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NOTES

ON

A POPULATION STRATEGY FOR NEPAL

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I. Past Conference

Six years ago here in Kathmandu at the National Conference on the Implementation of Population Policies, the then Chairman of the Population Policies Coordinating Board said that, "formulating a population policy for Nepal is no great problem. But given the formidable constraints we have--economic, physical, geographical, social, cultural, etc., as well as those pertaining to the management of supply and services--the implementation of such a policy is a big problem and a great challenge."[1]

The challenge remains. In looking over the proceedings and the recommendations of the 1976 Conference and of the 1975 Conference held at Berkeley, California and of the 1974 and 1971 Conferences conducted by CEDA[2], it is clear that it has been most difficult to implement any of the conference recommendations.[3]

It would be unfortunate if the present conference adjourned on Tuesday of this week leaving a set of recommendations that were essentially the same as those that have been handed down periodically over the past ten years. For example, in a few days time we may hear ourselves repeating the following familiar words:

> "The main objective of population policy in Nepal is to regulate the rate of population increase in relation to a prescribed feasible rate of economic development... This objective shall be realized through the following policies:

1. By diminishing the birth rate through indirect but extensive measures, such as economical, social, cultural, and educational development and reform; and through direct preventive measures, such as Maternal Child Health and Family Planning, which are to be carried out as a special project.

2. By checking immigration into Nepal from foreign countries, thus significantly reducing the part this factor plays in population increase.

3. By controlling existing migration patterns from hilly and mountain areas to the Terai, and from rural areas to towns, directing it in a planned way.

4. By increasing population density in the agricultural land of the Terai, especially in the Western Terai, in such a way as to utilize fully the economic potential of this region.

5. By developing infrastructure and modern facilities, to build small towns in selected and feasible areas where no sizable towns presently exist, ... and so forth."

These policy recommendations are contained in the Fifth Year Plan, which was issued in 1976. They have been specified somewhat in the 6th Plan. Much remains to be done before they will have been successfully implemented.

II. The Present Crisis

The dimensions of the current demographic crisis are well known to all of us and I will not recount them here.[4] It is, however, important to recall the results of the 1981 Census[5] which show a population growth rate of 2.6% annually and which give evidence of the massive unregulated migration that threatens to engulf the Terai. It is enough to mention

the results of the 1981 Contraceptive Prevalence Survey which reports that after more than a decade of family planning programs in Nepal only seven percent of eligible couples are contracepting and only 25% of married women know where to get family planning services.[6] And, finally, we all recognize that, after several years of recommendations and reorganizations, there is still no effective focus within the Government of Nepal for the monitoring, evaluation or coordination of programs which are essential to the population effort.

As the Chairman of the Population Policies Coordinating Board said in 1976, it is easy to make policies; it is difficult to make them work.[7]

III. The Task Ahead

Two critical tasks remain from past years. One is that of mobilizing village communities to participate in development projects, whether in agriculture, rural development, health or family planning. The other is that of mobilizing elites, and especially the government bureaucracy. The two problems are intimately related and share some of the same difficulties. The central fact is that structural change threatens established interests, both at the elite and mass level. That is why there is strong opposition to change. And that is why the implementation of development programs is so difficult.[8]

Developmental change in Nepal, as in any traditional society, poses a challenge to cultural systems which regulate resource allocation and which therefore guarantee stability for elites and masses alike. In South Asia, the caste system and the joint family system have long served to protect economic and social relationships that assured the poorest as well as the richest individuals of secure, if fixed, positions within the community. The same systems have also encouraged high rates of reproduction.[9]

A state of social and demographic equilibrium was maintained as long as land remained relatively abundant and high death rates kept population growth in check. But times have changed. Death rates have fallen sharply due to the impact of modern medicine. Birth rates remain high. The population doubles in size now every generation. Land and forest reserves are running out. The stability of the social order is increasingly shaken by the struggle for scarce resources. In this context, if Nepal's cultural as well as economic systems are to survive, they must adapt to changing demographic realities.

Although the caste system was officially 'abolished' in Nepal in 1963, even today membership within a certain caste often may decide the occupation, status, mode of life and economic position of the individual. The system stifles social mobility and individual performance and fosters a fragmentation

of the population into subgroups. All of these factors have demographic implications.[10] As the Government is aware, to counter the hold of the caste system, the society at every level must 'open up' to new talent, reward individual achievement and take measures to stimulate a private sector which values production and progress.[11] The resulting opportunity structure will help to neutralize traditional strategies for group enrichment which rely upon kinship or caste affiliation and high rates of reproduction.

Likewise in the case of the joint family, household heads must be persuaded that investments in large numbers of children will no longer yield as much as investments in a smaller number of well-educated daughters and sons. To strengthen this conviction,communities and districts should take action at the village level to ensure that the joint family begins to assume the full cost of its reproduction instead of passing on much of the burden to the community, to other regions and to future generations.[12]

At the elite level, within the bureaucracy, His Majesty's Government has already embarked upon the implementation of a standardized civil service system that has as its objective the recruitment, training, assignment and promotion of individuals based upon their personal ability and performance without respect to their caste, family or political ties. Since the Government employs (directly or indirectly) over

200,000 persons, these policies are important. The course of Nepalese modernization, at both the elite and the mass levels, must inevitably erode traditional barriers to individual and community achievement. To advance this transition is also to bring about conditions conducive to the lowering of birth rates.

In this respect, I propose for your consideration four specific suggestions to further this process.[13] The suggestions I propose support policies contained in the Government's Sixth Five Year Plan with respect to mass education, community development, cottage industry and family planning/maternal child health. Each recommendation, if implemented, would address aspects of the traditional cultural system, while attacking the root causes of high fertility. The process would, however, leave the joint family intact and strengthen its ability to adjust to the deepening demographic crisis, the growing shortage of land, the search for diversified economic opportunity.

A. Compulsory Education for All Village Children

Making primary education compulsory for all village children, girls as well as boys, regardless of caste and regardless of family income, would be the fastest, most effective means of reversing the resource flow from child to parent which lies at the root of high fertility.[14] Children must be removed from the labor force and at the

same time equipped for more productive adult lives. It may be argued that this will temporarily place a heavy burden upon village families which employ large numbers of children in household and farm labor, but that is precisely the point. Because of the relatively high economic value of children in Nepal,[15] parents seek to produce large numbers in order to ensure the survival of at least two sons. With current mortality levels, this means that the average woman will have at least six births. This strategy is, in the short run, functional for the male household head, but it is disastrous for the community and for the nation as a whole.[16] As long as there was abundant land in the Terai, families and communities could export their excess numbers. But available land is disappearing under an onslaught of migration. Uneducated children and adults will not be able to survive the coming crisis of landlessness and unemployment.[17] A Government policy to enforce compulsory schooling would immediately raise the cost of children and interfere with their immediate economic usefulness. It should therefore have an immediate effect upon birth rates. Moreover, if children were taught basic skills along with the principles of preventive health and sanitation, they would become more productive farmers and more effective parents.[18] With families and communities sharing some of the costs of constructing village schools

and hiring teachers, compulsory education could pay dividends within this decade. This assumes that it could be enforced, which leads us to the second suggestion:

B. Linking Community Development Assistance to Community Performance[19]

All communities should receive government assistance in providing primary education and family planning, but other government assistance (drinking water, roads, electrification, credit, irrigation, etc.) should gradually and systematically take into account community performance in enrolling children in school, recruiting married couples of reproductive age to family planning and increasing overall community involvement in the planning, design and implementation of development projects. In this way, the same standards would apply to all communities as they seek outside resources. Likewise, at the district level, the allocation of resources should recognize performance relative to other districts in education, family planning and community development. Communities and districts which start from lower baselines would not be penalized by this approach. Rather, awards would be made based upon percentage improvement over a set period of time rather than upon absolute levels of achievement. This form of decentralized rural development would be based entirely upon local participation. The incentives for community participation

would be significant and should result in lower birth rates and increased community cooperation. Bright banners and other visible tokens of community achievement would accompany financial awards so as to stimulate community pride and cohesiveness. Traditional forms of cooperation in Nepal (nogar, guthi, dhikur, parma, etc.) would be utilized to further increase local level participation.[20]

The responsibility for allocating resources to the districts would fall to the Ministry of Local Development, with the Population Commission responsible for monitoring community and district level performance. In this way, all villages would have an equal opportunity to share in Nepal's limited development resources.

A key set of such resources involves cottage industry:

C. Female Employment in Off-Farm Cottage Industry

The Sixth Plan calls for significant investments in cottage industry. These should take into account community performance in education, family planning and community participation, as indicated above. For maximum demographic impact, cottage industry development should focus exclusively upon employment of women away from their homes in settings which are not compatible with child rearing. In addition, child labor must be prohibited. At present child labor is heavily utilized in the cottage industries

of Nepal, especially in household weaving and food processing. (If compulsory schooling is enforced this should help to reduce child employment.) Government-assisted cottage industry programs which employ children are clearly pro-natalist. They may help temporarily to increase household income, but that is no deterrent to high fertility. Quite the contrary.[21] In the absence of structural change, modest increases in per capita income will lead to higher birthrates as parents are able to afford greater numbers of children. This is not at all to argue against raising income per se but only to warn that without structural change, it will foster higher birth rates.

Adult female employment in cottage industries located outside the home (off farm) should have an appreciable and timely effect upon age at marriage and fertility.[22] Female education, of course, is another important determinant of age at marriage. In Nepal, where female educational levels are low, and where few women earn incomes of their own away from the family farm, the mean age at marriage is among the lowest in the world.[23] Females employed in groups away from home should find an environment conducive to special literacy and nonformal educational programs. The effect of female education on age at marriage and fertility should be heightened in such settings.[24]

Of course, all of these strategies to reduce the demand for children will be strengthened by effective systems for supplying family planning/maternal child health services:

D. Community-Based Family Planning Services

Given the low levels of contraceptive availability in Nepal, it is likely that the latent demand for family planning is, even now, much higher than is actual use. In urban areas of Nepal, usage currently runs at almost 25% of eligible couples. This rate of use probably derives from higher educational levels and greater individual autonomy as well as from greater availability of contraceptives.[25]

Outside of Nepal's few urban areas, most Nepalese are not within three hours walk of family planning service point.[26] Those few villagers who are served by a medical doctor often complain that he is absent from his village post.[27] Those who are served by an extension worker frequently find the worker out of supplies or unable to provide adequate information concerning contraceptive use and side effects.[28]

The strategy of selecting (predominantly male) family planning extension workers centrally from among the relatively well educated and then sending them to work in

remote villages has its limitations. Workers find village life monotonous and encounter difficulty in communicating with village women. Males are usually recruited for extension work because of problems cited in sending women to work alone in remote areas. (Of course, this set of problems applies not only to family planning workers but also to agricultural extension agents.) Such systems of service delivery through outside extension entail considerable costs, and their effectiveness is sharply curtailed by any of a number of critical factors. The probability of achieving effective coverage is contingent upon a chain of necessary actions, each of which contains its own requirements. If, for example, there are only enough workers to cover half of Nepal's districts, if many of the workers have no supplies, if those with supplies are not adequately trained, and if the remainder cannot effectively deal with village women, then the overall probability of success is very low.[29]

In addition to the problems of selection, training and logistics, there remains the key issue of accountability. Extension agents paid and supervised from Kathmandu or even from the district headquarters are not necessarily responsive to the local community. Only when the village recruits from among its own supervises its own and controls their remuneration, is there adequate incentive for good service. In this regard, the Panchayat Development and Land Tax (PDLT)

authority, suspended in 1979/80, might be reintroduced on a voluntary basis in selected panchayats to test the relative effectiveness of community-based activities financed in large part by the communities themselves.[30] Surveys in Nepal indicate that individuals spend about Rs. 30 per capita per year from their own resources on health services.[31] This is in addition to the estimated Rs. 20 per capita which the government spends annually on public health. There is, therefore, a willingness and an ability in rural Nepal to pay for health care. It should be tapped. Current efforts to provide family planning and health services through such village leaders as ex-servicemen[32] and through such traditional medical practitioners as dhami jhankris[33] are important experiments in this regard. These individuals are respected members of village communities and, although they are males, they can enlist the women of their families in the provision of services and information. A more intensive effort is needed nationwide to recruit women to all levels of planning and service delivery so that the drive toward decentralization of government services can begin to include these key community resources.

At present, the emphasis within the family planning program is upon sterilization services. Of the 7% of Nepalese men and women who are protected by family planning, most have undergone sterilization. Surgical services such as vasectomy and

mini-laparotomy, while highly effective, may attract couples in Nepal who are relatively older and who already have four or more children.[34] The demographic impact of these services may, therefore, be limited. Moreover, sterilization camps depend upon scarce medical personnel and are relatively expensive to organize. Community-based strategies would include referrals for sterilization services when these are available, but would emphasize temporary methods distributed by villagers themselves. Experience in Nepal as well as other countries shows that villagers can be trained to effectively explain and distribute oral contraceptives, condoms and other temporary methods.[35]

Family planning of itself is an effective health intervention, since it contributes to improved birth spacing and therefore to child nutrition and improved maternal health.[36] Coupled with oral rehydration and other maternal/child health services, it should have a measurable impact upon infant and child mortality.[37] After mortality has declined, fertility should fall also, once parents realize that all of their children have a good chance to survive to adulthood. However, there is no reason to believe that fertility declines will <u>outpace</u> mortality declines and that the result will automatically lead to a lower population growth rate.[38] In Nepal, as health programs bring mortality lower, there is every reason to expect higher population growth rates (in excess of 3%) if other

programs to stimulate demand for family planning services along with the supply of services themselves are not effectively managed.

A recent study ranks Nepal 87th out of 94 countries in socio-economic indicators that have been shown to be correlated with receptiveness to family planning and with fertility decline.[39] These socio-economic factors include higher literacy, school enrollment, life expectancy, gross national product, percentage urban population and lower infant mortality. From this we can see the need for proceeding expeditiously on all fronts and especially with respect to the demand side strategies outlined above.

Nepal, with its crude birth rate of 45 per 1,000, faces a most difficult challenge in population planning, but it can learn from the failures and successes of other countries. Nepal can study the various policies and programs of the Indian government which is faced with a population of 688 million growing at the rate of 2.3 percent per year.[40] It can examine China's success in bringing its crude birthrate down from 34 per 1,000 in 1970 to 18 per 1,000 in 1979.[41] It would also be instructive to review the causes of Pakistan's family planning failures[42] as well as the reasons behind Sri Lanka's success in elevating the status of women, delaying age at marriage and reducing fertility.[43] Indonesia's family planning achievements in East Java and Bali (along with its difficulties

elsewhere) offer insights for program managers here.[44] Other countries of the Asian region are of interest, although their levels of economic development and their cultural components differ widely from those of Nepal.[45]

In summary, I would encourage the conference members to consider practical strategies to implement population programs in Nepal and to give careful consideration to programs based upon compulsory education, community incentives, female employment off farm, and community-based family planning services.

References

1. Nepal. 1979. Conference on the implementation of population policies. Population Policies Coordination Board in cooperation with the Ministry of Health and the University of California, Berkeley, FP/MCH Project. August. Kathmandu.

2. Nepal. 1972. Population and development policy in Nepal: a program for research and action. The Center for Economic Development and Administration. Tribhuvan University: Kathmandu.

3. For a more recent compendium of population policy recommendations, consult: UNFPA. 1979. Nepal: report of a mission on needs assessment for population assistance. Report number 21 (October). New York.

4. Cf:
Banister, Judith and Shyam Thapa. 1981. The population dynamics of Nepal. Papers of the East-West Population Institute. No. 78. East-West Center: Honolulu.

Economic and Social Commission for Asia and the Pacific. 1980. Population of Nepal. ESCAP Country Monograph Series No. 6. Bangkok.

The Futures Group. 1980. The Kingdom of Nepal: the effects of population factors on social and economic development. Washington.

The Library of Congress. 1979. Draft environmental report on Nepal. Prepared by the Science and Technology Division. Washington DC.

5. The Rising Nepal. Editorial. February 9, 1982.
For comparative data based on the 1971 Nepal Census, cf. Nepal. 1980. Atlas of economic development. National Council for Science and Technology. His Majesty's Government. Kathmandu. An analysis of the 1961 Census which compares Indian migration into Nepal with Nepalese migration to India is contained in Weiner, Myron. 1971. The political demography of Nepal. Mimeo.

6. Nepal. 1982. A preliminary report of the 1981 Nepal Contraceptive Prevalence Survey. Family Planning and Maternal Child Health Project, Kathmandu.

7. This is not to deny that general policies are necessary, but only to suggest that they are insufficient. Specific strategies driven by political will are required to make

effective use of scarce resources. Cf. Nepal. 1980. National experience in the formulation and implementation of population policy, 1960-1976. United Nations. New York.

As Stycos has pointed out, "national policies with respect to population growth are widespread but lack commitment on the one hand and precision on the other." Stycos, J. Mayone. 1977. Population policy and development. Population and Development Review, 3 (1 & 2).

Demeny suggests that a principal concern of population policy should be "correcting situations in which some of the costs of demographic acts are imposed on parties not responsible for the relevant decision." Cf. Demeny, Paul. 1975. Population policy: the role of national governments. Population and Development Review. 1 (1).

See also, Robinson, Warren C., editor, 1975. Population and development planning. The Population Council. New York. and,
Todaro, Michael P. 1977. Development policy and population growth: a framework for planners. Population and Development Review. 3 (1 & 2).

8. For a discussion of confrontation, conflict and bargaining strategies within the Nepalese political context, see: Scholz, John T. and Leo E. Rose. 1979. Trying to control the policy process: royal strategies in Nepal. Contributions to Asian Studies. Volume 14.

The historical antecedents and relatively recent expansion of the Government of Nepal bureaucracy are treated throughout- Blaikie, Piers, John Cameron and David Seddon, 1980. Nepal in crisis. Oxford University Press. Delhi.

For a more detailed account of some key impediments to project implementation in Nepal, cf. Gould, Floyd J. 1969. Report on the accounting and reporting system of His Majesty's Government of Nepal. USAID. Kathmandu; and, Varley, John W. 1979. A report and recommendations on disbursal and accounting procedures for the Rapti Zone Integrated Rural Development Project. USAID. Kathmandu.

9. Recent studies by Lynn Bennett among the Parbatiya of Nepal are of particular relevance in that they examine the overall status of women within a patrifocal system. See Bennett, Lynn. 1981. The Parbatiya Women of Bakundol. Volume 2, part 7 of field studies carried out under the Status of Women in Nepal. Centre for Economic Development and Administration, Tribhuvan University, Kathmandu. Bennett adopts Schlegal's concept of

the family as a central institution, that is, "one that establishes priorities in the allocation of time, goods and personnel and legitimizes motivation and justification for action." p. 37.

For a treatment of the Hindu Joint family and fertility, see Nandi, S., Bandyopadhyay and Sudhin K. Mukhopadhayay. 1978. Economic determinants of fertility: analysis based upon census data for West Bengal. Demography India, Nos. 1 and 2.

Other studies in South Asia which analyze female status and fertility within the context of patriarchal family systems include: Mahmud, S. and McIntosh, J. P. 1980. Returns to scale to family size: who gains from high fertility? Population Studies 34 (3), November; Cain, Mead, et. al. 1980. Labor market structure, child employment, and reproductive behavior in rural South Asia. Center for Policy Studies, Working Paper No. 56. The Population Council. New York. Cain, Mead, Syeda Rokeya Khanam and Shamsun Nahar. 1979. Class, patriarchy and women's work in Bangladesh. Population and Development Review. 5 (3).

10. There may be instances where dominant castes act directly or indirectly to curtail the reproduction of their less powerful neighbors. Cf. Monica Das Gupta's account of the North Indian village of Rampur, a highly stratified community, where the dominant Jats have come to monopolize production resources, so that the landless can gain little from having many children. Contained in Hawthorn, Geoffrey, editor, 1978. Population and development: high and low fertility in poorer countries. Frank Cass and Company: London.

11. See the statement by Kingsley Davis at the 1976 Conference on the implementation of population policies (What Can Be Done ?). POPCOB, op. cit.

12. As Cassen points out in the language of the economist: The (negative) externalities are considerable: all the effects on the economy of higher compared with lower fertility are part of what each family may impose on others by their reproductive behavior - worsening earnings prospects in the labor market, the influence on savings, environmental impact, contribution to the cost curve of agricultural production. There are also more direct externalities if parents do not pay the full governmental costs of their children's education, housing and so forth - effects essentially on income distribution...Perhaps the greatest welfare problem is that the negative externalities are felt mainly by the next generation: present parents may be enjoying and benefitting from their children, but their children will wish possibly that they had fewer siblings, and

quite probably that they had fewer fellow citizens, competing for jobs and overcrowded amenities.

Cassen, Robert H. 1976. Population and development: a survey. World Development, 4 (10 & 11) pp. 785-830. Pergamon Press. Great Britain.

13. For a more comprehensive treatment of the population sector in Nepal, see UNFPA/Nepal. 1982. Population Issues Summary (March). Kathmandu.

More specific policy recommendations are contained in Tuladhar, J. M., B. B. Gubhaju and John Stoeckel. 1978. Population and family planning in Nepal. Ratna Pustak Bhandar. Kathmandu.

14. Cf. Caldwell, John C. 1978. A theory of fertility: from high plateau to destabilization. Population and Development Review. 4 (4).
_____. 1976. Toward a restatement of demographic transition theory. Population and Development Review. 2 (3 & 4).
as well as, Thadani, Veena N. 1980. Property and progeny: an exploration of intergenerational relations. Center for Policy Studies, Working Papers No. 62, The Population Council. New York.

15. Cf. Nag, Moni, Benjamin White and R. Creighton Peet. 1978. An anthropological approach to the study of the economic value of children in Java and Nepal. Current Anthropology, 19 (2) June.
and compare with Cain, Mead T. 1977. The economic activities of children in a village in Bangladesh. Population and Development Review. 3 (3); and Bulatao, Rodolfo A. 1979. On the nature of the transition in the value of children. Papers of the East-West Population Institute. No. 60-A. Honolulu.

16. As McNicoll has phrased it, "the central problem of population policy is how to bring the private demand for children into line with social demand....to internalize costs of excessive fertility at the community (specifically, the natural village) level and to strengthen social controls of demographic behavior within communities." McNicoll, Geoffrey. 1975. Community-level population policy: an exploration. Population and Development Review. 1 (1).

17. Cf. Mahmud, op. cit. and Das Gupta, op. cit. and also Vlassoff, M. and Carol Vlassoff, 1980. Old Age security and the utility of children in rural India. Population Studies 34 (3). The latter conclude based on a 1975-76 study in Maharashtra that "small family sizes make greater economic sense, unless the

farmer has sufficient land and resources to utilize the labor of many sons." They also found no evidence that poorer families secured more support from their sons. In fact the opposite tendency was apparent. In sum, only half or fewer of the sons in the study sample provided for their aged fathers in three specific situations: meal preparation, care when sick, and purchase of medicines. Landlessness may eventually lead to reduced demand for children in rural Nepal, although, by then, the economic trends may be irreversible.

The general issue of the relationship between land and fertility has been treated (gingerly) by Stokes, Shannon, Wayne Schutjer, Terry McCoy and Charles Wood. 1979. Rural development, land and human fertility. A state of the arts paper prepared for the South-East Consortium on International Development.

See also, Cain, Mead. 1981. Landlessness in India and Bangladesh: a critical review of data sources. Working Paper No. 71, Center for Policy Studies, The Population Council. New York.

Cain speculates that, "in the Bangladesh setting" in the absence of alternative forms of risk insurance, mature sons emerge as an important source of security, and reproductive behavior can be viewed as a form of self-insurance. In the Indian setting, children are largely redundant as sources of risk insurance." Cain, Mead. 1981. Risk and insurance: perspectives on fertility and inequality in rural India and Bangladesh. Working Paper No. 67. Center for Policy Studies. The Population Council. New York.

18. Jamison reviews evidence from studies in Nepal that show that investment in relatively limited amounts of primary and lower secondary education can significantly increase the willingness and ability of farmers to adopt innovative agriculture practices. Cf. Jamison, Dean T. 1980. Notes on human resources and development in Nepal. Annex Table AT.4. The World Bank. Washington.

See also the recent doctoral dissertation by Pudasaini, Som Prasad. 1981. The contribution of education to agricultural productivity, efficiency and development in Nepal. University of Minnesota.

With respect to approaches to population education, specifically, cf. Taylor, Daniel and Hem B. Hamal. 1974. Population education for Nepal. CPC Working Paper No. 2. University of North Carolina. Chapel Hill.

19. For an overall literature review of the relationship between rural development and fertility, cf:
McGreevey, William P. et. al. 1979. The impact of rural development on population growth. Battelle PDP Working Paper No. 8. Research Triangle Institute and South East Consortium for International Development. 1979. Summary report. Rural development programs and their impacts on fertility: state-of-the-art.

Lieberman has questioned the relevance for South Asia of what he terms a 'broad-based' or 'Japanese' model of rural development and fertility transition, and argues against central government interventions which package agricultural technologies and other programs for raising income and increasing employment. He points out that "there are risks...that an integrated strategy will lose its way in the face of organizational problems and realities of the rural social setting. There is no standardized and proven administrative model that can be applied in such programs." (Lieberman, Samuel S. 1980. Rural development and fertility transition in South Asia: the case for a broad-based strategy. Center for Policy Studies. Working Paper No. 55. The Population Council. New York.)

What Lieberman proposes, instead, is a more limited role for the central government concomittant with "the devolution of significant administrative responsibilities and tax and enforcement powers to reorganized local communities." He favors an approach in which public agencies would "confine their attention (and resources) to a limited number of manageable tasks while leaving development plans to be operationalized and executed for the most part through markets and other indigenous institutions and processes." The result would, he thinks, elicit greater community participation and commitment and would lead to stronger forms of interaction which would increase security for individual households and substitute for some of the insurance functions of children. Cf. Lieberman, Samuel S. 1982. Strategic and selective interventions in population and development planning in Nepal. Center for Policy Studies. The Population Council. New York.

The literature on community incentives for population programs is limited. On the broader issue of incentives, cf. UNFPA. 1980. The role of incentives in family planning programs: A report of UNFPA/EWPI technical working group meeting on the role of incentives in family planning programs. East-West Center, Honolulu, Policy Development Studies, No. 4.; and Hedin-Pourghasemi, Marrianne, et. al. n.d. Incentives and Disincentives in Family Planning. Mimeo. AID. Office of Population. Washington.

David, Henry P. 1980. Incentives, fertility behavior and integrated community development. Prepared under Contract Order No. AID/OTR-147-79-90 with the Agency for International Development, Washington.

Khannabha, Choedchai and David Walker. 1980. The experience of the Population and Community Development Association in utilizing reward systems for contraceptive use in Thailand. Mimeo. The Population Council. Regional Office for South and East Asia. Bangkok.

20. Cf. Messerschmidt, Donald A. 1981. Nogar and other traditional forms of cooperation in Nepal: significance for development. Human Organization, 40 (1). See also Messerschmidt's 'Bibliography of people's participation in Nepal (1982),' with particular attention to his synopses of Korten, Frances. F. Stimulating community participation: obstacles and options at agency, community and societal levels. Rural Development Participating Review. 2 (3) Cornell University Rural Development Committee. Ithaca; and

Pradhan, Prachanda P. 1980. Local institutions and people's participation in rural public works in Nepal. Special Series on Rural Local Organization, No. 4, Cornell University, Rural Development Committee, Ithaca. Also recommended is Korten, David C. and Felipe B. Alonso. 1981. Bureaucracy and the poor: closing the gap. McGraw-Hill, Singapore.

21. Cf. McGreevey, op. cit. and also, Lee, Bun Song, and Thomas J. Meeks. 1979. State-of-the-art paper on the relationship between income, wealth and fertility. Research Triangle Institute and South East Consortium for International Development. Of particular interest is their thesis that "countries with very low levels of modernization should not expect economic development per se to lead to reduced fertility. It may do the opposite unless offset by active family planning programs."

22. The work of Ruth Dixon is fundamental in this field. See, for example, her 1978 book, Rural women at work: strategies for development in south Asia. Published for Resources for the Future by the Johns Hopkins University Press. Baltimore.

See also, Shields, Nwanganga. 1977. Female labor force participation and fertility: review of empirical evidence from LDCs. Population and Human Resources Division. The World Bank. Washington, DC.
For one of the rare studies in Nepal containing data on female employment outside the home on fertility-related behavior, see New ERA. 1979. Population education in the organized

sector: a baseline survey for the population education program among industrial workers and women in Mechi, Lumbini, Bheri and Mahakali Zones. Kathmandu.

23. Cf. Durch, Jane S. 1980. Nuptiality patterns in developing countries: implications for fertility. Reports on the World Fertility Survey, 1. Population Reference Bureau. Washington; and Population Reports, 1979. Age at marriage and fertility, Special Topic Monograph. Series M (4). The Johns Hopkins University. Baltimore.
For quantitative and ethnographic studies of the status of women in Nepal, see the AID/Nepal-funded studies on The Status of Women in Nepal, published by the Center for Economic Development and Administration of Tribhuvan University. Kathmandu. Chief among these are the following:

I (1) Acharya, Meena. 1979. Statistical profile of Nepalese women: a critical review.
(2) Bennett, Lynn with assistance from Shilu Singh. 1979. Tradition and change in the legal status of Nepalese women.
(3) Pradhan, Bina. 1979. Institutions concerning women in Nepal.
(4) Shrestha, Indira. 1979. Annotated bibliography on women in Nepal.

II (1) Acharya, Meena. 1981. The Maithili Women of Sirsia.
(2) Molnar, Augusta. 1981. The Kham Magar Women of Thabang.
(3) Rajaure, Drone. 1981. The Tharu Women of Sukhrwar.
(4)
(5) Schuler, Sidney. 1981. The Women of Baragaon.
(6) Pradhan, Bina. 1981. The Newar Women of Pulu.
(7) Bennett, Lynn. 1981. The Parbatiya Women of Bakundol.

See also: Nepal. 1981. Integration of women into the mainstream of national development. Report of a national seminar held in Kathmandu. Women's Services Coordination Committee. Bhrikutimandap.

24. The relationship between female education and fertility is not so straight-forward as once supposed. Cf. Cochrane, Susan Hill. 1979. Fertility and education: what do we really know? Published for the World Bank by the Johns Hopkins University Press. Baltimore. But also consult: Kasarda, John D. 1979. How female education reduces fertility: models and needed research. Mid-American Review of Sociology. 4 (1); Javali, V. P. 1978. Female literacy and fertility. Demography India. 8 (1 & 2);

Vlassoff, Carol. 1978. Educating the female adolescent: possibilities and limitations for social change and population learning in rural India. Demography India. 7 (1 & 2) More recent work to explain the apparent lack of uniformity in the observed relationship between female education and fertility can be found in: Jain, Anrudh K. 1981. Fertility effect of female education: a simple explanation. International Programs. Working Paper No. 13. The Population Council. New York. See also, The Population Council. 1981. Education policies, women's educational attainment and fertility change. Report of a workshop, Bangkok.

25. Preliminary report of the 1981 Nepal Contraceptive Prevalence Survey. Family Planning and Maternal Child Health Project, op. cit. A study now underway in Kathmandu investigates the social and economic determinants of fertility and contraceptive use among urban dwellers. Cf. Goldstein, Melvyn, James Ross and Sidney Schuler, 1981. Fertility and contraceptive use in Kathmandu. Prpposal to the National Institute of Child Health and Human Development of the National Institute of Health. Bethesda.

26. Preliminary report of the 1981 Nepal Contraceptive Prevalence Survey, op. cit.

27. Nepal. 1979. Mid term health review: research and evaluation of health and health services in the mid fifth plan period. Ministry of Health. His Majesty's Government.

28. Nepal. 1981. Evaluation of the FP/MCH Project's panchayat-based health workers. New FRA. Kathmandu.

29. The following (oversimplified) model illustrate this:

$$P = (P_{wa}) \quad (P_s) \quad (P_t) \quad (P_d) \quad (P_c)$$

where P is the probability of success (or the percentage coverage obtainable)

P_{wa} is percentage of areas accessible to workers

P_s is the percentage of workers adequately supplied with contraceptives

P_t is the percentage of workers adequately trained

P_d is the percentage of couples demanding family planning

P_c is percentage of couples who continue after acceptance

If we assume that the Ministry of Health has enough extension workers for only half of Nepal's 4,000 panchayats, then P_{wa} is .5;

If only half of the workers have adequate supplies, then P_s is also .5;

If perhaps 80% of the supplied workers are adequately trained and can give proper instruction to clients, then P_t is .8;

If half of the couples approached by a supplied, trained worker want to contracept, then P_d is .5;

If 70% of those who accept continue use for a set period, then P_c is .7;

The equation would then read:

$$P = \overset{P_{wa}}{(.5)}\ \overset{P_s}{(.5)}\ \overset{P_t}{(.8)}\ \overset{P_d}{(.5)}\ \overset{P_c}{(.7)}$$

$$= .07$$

In other words, the above system would protect about 7% of eligible couples which is the current coverage of the program in Nepal.

Of course, the above post-hoc description does not pretend to provide an adequate causal explanation for current family planning program effectiveness. Moreover, it assumes that the above factors are independent each of the others, whereas several of them may be indirectly linked. However, the model does demonstrate that marked improvement in only one of a series of factors without concomittant improvement in the others produces quite modest results. For example, if numbers of extension workers were increased so as to cover all 4,000 panchayats, without at the same time improving the percentage well supplied and well trained and without increasing demand or continuation rates, the final percentage of couples using family planning would reach only 14%, which doubles the percentage protected but which still falls quite short of levels required for a major demographic effect (using the rule of thumb that about 30% of eligible couples must be protected by family planning before the crude birth rate drops to 30/1000).

30. Jamison, Dean T. 1980. Notes on human resources and development in Nepal. Op. cit.

31. Ibid.

32. Nepal. 1981. Proposal to the National Commission on Population. Ex-Servicemen's Organization, Jawalakhel.

33. Shrestha. Ramesh Man and Mark Lediard. 1981. Faith healers: a force for change. Preliminary report of an action-research project of the Information, Education and Communication Division, Family Planning/Maternal Child Health Project. Kathmandu.
See also: Pillsbury, Barbara L. K. 1979. Peaching the rural poor: indigenous health practitioners are there already. AID Program Evaluation Discussion Paper No. 1. The Studies Division. Office of Evaluation. Bureau for Program and Policy Coordination. U. S. Agency for International Development. Washington.

34. Cf. Nepal. 1981. Characteristics of male and female sterilization acceptors of the Family Planning Association of Nepal: 1976-1980. Family Planning Association of Nepal. The study analyzed 600 client records of sterilization acceptors served by FPAN between 1976 and 1980. Unfortunately, no analysis has been carried out with respect to sterilizations performed by Ministry of Health (FP/MCH and CHIP) programs. This would seem to be a priority area for evaluation and one which would contribute to an understanding of the cost-effectiveness of sterilization services in Nepal.

Studies by Nortman suggest that "without ready access of the population to reversible contraceptive methods that are attractive to birth spacers and tentative birth terminators, the rate of fertility decline is not likely to be satisfactory regardless of the availability, promotion or popularity of sterilization." Nortman, Dorothy L. 1980. Sterilization and the birth rate. Center for Policy Studies. Working Paper No. 60. The Population Council. New York.

For recent evaluations of the family planning and health sectors in Nepal, see: Grant, Robert Y. and F. Curtiss Swezy, 1980. Summary report: evaluation of two AID-financed health and family planning projects in Nepal. Supported by the U.S. Agency for International Development (ADSS) AID/DSPE-C-0053. American Public Health Association. Washington. and, F. Curtiss Swezy. 1980. The Nepal Family Planning Program: a report on an administrative management consultancy. American Public Health Association, Washington.

35. Nepal. n.d. FP/MCH data analysis: final report. His Majesty's Government Ministry of Health. Nepal Family Planning and MCH Project. The Population Council which includes a comparison of the relative impacts of the 'vertical' and 'integrated' FP/MCH programs; an assessment of the effectiveness of the community based experimental family planning program: a study of fertility, mortality and morbidity in selected districts; and an analysis of differentials in demographic processes.

See: Burkhart, Marianne C. 1981. Issues in community-based distribution of contraceptives. Pathpapers No. 8. The Pathfinder Fund. Boston.

36. Cf. Maine, Deborah. 1981. Family planning: its impact on the health of women and children. The Center for Population and Family Health, College of Physicians and Surgeons, Columbia University. New York.

37. Cf. Thapa, Shyam and Robert D. Retherford. 1981. Infant mortality estimates based on the 1976 Nepal Fertility Survey. Working Paper No. 3. East West Population Institute. Honolulu; and
Cochrane, Susan H. 1981. The determinants of fertility and child survival in the Nepal Terai. Prepared for Research Project 671-49, 'Education and rural development in Nepal and Thailand,' Discussion Paper No. 81-34. Population and Human Resources Division. The World Bank. Washington.

38. Preston notes that, "it has become conventional demographic wisdom that the level of mortality in a population has a substantial positive influence on its level of fertility. Evidence in support of this proposed relationship has been flawed, and recent studies of reproductive-age couples suggest that the influence is probably much weaker than previously supposed. The child-bearing of individual couples in developing countries is not highly responsive to child deaths that have occurred within their family. It is possible that there exist powerful extra-familial effects of mortality on fertility. But if so, they operate with a substantial lag and have not yet been verified. Mortality reduction programs do not offer a promising path for lowering rates of population growth." Preston, Samuel H. 1975. Health programs and population growth. Population and Development Review. 1 (2).

39. Mauldin, W. P. and Berelson, B. 1977. Cross cultural review of the effectiveness of family planning programs. International Population Conference, Mexico.

Also, Mauldin, W. Parker. 1977. World population situation: problems and prospects. The Population Council, New York. Printed in Great Britain; and Berelson, Bernard. 1978. Prospects and programs for fertility reduction: what? where? Population and Development Review. 4 (4).

See also the proposal by Gayl Ness, (1981). "Family planning program performance and its determinants: a cross national study of Asian programs," which intends to use 22 countries of Asia (including Nepal) and 21 states of India as the units of analysis.

40. Cf. Visaria, Pravin and Leela. 1981. India's population: second and growing. Population Reference Bureau, 36 (4). Washington; Visaria, Leela. 1980. Indian population trends: a capsule view. INTERCOM, 8 (2); Rao, M.V.S. 1978. The family planning program: achievements and prospects. Demography India, Nos. 1 and 2.; Mitra, Asok. 1977. National population policy in relation to national planning in India. Population and Development Review, 3 (3); and Cassen, Robert. 1975. Welfare and population: notes on rural India since 1960. Population and Development Review 1 (1).

41. Cf. Chen, Pi-chao and Adrienne Kols, 1982. Population and birth planning in the People's Republic of China. Population Reports, Series J, Number 25. The Johns Hopkins University, Baltimore; Goodstadt, Leo. 1978. Official targets, data and policies for China's population growth: an assessment. Population and Development Review, 4 (2); Aird, John S. 1978. Fertility decline and birth control in the People's Republic of China. Population and Development Review, 4 (2); Chu, Leonard L. 1977. Planned birth campaigns in China 1949-1976. Case study No. 5. East West Center, Honolulu; and, China. 1974. China's experience in population control: the elusive model. Prepared for the Committee on Foreign Affairs of the U. S. House of Representatives by the Congressional Research Service Library of Congress. U.S. Government Printing Office. Washington.

42. Robinson, Warren C., Makhdoom A. Shah and Nasra M. Shah. 1981. The family planning program in Pakistan: what went wrong? International Family Planning Perspectives. 7 (3).

43. Langford, C.M. 1981. Fertility change in Sri Lanka since the war: an analysis of the experience of different districts. Population Studies.

44. Hull, Terence H. 1978. Where credit is due: policy implications of the recent rapid fertility decline in Bali. Paper prepared for presentation at PAA meetings 1978, session 25; Heiby, James R., Gayl D. Ness and Barbara L.K. Pillsbury. 1979. AID's role in Indonesian family planning: a case study with general lessons for foreign assistance. AID Program Evaluation Report No. 2. U.S. Agency for International Development, Washington: Suyono, Haryono et. al., 1976. Village family planning: the Indonesian model. Technical report Series. National Family Planning Coordinating Board. Monograph No. 13; and Barten, Jeannette et. al. 1981. Village-based family planning in North Sulawesi. Pathpapers No. 8. The Pathfinder Fund. Boston.

45. For Thailand, cf. National Research Council. 1980. Fertility and mortality changes in Thailand, 1950-1975. Report No. 2. Washington. Also, Samaniego, M.C. and Burintratikul, S. 1978. CBFPS in Thailand: a community-based approach to family planning: project to help practitioners help the rural poor. Case study No. 6. International Council for Educational Development.

For Bangladesh, see Timberlake, Bangladesh. 1982. Bangladesh: the numbers game. Development Forum. DESI/DPI. United Nations. Geneva; Arthur, W. Brian and Geoffrey McNicoll. 1978. An analytical survey of population and development in Bangladesh; and Cain, Mead, op. cit.

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