Again with reference to South India where women have greater access to paid employment, the labor value of children is no longer obvious to many families. Among agricultural laborers, an increase in family size no longer results in greater total family income or in greater total work input but only in greater claims on subsistence 81/.

Rural India is not a monolithic mass mired in tradition; change is perhaps its dominant characteristic. As Professor A.M. Shah of Delhi University, India's leading authority on the family, has commented, the question of limiting family size is frequently and avidly discussed by villagers, cheap literature on the subject is read and sought out. Village India has been invaded by pulp fiction. Inexpensive tales of romance are widely available and are read aloud by literate women to small groups of illiterate women who discuss and dissect them in terms of

80/ Caldwell, John, "In Search of a Theory of Fertility Decline", in Srinivasan and Mukerji, op cit.

81/ Panikar, P.G.K., T.N. Krishnan and N. Krishnaji, "Population Growth and Agricultural Development: A Case of Kerala". Paper No. 5, FAO, Rome 1978. The amount of work available for children is drying up in parts of South India. Caldwell (op cit) observes that not even cowherds are employed until around age 16.

their own situations. The plots frequently revolve around a woman's struggle against exploitation and powerlessness, the overcoming of which projects for the readers an entirely new and stirring sense of the possibilities of womanhood. Carrying the same message, but less accessible, are modern Indian films which now-a-days devote considerable footage to women who triumph over the unfair treatment handed them by custom and tradition and who contrast sharply with their supine and subservient sisters 82/.

The concern over the condition of women and other change in the family extends to matters related to fertility. Professor Shah insists that many husbands are worried about what excessive numbers of pregnancies will do to their wife's health. Husbands express concern also about further subdivision of family landholdings among their children 83/. Thus the appeal of a strategy of diversification and dispersal of some family members as a way of securing the family's economic base. Increasingly family limitation is seen as part of this strategy.

82/ Film showings are widely attended in urban areas but even among rural residents attendance is fairly high. A study of media coverage indicates that in the year preceeding the study in a sample of 14,000 respondents, 57 percent of rural males and 47 percent of rural females saw one or more film shows. (See "Evaluation of Media Reach and Effectiveness - a Collaborative Study"), National Institute of Health and Family Welfare (undated)

83/ Cited in Franda, op cit, p 14

The demographic transition is beginning to manifest itself elsewhere than in the South, specifically in the Punjab. Less than 15 years ago Mahmood Mamdani in his book, The Myth of Population Control, forcefully presented the argument, based on anthropological observations, that family limitation was deeply incompatible with the Punjabi's belief in the indispensable value of children as a source of household and paid labor, as insurance against various risks and old age disability, as guarantors of status within the village and, in many cases, providers of remittances from outside the village 84/. Reinterviews with the same couples 12 years later revealed a remarkable reversal of attitudes toward family size "linked mainly to a change in the economic value of children - actual as well as perceived by parents" 85/. Children still do plenty of work, Nag and Kak maintain, but there has been a reduction in remunerative work and in the time devoted to work of any kind, both as a result of changes in agricultural activities as well as increased school enrollment of both girls and boys. Similar changes have been observed in "Rampur", a village near Delhi, where it was found that alterations in farm operations and farm technology (tractors, tubewells, electric pumps) reduced the demand for the labor of young people with a corresponding rise in the demand for education 86/.

84/ Nag, Moni and Neeraj Kak, "Demographic Transition in a Punjab Village", Population and Development Review 10, No 4 (December 1984)

85/ op cit, p 669

86/ Das Gupta, Monica, "Production Relations and Population: Rampur", Journal of Development Studies 14, no 4 (1978)

Another traditional support for high fertility, the strong preference for sons, also is showing signs of weakening, although it is still a factor to be reckoned with in rural areas. "Urban middle-class couples may want both a daughter and a son, but if they don't have a son they don't make too much fuss about it. Such a fuss is still made in the rural areas"87/. However, changing agricultural practices, which are direct responses to population growth, may lead to a deterioration of traditional patron-client relations 88/ and to the substitution of a system of cash payment for services. This can bring about, as reported from the Punjab, an upward valuation of the field labor provided by daughters 89/ - the entering wedge for an eventual reassessment of the value of female children.

Changing Position of Women - From her in depth study of 50 middle class women of the pre-Independence period and 50 brought up in post-Independence India, Rama Mehta concludes:

"the greatest change between the pre- and post- Independence eras can be described in terms of a transformation in the status of women and their values regarding extended family responsibilities. While the former group viewed itself as subordinate to men and did not

87/ A.M. Shah, quoted in Franda, op cit. p 14

88/ Das Gupta, Monica, "Microperspectives on the slow rate of urbanization in India: informal security systems and population retention in the rural areas", Paper presented at IUSSP Seminar on "Micro-Approaches to Demographic Research", Canberra, Australia, Sept. 1984

89/ Franda, op cit p.70

have the confidence or courage to defy conventional prejudices or their husbands authority over them, the modern Indian educated woman is assured of her status as a separate identity. She has become more of an individual in her own right." 90/ This observation is no doubt correct as to direction but the "modern educated Indian woman" is yet a world apart from the mass of Indian women.

These conclusions are consistent with the observations of others. For example, I.P. Desai 91/ in a colorful summary of trends two decades earlier, commented that "the real advance which has been made during this period is actually a revolution that is being brought about in the outlook with regard to the concept of the status of women and their role in society. Now a woman is no longer looked upon as a childbearing machine and a harlot in the home " 92/.

90/ "White-collar and Blue-Collar Responses to Population Growth in India", Rama Mehta, in Franda, op cit p 134. The distinctiveness of urban middle class life in India can be overdrawn. A great many urban families, at all levels of society, maintain village connections which they reaffirm on a variety of occasions. As their behavior and that of their children begins to be shaped by the demands of an urban existence with its attendant rootlessness, they are apt to romanticize and reify 'village India', if not retreat psychologically into a Gandhian idealization which has largely lost its relevance.

91/ I.P. Desai, Some Aspects of Family in Mahuva, (Bombay) Asia Publishing House, 1964.

92/ Cited by Mehta, op cit

The essential changes are greater freedom and equality in the relations between spouses, freedom to work outside the home, especially before marriage, and the quest for education. It is easy for the outsider not to see these in their full impact in part because a number of outward structures - arranged caste marriages, persistence of the joint family - are still favored and to all appearances, intact. As opportunities for education expand, as the floodtide of rural to urban migration finally breaks and as new occupational configurations emerge, these changes can be expected to spread and intensify. The masses of rural Indian women, however, live in a male dominated, isolated world in which their inferior status is continuously impressed upon them.

Little by little, here and there around the country, women from the lowest orders of society are organizing to wrest through collective action what society has refused them freely. Organizations such as SEWA (the Self Employed Women's Association) in Gujarat, and the Working Women's Forum (WWF) in Southern India, have assisted women from the humblest occupations - lace making, fish, fruit or flower selling, beedi or incense rolling, milk vending - to gain a measure of economic independence and emancipation through group action.

Slowly and often begrudgingly, the institutions of traditional society accommodate to these changes. Whether these movements will gather momentum and spread throughout the country, or whether they are merely ephemeral expressions of human indomitability under intolerable pressure, one cannot say. They are unquestionably an aspect of what John Lewis

once called "relevant radicalism" which, if supported by broader advancement in economic and social development, can help to shape that development toward greater equity. But it seems as true now as when Lewis first wrote it, that "the only feasible way to get substantially more equity into the Indian system ... is as a dividend from still faster growth ..."93/

One concomitant of economic growth is increased participation of women in the labor force. For women, the work participation rates of "main workers" increased during the last intercensal period at all but the older ages. Fears that the nature of technological change in India would be adverse to the employment of women appear to be unfounded. A recent analysis of the change in female worker participation rates concludes that technology is "shifting very favorably for females in the larger part of the Indian economy" 94/. Surprisingly perhaps, this conclusion pertains to illiterate women; the shift in technology being unfavorable to literates in general, whether female or male 95/. The sectors in which changing technology has helped employment of illiterate females include livestock, forestry and fisheries, and non-household manufacturing 96/. The effect of continued economic growth on the labor force

93/ Lewis, John, "Wanted in India: A Relevant Radicalism", Center for International Studies, Woodrow Wilson School of Public and International Affairs, Princeton, Dec 1969 p 32

94/ Dholakia, Ravindra H. "Role of Literacy and Industrial Structure in Displacement of Female Workers". EPW Vol XX no. 14, April 6, 1985

95/ Dholakia, op cit

96/ Technology shifts have been unfavorable to female employment in construction, trade and commerce, transport, storage and communication, see Dholakia, op cit

participation of women is not readily predictable. Recent trends have been toward greater participation by women, but as the economy shifts away from agriculture and primary industry, which have been fairly absorptive of illiterate women, toward secondary and tertiary industry with their greater educational requirements, women could be at a relative disadvantage. It would be a mistake, however, to mechanically extrapolate past trends. The Indian society and economy are poised to move in new directions, and while there are formidable obstacles to overcome, it is inconceivable that the "cake of custom" will not continue to crumble.

Knowledge of contraception - Several recent studies reveal surprisingly low levels of awareness of contraceptive methods other than sterilization, and even lower levels of knowledge of how to use them. For example, less than half of currently married women living in rural areas know much about the common spacing methods:

Knowledge of Selected Birth Control Methods, Currently Married Rural Women, All India, 1980

Method	Aware of Method	Know How to Use
Condom	48%	36%
IUD	37	19
Pill	31	17
MTP	21	n.a.

Source: ORG op cit. Table 5.12 & 5.14

Similar findings have turned up in the Communications Needs Assessments carried out under the USAID-assisted Integrated Rural Health Project. While these findings are surprising after so many years during which the Government has claimed to have created awareness, if not use, of contraception, the situation nonetheless has its positive side. It suggests that bridging this knowledge gap through a well designed, energetically executed information program may have a material impact on contraceptive use. Among couples not using contraception who don't want additional children 97/, 60 percent explain their failure to use contraception either by saying that they do not like existing methods or that they are unaware of any family planning method. For most couples contraception means sterilization. Therefore, these data suggest substantial scope for educating couples about other methods. By contrast, were the situation one in which the information had been effectively transmitted but went unheeded, the prospects would be less promising. The conclusion is irresistible that "There is an important need for the (Government) program to (1) increase its level of IE&C activities and (2) change the content of these activities by shifting the emphasis from why birth control is essential (most couples are now aware of the officially propagated advantages of small families) to how a small family can be achieved by methods less drastic than vasectomy,

97/ excluding couples in which the wife is menopausal and also those planning early adoption of sterilization. The data are from O.R.G., op cit Table 7.26

tubectomy and laparoscopy" 98/. It will be necessary not merely to increase knowledge of how methods are used, which in itself would be an important gain, but also to counteract the rather pervasive misinformation that exists concerning these methods. For example, while most couples seem to know about male and female sterilization, about half the population that has heard of vasectomy believes that it results in impaired health and prevents a man from doing hard work. Similarly, it is widely held that tubectomized women grow fat and suffer a decline in health 99/. Misinformation is not confined to the lay public but is found among medical professionals as well. Its eradication there may be a more difficult undertaking and is likely to be beyond the reach of ordinary IE&C programs.

Communications - In the same way that the poor state of knowledge can be looked upon as an opportunity for quick and easy gains in the

98/ Basu, Alaka, "Ignorance of Family Planning Methods in India: An Important Constraint on Use", Studies in Family Planning, 15(3) May/June 1984.

99/ NIHFW, "Evaluation of Media Reach and Effectiveness", op cit. This same study reports that Nirodh was "the only method wherein a majority of the respondents reported that they had no fear of using it" (p 21). If these figures are to be trusted, it is little wonder that the Indian program has had an uphill struggle. There are, unfortunately, some grounds for some of these fears stemming from past Indian experience with the IUD and other methods.

dissemination of activating knowledge, so the rather dismal state of affairs that exists with respect to the communication of family planning information might be viewed as a challenging opportunity. What discourages such a view is the fact that the Indian program has for some years invested heavily in training of communicators and in the production of the various paraphernalia by which communicators ply their trade. There is a long trail of consultancies, seminars, workshops, study tours. There is "in place" an army of field workers, almost all of whose job descriptions specify some sort of communication responsibility. Yet an investigation of 955 family planning field workers - block extension educators, lady health visitors, auxillary nurse midwives, family planning health assistants, MFWs revealed:

- . over half never got the communication materials they were supposed to receive.
- . a majority failed to organize exhibits, show films, present slide shows or to use any of the AV materials they had learned about (little wonder in view of the first point)
- . hardly any used the traditional mimes, dramas, or songs which are said to be so effective although data on this latter point are lacking (professional communicators fondness for these methods seems to rest more on sentimental attachment than on their demonstrated effectiveness)

Most of these workers (76 percent) did report organizing group meetings and receiving visitors in their homes for consultation on family planning. However the reach of these activities must have been rather limited since residents in the same sampled areas report relatively little contact of any kind with family planning workers 100/.

100/ These observations are from the NIHFW report on Media Reach (see note 89).

To complete the indictment, it must be said, with some sadness, that the message put out by this vast apparatus when it was sending and being received, is the bland, experience-defying, non-directive assurance that a "small family is a happy family". With such pabulum to market, the "communicators" may be forgiven if they prefer to drink tea.

Despite the disappointing results of these efforts to inform the public about family planning in a meaningful way, the fact that a vast organization of "potential communicators" is in existence, backed by a network of national and state level training institutions able to tap eagerly proffered technical assistance from an international roster of experts, must probably be counted on the positive side of the ledger.

A word is needed here about mass media, about which much is heard these days. Radio listenership (as opposed to ownership) includes about half the couples in which the wife is of reproductive age 101/. About two-thirds of these "listeners" report having heard family planning messages - such as they are. Television ownership (5 percent) and viewing (10 percent) is growing rapidly. During the past year many new transmitters have been erected. Domestic production of TV sets has been stepped up and concessions given to local manufacturers for the importation of foreign made parts. There has been a flood of articles and seminars dealing with the use of TV in the service of "development".

101/ op cit. Newspaper and magazine readership is limited except in urban areas.

One could easily believe that the country is on the threshold of a "communications revolution"

Providing some sober second thoughts on all this, at least for the short run, is the Report of the Working Group on Software for Doordarshan (the state owned system for television broadcasting.) 102/. The report considers "the question of family planning promotion to be a very major area of concern for Doordarshan's programming. But we are equally, emphatically of the view that a number of basic issues will have to be resolved before the enormous, inherent potential of television can be utilized for this cause".

The basic issues identified in the report are indeed basic. Warning is given against "any intensification of communication activities to promote family planning " until there is a functioning network of "accessible and satisfactory services that conform to what is projected". It is stipulated further that "family planning communication must move beyond a narrow conceptualization ... that concentrates exclusively on projecting the necessity for and means of adopting contraceptive technology. The message ... has to be firmly rooted in an integrated philosophy of human/needs".

102/ This report, pending release by the Government, was published in Mainstream, April 11, 21, 28, 1984

Unmet Need - Survey data indicate that on average married women in India bear more children than they want. According to the O.R.G. survey of 1980, couples, on average, express a desire for three children.

Classified according to the number of their living children, couples are found to want the number of additional children that would bring the total to around three:

Number of Additional Children Desired by Number of Living Children

Number of Living Children (1)	Mean Number Additional Children (2)	Total Desired (Col 1 plus Col 2) (3)
None	3.0	3.0
1	1.7	2.7
2	0.8	2.8
3	0.3	3.3
4+	0.1	4.1

Source: Operations Research Group, Family Planning Practices in India - Second All India Survey M.E. Khan and C.V.S. Prasad, 1983.

There is thus a strong indication of a reproductive norm of 3 children on the part of couples who have not surpassed that number. Couples already having more than 3 children would be reluctant to say they want fewer children even if the questionnaire had allowed such a response. It is striking, however, that 84 percent of them say they do not want any more children. Desire for additional children among those with four living children is found to an appreciable degree only where there are no sons, but even then two out of five such couples say they want no more.

With due allowance for the softness of such data, these responses suggest that the market for family limitation could be readily expanded.

Moreover, it might be expected that as more couples enter this market, others will be encouraged to do likewise. It does not follow that when the number of living children equals or exceeds the number of children desired, such couples will immediately opt for contraception. That would depend on how well these potential users can be activated by a well designed and well run delivery system and the extent to which the use of contraception is an approved behavior. If the first of these conditions can be met, India would seem to be in a position to increase its contraceptive prevalence rate substantially. For example, if couples who want no more children and are not currently using contraception became contraceptors, the total number of couples using contraception would equal two thirds of all married couples 103/. It is unlikely of course, that all couples not wanting more children would take steps to prevent further births. The exercise does suggest, however, that there is substantial unmet need for fertility regulation which, if met, would go a long way toward meeting the Government's goal of achieving a 60 percent contraceptive prevalence rate. It suggests also that efforts to increase the density and improve the quality of contraceptive services may be more effective than composing rhymes and jingles about the "small family norm".

103/ O.R.G. op cit; calculated from data in Tables 3.1 and 7.21. Such adopters would, of course, tend to fall in the upper half of the reproductive age distribution, i.e., in the 30-49 age bracket.

Fertility Regulation

Fertility Norms and Control Strategies - Fertility is regulated in all societies, reproduction being too vital to the organization of human affairs to be left to chance. This does not mean that the reproductive goals of individual families will necessarily and at all times coincide with societal objectives, but, over time, there is a strain toward consistency, that is, toward the establishment of a functionally appropriate family size norm to which individual behavior tends to conform. High fertility norms are functionally appropriate under conditions of high mortality and high valuation of the contribution of children to the household economy and to the long term physical, financial, and psychic security of parents. Fertility norms change as these underlying conditions change, and as parents come to recognize that large families are no longer advantageous and find that there are effective and socially approved means by which they can reduce their reproductive output.

The onset of fertility regulation in noncontracepting societies frequently begins with limitation, i.e., with the regulation of number rather than timing. The timing, or spacing, of births is typically a later phase.

The difference between "limitation" and "spacing" relates to the intention of the user rather than to the outcome of use. To base the distinction on outcome invites confusion. For example, a couple using

contraception with the intention of putting an end to childbearing may, if the woman accidentally becomes pregnant due to the failure of the method, have achieved some spacing effect from the method but certainly not limitation. Similarly, a couple that has been using a method for spacing might find, when the method is discontinued in order to have another child, that the woman is unable to conceive. If her inability to conceive is method related or due to the aging of one or both partners while the method was being used, it could be argued, on the basis of an outcome criterion, that the method had, in effect, "limited" the couple's fertility. Such confusion is avoided if the terms are used solely to refer to the reproductive goals the couple has in mind in deciding to use a particular method.

There is only the loosest connection between what a couple is trying to achieve through contraception, i.e., limitation or spacing, and the means they employ to achieve it. Any combination of methods can be effective if properly employed. Even sterilization, which is ordinarily regarded as the limitation method par excellence, could in theory, be a "spacing" method if reversibility were practicable. The point to note is that a couple wishing to limit family size can do so in a variety of ways. This point is often lost sight of in discussions of the Indian program where, for most people, limitation implies sterilization.

In this connection it is worth noting also that the profiles of contraceptive methods in use vary widely among countries. Countries in which the contraceptive prevalence rate (married couples using

contraception divided by total married couples of reproductive age) is 30 percent or greater - the statistical territory that India is entering - exhibit different patterns of contraceptive use. The most common pattern is one in which oral contraception is the leading method. Next in order of frequency are profiles featuring either sterilization or a conventional method such as the condom. These three patterns characterize 22 out of the 27 countries whose contraceptive profiles are available 104/. A few countries have what might be called balanced programs in the sense that a broad spectrum of equally popular methods is in use. One country, China, has essentially an IUD based program. Abortion, which is generally poorly reported, plays a variable role depending on the way it is viewed, the facilities available, and the average effectiveness of the prevailing contraceptive regime.

No country emphasizes sterilization to the extent India does. For developing countries generally, sterilization accounts for a little less than 40 percent of contraceptive use 105/. By contrast, sterilization provides more than 80 percent of effective contraceptive protection for Indian couples:

104/ Nortman, Dorothy L. Population and Family Planning, 12th edition, Population Council, 1985 Table 18.

105/ *ibid*

Distribution of Countries with Prevalence Rates
of 30 Percent or above by Percent of Use
Accounted for by Sterilization

<u>Sterilization/Total use x 100</u>	<u>Number of Countries</u>
Less than 20%	9
20-24	4
25-29	6
30-34	7
35-39	8
40-44	2
45-49	0
50-59	0
60-69	0
70-79	0
80-89	1 (India)

Source: Nortman, see Note 104/.

a is clearly a unique case. As pointed out earlier, the course that Indian program has projected may result in less dependence on sterilization, assuming the prevalence rate goes up as anticipated and limiting the sterilization schedule does not exceed the "high" option

family planning program has gone far toward meeting the strong interest in limitation among Indian couples. The percentage of couples using some form of contraception, primarily sterilization, has risen steadily since the mid 60s, on average by slightly more than one point per year. Currently about 30 percent of married couples are protected in

Survey data (O.R.G. op. cit p 147) indicate that 80 percent of contracepting couples who plan to take up the practice some time in the future, will opt for sterilization. The "high option" assumes that 100 percent of all new acceptors will choose sterilization. Implicitly, therefore, the Government's projected course assumes a different prevalence map from the one that now appear to be operating.

some form against pregnancy, around 80 percent of them by sterilization. Given that contraception is used largely to end childbearing, its use is concentrated among older women. As a result, approximately one-third of married couples in which the wife is 30 years of age or older, are sterilized 107/. The Government's program has done a creditable job in meeting the demand for fertility termination in quantitative terms 108/; it will doubtless continue on this course as it increases efforts to encourage the practise of birth spacing.

India's Family Planning Program - Financial control and broad policy formation is the responsibility of the Ministry of Health and Family Welfare. Implementation of the program falls to the individual states. The vertical organization runs from the Centre to the states, to the districts and ultimately to the Primary Health Centres (PHCs) and subcentres. The plan of organization calls for one subcentre staffed with a male and female "multipurpose" worker (formerly known as an auxillary nurse midwife), for every 5 to 10 thousand population. At the village level there is a village health guide, a volunteer contact for various kinds of health and family planning services who is paid a small monthly honorarium, the equivalent of about \$ 5. In addition to routine services offered through the centres and subcentres, the PHCs periodically organize sterilization camps for which medical teams are sent in. Sterilization and IUD acceptors are compensated monetarily in

107/ Operations Research Group, op cit, Table 7.15

108/ Criticism of the quality of contraceptive services is not uncommon.

recognition of the time and expense incurred. These payments vary in amount from state to state, from season to season, and recently have accounted for about one fifth of central program expenditure. These "compensation" payments are supplemented, often substantially, by states, local government bodies and private groups.

Target setting and target achievement is the operational core of the program. Every unit receiving government funds for providing contraceptive services, whether public or private, is assigned a target which represents its share of the district target established by the state. To keep this system somewhat honest, the Ministry has set up Regional Evaluation Units whose task it is to operate a monitoring and surveillance system which compiles and forwards program statistics. Additional evaluation is provided by the 16 Population Research Centres (PRCs) funded by the Ministry. Part of their work consists in following up PHC clients to determine if they are bonafide cases and to see if they have received any payments due them. The reports prepared by the PRCs, which may include data on other aspects of PHC operation, are forwarded to the Center, by-passing state officials who, if derelictions or deficiencies are found, will hear from Delhi regarding actions to be taken.

The heart of the health and family welfare delivery system is the Primary Health Centre (PHC) and its satellite subcentres. Under the revised "multi-purpose worker scheme", the PHC has a complement of three medical officers, three first-line supervisors who are supposed to

look after the male and the female "multipurpose" workers assigned to each subcentre. In addition there are various technicians, clerks, and service personnel.

From among the three medical officers, who tend to be of equal rank and seniority, one is designated as the Chief Medical Officer (CMO). The CMO has overall administrative responsibility and thus controls the sometimes scarce resources of the PHC. This fact provides a natural base for conflict and thus relations among the PHC medical officers are often marred by inter-personal discord and lack of coordination of activities. Not only do the subordinate Medical Officers lack direct access to various PHC resources but they lack disciplinary authority over the workers in their assigned territory except through the CMO, who may or may not wish to back them up. According to the well established law of nature, competition among members of the same species in a resource limited environment leads either to conflict or to species diversification. Both of these tendencies are evident among the PHC medical officers. The CMO seeks to differentiate himself and his activities from the other medical officers. To do this, he may maximize the opportunities that have been handed to him which at times means minimizing opportunities for the other MOs. An example of this is the establishment of a private practise, much coveted among PHC physicians even though the authorities attempt to discourage it through the payment of a non-practise allowance. The CMO, by his greater control over field personnel and other PHC resources, has a decisive advantage in this regard. A private practise is not a wholly bad thing since private

patients, receiving better than average treatment (less waiting, more considerate treatment, perhaps free medicines) are a source of clients for contraception. The point to be made here is that rancorous relationships among members of the medical staff is an endemic tendency in the organization of the PHC.

At the distal end of the PHC organization are four subcentres each with a male and a female multi-purpose worker. Except for recent recruits, these multipurpose workers are converted "unipurpose" workers who formerly had a narrower range of responsibility. Their conversion involved a host of new responsibilities to be performed at no increase in pay.

The PHC has two supervisors, one male and one female, who look after the work of the multipurpose workers located at the four subcentres. Subcentre workers will ordinarily have additional supervisors depending upon the number of "vertical" programs (e.g., malaria, leprosy etc.) operating in the area. Subcentre workers are charged with maintaining 18 different registers and preparing 30 reports which are submitted monthly to the PHC. This is all in addition to their work in recruiting patients to meet their targets and serving as the primary contact for various kinds of preventive and curative health care. Inevitably, some of these tasks are neglected.

The performance of multipurpose workers is highly variable. In areas where they live at the subcentres long enough to be known locally, they

often achieve good results. For example, at one subcentre in U.P., a state not known for outstanding achievements in family planning, two workers who had lived in their area for more than eight years managed to maintain up-to-date registers which showed a couple protection rate of 35 percent (compared to the State average of 15). They registered 85 percent of the pregnant mothers for ante-natal care, achieved 100 percent coverage for tetanus toxoid and folic acid distribution for pregnant women and secured 25-30 sterilization cases from among the 180 to 200 deliveries performed 109/. Unfortunately, this kind of achievement is exceptional in "poor performance" states like Bihar, Madhya Pradesh, Rajasthan, and U.P. which together account for approximately 45 percent of annual births in India.

Another functionary at the PHC with responsibility for field supervision is the Block Extension Educator (BEE) who works under the CMO and the District Extension Educator. Like the multipurpose worker, the BEE's assignment is nearly an impossible one in its manifold diversity. In addition, he has no real authority over the 40 workers assigned to him and few, if any, resources at his disposal. As a consequence, the BEE serves the CMO in a miscellaneous capacity and may spend a good share of his time cementing his relationships with the local population. For this reason, the BEE sometimes can be an influential figure in the area but this influence is rarely used in the interest of the health or family

109/ Study of Facility Utilization and Programme Management in Family Welfare - Uttar Pradesh, Public Systems Group, Indian Institute of Management, Ahmedabad, September, 1985 p 48

planning program. CMOs are well advised to treat the BEE with circumspection for, while they lack sanctioned authority, they may have a significant amount of power locally and the time and capacity for mischief.

Beyond the formal structure of full time government functionaries is the Village Health Guide (VHG), first introduced in 1979 as the Community Health Worker. Each VHG is expected to serve a population of approximately 1000 and, in theory, is the point of initial contact for villagers seeking to enter the health system. Most VHGs are men, although the emphasis in recent recruitment has been on women. VHGs may be given family planning targets (e.g., one case per month in U.P.), but with no one to supervise them and with no reward for performance (they receive a fixed Rs. 50 per month), the average VHG contributes little to the family planning effort. A number of studies have been made of the VHG. These studies frequently comment on the "promise" and "potential" of a worker of this sort. So far this potential remains largely unfulfilled.

The structure of the PHC is, for all intents and purposes, uniform throughout India. The way it functions is not. A recent comparison 110/ of a sample of PHCs from Kerala, one of the best performing states, and Bihar, one of the poorest, strongly suggests that the relative family planning performance of those two states may be attributable not only to

110/ Khan, M.E. and C.V.S. Prasad, Functioning of Health and Family Welfare Programme - A Comparative Study of Bihar and Kerala, Operations Research Group, Baroda

the differential readiness of their populations to accept contraception, but to the quality of the services provided. In both states, about 70 percent of those interviewed indicated that they preferred private sources to Government sources of medical care. The reasons given for not using the PHCs are revealing of what is behind this attitude as well as indicative of widely ranging perceptions of the PHC in the two states:

Percentage Giving Stated Reasons for Not Using PHCs*

Major Reasons	Bihar	Kerala
Good medicine not available	60%	32%
Medicines must be bought from market- not given at PHC	42	22
"Bad" treatment from staff	50	29
PHC doctors charge money	47	4

* These responses are from respondents living in villages that have a PHC or in Scheduled Caste villages

Data on the operations of the PHC also reveal significant differences between these two states. In Kerala there is a doctor on hand in the PHC at all times; this is rarely so in U.P. The average time spent by PHC physicians working in the out-patient department varies greatly: in Kerala the figure exceeds half an hour per day; in Bihar it averages 5 minutes. Neither figure may seem impressive, but the differences certainly are. Other observations make the same point. For example, the mean waiting time per patient is 79 minutes in Bihar and only 10 minutes in Kerala despite the fact that Kerala PHCs see over 3 times as many patients per day.

Home visits following sterilization are not made in the majority of cases in either state, but again there is great variation: in Kerala about one-third of cases of female sterilization receive a follow-up home visit; in Bihar 11 percent are so favoured. This difference may have something to do with difference in the territory workers are expected to cover and the pay they receive and their length of service. Kerala workers are somewhat better paid on average, which indicates greater time spent in service since for given seniority, pay scales are uniform throughout India for this kind of employment. In addition, less than 5 percent of Kerala workers have more than 5 villages to cover whereas in Bihar over 70 percent of the workers face such taxing assignments.

In addition to its network of PHCs and subcentres, the Indian family planning program has relied heavily on the "camp approach". This approach to the delivery of contraceptive services stems from the emphasis given to surgical procedures, the shortage of surgeons trained in these procedures and the belief that a concentration of logistical and promotional effort would overcome the hesitancy of couples trying to come to a decision about sterilization. Early on there was much discussion over the net gains realized by this approach, the question being whether this was merely a cream-skimming operation which, at the cost of the extra inducements usually offered at the camps, brought in acceptors who sooner or later would have come anyway. The question remains largely unanswered since the alternative of a high quality, dependable, routinely available, readily accessible service has not been available for comparison. There can be no doubt, however, that the camps have yielded

a great many acceptors. There are serious questions, however, about the quality of services that have been provided in some instances - a question about which Government officials are acutely aware.

Targets for family planning are set for various methods but the system operates essentially in terms of obtaining cases for sterilization. It is an open secret that each level of administration inflates the targets that it passes on to the next lower level in the belief that this will stimulate performance. The assignment of targets to the workers who have the ultimate responsibility for "motivating" acceptors is a variable procedure. The PHC medical officer may assign targets equally to all workers, or he may assign targets individually. Frequently in this process the worker's immediate supervisor is by-passed, having nothing to say about this central aspect of the workers work load. Obtaining cases against assigned targets is a highly competitive business with target 'snatching' at all levels a common occurrence. "Self motivated" cases are often claimed by workers toward their quotas. There is no sense of collective achievement or team work in evidence. Progress toward target fulfillment is reviewed monthly at meetings held at the PHC. These are generally marked by the application of pressure to workers who are lagging in meeting their targets, a practise which serves to underscore the individualized nature of target fulfillment.

It would be unfair to dwell on selected stigmata of the Indian program - the emphasis on surgical methods, the addiction to target setting, the "camp approach", the mobilization of a vast, partly voluntary, field

force - without noting the innovativeness of the program in the years since its inception as the world's first major effort in fertility regulation. There is very little in the way of program innovations that the Government hasn't tried. It has secured top level endorsement. For example, the late Indira Gandhi stated that "Family Planning has been a basic postulate of free India's national policy ..."^{111/}. Less grandiloquently, but with equal conviction, the present Prime Minister, Rajiv Gandhi, has on numerous occasions located population growth at the centre of his concerns.

Other innovations include the distribution of oral contraception by paramedics (using a checklist of contraindications); it offers condoms free, and for sale through commercial channels; it has licensed the manufacture of contraceptives under the Drugs and Magic Remedies Act; it has legalized abortion for, among other things, contraceptive failure; it has raised the legal age of marriage; it does not pay family allowances; it has made donations for family planning purposes tax deductible; it offers incentives for the adoption of certain methods of contraception and offers all methods at subsidized prices; the Central Government offers salary increases and low interest housing loans to its employees who are sterilized after 2 or 3 children; some states have reduced maternity benefits for its women employees after the birth of the second child; cash awards are made to the states that have the best record of

^{111/} Westinghouse Social Sciences International, Demographic Data for Development, Population Policy Review, India, Oct 5, 1984, p 7

family planning performance; it issues "green cards" to those who accept sterilization after 2 children which entitle the holder to various kinds of preferential treatment and benefits, including free lottery tickets. Individual states have sometimes supplemented these measures with some of their own devising, including facilitated school admission for the children of families in which one member is sterilized after 2 or 3 children. Beyond these direct incentives, there are provisions in law fixing the allocation of central financial resources to the states on the basis of the population distribution as of 1961. The Indian Association of Parliamentarians has called for an amendment to the election law making any suggestion of opposition to family planning by candidates a punishable offense 112/.

Yet the verdict on all this effort as given by Mrs. Gandhi a few years ago remains valid. At the First National Conference of the Indian Association of Parliamentarians for Problems of Population and Development four years ago she said, "we have to admit that the program has been only marginally successful. Kerala, Maharashtra, Orissa, Punjab and Tamil Nadu have done well, but not, I am sorry to state, the other states" 113/. The same conclusion was reached in a Population Council review prepared a year later which down to its diagnostic details remains valid today:

112/ See Demographic Data for Development, Population Policy Review, op cit

113/ Demographic Data for Development, op cit

"India's past performance in reducing population growth has been uneven and disappointing ... Programme constraints include insufficient planning of programmatic inputs and resources required to achieve population objectives; management limitations at all levels ... almost total reliance on sterilization; only partial staffing of the rural health infrastructure; poor quality of training and supervision of rural family planning workers; problems of contraceptive manufacture and distribution" 114/.

Criticisms of this nature, which few would deny, should not obscure the program's real achievements. Writing of the period up to 1977 when the birth rate was declining, Robert Cassen concluded that "India's investment in family planning had been more cost-effective than the average of all its capital formation activities ... 115/. More convincing, perhaps, is the fact that the level of contraceptive acceptance in states like Maharashtra, Haryana, Punjab stand at around 40 percent and compare favorably with respect to the provision of modern methods by a Government program, to countries such as Indonesia, Malaysia, and the Philippines which are generally regarded as having reasonably successful programs.

114/ India's Population Policies and Programs, Population Council, August 1982

115/ Cassen, op cit

The Government presently is engaged in a reconsideration of its strategies and policies in family planning. It readily admits that it is not reaching the couples who are producing most of the children. On the positive side, efforts are being made by Central authorities to engage the services of commercial marketing and advertising firms for the distribution of selected kinds of temporary contraceptive methods. There is evidence also of a greater readiness to treat with the voluntary sector so as to expand and strengthen the activities of the groups who, many believe, are more effective agents for the introduction of new ideas and behaviors than village-shy government services.

There are many ways in which Government family planning services, as presently offered, can be improved. The lack of mobility of workers is a problem at present. Means to overcome this are not inconceivable, including the reallocation of workers and changes in their assignments that would minimize the need to move about. The derelictions of the professional staff, especially physicians, are frequently lamented. Something could probably be done about that. The preoccupation with sterilization, the mechanical fixation on targets, the poor reception given to patients, the poor quality of services in some facilities, the logistic failures - these are all remediable, although no one should underestimate the difficulties of doing so.

But essentially the problems are matters of compliance with the existing system. Compliance works so long as central pressure is maintained and

enforced. Some students of India's family planning program argue that compliance must be supplemented by popular acceptance and by the kind of political mobilization and local participation that can exert a reverse pressure on government agencies for a more effective supply of services. This, in large measure, is the appeal of the voluntary sector - its presumably greater capacity to generate acceptance and demand for services. Beyond this, however, some have argued that the Indian program must find a way to deconcentrate its operation and devolve responsibility, at least to the states 116/. Such recommendations are encapsulated in the term 'decentralization' which, though firmly ensconced in development rhetoric, eludes precise definition on effective implementation. It remains largely metaphorical, as in the regular ritualistic evocation of "grass roots" organization.

Those who study the functioning of bureaucracy have observed that performance, as an operational criterion, shrinks to an emphasis on procedure, terms familiar in discussions of India development, unless the tendency of the bureaucracy to "accumulate privilege in their rates" is countered by political oversight and pressure 117/. Such pressure is currently being applied at the central level to the national program.

116/ Maru, Rishikesh M. Birth Control in India and in the People's Republic of China: A comparison of Policy Evolution, Methods of Birth Control and Program Organization, 1949-1974, University Microfilm, Ann Arbor, Michigan, 1976

117/ Ness, op cit, See also Ness, Gayl D. Bureaucracy and Rural Development in Malaysia, University of California Press, 1967

Its analogue at state and local levels is a requirement for ultimate success. This will not be an easy thing to accomplish since weakness in local initiative is the "raison d'etre" for strong central initiatives. Evidence can be found, however, to suggest that a way to begin is by relaxing central control and decentralizing resources. This can encourage local initiative and the development of administrative skills which otherwise would be limited to ensuring compliance with central directives 118/. External assistance is and will be necessary but it should not be allowed to degenerate into a dependency that stifles local initiative. How effective decentralization is to be achieved—in what aspects, through what agencies, for what rewards, on what timetable — is, along with the question of the balances to be struck between the developed and underdeveloped parts of the world, a major development issue of the day.

118/ Ness, op. cit. see also Ness, Bureaucracy and Rural Development in Malaysia, University of California Press 1967

REFERENCES

- Ahluwalia, Isher Judge, Industrial Growth in India : Stagnation Since the Mid-Sixties Oxford Univ. Press 1985
- Bardhan, Pranab, The Political Economy of Development in India, Oxford Univ. Press 1985.
- Bardhan, Pranab K., "On Labour Absorption in South Asian Rice Agriculture, With Particular Reference to India", in Labour Absorption in Indian Agriculture, I.L.O., Asian Regional Programme for Employment Promotion, Bangkok 1978.
- Basu, Alaka, "Ignorance of Family Planning Methods in India: An Important Constraint on Use", Studies in Family Planning, 15(3) May/June 1984.
- Basu, Kaushik, The Less Developed Economy: A Critique of Contemporary Theory, Oxford Univ. Press, 1984, p 25
- Booth, Anne and R.M. Sundaram, Labor Absorption in Agriculture, Oxford University Press, 1984, Ch.2.
- Bowonder, B., Rahul Chettri and C. Ravi, Environmental Degradation of Fresh Water Lakes, Centre for Energy, Environment and Technology, Administrative Staff College of India, Nov 1983
- Bowonder, B. and Rahul Chettri, "Urban Water Supply in India: Environmental Issues", Urban Ecology, 8(1984) Elsevier Science Publishers.
- Caldwell, John, "In Search of a Theory of Fertility Decline", in Srinivasan and Mukerji, op cit.
- Cassen, Robert, India: Population, Economy, Society, Macmillan, 1978 pp 214-216.
- Census of India 1981, Series 1, Paper 1 of 1984. Population Projections for India 1981-2001
- Chaudhri, D.P. and Ajit K. Das Gupta, Agriculture and the Development Process, Croom Helm, 1985, Ch.II
- Dandekar, V.M., "Economic Theory and Agrarian Reform", in Eicher, C and L. Witt. Agriculture in Economic Development, Mc Graw Hill, 1964, p 170
- Das Gupta, Monica, "Production Relations and Population: Rampur", Journal of Development Studies 14, no 4 (1978)
- Das Gupta, Monica, "Microperspectives on the slow rate of urbanization in India: informal security systems and population retention in the rural areas"
- Das Gupta, Monica, unpublished Ph.D. dissertation, London School of Economics, 1976
- Desai, I.P., Some Aspects of Family in Mahuva, (Bombay) Asia Publishing House, 1964.

Dholakia, Ravindra H., "Role of Literacy and Industrial Structure in Displacement of Female Workers". EPW Vol XX no. 14, April 6, 1985

Dyson, Tim and Mick Moore, "On kinship structure, female autonomy and demographic behavior in India", Population and Development Review, 9(1), 1983

Goldman, William R. "Application of a Strategy to Reduce Infant and Young Child Mortality in Asia," Agency for International Development, May 3, 1983

Gopalan, C., "The Mother and Child in India", Economic and Political Weekly, Vol XX, No. 4 Jan 26, 1985.

Govt. of India, The Approach to the Seventh Five Year Plan 1985-1990, Planning Commission, p5.

Indian Institute of Management, Public Systems Group, Study of Facility Utilization and Programme Management in Family Welfare - Uttar Pradesh, Ahmedabad, September, 1985 p 48

International Bank for Reconstruction and Development, World Development Report 1984, Oxford Univ. Press p 105

Jain, Anrudh, "The Impact of Development and Population Policies on Fertility in India," Studies in Family Planning Vol 16, No 4, July/Aug 1985

Jain, Anrudh, Determinants of Regional Variations in Infant Mortality in Rural India, Population Council Working Paper No 20, June 1984

Jodha, N.S., 'Population Growth and the Decline of Common Property Resources in India', Population and Development Review, Vol. II, November 2, June 1985.

Khan, M.E. and A C.V.S. Prasad, Functioning of Health and Family Welfare Programme - Comparative Study of Bihar and Kerala, Operations Research Group, Baroda

Krishna, Raj, The Growth of Aggregate Unemployment in India, World Bank Staff working papers No 638, 1984

Kumar, Sahu Mahesh, Impact of an Irrigation Project on Labor Force and Migration, Ph.D. Thesis, Institute for Social & Economic Change, Bangalore

Lee, Ron "World Development Report 1984: Review Symposium", Population Development Review, op cit p 128

Leibenstein, Harvey, Population and Development Review Vol II, No. 1, March 1985 p 136

Lewis, John, "Wanted in India" A Relevant Radicalism", Center for International Studies, Woodrow Wilson School of Public and International Affairs, Princeton, Dec 1969 p 3?

Lewis, Oscar, M.M. Gandotra and Narayan Das Village Life in Northern India, Vintage Books, 1958 "Infant Mortality Research in India, A Status Study" Pop. Res. Centre, Baroda 1984.

Maru, Rishikesh M., Birth Control in India and in the People's Republic of China: A comparison of Policy Evolution, Methods of Birth Control and Program Organization, 1949-1974, University Microfilm, Ann Arbor, Michigan, 1976

Misra, K.K., "Safe Water in Rural Areas, An Experiment in Promoting Community Participation in India", International Journal of Health Education, 18(1), 1971

Mosley, W. Henry, "Will Primary Health Care Reduce Infant and Child Mortality? A critique of Some Current Strategies, with Special Reference to Africa and Asia" (1983).

Nag, Moni and Neeraj Kak, "Demographic Transition in a Punjab Village", Population and Development Review 10, No 4 (December 1984)

Nag, Moni, "Impacts of Social Development and Economic Development on Mortality: Comparative Study of Kerala and West Bengal", Economic and Political Weekly XVIII (19, 20, and 21), 1983.

National Nutrition Monitoring Bureau, Annual Surveys 1975-1979. Report for the Year 1979. National Institute of Nutrition, Hyderabad, 1980.

Ness, Gayl D., Bureaucracy and Rural Development in Malaysia, University of California Press, 1967

Ninan, Sevanti, "Co-opting voluntary agencies", Indian Express Sept 21, 1985

Nortman, Dorothy L., Population and Family Planning, 12th edition, Population Council, 1985 Table 18.

Panikar, P.G.K., T.N. Krishnan and N. Krishnaji, "Population Growth and Agricultural and Development: A Case of Kerala". Paper No. 5, FAO, Rome 1978. Govt. of India, Min. of Health and Family Welfare, Yearbook 1983-84, pp. 109 and 147

Rao, N. Pralhad and J. Gowrinath Sastry, "Nutrition Profile in India over a Decade", National Institute of Nutrition, Hyderabad, Oct. 1985

Srinivasan, K. and Shireen Jejeebhoy, "Changes in Natural Fertility in India 1959-72, in Dynamics of Population and Family Welfare, 1981 Himalaya Publishing House, Nov 1981.

Srinivasan K., P.H. Reddy and K.N.M. Raju, "From One Generation to the Next: Changes in Fertility, Family Size Preferences, and Family Planning in an Indian State Between 1951 and 1975", Studies in Family Planning, Vol 9, No 10-11. Oct-Nov 1978.

Todaro, Michael, Economic Development in the Third World, Longman, 2nd edition, 1981, Ch 10

Trussell, James and Anne Pebley, "The Potential Impact of Changes in Fertility on Infant, Child and Maternal Mortality," Studies in Family Planning, Vol 15, no. 6

Vergheze, B.G., "Voluntary Action: A New Mission for New Missionaries," Catalysts for Development.

Westinghouse Social Sciences International, Demographic Data for Developmnet, Population Policy Review, India, Oct 5, 1984, p 7

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