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**A HEALTH, POPULATION, AND NUTRITION
STRATEGY FOR ASIA**

**Health, Population, Nutrition
Division
Office of Technical Resources
Bureau for Asia**

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Erratum

On page 1 of Part I it is asserted that the Agency's soon-to-be-released Health Policy Paper does not really discriminate among the health interventions it endorses. In fact the paper does explicitly set primary health care as the Agency's top priority.

Preface

The Asia Bureau's Health, Population, and Nutrition (HPN) strategy got its start at the Asia Bureau Health, Population, Nutrition Conference in Manila in late 1978. It has been submitted for review and criticism to each Asian A.I.D. Mission and the following offices in AID/Washington: AA/ASIA, ASIA/DP, ASIA/TR, each geographic office in the Asia Bureau, PPC/PDPR/HR, DAA/DS/HRD, DS/POP, DS/HEA, and DS/N.

The paper is intended as a guide for field action. I recognize that the targets, and the approaches to the realization of those targets, that are discussed in the paper are subject to interpretation and revision in the context of each Asian country in which A.I.D. works. Only the Asian countries themselves can set national development targets, including HPN targets. A.I.D. Missions work within the limits established by host-country targets and priorities. Therefore, the strategy that follows is a statement of objectives and approaches, not rigid guidance on project identification and design. In this respect, the strategy is an effort to build a bridge between the broad generalizations of the Agency's health sector policy paper (soon to be issued by PPC) and the specific activities represented by A.I.D. field projects. The paper has three parts: General Health Goals and

Strategy; The Population Strategy; and Approaches to Overcoming Malnutrition in Asia.

It was our intention to prepare this strategy in a way that proceeded deductively from the establishment of sensible goals to the identification of cost-effective interventions that A.I.D. and host countries could realistically embrace and implement. We will be looking at future documents such as CDSSs, Multi-Year Population Strategies, and, of course, all PIDs to see to what extent they agree with the strategy and, to the extent that they diverge from it, to ascertain why. In other words, the strategy, while quite broad and flexible, is intended to serve as a framework for programming.

The strategy is a dynamic document that will be kept under continual review. As the population strategy has been revised every four or five months to reflect program and demographic changes, so this general strategy should be subject to regular review and revision. A good example is the nutrition strategy which is currently quite general, but which will, over time, take on more precise dimensions.

I would like to thank the staffs of the Asia Bureau Missions for their serious and thoughtful responses to our request for

comments on earlier drafts of this strategy. All the responding Missions will see reflections of their comments on earlier drafts in the text that follows. Thanks are also due Abby Bloom, PPC/PDPR/HR and Anne Tinker, DS/HEA for their helpful collaboration during the drafting of this final version of the strategy.



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Washington
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PART I -- GENERAL HEALTH GOALS AND STRATEGY

INTRODUCTION AND RATIONALE

This Asia Bureau Health, Population, Nutrition Strategy statement was prepared in order to give substance to several different health goals that have been enunciated in recent years. In the 1978 amendment to the Foreign Assistance Act Congress called on A.I.D. to give highest priority in its health activities to lowering infant and child mortality, reducing fertility, and increasing life expectancy. Then, in 1979 the United States was a cosignatory, along with most of the other nations of the world, to the Declaration of Alma Ata (USSR) which calls for "health for all by the Year 2000" -- principally through the mechanism of primary health care systems. Finally, in 1978 the United States endorsed the concept of a global Decade of Water and Sanitation, thereby committing this country to helping provide safe water to large populations that are without it.

Because these priorities are in competition for very scarce resources and because the Agency's soon-to-be-released Health Policy Paper (prepared by PPC with help from DS/HEA) does not really discriminate among the various health interventions it endorses, the Asia Bureau, by means of this paper, attempts to provide suggestions to its field Missions on priorities in the HPN "sector". The paper seeks to answer the following questions:

- 1) Given the overall goals established by the 1978 FAA, what are the most realistic quantitative targets for the Asia Bureau?
- 2) What does "health for all by the Year 2000" really mean in program and project terms?
- 3) What are the most cost-effective approaches toward realization of the targets?

The strategy that follows draws heavily on reactions the A.I.D. Missions in Asia provided to earlier drafts. Furthermore, it recognizes that no matter how precise and detailed Washington-based analysis is, it cannot substitute for the perceptions and prescriptions that are developed in the field. In that sense, this strategy represents a middle ground between Congressionally-mandated emphases in the health/population/nutrition field and Mission programming in collaboration with host-country government officials.

REGIONAL GOALS

The quantitative goals-- or targets-- that follow represent the Asia Bureau's best guess at what the region as a whole might accomplish by the year 2000 were all the countries in which AID has programs committed to the same goals, and, recognizing that some countries are blessed with conditions that will permit them to exceed the goals while others will find themselves unable to

accomplish them. The important point is that these goals represent aspirations, not standards against which actual performance should or will be judged. However, it is reasonable to speculate that, were all the nine countries in which AID has bilateral programs to meet to discuss HPN goals for the region, they might well endorse the quantitative expressions of those goals that follow:

BY THE YEAR 2000

- reduce infant (0-1 year) mortality to less than 50 per thousand live births
- reduce young child (1-5 years) mortality to less than 12 per thousand
- reduce the crude birth rate to less than 25 per thousand
- provide basic care to as large a proportion of the population as possible, perhaps to 90 percent.

(Current estimates of IMR, CBR, and LE are given in Table 1).

Many readers will recognize that these goals are close to those expressed in the last draft of this paper (July 31, 1979). The important differences are as follows: a) infant and child mortality are separated from one another, and b) we are speaking now of basic care rather than of access to basic health services.

These differences are important. Infant and child mortality are, as many Missions pointed out, quite different and one should avoid establishing a single target for both--hence the separate expressions above. More important, a number of Missions called the Bureau to task for establishing a goal of access to basic health services on the same plane as the health status goals. USAID/India argued, however, that

a health system has other jobs than just reducing mortality. In the minds of the people, its most important job is to reduce fear, pain, and suffering for people who are sick. This relief may or may not contribute to mortality reduction but is important as it represents a basic human need. Since this need should be met, USAID/India recommends that access to basic sickness care should be a goal of USAID-assisted programs, even if clear relationships to mortality cannot be demonstrated. (JWLeSar 10/12/79)

Thus, we have changed the goal to "basic care," rather than basic health services, maintaining the hope, nonetheless, that basic care can in most cases be transformed into basic health services over the course of the next 20 years. The important point is that we continue to regard some access to symptomatic relief as a basic human right and, as such, on the same plane as mortality and fertility reduction in terms of regional HPN goals. (There is more on the issue of what "basic health services" actually means in the pages that follow.)

The concept "basic care" implies a system that is capable of delivering that care. There must be a person, whether a physician, a paramedic, an auxiliary worker, or a traditional healer, available in or near the village, who is capable of responding to the health problem that is presented. And that brings us to the central core of the Asia Bureau's HPN strategy: to reduce the birth and death rates among the most vulnerable groups in the context of a system of primary health care.

Earlier drafts of the population part of the strategy received either positive comment or no comment from the majority of Missions. Only Manila and Dacca offered substantive alterations. These have been incorporated in the revised population strategy that is Part II of this paper. The following discussion regrettably deals with nutrition only superficially. A more detailed discussion can be found in Harold Rice's discussion paper on nutrition in Part III.

TRANSLATING GOALS INTO ACTIVITIES

The causes of infant and child mortality vary from country to country and, as the Indonesia Mission reminded us, they vary considerably within countries. Therefore, country strategies as they are expressed in CDSSs and elsewhere, should begin with careful analysis of health data. In many cases, these data do not exist and need to be collected. Good data and good analysis of those

6
TABLE 1
INFANT MORTALITY RATES, CRUDE BIRTH RATES, AND
LIFE EXPECTANCY FOR SELECTED ASIAN COUNTRIES

A. SOUTH ASIA	Infant Mortality Rates (1975)	Crude Birthrates (1978)	Life Expectancy(1975)
Bangladesh	140	47	45
India	130	34	49
Nepal	300	47	44
Pakistan	145	44	48
Sri Lanka	51	26	68
Region Average:	155	38	51
Region Median :	135	40	47
B. <u>SOUTHEAST ASIA</u>			
Burma	48	39	50
Indonesia	125	34	48
Philippines	72	35	58
Thailand	68	30	58
Region Average:	78	34	53
Region Median :	70	34	54
C. <u>OTHER COUNTRIES</u>			
Korea	38	22	68
Malaysia	33	31	59
Singapore	12	17	70
Taiwan	14	24	69
Region Average:	24	23	66
Region Median :	23	23	68

NOTE: Group A & B countries are AID-assisted countries (as of mid 1979), while Group C countries are used for comparative purposes.

data ought to reveal at a minimum the prevalence of disease by region, the primary causes of mortality and morbidity, the existence (or lack thereof) of health services of various kinds, and the demand for health services among the population (including where people currently receive health care and how much they are paying and willing to pay for various forms of care). An important outcome of such analysis could be an improved understanding of the direct and indirect determinants of mortality (and fertility) from which host countries, AID, and other donors could learn more about the comparative effectiveness of investments in the health sector (versus investments in income generation, for example) in reducing mortality and fertility. AID/W has resources to assist host countries and Missions do more in the area of demographic and epidemiologic measurement and analysis.

However, recognizing that we cannot wait in all cases for better and better data, certain generalizations probably stand up in most of our countries:

1. The major killer of infants and young children in most of Asia is diarrheal disease. It is caused by poor sanitation, ingestion of bacteria and virus ridden food and water, and by low levels of resistance to infection caused by poor nutrition.

2. The major killer of women of childbearing age-- the second most vulnerable group-- is pregnancy itself.

3. Malaria, while not a major killer, is so widespread as to represent an important inhibition to productivity.

If our primary goal is to reduce the mortality of the most vulnerable group, the next question is: What is the best way of doing so within the resource constraints we and host countries face? The remainder of this paper represents a series of suggestions for establishing country priorities, using cost-effectiveness as the basis for selecting appropriate interventions. (See Table 2 for some suggestive data on this issue.)

It has been clearly established that categorical or single-purpose health programs can be highly effective. The Malaria Eradication Program of the 1960s, while not succeeding in eradicating the disease, reduced its incidence dramatically in many parts of the world. The Smallpox Eradication Program has succeeded completely. Family planning programs in several countries have succeeded in bringing down birth rates. However, the experience with malaria in Asia (i.e. dramatic resurgence in recent years) reminds us that when the special inputs are withdrawn, the problem is liable to recur. Furthermore, inasmuch as categorical programs usually depend upon workers trained for a single purpose, such programs raise serious questions about both cost and efficiency. Nonetheless, it is clear that for certain kinds of diseases, categorical campaigns work.

TABLE 2

ESTIMATED ANNUAL COSTS OF DIFFERENT SYSTEMS OF HEALTH INTERVENTION*

Intervention	Per Capita Cost (\$)	Cost per Infant and/or Child Death Averted**(\$)
Basic primary health care***		
Range	0.40-7.50	144-20,000(I)
Median	2.00	700
Mosquito control for malaria	2.00	600(I)
Onchocerciasis control program	0.90	few infant and child deaths
Mollusk control for shistosomiasis	3.70	few infant and child deaths
Community water supply and sanitation	30-54	(3600-1300(I,C))
Nutrition supplementation (Narangwhal)	1.75	213(I) 3000(C)
Selective Primary Health Care****	0.25	200-250(I,C)

*Source: Julia A. Walsh and Kenneth S. Warren, "Selective Primary Health Care, An Interim Strategy for Disease Control in Developing Countries," The New England Journal of Medicine, Vol. 301, No. 18 (Nov. 1, 1979), p. 973.

** C=Child: I= Infant

*** Delivered by village health workers

****In this case, delivered by mobile units

On the other hand, in dealing with such endemic diseases as diarrhea with its multiple causes, the basic approach must be systematic and multidisciplinary. This implies the need to establish a system of primary care at the village level in order to institutionalize the delivery of health services. However, "health for all by the year 2000"-- the battle cry of Alma Ata-- is almost certainly beyond the means of either donors or developing countries, including most of those in Asia.

Indeed, The Asia Bureau believes that the single most important issue facing the primary health care movement is the financial one: Who pays for primary care? Clearly LDC governments, even those which allocate significant proportions of their budgets to health, are in no position (and will be in no position in the near future) to engage in massive expansions of primary care to rural areas. Neither, unfortunately, can the donors pay the full cost. Obviously if the "health for all" goal is to be even distantly approached over the next two decades, most of the cost will have to be borne by the recipients of these services-- the rural poor. How to internalize the costs of primary care at the village level is the huge unanswered question of the Alma Ata conference. As such, it represents a major challenge to each Mission and to each primary health project we consider.

Because of the enormous cost implications of comprehensive primary care, the Asia Bureau endorses the concept of selective primary care: supporting the development of village-based services which emphasize high-quality care for those at the greatest risk of death (infants, young children, and women of reproductive age). The emphasis on quality underscores the importance of limiting the number of services to the few of highest priority that sub-professional village-level workers can effectively deliver. Over time it may prove possible to expand from a narrow base of relatively high quality care. But in the first instance it appears from experience to be especially important to establish credibility by demonstrating the system's ability to deal effectively with the most prevalent death-causing diseases.

Having identified the primary target and the most appropriate delivery vehicle, the final step is to identify the most appropriate set of health interventions. Here the choices are several. We will use the example of diarrhea to illustrate the three basic choices:

- attack the primary cause, infection (preventive)
- attack the secondary cause, malnutrition (preventive)
- attack the most dangerous symptoms, dehydration (secondary preventive)

Primary preventive approaches are either relatively costly, long run in implementation and impact, or both. The solution to

the problem of diarrhea-causing infection is control of bacteria and diarrheal viruses. At a minimum such an approach requires the provision of safe water, the proper disposal of human waste, instruction in proper food handling and preparation, and sanitary education-- the familiar trio of water supply, sanitation, and health education. Water supply systems are relatively very costly to construct if they are to be effective in preventing infection. Indeed, only the most costly form of water supply system, one that delivers safe water in the household, has been clearly demonstrated to improve community health status. Simpler systems such as village standpipes, the form of water supply system that donors and poor countries can most easily afford, have not been demonstrated to improve health significantly. It is highly unlikely that A.I.D. and other donors will have the resources any time soon that would permit construction of water supply systems that would bring about statistically significant improvements in infant and child mortality rates.* Furthermore, even if we were able to afford widespread water supply systems, we would still have to tackle the related problems of waste disposal and hygiene or health education. It has been quite clearly shown that improved water supply will improve health only if accompanied by measures to assure that the water, once delivered, is not contaminated. The worldwide record in sanitation and health education is relatively poor.

*This is not to say that there is no justification for water projects. Indeed, there may be excellent reasons for undertaking water projects that have nothing to do with health (e.g. women's status, the issue of access to water). Our point is simply that in most of the Asian countries, water supply projects do not appear to be a cost-effective approach to the achievement of health goals.

Malnutrition, the major secondary cause of deaths whose primary cause is diarrhea, is extraordinarily difficult to attack and, in any case, is not amenable to short-term solutions. The causes of malnutrition are related to food availability, food preparation, and within-family food distribution. Once again, neither AID's nor host countries' records are very good in the nutrition area. In some countries nutritional problems stem from the simple scarcity of nutritious food. In Bangladesh and in certain areas of South Asia, the first approach to malnutrition must be to increase food consumption. Nutrition planning is another approach that has been tried. This involves studying the direct and indirect determinants of malnutrition and trying to identify a package of public policy interventions-- both direct and indirect-- to improve nutritional status. Finally, one can undertake programs of nutrition surveillance (i.e. physically measuring children to discern nutritional status) with or without programs of targeted feeding. We return to this third option below.

In the case of diarrhea, the secondary prevention approach to care involves early case detection and oral rehydration. Given the resource constraints donors and LDCs face, this secondary prevention approach appears to be the most cost-effective, especially in the

context of a system of primary care. Village workers with a short period of high-quality training can be effective in identifying early symptoms of diarrhea and, in more advanced cases, both providing oral rehydration solution and instructing families in its preparation.

AN ILLUSTRATIVE PRIMARY HEALTH CARE "PACKAGE"

The foregoing discussion provides the rationale for the various measures which the Asia Bureau has identified for inclusion in a system of selective primary health care. Each Mission, working in close collaboration with host-country professionals, should view this package in the specific context of its country situation. The list includes:

1. Early case detection of diarrhea and oral rehydration
2. inoculation of women of childbearing age with tetanus toxoid to prevent neonatal tetanus
3. family planning services
4. encouragement of breast feeding and nutrition surveillance
5. immunization for measles and DPT (diphtheria - tetanus - pertussis)
6. malaria treatment (chloroquine for fever) in the context of primary care, source reduction, and spraying for control.

There are some important qualifications to this basic package that immediately suggest themselves. For example, where the cold chain is inadequate, measles vaccination may not be possible. Water and sanitation projects may be defensible where host country resources are substantial; where commitment is high; where significant amounts of infrastructure are already in place so that marginal additional investments will permit widespread coverage; and, perhaps most important, where village social structure permits true cooperation in the maintenance of the system and in carrying out necessary sanitation measures. In some countries targeted child feeding programs have been shown to work and may be expanded.

The most important issue is the creation of the primary care structure. Once it is in place and functioning effectively, many other things become possible such as the seasonal decontamination of existing water supply by village volunteers or paid workers, nutrition and health education at the village level, community organization for the construction and maintenance of piped water supply, and much, much more.

PART II -- POPULATION STRATEGY

POPULATION STRATEGY FOR ASIA

ASIA/TR/HPN: 1/3/80

A POPULATION STRATEGY FOR
THE ASIA BUREAU

BY

Steven W. Sinding

In the 1978 Foreign Assistance Act Congress identified three broad goals within the health/population/nutrition "cluster" to which it directs AID's special attention: decreasing infant mortality, increasing life expectancy, and lowering crude birth rates. The purpose of this paper is to suggest a strategy for dealing with the last of these difficult problem areas - lowering the crude birth rate - in the Asia region.

The analysis and proposed course of action which follow are drawn largely from two recent studies: Bernard Berelson's "Programs and Prospects for Fertility Reduction: What? Where?"^{1/} and Steven Sinding's "Study of Family Planning Program Effectiveness: Summary."^{2/}

The two papers attempt to categorize the current demographic status of many of the countries of the Third World and to propose program and policy approaches appropriate to the demographic circumstances of specific countries. This paper limits itself to the nine countries in which the Asia Bureau has bilateral program activities

^{1/} In Population and Development Review, Jan. 1979

^{2/} AID/PPC Staff Paper, Dec. 1978

underway or in the planning stages: Nepal, Bangladesh, India, Pakistan, Sri Lanka, Burma, Thailand, Indonesia, and the Philippines. It does not include the South Pacific or Korea, nor does it concern itself with countries in which bilateral population programs are unlikely to occur in the short run (e.g. Vietnam, China, Cambodia, Laos).

From a demographic standpoint the Thailand-Burma border represents the "great divide" in Asia. To the east of this border fertility is declining or apt to decline soon. To the west the demographic outlook is grim save in Sri Lanka. According to Berelson, both Thailand and the Philippines are likely to achieve a crude birth rate of 20/1000 by the year 2000. Indonesia has a good shot at it. To the west of the Thailand-Burma border, only Sri Lanka is likely to achieve a CBR of 20 by 2000; India has a shot at it; and Bangladesh, Pakistan, Burma and Nepal are unlikely to succeed. The nine countries of which we are speaking represent around a quarter of the world's population. Those countries which Berelson views as "likely" to achieve a CBR of 20 by 2000 (the Philippines, Thailand, and Sri Lanka) in 1979 had a combined population of just over 100 million, or around 10 percent of the total population of the nine countries. India and Indonesia, the two "possibles" in Berelson's analysis, had 800 million people and accounted for over 70 percent of the nine-country total -- and nearly 20 percent of the world total. The countries

which are deemed unlikely to achieve a CBR of 20 by 2000-- Burma, Pakistan, Bangladesh, and Nepal-- had 214 million people and represented nearly 20 percent of the regional total and almost five percent of the world total.

Berelson's selection of a crude birth rate of 20/1000 seems reasonable as a generalized long-range target for the Asia Bureau.* Countries which achieve a CBR of 20 are likely to have population growth rates at or near one percent per year. In general, they will have had enough experience with fertility control programs by the time they reach a CBR of 20 so that they can sustain these programs without external assistance. As a general rule of thumb, we will adopt a CBR of 20 as a target for our assistance programs in Asia. Once a country has reached that level, outside donor inputs will be carefully reviewed to determine whether or not further support is required.

While it may be useful, when dealing with a large number of countries, to classify them according to broad groups as Berelson did in his paper, it is less useful to deal with such broad generalizations when attempting to develop a strategy for working with them. On the other hand, it would be foolish for us to attempt the sort of detailed analysis that a Multi-Year Population Strategy paper (MYPS) contains. That sort of highly focused and precise analysis can

*Although not necessarily by the year 2000. For that year, as the Asia Bureau HPN Assistance Strategy suggests, a CBR of 25/1000 seems more realistic.

only be carried out at the country mission level. Therefore, in this paper the effort is made to work at a middle level of generalization: more specific than the broad generalizations of the Berelson analysis but much more general than the analysis of a MYPS. Hence, within each of the broad groups of countries identified earlier--those likely to achieve CBR of 20 by 2000, those where it is possible, and those where it is unlikely-- there is significant variation.

The strategic approach one might advocate for the Philippines is quite different, as we shall see, from the approach one might take for Thailand. Similarly, India and Indonesia, while in the same group, are in very different circumstances with respect to program development and level of effort. The general guiding principle of this strategy proposal is that levels of host country and external resources required to achieve the overall target of CBR=25 by the year 2000 should be commensurate with the three basic determinants of family planning program effectiveness discussed in the Sinding paper: political commitment, administrative capability, and the socio-economic and cultural environment that conditions motivation to control family size. Each of these major sets of "determinants" is discussed with respect to each of the country analyses that follow.

Before turning to these individual country program analyses, it is necessary to say a few final words by way of introduction. Some

reviewers of an earlier draft of this paper have suggested that the proposal for a patient approach with modest funding levels in the "unlikely" countries is inappropriate inasmuch as these countries represent a significant proportion of Asia's "population problem." These reviewers have suggested the alternative of pursuing a strategy of stronger, more sustained U.S. leadership and program support because 1) it might work, and 2) even if it doesn't we are likely to learn by doing.

In response, it should be pointed out that AID pursued such a course in Pakistan from 1972 to 1976 and has been supporting a large-scale effort in Bangladesh since 1975. We have learned that no amount of donor effort can overcome basic socio-economic and cultural inhibitions to the practice of family planning and host country deficiencies with respect to political commitment and administrative capability.

Furthermore, we have learned from the Pakistan case that the costs of large-scale failure are very high in terms of staff morale and future host-country commitment. Conversely, the Indonesian program developed on the basis of small-scale trial and error and the replication of successes: an approach that seems eminently sensible for countries in which the prospect of short-term major fertility decline is not good.

Finally we must as a bureau make some attempt to evaluate the prospects of achieving a CBR of 25/1000 by the year 2000 for the eight countries as a group. Each country is discussed below in some detail.

However, for the region as a whole our most optimistic estimate is that by the year 2000 the crude birth rate will have declined to around 22/1000. This assumes that India will have brought its CBR from 34 in 1978-79 to 22 by 2000; that Bangladesh will have knocked 12 points off its 47/1000 CBR while Pakistan's CBR goes from 44/1000 to 34/1000; that Korea, Sri Lanka, and Thailand will all be below 20/1000, that Indonesia will have brought its CBR down from 34/1000 to 20/1000, and that the Philippines will have dropped from 35/1000 to 23/1000.

A more realistic (conservative?) estimate and the one selected for this strategy, is a CBR of 25 for the nine countries by 2000. The weighted average population growth rate under the optimistic assumption would be around 1.2 percent. Under the more conservative assumption, it would be around 1.4 or 1.5 percent. All these projections/quasi-predictions exclude consideration of Burma: the great (32.9 million population) unknown in terms of future demographic policies and programs.

What are the cost implications of these targets and the individual country program suggestions which follow? We would not begin to attempt to speculate about the total costs for host countries and all donors combined. For AID, the cost implications of the proposed country strategies can be characterized as:

1. heavy expenditures throughout the period in Indonesia, India and, perhaps, the Philippines.

2. declining expenditures as programs become more and more institutionalized and host country commitments of funds increase in Thailand and Sri Lanka.*

3. increasing expenditures as successful innovations are discovered and full-scale program implementation occurs in Bangladesh, Pakistan, and Nepal and as initial activities get underway, perhaps, in Burma.

It would be foolhardy to attempt to calculate actual dollar costs. These can be estimated only on the basis of aggregated country AID missions estimates, based on detailed planning of the sort which takes place as part of a MYPS.

A. The "Likelies"

1. Thailand-- Recent data suggest that Thailand has one of the most successful fertility control programs in the developing world. The crude birth rate is estimated to be at or below 30/1000-- and declining rapidly. Prevalence of contraceptive use among women 15-44 is estimated to be somewhere around 50 percent. Recent analyses by Knodel indicate that the family planning program accounts for a significant proportion of the observed decline fertility. There is every reason to believe that this highly successful program will achieve a CBR of 20 before the end of the century. The Thai program is noteworthy for the fact that family planning is fully integrated

*Because there is no bilateral population assistance in Sri Lanka, this refers to AID funds from any source.

with the delivery of health services and is seen as one of several maternal and child health measures.

A.I.D. support has covered a wide range of activities including contraceptive and other commodity assistance, sterilization, training, research, IEC, and budgetary support.

Given the enormous momentum of the Thai program, it is important for external donors to continue their support up to the point that responsibility for the program budget can be entirely assumed by the Government (RTG). RTG ability to assume responsibility for program costs is expected to increase gradually. Hence, donor phase-out should also be gradual. For A.I.D.'s part, we are committed to support the program through 1981 at a level of around \$2.5 million per year. After 1981 the level of support will depend on Thai Government requirements, other donor plans, and AID's assessment of RTG requirements. The A.I.D. strategy will be to support the provision of family planning services, especially voluntary sterilization, and to support the continuing move to fully integrate health and family planning service delivery in Thailand. We will also support RTG initiatives to incorporate demographic objectives into development activities in other sectors such as education and agriculture.

2. The Philippines-- Berelson identifies the Philippines as a country likely to achieve a CBR of 20/1000 by 2000, an optimism which has been borne out by recent evidence of significant fertility

decline. Yet, unlike Thailand, the Philippines has failed to develop a truly effective family planning service delivery system or to implement an effective fertility control program.

The crude birth rate is in the low 30's and the population growth rate is around 2.4 percent per year. The prevalence of contraceptive use is around 40 percent of women 15-44, but some 40 percent of that rate is accounted for by "less effective" methods (rhythm, abstinence, withdrawal-- and combinations). In recent years there has actually been a decline in the proportion of women using such highly effective methods as the pill and IUD. Sterilization rates are fairly low but show an encouraging upward trend.

Optimism about the demographic prospects in the Philippines is based on the relatively favored socio-economic circumstances of the country. Those factors which are most closely associated with declining fertility show up quite favorably in the Philippines, especially female primary education rates, literacy, income per capita, and infant and child mortality. On the other hand, the nonsupportive position of the Roman Catholic Church vis-a-vis family planning services has caused the Government to move with considerable caution in the provision of those services.

A study of contraceptive behavior in the early seventies revealed a very strong relationship between a couple's proximity to a

source of family planning services and their actual practice of family planning. Accordingly, in 1976 the GOP and the A.I.D. Mission agreed on a strategy of "contraceptive outreach." The Outreach program is now in its third year of field-level implementation. There are some indications that it is succeeding in increasing access to and practice of family planning. As the 1979 Philippines Mission's MYPS says, in the short run the A.I.D. strategy will be to continue to support the Outreach scheme in order to attempt to assure the availability of family planning services at the barangay level and to encourage private sector contraceptive distribution and sales activities. In a country which is as relatively advanced in socio-economic terms as the Philippines, there is every reason to believe that lack of availability of services is a major constraint on fertility decline. However, it is not the only constraint and A.I.D. will continue to support research into the determinants of fertility decline and the factors which explain differential fertility in the Philippines. Finally, A.I.D. will support private sector organizations which are actively engaged in fertility control program activities.

There are few countries in which the truly effective administration of family planning program activities would result in more rapid fertility decline than in the Philippines. Therefore, the centerpiece of any strategy must be the development of plans to assure the availability of fertility control services to the entire population of couples of reproductive age.

3. Sri Lanka-- Whereas Thailand represents a case of family planning program "success" and the Philippines is a case of great family planning program potential, Sri Lanka appears to be a country in which fertility decline has occurred despite the relative absence of a national fertility control program, although contraceptives have been widely available for some time. The crude birth rate is already under 30/1000 and the population growth rate is somewhere around 1.5-1.7 percent per year. Moreover, the decline in the population growth rate has been quite rapid, dropping from 2.5 percent per year in 1965 to 1.5 percent in 1975. Yet this decline has occurred in the absence of any real national commitment to fertility decline. Indeed, many critics of the family planning approach to fertility control have pointed to Sri Lanka as an example of how equity-based development policy can bring about relatively rapid declines in population growth.

A.I.D. has only recently reopened a full-fledged mission in Sri Lanka and bilateral program activity is still at a relatively low level. Hence, it is not entirely clear just now what the nature of population assistance to Sri Lanka ought to be. At the moment A.I.D. is providing population assistance to Sri Lanka only through centrally funded intermediaries such as the International Planned Parenthood Federation, Family Planning International Assistance, and the Association for Voluntary Sterilization. It may well be

that no bilateral program activity is either necessary or desirable at this time. However, the Mission will have to make a determination concerning the desirability of providing bilateral population program support after it has completed an evaluation of centrally funded activities and an assessment of the demographic situation in Sri Lanka. This review is planned in FY 1980 and will form the basis for future decisions. For the moment, suffice it to say that Sri Lanka appears to have its demographic situation under sufficiently firm control as not to require substantial amounts of additional assistance.

B. The "Possibles"

1. Indonesia-- Perhaps no country has made a more impressive showing in family planning program effectiveness than Indonesia. This very poor country, in which the "development" indicators are generally unfavorable in terms of fertility decline, has demonstrated that family planning programs can overcome substantial socio-economic and cultural obstacles if political commitment and administrative capability are sufficiently strong. The Java-Bali program has been associated with a substantial decline in fertility over the past five years. The crude birth rate has dropped from over 40/1000 in the early 1970's to the mid to low 30's in Java and Bali today. Prevalence of contraceptive use ranges from 25 to 45 percent of married women of reproductive age on Java and Bali,

depending on the province. The mean for the two islands is at least 35 percent today, and could be as high as 40 percent. These impressive results have been brought about as the result of sustained high-level commitment to the family planning program and the translation of that commitment into outstanding administrative performance and powerful peer pressure at the local level.

A.I.D.'s role in the Indonesia family planning story has been important. The Agency has provided strong financial and intellectual support to the program from its outset. Much of what has come to be effective program activity began as small-scale research and development with "risk capital" supplied by A.I.D.* The Java-Bali program which covers some 70 percent of the total population, has now been institutionalized. The so-called Outer Islands program has been underway only since 1976.

A.I.D. strategy calls for continued financial support to the Java-Bali program and continuing financial and intellectual support to the expansion of activities in the Outer Islands. However, there is considerable debate regarding Indonesia's capacity to achieve and sustain an overall CBR of 20/1000 by 2000. While the gains to date have been impressive, it is arguable that these gains

*See the 1979 evaluation of A.I.D.'s role in the Indonesian population/family planning program by James Heiby, Gayl Ness, and Barbara Pillsbury.

cannot be extended to the 20/1000 threshold without substantial improvements in the overall standard of living. Whatever the merits of this argument might be, it is clear that Indonesia is still several years away from even approaching the target level of fertility and that sustained donor support to the program will be required.

Therefore, it is clear that A.I.D. will need to remain involved in the provision of population assistance for some time to come. The bulk of this assistance will be in contraceptive commodities and other sources of support to the family planning program. However, it is also important to consider the possibility that family planning program activity will not by itself bring about fertility declines of the sort required to achieve a CBR of 20/1000 by the year 2000. Therefore, A.I.D. will provide significant support to research efforts aimed at discovering additional policy initiatives which may contribute substantially to achieving the CBR=20/1000 goal by the year 2000. The Indonesian government has shown great ingenuity in identifying and supporting innovations in the fertility control field. A.I.D. must be prepared to support the continuation of the search for innovations for a considerable time to come, particularly in the Outer Islands where the prescriptions that succeeded in Java-Bali may be inappropriate and where new and different approaches may be required. It is not the place of this very general paper to suggest what those approaches might be. However, the Mission

is currently supporting the investigation of alternative approaches in much the same manner that it supported the search for successful innovations in the Java-Bali program in earlier years.

2. India-- India's vastness makes it very difficult either to characterize the country or to prescribe strategies for her development. While the crude birth rate is in the mid-30's, the range between the highest state and the lowest is enormous. The CBR in Bihar and Rajasthan is well over 40, while in Kerala and Madras it is under 30. Clearly the strategic approach which one takes in the former states will be different from that which one takes in the latter.

However, it seems fairly clear that a couple of major policy initiatives are required nationwide in India. The first is to broaden the range of contraceptive services available to the general population. Up to this point the Indian family welfare program has been nearly exclusively a sterilization program. There has been a much less vigorous effort to provide condoms through a commercial distribution system (Nirodh). The range of methods must be broadened to permit the provision of services to couples who wish to space births without necessarily ending their child-bearing career. Second, India must take measures to overcome the program malaise which has lingered since the excesses of the Emergency. The central Government must give higher priority to family planning and must provide greater

support to those who advocate fertility control within India.

The Janata government reinstated a national family planning effort (called "family welfare") and enlisted the support of international donors in this effort. Most noteworthy about the approach being taken today is the desire to limit donor efforts to specific geographical subunits of the country. Hence, the World Bank is being asked to concentrate its efforts in Uttar Pradesh and Andhra Pradesh; the UNFPA is being assigned responsibility for supporting program activities in Rajasthan and the Bihar; and other donors have been given the responsibility of providing support to programs in other states (e.g. DANIDA in Tamil Nadu and Madhya Pradesh, Britain in Orissa).

When A.I.D. becomes involved in bilateral population program activities in India in 1980 our support will be limited to the states of Maharashtra, Gujarat, Punjab, Haryana, and Himachal Pradesh. Moreover, the Indian Government has apparently determined that its family planning program activity will be fully integrated with the provision of health services. For this reason, A.I.D. program support will not be welcomed except to the extent it is incorporated in a broader health context.

The Asia Bureau finds both emphases congenial and is fully prepared to incorporate them in our own strategy. We believe that the heterogeneity of India and its sheer size make geographical limitation of our assistance sensible. Likewise, if for no other reason, given

the political associations of the family planning program during the Emergency, it seems sensible to maintain a strong health emphasis in the renewed program. However, we will seek to persuade the Government to make a full range of contraceptive services available and to provide financial support to this effort. At the same time, recognizing that a national average CBR of 20/1000 is a tremendously ambitious target for India by the year 2000, A.I.D. will attempt to encourage the Government to examine a range of policy measures which extend beyond family planning. (We do not mean to imply, of course, that these measures would involve even the slightest hint of coercion.) The mix of family planning/beyond family planning program emphases will, of course, be determined to a large extent by the socio-economic and political circumstances of the area selected for A.I.D. assistance.

C. The "Unlikelies"

1. Bangladesh-- The prospects for Bangladesh are grim. The country has experienced what appears to be a singularly unsuccessful experiment with family planning. While there are indications that significant numbers of Bangladeshi couples wish to limit their fertility, it is not at all clear that the Government is able to deliver services in an appropriate manner. Accordingly, the A.I.D. Mission has opted for an approach which will give significantly more attention to private sector institutions than they have received in the past. While such an approach may increase the prevalence of contraceptive use, it is unlikely that the private sector can fully substitute

for the public sector in the provision of fertility control services nor is it the Mission's intention that this occur. Furthermore, the Government of Bangladesh had set a fertility control target which appears to be utterly unrealizable in the context of voluntarism--replacement level fertility by 1990 and zero population growth by 2000. Assuming that the death rate falls no lower than 15/1000, the birth rate would have to reach a similar level in order for the goal to be achieved by 2000. This strikes us as completely hopeless unless the Government is considering the adoption of draconian policies which are probably neither culturally acceptable nor implementable. Thus, population policy in Bangladesh represents a dilemma: given population densities and the current rate of growth, fertility control is an absolute necessity. Yet, fertility control can probably not be achieved in the short run because of the weaknesses of the administrative system, the inability of political leadership to command adherence to national policies, and a socio-economic and cultural environment that is somewhat inhospitable to family planning. In this contest, A.I.D. faces a formidable set of inhibitions to a workable strategy.

The strategy we advocate for Bangladesh has the following characteristics: articulation of modest, short-term objectives; a search for innovations that can be replicated on a broader basis; incorporation of experimentation before nationwide implementation; demographic goals and objectives into national planning in other

development sectors; and the search for approaches that maximize community involvement and peer pressure in population planning activities. There are no short-term solutions to the population dilemma of Bangladesh. A.I.D. must be prepared for a long-term commitment to the program and must avoid pressing prematurely for unachievable results.

2. Pakistan-- USAID/Pakistan has prepared a Multi-Year-Population Strategy paper (MYPS) which calls for a step-by-step reinvolvement in the program as the Government of Pakistan demonstrates an increasing commitment to and capacity to undertake population planning. The program collapsed completely in 1976 and 1977 as the result of poor planning, maladministration, and political interference.

At present the political situation is too insecure to permit optimism about renewed activities in the near future. On the other hand, with a population growth rate of 3.0 percent per year and a crude birth rate in the mid-40's, Pakistan has a population problem of immense proportions. Perhaps no country faces a bleaker demographic future than Pakistan because no country has failed in family planning program efforts in the past as repeatedly and dramatically as Pakistan has. Thus, there is a crisis of confidence. The country desperately needs a population program success of whatever magnitude in order to reestablish some self-confidence among its managers and fieldworkers.

The strategy that emerges from this unhappy picture is a three-pronged one: 1) support for small-scale research and development to attempt to discover innovations which show promise for replication on a broader scale; 2) support for research on fertility determinants in order to identify interventions in broader development policy which would be supportive of a lower population growth rate; and 3) experimentation with renewed family planning program activities in sterilization, management information systems, and training in order to get some semblance of family planning services reestablished. In the longer run, however, it will be necessary for the Government of Pakistan to demonstrate renewed commitment by appointing highly competent managers to the population program, allocating internal resources to the program, and enunciating population policies which signal a clear commitment to fertility control.

From the vantage point of the present, it appears inconceivable that Pakistan could achieve a crude birth rate of 20/1000 by the year 2000. A strategy which counsels patience and quiet support for the incremental replication of successful small-scale innovations appears still to be the most sensible approach to take in Pakistan, a country where demographic miracles are not in the offing.

3. Nepal-- Among the nine countries in Asia which are covered by this analysis, only Nepal has a population whose growth

rate appears to be increasing. Even Bangladesh seems to have peaked at somewhere around 2.8-3.0 percent per year. Nepal, on the other hand, shows a marked increase in the population growth rate since 1950. In that year the rate of growth was 1.5 percent per year. In 1977 the rate of growth is estimated to be 2.5 percent. It has never been higher. Moreover, with a death rate around 20/1000, there is little hope that the growth rate will decline substantially any time soon. If anything, the growth rate is likely to increase a bit further before a decline sets in. In such a setting, population strategy must be long range. Thus, appropriately the Nepal Mission has developed a two-pronged approach to fertility control: support for family planning through a health and family planning project, and support for broader population policy measures through a population policy research project that is intended to explore the more basic determinants of fertility and issues of motivation regarding determination of family size. In a context of high death rates and minimal movement toward modern levels of social development in such sectors as health, education or agriculture, it is extremely difficult to be sanguine about the prospects of rapid fertility decline. Thus, A.I.D. must regard Nepal in the same way as we do Bangladesh: as a country to which we should be prepared to maintain both a development and population planning commitment for many years to come.

4. Burma-- Burma has maintained a staunch pro-natalist stance for many years. Unless and until this posture changes, there would

not appear to be many opportunities for bilateral program activities in Burma.

Nonetheless, AID has centrally funded resources which could be deployed in the policy and research areas in order to help the Government of Burma to analyze its demographic situation and to evolve revised policies on the relationship between socio-economic development and population growth. Furthermore, since it appears likely that AID will be assisting Burma in the health field, it is conceivable that some family planning could be introduced as an MCH/child-spacing measure at some future date.

Finally, as Burma reestablishes external relationships it is conceivable that the country's view of the relationship between population and national development will change as Thailand's has over the past decade, to the point of recognizing that the number of people is less important than many other factors in determining a country's development potential.

Conclusion

As a general conclusion, it should be noted that there is an extremely close correspondence between level of development (as measured by such conventional indicators as literacy, income per capita, school enrollment, doctors per thousand population, infant mortality, etc.) and fertility among the countries considered in

this strategy paper. Even Indonesia, with its high level of family planning program effort, has significantly higher fertility levels than neighboring countries with lower levels of program effort but higher levels of development (e.g. the Philippines and Malaysia). This is pointed out lest we lose sight of the fact that development is an important determinant of fertility levels and that the solution to the problem of rapid population growth in Asia is intimately bound up with the solution to the problem of general levels of poverty, notwithstanding the important contribution that family planning programs can make in dealing with problems of excess fertility.

Thus, the population strategy for the Asia Bureau cannot be separated from the broader development objectives and strategies of the Bureau. Indeed, the more inhospitable the circumstances in which a population program is located, the more important an explicit linking of population and other development strategies is. It can be persuasively argued that the most effective population policy measure Bangladesh could take would be to broadly expand the non-maternal opportunities available to women, including educational opportunities. On the other hand, it is arguable that the most cost-effective approach in the Philippines is the provision of family planning services.

Finally, lest we leave the impression that this paper represents another example of Washington preaching to the field, let us make clear that we 1) welcome USAID arguments to refute or reject specific points made above, and 2) stand ready to provide full support to all missions in the further elaboration of strategies at the country level through direct-hire TDY and grantees/consultants/contractors. The purpose of this paper is not to lay down received wisdom but to provoke thought and debate about where we are and where we are going in the population field in Asia.

42

PART III -- APPROACHES TO OVERCOMING MALNUTRITION
IN ASIA

43

APPROACHES TO OVERCOMING MALNUTRITION
IN ASIA

By Harold L. Rice

I. Background

A variety of nutrition initiatives have been taken throughout Asia. The nature and extent of the initiatives ranges from a mere token statement in a national plan to large scale replication of demonstration projects such as those described below. In no country, except perhaps the Philippines, however has the initiative for nutrition been sufficient to achieve a significantly lower infant and childhood mortality by the year 2000. In the countries with high rates of malnutrition the diseases having strong nutritional interactions are common; tuberculosis, measles, parasites, diarrhea (viral, bacillary and parasitic); and malabsorption. In these situations food and nutrition programs alone, are not enough. Infection rates from water borne and water wash diseases must decline and immunizations must be undertaken. Indeed, diagnosing the cause of malnutrition in some situations has shown that high malnutrition rates exist in the presence of sufficient food, pointing to infections as a likely primary cause of the malnutrition prevalence.

Generally in Asia the lowering of malnutrition prevalence will require increased nutrient intake from improved diets as well as lowering the prevalence of infection, in particular of diarrheal disease.

Unfortunately, no examples exist where protein calorie malnutrition prevalence has declined nationally as a result of a planned nutrition program.* Reduced prevalence of protein calorie malnutrition can only be found in several nutrition demonstration projects (in the Philippines, India, S. Korea, and Indonesia). The successful national nutrition programs have all involved only vitamins or minerals but not proteins and calories. The decline in child mortality in Sri Lanka, but with continuing malnutrition, followed the establishment of food subsidy programs. The general decline in malnutrition in S. Korea can be associated with an effective family planning program and improved equity and income, particularly among the rural population.

The Asia region has a wide range of different situations and cultures, some of which exacerbate the nutrition problems and frustrate the development of practical solutions. The regional strategy therefore must be country, or even locally, specific, but the goal of reducing infant mortality through improving nutritional status is practical for the region as a whole.

II. The Importance of Problem Identification

Malnutrition in Asia has diverse causes, the dimensions of which are not known in many areas. Thus, without area specific diagnosis to

*Malnutrition has declined steadily in Chile but knowledgeable observers believe the decline may be more associated with the income redistribution and health services than with nutrition programs. Development reform and Malnutrition in Chile, P. Makim and G. Solunano, International Nutrition and Policy Series # 4, MIT Press, Cambridge, Mass., 1978.

discover the probable underlying causes of malnutrition and the availability of resources to deal with it, intervention planning makes little sense. We take this view based on the recognition that where food scarcity is the principal cause of the malnutrition (which is true for most of the poor of the region), the cost of alleviating the shortage may be a substantial fraction of the family resources. When aggravated, the costs will probably be too great for any government and the international donors to bear. Therefore, providing food or even subsidizing food on a national scale in most of Asia is not a feasible short-run solution (although increased food production remains a necessary condition of overcoming malnutrition in Asia). If diarrheal disease is also an important determinant of nutritional status (as it is in most of the region), food alone may not even be a cost/effective short-term intervention.

Already in Asia new ways to obtain equitable distribution of local foods and to reduce infections within communities are being tried to prevent the development of malnutrition. We suggest that in most of Asia the nutrition problem must be approached preventively and at the community level. Only in this way can one deal with the problem at the level of causality.

III. Some Relevant Program and Research Findings

Projects and studies conducted by AID and others over the last few years have contributed significantly to project design and country

strategy development. The experiences, even though often limited to smaller research efforts or action programs lacking baseline data, can assist in guiding us toward more effective assistance programs for Asia.

Food

Production in the off season by intensive farming of small areas (5 or 10 hectares) can provide a 15% increment in the food available to small communities.

Mothers will learn how to avoid malnutrition in subsequent children once they learn how to reverse its course in one child, but they must learn to understand the relationship between child health and weight gain as shown on a scale.

Home gardens as small as 1 sq. meter can produce enough trace nutrients (Vit. A, iron, Calcium and Magnesium) to fulfill the needs of all the family members. Seeds and continuous watering seem to be the major constraints.

Food technologies now enable the formulation of foods both in the home (for lowest cost) and for the market that can prevent most types of malnutrition. Proper food design and locally supported delivery mechanisms can make them affordable.

Food Distribution

Nutritional benefits of Title II programs generally have proven to be difficult to evaluate. CARE evaluations in India, the Dominican Republic, Colombia and Pakistan revealed little or no impact on the nutritional status of the participating population. But most programs have not been designed for nutritional impact. In some feeding programs the ration size is not large enough to show short term impact. Indeed, it may only raise the caloric intake sufficiently to enable the child to expend energy in play or work and contribute little to accelerated weight gain. In some programs children do not receive supplemental food daily throughout the year, and therefore, such programs are unlikely to affect nutritional status. Infections such as measles and diarrhea can wipe out weight gains in some recipients so that the evaluation method may lose its sensitivity to record the impact of the food.

For nutritional impact, programs must be suitably designed. For example, in the Philippines, evaluations have shown that in targeted family food distribution projects the number of toddlers with low weights declined by about one-third.

Also in the Philippines delivering imported or locally obtained food directly to households with underweight children coupled with a program of monthly child weighing has virtually eliminated the prevalence of third degree (most serious) malnutrition.

Growth records kept on each low weight child have proven to be effective teaching and monitoring tools in food distribution programs. In addition the weight record provides an early warning of deteriorating nutritional status.

Title I, II and III food can be a major resource for alleviating food shortages and can be an important resource for initiating nutritional programs. The danger is that imported food can create dependency and discourage local production unless special policies and practices are designed for its use.

Where rates of malnutrition are below 50% among the young children local foods should be preferred to Title II. Where higher rates prevail Title II may be the most valuable resource, at least in the short run.

Food Production

For Asia increasing food production has a special significance because of the large population of landless labor and the small landholdings of so many. However, production alone will have no impact on nutrition unless policies and plans can be made to raise food production in ways that raise income of the poor or otherwise increase food consumption by the poor.

Programs to raise employment, purchasing power, and food consumption can be designed for the situation at hand and may include such things as increasing the amount of labor intensive small plot farming, improving on farm storage of food, reducing seasonal food price fluc-

tuations, and lightening the burden of women's household chores, thus enabling higher participation in economic and personal development.

Household food production may be increased with little more than a few added tools or a more reliable source of irrigation water in the dry season. Any increase also requires that labor is not limiting and that land is available. Village mother clubs particularly may be effective for increasing locally available foods to supplement the diets of very young children and pregnant and lactating women, groups especially at risk with regard to malnutrition.

Increasing food availability will address one cause of malnutrition. Others can be addressed by reducing household, environmental and food contamination by improper food handling and by unsanitary food preparation practices.

Family Planning

The impact of family planning on food needs should not be taken lightly. In most cases reduction in family size by one would provide sufficient calorie savings to avoid malnutrition in the rest of the young children. Furthermore, if births can be more widely spaced, improved child care by the mother may be possible. This can be effective in reducing malnutrition and the associated permanent mental retardation.

Role of Women in Nutrition

Already in most Asian cultures the demands on the women are excessive, especially among the poor with large families and closely spaced births. If women are to participate fully in the development process, these burdens must be lightened or shifted to others. Child care and feeding, household maintenance, food preparation, water fetching, and clothing care are just some of the many chores usually allotted to women.

Improving the technologies available to households would also lighten the burden and increase the contribution of women to the development process. Among the available technologies are convenient, clean water, easier access to fuel or energy, electricity, latrines, drainage, hard surfaces, screens, food preservation and storage techniques. Something as simple as an iron pot could be effective in reducing anemia since most anemia is from iron deficiency and cooking of some foods in iron pots will dissolve a sufficient amount to meet requirements.

A Basis for Action

The following rough estimate of the amount of food required to prevent most of the malnutrition in Asia may provide some guidance to program development.

Only in some destitute areas of Asian countries does one find malnutrition rates in children above 70%. Here we shall not address the cases where childhood malnutrition rates are above 70% because we believe that when such rates are so high, the entire population is affected. Enormous amounts of food are needed to restore the levels even to the 35% rates. Such areas will probably require massive food assistance just to provide productive labor let alone avoid malnutrition among the vulnerable groups.

For the rest of Asia the rates are less than 50%. For these areas the amount each child needs to prevent malnutrition, thereby lowering rates to perhaps 5%, is equivalent to about 200 calories per day in the form of a mixture of local food commodities. Rice plus some legumes and a little oil, and in some cases some vitamins or vegetables in small amounts, will typically avoid the problem. If a low cost delivery system could be established to assure that the at-risk (low weight) young children consume the 200 calories additionally, we would succeed. The daily food cost is equivalent to about one tenth of a pound of rice or perhaps 1.5¢. Since about 1/5 of the population is in the age group from 6 mos. to 4 years and about 30% need the food in a village of 2000, food for about 135 children is needed per day. Thus, about \$3.00/village/day would prevent the problem. This represents only about 1/60th (less than 2%) of the total village food needs.

Bangladesh

Estimates of the extent and severity of malnutrition in Bangladesh always give values in excess of 60% and for rural dwellers as high as 76% of the total population. It can be predicted that among the young children the rate is even higher.

In any area with such massive deprivation it is suggested that targetting programs to the most vulnerable groups, the children and mothers, without taking into consideration the total food deficit of the whole family makes little sense. Strategy, therefore, would seem to dictate directing our attention to the task of increasing the amount of food available to the poor, through national food policies and production programs, and/or food subsidies. Furthermore, programs designed to use imported food at least as an emergency measure appear to make good sense, provided that such food does not delay the development of self-sufficiency.

India

Gwatkin* has stated that "malnutrition-- directly and indirectly-- is responsible for more child fatalities than all other causes combined"-- 27% of all deaths in the country. With a challenge of this magnitude getting ahead of the malnutrition problems of India does not appear to be possible without increased food production and equitable distribution plus a major reduction in the birth rate. The states or eco-regions of the sub-continent present different malnutrition problems and different causes of the problems which require a multitude of strategies to take into the account the variations in the resource bases, cultures, religions, climates, and history.

A suggested strategy for AID is to support a strong and vocal Indian national commitment to nutrition if the government will delegate the authority to resolve the problem to the lowest possible bureaucratic level. Authorities at all levels will need to encourage the utmost flexibility in supporting specific implementation plans generated at the local level for preventing malnutrition. In some situations, such as in Kerala, a feasible solution may be food subsidy. In other places the expansion of successful child feeding experiments may be appropriate. In still other

*David R. Gwatkin, Health and Nutrition in India, a report to the Ford Foundation, Jan. 1974.

places village self-sufficiency schemes may work.

In a country as diverse as India establishing national goals for the reduction of malnutrition may be a meaningless exercise. It would appear more sensible to identify the number of "poor" communities in which Gopalan* has estimated 65% of the children weigh less than 70% of the standard weight for age and 18% of the children are less than 60% weight for age. Based on the number and identification of the specific communities then one could go about setting such goals as the elimination of the severe malnutrition and the reduction of moderate malnutrition by 50% by the year 2000.

As in the rest of Asia in areas of India where high malnutrition rates of 50% or higher prevail we suggest that targeting programs to mothers and children will not be sufficient. Rather, massive food assistance is likely to be necessary. Family deficits may average 20% and therefore subsidies commensurate with deficits may be the only solution. Even in these circumstances the deficit may not be year round so that on an annual basis the deficits will be less than 20% and solutions may be affordable.

A stratum of communities with less malnutrition (20-50%) could also be identified and goals for improvement could be developed based on feasible interventions - probably targeted to mothers and

*Gopalan, "The Nutrition Problem in India", p. 225.

children and village self sufficiency.

The areas in the east and south of India will probably fall into the poorest group and those to the north and west into the moderate group.

Nepal

An extensive nutrition survey by region was supported by AID in 1975. The outcome of the survey showed a high prevalence of chronic malnutrition (45%) and high levels of acute malnutrition in some regions.

Because of the regional differences a countrywide delivery approach does not appear to be feasible for Nepal. However, the high infant mortality points to the probability that high infection rates prevail among the young children. The highest percentage of malnutrition is also found in the 12 to 35 mo. age group, leaving the child more vulnerable to acute infection.

The above suggests that any health program will have limited effectiveness unless the feeding of young children can be improved. The present data suggest that affordable food is in short supply, particularly in rural areas. If so, the implication is that multisectoral approaches will be necessary to overcome the problem:

agricultural policies, food subsidies, health and nutrition supportive education efforts, and general rural development and income generating activities.

Pakistan -

An extensive survey of the nutrition problems in Pakistan was carried out in 1976-1977 in which AID-sponsored contractors participated. The report of that survey identifies protein/calorie malnutrition and nutrition anemia as major problems. Both Vitamin A deficiency and iodine deficiency are also significant problems.

Because about 15% of the young children were found to be below 80% weight for age, with infant and child mortality remaining high and diarrheal disease being a major cause of death, a strategy of targeting interventions to meet the important deficiencies appears at first glance to be the preferred programming approach.

However, since the percentage malnourished (15%) is nearly the same as the percentage of families with insufficient income to purchase needed food (about 13-18%) and because the diet is based on a relatively nutritious cereal (wheat) with some animal protein available, further identification of the causes of mal-

nutrition may be needed prior to targeting. Instead, consideration should be given to subsidizing the general availability of food to the poor for immediate impact, with targeting to await a more thorough diagnosis.

A program targeted at reducing morbidity and mortality from diarrheal disease would appear to offer a good chance for alleviating some malnutrition while also reducing infant and young child mortality. Oral rehydration, and hygiene education are suggested interventions.

Sri Lanka

This is the one country in the region having an acceptably low infant and child mortality rate, but a high malnutrition rate.* It also has a history of malnutrition. The pattern of malnutrition indicates that prevalence was probably higher in the recent past than today since evidence of malnutrition is higher among children toward the upper end of the 0-5 group. In most environments the highest prevalence occurs between 6 and 30 months of age.

One interpretation of the Sri Lanka problem is that chronic malnutrition is widespread but less severe than in the past. The probable implication to be drawn from the Sri Lanka data on nutrition and mortality is that more food within the family would

*AID supported an extensive nationwide survey in 1975-76 showing more than 40% of the children 0-5 years of age are malnourished (less than 75% normal weight for age).

alleviate the problem, while less food would exacerbate mortality. Sri Lanka is therefore on the brink of a serious malnutrition problem which could be precipitated by nothing more than a ten percent rise in the price of food.

If Sri Lanka decided to reduce or eliminate present food subsidies and still reduce malnutrition, then targeted programs aimed at making villages self-sufficient would appear to be necessary.

Indonesia

Malnutrition, often acting synergistically with diarrhea, pneumonia and other infectious diseases, is estimated by Rohde* to account for 57% of all infant and child mortality in Java.

IBRD** estimates that close to one third of all children under the age of five suffer from moderate to severe malnutrition (less than 75% weight for age). In addition to this protein calorie malnutrition, Vitamin A deficiency, anemia, and iodine deficiency are widespread.

The Indonesian government has begun pilot programs to test a strategy for preventing malnutrition. This strategy proposes to build on the successful outreach program in family planning where volunteer village workers are already in place and where around 40% of eligible villagers are participating in the family planning program.

Most of the villages of East Java and Bali are already involved.

The nutrition strategy fits with the overall government development strategy which is to emphasize village self-sufficiency. The nutrition goal in each village is to reach 50% of present levels within five years of beginning a village nutrition project. By 1984 a target of 34,000 participating villages (about half the total) has been set.

The Indonesian nutrition strategy is ambitious and is highly dependent on the cooperation of villagers in generating their own resources. Given their success in family planning and the fact that targeting the nutrition program directly to the mothers of low weight for age children will require a minimum of additional food resources (1 to 2% of village food), the program appears feasible.

The Indonesia strategy fits well with the overall regional strategy being recommended in this paper for AID.

*Jon E. Rohde, et al, "Who Dies of What and Why" Prisma (Indonesian Journal of Social and Economic Affairs), No. 9 (March 1978).

**World Bank Report No. 1318-IND. Indonesia: Appraisal of a Nutrition Development Project, Feb. 16, 1977, p.4

Philippines

A nationwide survey in 1976 of more than 4 million children 0-6 years old (approximately 45% of the age group) revealed about thirty percent of them to be moderately or severely (5%) malnourished (below 75% weight for age).

The data by province range from a high of 39% malnourished in the western Visayas to a low of 25% in Southern Mindanao. The data on weights of children are supported by food consumption studies of the various provinces which show mean caloric deficits to be about 85% of requirements with the lowest levels in the western Visayas. The surveys show Vitamin A, B, and calcium consumption to be even lower than calories.

Creating awareness of the Philippines nutrition problems began about 1960 with the formation of a National Coordinating Council on Foods and Nutrition. In 1967 the Minister of Health publicly urged an extensive effort to reach preschoolers and mothers with nutrition programs and in 1968 a nutrition Project Agreement between the U.S. and Philippine governments was signed. A national Food and Agricultural Council was formed in 1971 by the National Economic Development Authority to coordinate all nutrition activities, but the national commitment to an effective program appears to have begun with the presidential decree in 1974 to establish the National

Nutrition Council. This was followed closely by the establishment of a National Nutrition Center, now a unique blend of private sector and public sector activities.

The GOP, assisted by donors and the NNC, has been testing a wide array of approaches to reduce malnutrition. The goal that developed from these trials aims to create village self-sufficiency in preventing malnutrition. The strategy is to encourage local officials to develop and implement a municipal nutrition plan based on volunteer workers to monitor the growth of children and to subsidize and/or elicit local food for use by mothers who have children who are failing to grow. The NNC recognizes that these efforts are not enough and that local food production and its availability to the poor must be increased.

Based on the NNC strategy the National Economic Development Authority, assisted by donors, plans to establish malnutrition prevention programs in one third of all Philippine villages within five years.

The GOP goal is ambitious, particularly in view of the lack of decentralization of NNC or other institutions that can implement the strategy, and in view of the need for increased food production to support the strategy. Progress with demonstration testing during the coming year should clarify the reasonableness of the goal.

Thailand

Nutritional status information in Thailand is scattered. Several small studies in different regions have been carried out by different investigators at different times in the past but no statistically designed studies have been published to date. The general impression based on the limited research available, leads to a suspicion that most of the malnutrition exists between 6 months of age and 30 months. Investigators report malnutrition in this age group among households where ample food is available.

Since diarrhea is also an important health problem and because of its interaction with nutritional status, there is reason to believe (based on similar situations elsewhere) that perhaps 20% of children 0-4 are less than 75% weight for age.

Thailand is a major rice exporter and most villagers have the capability to produce enough food to feed themselves and their families. The suggested strategy for Thailand thus would emphasize creating village self-sufficiency in preventing malnutrition. Villages would organize to keep records on the growth of all children by establishing a weighing program. In children with faltering growth the village mothers organization would find the food from local resources and see to it that needy children and families got as assistance both nutritious food and work generated income (where necessary) to get ahead of the problem. Diarrhea treatment and improved water supply may

be necessary components of this strategy along with health/hygiene/
nutrition education.