

NUTRITION AND DEVELOPMENT

A Briefing Paper

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EXECUTIVE SUMMARY

Economic growth and increased food production are not sufficient to reduce malnutrition in developing countries. Spectacular increases in food production in developing countries in the last two decades were accompanied by increases in the number of people with inadequate food consumption. Economic growth in the developing countries between 1960 and 1980 exceeded historical growth rates of the now-developed countries yet the prevalence of malnutrition remained virtually unchanged. The outlook to the next century looks the same: more income, more food, and more hungry people. Direct action is necessary. Policy reforms, targeted interventions, and communication for behavioral change must complement economic development.

Economic development itself is retarded by undernutrition. Poor nutrition underlies more than half of early childhood mortality, accounts for most of the acquired immune deficiency in the world, reduces learning potential and performance, limits work capacity, and increases reproductive wastage.

Undernutrition frustrates both the child survival and family planning objectives of the foreign aid program. Undernourished children are twenty times more likely to die than well-nourished children in the same environment. Families who fear their children will die have more children than they really want, which in turn increases the risks for those children.

There are more than 300 million people with severely inadequate diets in developing countries and more than 140 million children whose stunted growth limits their life's chances more than any repressive political system could. Highest priority regions are Africa, where food insecurity is greatest, and South Asia, which has the most malnourished children.

The causes of the nutrition problem are chiefly food insecurity and health insecurity.

- Food insecurity is the inability of nations, households, and individuals to procure sufficient food through production, markets, and transfers. It is a result not of inadequate food supply but of inadequate household income and productive assets, inefficient markets, fluctuations in food availability, and misguided government intervention in the food system (subsidizing food consumption of the non-needy at the expense of the farmers rather than providing targeted food transfers to the nutritionally at-risk).
- Health insecurity is high exposure to disease coupled with low resistance (due to malnutrition) and poor preventive, promotive, and curative health services. It reduces the nutritional benefit of the food that is ingested and ratchets down nutritional status with each bout of illness.

- ♦ **Household-level behaviors**, including allocation of resources, health and hygiene practices, food procurement and handling, child care and feeding, are important intermediaries between food and health resources and nutritional status of individual household members.

Feasible cost-effective interventions are available to address all three causes of undernutrition.

A.I.D. has played a central role in international nutrition programs for the last twenty years. It has fostered clinical and operations research, helped debunk implementation myths, nurtured promising new interventions, and persuaded other donors to increase their nutrition funding. The number and geographical spread of nutrition projects has fallen in recent years as a result of the Agency's singleminded focus on ORT and immunization in health and on food supply in agriculture. Nutrition-oriented staff and budget have been diverted to those goals and nutrition efforts have become piecemeal and random. Recent experience shows, however, that malnourished children will continue to die regardless of immunization rates and number of ORT packets distributed and that hungry families will continue to pursue non-commercial production strategies for their marginal and fragile lands. In other words, the population that is nutritionally at risk needs programs specifically addressed to their needs.

The Agency has developed effective, field tested interventions that can make a difference in nutrition in the short and medium term. They are

- ♦ **NUTRITION DIAGNOSTICS AND MONITORING.** Analyzing existing and new data on nutrition and food consumption to devise effective policy reforms and program strategies for food- and health-insecure populations and to monitor their impact.
- ♦ **BREASTFEEDING PROMOTION.** To assure that children exposed to the formal medical system are not denied their best nutritional resource, this well-tested methodology educates physicians, hospital personnel, and the community about the benefits and cost savings of promoting breastfeeding.
- ♦ **GROWTH PROMOTION** is a web of education and resources for children under three and mothers which uses growth monitoring to consolidate nutrition education (see below), food and nutrient supplements, and maternal/child health care.
- ♦ **NUTRITION SOCIAL MARKETING.** A.I.D. has been instrumental in developing more effective nutrition education methods including community diagnosis of problems, behavioral trials of educational messages, development of interactive counselling materials, and judicious use of mass media to complement interpersonal counselling.

A.I.D. has in place the necessary policy framework but trained staff have been siphoned off from nutrition and the budget is being inefficiently allocated to small and ineffective efforts. In order to revitalize the Agency's nutrition effort A.I.D. must

- communicate these program priorities to the field,
- capacitate one third of the A/RDOs and HPN officers to do nutrition work and station them in highest priority countries,
- increase funding for nutrition in Africa and the Office of Nutrition, and
- put into operation a monitoring and evaluation system for nutrition activities in the Agency.

The Agency could just rest on its laurels and stagger from one Congressional nutrition earmark to another or it could execute a well designed cost-effective nutrition strategy. The latter would have greater nutritional impact, be more responsive to the public interest in alleviating suffering, and contribute to A.I.D.'s developmental, economic and political goals.

NUTRITION AND DEVELOPMENT

The world has enough food to meet everyone's needs, but more than 300 million people have severely inadequate diets. In the last twenty years, moreover, there have been two major famines in Africa and one in Asia.

The developing-country economic growth rates in the 1960s and 1970s exceeded historical growth rates of the now-developed countries, yet malnutrition among children remains virtually unchanged from two decades ago. Today, about 30 percent of children under five are so malnourished that their growth is stunted.¹

Clearly, the cause of the problem is neither food supply nor GNP growth. It is access to resources -- food and health -- to support normal growth in children and maintain health and productivity in adults. Food insecurity -- the inability of nations, households, and individuals to command adequate food resources through markets, home production, and transfers -- means that people cannot get enough food to eat when they need it. Health insecurity -- high prevalence of illness, excessively prolonged due to malnutrition and lack of medical treatment -- robs the population of nutrients it needs for growth, mental development and physical work. Household behavior -- in food allocation, feeding, child caregiving, and health care -- determines the efficiency of resource use at each socioeconomic level.

Economic development may ultimately reduce undernutrition to an infrequent and isolated problem but it will take at least two or three

1. Excluding India, Pakistan, and Bangladesh, in which more than half the children are growth-stunted in spite of significant improvements in nutrition.

generations.² Without improving nutrition, moreover, economic development will itself be retarded and possibly capped by human resource constraints. Undernourished people are less productive and constitute a drain on national health, education, and social welfare budgets. Growth retarded children stymie long term development of the human resource capacity of a nation.³

This briefing paper summarizes available information on the world nutrition situation, A.I.D.'s response to the problem, and avenues for future actions by A.I.D. in collaboration with other donors.

RATIONALE FOR INVESTING IN NUTRITION

Undernutrition today affects a large proportion of the population in developing countries in spite of major gains in per capita income in the last two decades. The Agency for International Development needs an effective program to alleviate malnutrition for economic, political, and practical reasons.

Undernutrition limits the economic potential of a society by reducing the productivity of those households which rely most on their own physical capacity for their livelihood. Undernutrition also contributes to lower productivity through increased disease burden of malnourished adults and children. In the longer term, undernutrition reduces the human resource capacity of a society by limiting mental development and impairing school performance of lethargic children.⁴

2. Berg, A. Malnourished People: A Policy View. Washington, D.C.: World Bank, 1981.

3. McGuire, J., and J. E. Austin. Beyond survival: children's growth for economic development. New York: UNICEF, 1987.

4. McGuire and Austin, 1987.

Undernutrition undermines the purposes of the foreign aid program in other ways as well. In particular, malnutrition and food insecurity fuel social malaise which can erupt at any time but particularly in times of economic stress. Policy reforms which are essential to economic development can be undone by food insecurity unless adequate measures are taken to provide support for those marginal households temporarily harmed by macroeconomic policy change. Providing nutritional compensatory measures not only weakens the rhetoric of opposition groups but also safeguards the future human resources of the nation.

A.I.D. also needs an effective nutrition program because the Child Survival revolution will fail without it. Malnourished children face twenty times the mortality risk of normal children. Medical interventions to reduce mortality have limited value unless adequate attention is paid to the malnutrition that underlies more than half of the deaths. Replacement mortality -- for instance, death from pneumonia or diarrhea instead of measles -- will continue to frustrate A.I.D.'s goals unless and until promotion of adequate growth of children is integrated into health programs and child survival.

In sum, whether one is interested in maximizing economic growth, promoting economic policy change, political security, or reaching development targets, nutrition must play a central role.

WORLD NUTRITION TRENDS

DEVELOPMENT INDICATORS

Over the last two decades per capita income throughout the developing world has risen dramatically. Per capita food production has increased modestly in most areas and food consumption has risen everywhere but Africa (Table 1, Figs. 1-3). Infant mortality (IMR) and under-five mortality

(U5MR) have fallen significantly throughout the world (Fig. 4). The benefits of development do not fall equally on all members of society, however. Improvements in national food availability may not trickle down to households that lack sufficient purchasing power for an adequate diet, for example the landless informal sector employees and small farmers on fragile lands. Within the household young children and reproductive-aged women, who are the most vulnerable to permanent damage and death because of inadequate nutrition, may also be disadvantaged in their access to household food supplies.

NUTRITIONAL INDICATORS

Nutritional Status

Nationally representative surveys of nutritional status of preschool children provide an indicator of the diffusion of development to those at nutritional risk.⁵ In Latin America and South Asia clear improvements in preschool nutritional status have been made since the 1960s (Table 2, Fig. 5). Very recent evidence from Latin America, however, indicates that earlier gains have been lost as a result of the global recession, structural adjustment, and reaction to the debt crisis. Several Latin American countries had excessive malnutrition levels even without the

5. Without A.I.D.'s support for methodological improvements and technical assistance in nutritional surveillance over the past 15 years, we would not have the quality or breadth of data on nutritional status used to construct this table nor the means to interpret them. That said, it is disappointing to note that representative cross-sectional or time series data do not exist on either nutritional status or individual or family food consumption in more than one or two countries. CDC and DHS programs are working on new surveys and institutionalizing capability in-country which will make longitudinal comparisons more likely in the future. Food consumption data, however, are largely unavailable, and we must rely on estimates based on food availability, income distribution, and income elasticity of demand for food or calories.

crisis (Map 1).⁶ More than half of the children in Asia are still undernourished in spite of marked improvement in nutritional indicators. In Africa nutritional status has steadily deteriorated over the past two decades. In short, greater income and food supplies at the national level reach the poorest last.

In contrast, deterioration in economic indicators usually affects the poorest first. The combination of recession and structural adjustment in the early 1980s, for instance, rapidly worsened nutritional indicators in Sri Lanka (Fig. 6), Costa Rica (Fig. 7), and elsewhere.⁷ Countries that acted swiftly to protect the nutritionally vulnerable -- for instance, Chile⁸ -- were able to minimize the losses, but others, like Sri Lanka, failed to institute compensatory programs and were set back a decade in health and nutrition status even though the economy recovered.

Contrary to popular opinion, malnutrition is primarily a rural problem (Fig. 8). Poverty, unsanitary living conditions, variability in food supplies, and poor access to services (particularly schools and health care) increase the nutritional risk in rural areas. Urban malnutrition is more palpable because it is closer to the headquarters of governments, donors, and newspapers. In Latin America and Africa, where urban areas are

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6. No more than 2.3 percent of a well-nourished population would fall below the cut-off point used here. A.I.D.'s target, established in the "Blueprint for Progress," is to assure that no more than 20 percent of children are classified as moderately to severely undernourished (viz. fall below the cutoff point).
 7. Hood, R., J. McGuire, and M. Starr. The Socioeconomic Impact of Macroeconomic Adjustment. Report to A.I.D./PPC, 1988. Cornia, G. A., R. Jolly, and F. Stewart. Adjustment with a Human Face. Oxford, U.K.: Clarendon Press, 1987.
 8. A.I.D. can take some pride in Chile's well designed and well-targeted nutrition programs, since the Agency played a major role in institution building, design of child nutrition programs, and enhancing nutrition planning capacity in Chile in the 1970s.

growing rapidly, concern with urban malnutrition is appropriate but must not displace attention from the factors in rural areas that cause outmigration, including food insecurity and poverty.

Food Consumption

The proportion of the population with inadequate diets (less than 90 percent of F.A.O.'s recommended calorie intakes) in developing countries has decreased from 40 percent in 1970 to 34 percent in 1980 (Table 3) but the number of people with insufficient intake has risen from 657 million to 730 million. The proportion consuming severely inadequate diets (less than 80 percent of FAO standards) has decreased from 18 percent to 16 percent of the population, but grown in absolute numbers as well. Africa has the highest proportion of the population with severely inadequate diets (Table 4, Fig. 9), but Asia has three times the number of underfed people.

The reason for the disparity between the proportion of people estimated to be hungry on the basis of severe dietary inadequacy and the prevalence of malnutrition in preschool children is that a) children are more vulnerable to inadequate food intakes; b) children may have relatively less access to the family food supply; c) illness, particularly fever and diarrhea, exacerbates inadequate dietary intake by increasing nutritional needs while simultaneously decreasing appetite, absorption, and metabolic efficiency; and d) energy expenditure of many people, including children,⁹ in unmechanized societies may be considerably higher than the average energy expenditure assumed by FAO.¹⁰

9. One study in Uganda, for instance, found that in order to maintain normal growth children had to become virtually immobile.

10. In fact, the Fifth World Food Survey excludes energy expenditure at work from energy requirement standards.

Reutlinger and Alderman¹¹ predict that under the best economic conditions (high income growth and constant food prices), without nutrition interventions, 398 million people will still be consuming inadequate diets in 1990. Under the worst case scenario (low income growth and rising food prices) the number be be around 590 million (Table 5). Even 400 million people with inadequate diets is too much human potential for developing countries to squander, however.

Famine

In spite of major advances in agricultural production and per capita income, famine remains a real threat to sub-Saharan Africa and worrisome to South Asia. Millions of people starved to death in the Sahel famine in the early 1970s, the Bangladesh famine of the mid-1970s, and the pan-African famine of the early 1980s. Now drought and locusts threaten the Sahel and Ethiopia again. The U.S. has responded to these famines generously providing \$137 million in disaster assistance plus \$400 million in Food Aid to Africa in 1985/1986, for instance. To put the amounts in perspective, nutrition technical assistance to all regions has averaged about \$27 million per year (since 1979) and nutrition-related food aid to all regions has averaged about \$150 million per year (since 1983).

Political factors exacerbate ecological distress in many areas but the underlying cause of the problem remains food insecurity. Rapid and distant dispersion of food aid to the worst off areas not only brings temporary food security, but also prevents massive migration and social disruption that occur when the food is delayed or available in few locations. Fortunately, the U.S. has coordinated with other donors to put into

11. Reutlinger, S. and H. Alderman. "The Prevalence of Calorie-Deficient Diets in Developing Countries." *World Development* 8: 399-411, 1980.

operation early warning systems in most famine-prone countries which accelerate and target responses based on the early harbingers of famine.

Famine is a crude and insensitive measure of food insecurity. Action must be taken to extend economic development, including efficient markets and compensatory food programs, to those areas which are prone to famine. The ready packageability of famine and famine relief for the evening news should not deflect the attention of donors from the much larger and more insidious problem of chronic undernutrition which has a more enduring effect on development.

Health Status

Health indicators in developing countries have changed dramatically over the last two decades. Mortality of children under five, a gross indicator of health status of a population, has improved significantly. But this is not cause for unrestrained jubilation for several reasons. First, children who might have died in the past are now surviving but often in a malnourished state. Second, as diseases like neonatal tetanus, malaria, measles, smallpox, and whooping cough are brought under control (either through prevention or treatment), nutrition as a direct or underlying cause of death grows, leaving a hardcore mortality problem which requires behavioral change rather than medical technology. Finally, under five mortality is still alarmingly high in Africa and selected countries in every region.

Low birth weight remains virtually unchanged (Table 6) and undoubtedly accounts for an increasing share of infant mortality and morbidity. This reflects, in large part, the poor nutrition and health status of reproductive-aged women especially (but not exclusively) during pregnancy.

Vitamin and Mineral Deficiencies

While inadequate overall food consumption remains the foremost nutritional problem, deficient intakes of specific nutrients are of serious concern for special population groups and in specific regions.

- ♦ Iron deficiency anemia, which is detrimental to work capacity, maternal and child health, and learning capacity, is ubiquitous throughout the developing world (Table 7). It is most severe for pregnant women and preschool-aged children (Fig. 10).
- ♦ Vitamin A deficiency, on the other hand, is concentrated in South and Southeast Asia, the Sahel and East Africa (Map 2). Increased illness, death, and blindness, which are associated with Vitamin A deficiency, are most frequently seen in preschool-aged children in those areas.
- ♦ Iodine Deficiency Disorders -- including cretinism, goiter, and below average mental capacity -- are restricted generally to mountainous areas (Map 3). Fetuses and young children have the most adverse reactions to iodine deficiency although iodine deficient adults exhibit reduced mental capacity, lower reproductive success, and mechanical obstructions from goiter.

PRIORITIES

Taken all together, the data suggest that South Asia and sub-Saharan Africa constitute the highest priority geographical regions, the former because of the sheer numbers of people affected, the latter because of its vulnerability to acute adversity. Within the other regions, priority should be given to specific countries on the basis of nutrition indicators.

The chief nutritional problem is insufficient food but in selected countries, based on problem diagnosis, certain nutrient deficiencies may also demand priority.

As a general rule certain population groups within countries are likely to be at greatest risk -- the landless, new arrivals to urban slums, seasonal migrants, women-headed households, subsistence farmers and those in transition to commercialization, and households in isolated and ecologically fragile areas -- however, each country is different. Disaggregating data on malnutrition, inadequate food consumption, or even under five mortality by operationally relevant categories is necessary to establish priorities among population groups and to identify opportunities for interventions. A.I.D. has been a leader in such nutrition problem identification over the last decade.

CAUSES OF THE PROBLEM

Undernutrition is caused by the combination of food insecurity, health insecurity and nutrition behaviors.

HOUSEHOLD ACCESS TO FOOD

The World Bank defines food security as "the access by all people at all times to enough food for an active, healthy life."¹² Food insecurity is the inability of an individual, family, or nation to acquire adequate food from season to season, from year to year, or during periods of unexpected economic hardship. In the past, public attention has focused on food supply as a determinant of undernutrition but it is quite clear on a global as well as national basis that food supply is not the limiting factor in reducing undernutrition. Even in famine situations it has been found that national food supply is rarely the sole or even the most important cause of the problem -- loss of income, increased food prices, and failure of markets (or governments) to move food into food deficit

12. Poverty and Hunger. Washington, D.C.: World Bank, 1986.

areas were at least as important as aggregate food supply in the famines in Ireland in the mid-19th century, in Bengal in the 1940s, and in Ethiopia in the 1970s and 1980s.¹³ In such cases food supply may be adequate to meet effective demand but fail to reach those who lack sufficient income or influence to obtain food.

Where food purchasing power is too low to prevent growth retardation and dysfunction, transfers of food directly (feeding programs) or through targeted food subsidy programs may be required to support the development process. A.I.D.-supported research has shown that such programs can be affordable and cost-effective if they are targeted to the population at nutritional risk.

Food security can no longer be defined in terms of trade balance, as it has in the past. The most striking example of the inadequacy of the old definition is India. As a result of the Green Revolution, India has been able to produce enough basic grains to export food in good harvest years. Yet one-half to three-quarters of Indian children are chronically malnourished.

Food insecurity is generally a problem of

- irregular income streams
- low wage rates
- wide fluctuations in food prices and availability
- adverse terms of trade between developed and developing countries, urban and rural areas, livestock and agricultural sectors
- seasonality of food supply and prices.

13. Sen, A. Poverty and Famines. An essay on entitlements and deprivation. Oxford, U.K.: Clarendon Press, 1981. Kumar, G. Ethiopian Famines 1973-1985: A Case Study. WIDER Working Paper 26. Helsinki: World Institute for Development Economics Research, 1987.

Seasonality is particularly important in Africa, where a "hungry season" each year precedes the major harvest period. Food stocks are depleted, prices rise, employment opportunities must be forsaken in the interests of the family farm, diarrhea and malaria strike in force, and women are overburdened with agricultural work. The great work burden on women means that food preparation frequency is reduced (increasing bacterial contamination), child care deteriorates, women lose weight even if they are pregnant, and illnesses remained unattended until they become life-threatening. In other words, one bad season can irreparably diminish a family's health and nutritional status.

If agricultural development increases food supply significantly, it will have an impact on nutrition only if it expands the food consumption of at risk households by reducing food prices, increasing incomes, or improving food acquisition and allocation behaviors (assuming that health risks remain constant). Agricultural development need not be restricted to food production and targeted to the small-scale farmers to have an impact on nutrition, however. Households, just like nations, have comparative advantages. Cash crop production may be more advantageous to household income and would be expected to improve household nutrition if food markets were efficient and if intrahousehold allocation of food and other resources were equitable. By the same token, agricultural improvements for larger farmers may result in greater demand for labor of food-poor households, through demand for their labor directly on the farm and through demand for labor intensive goods and services. Once again, the impact on nutrition would depend on income, food availability and intrahousehold distribution effects on food insecure households.

INTRAHOUSEHOLD ALLOCATION OF FOOD

Food security within the household is also of concern. Under severe poverty conditions, children may not be allocated their proportionate share of food and other resources because parents must be more concerned with survival of the family unit than of individual children -- in other words, those that earn the income get the best diet. Females, particularly in South Asia and the Near East, are not entitled to as much food as males because of lower social status as well as lower cash contributions to household income. When income increases, low priority household members may not benefit because the income earner has discretion over expenditures. Analysis of intrahousehold allocation of resources is thus essential to diagnose nutrition problems and to project impacts of interventions.

HEALTH ENVIRONMENT

Health insecurity is caused by a combination of high exposure to infection, increased biological vulnerability, and inadequate access to preventive and curative medical services. The environment in rural areas (and many urban ones) is rife with pathological organisms. The lack of safe water and adequate sanitation assures active fecal-oral transmission of pathogens. This is exacerbated by unsanitary hygienic practices and child care behaviors. Moreover, the lack of childhood immunization, crowding, and poor housing increase transmission of many communicable diseases.

Although food insecurity usually goes hand-in-hand with high exposure to infection and parasites, the primary contribution of nutrition to health insecurity is through enhanced vulnerability to disease. In malnourished people the duration of disease is considerably longer and each bout of disease, in turn, ratchets down nutritional status unless timely compensatory measures are taken during active disease as well as

recuperation. Preschool children and reproductive-aged women are especially vulnerable to the synergistic effects of disease and malnutrition. The extra nutritional demands of growth, pregnancy, and lactation compete with disease for the already inadequate food intake. All too often the result is unhealthy people, poor growth, low birthweight, poor lactation, and maternal depletion.

Breastfeeding both reduces exposure and enhances immunity of infants: breastmilk is nutritionally ideal, it is clean, and it contains some antibodies and other chemical factors that protect the child against infection. As soon as protective breastmilk is replaced with less nutritious contaminated food, exposure and vulnerability rise. For this reason, promotion of breastfeeding is an essential component of health security.

Health Services

To complete the triangle is the lack of services needed to promote good health. Growth promotion for children, prenatal screening, health care and nutrition for women, and education on hygiene, food processing and preparation, feeding, and child care are needed to break the malnutrition-infection cycle in a sustainable manner. The lack of preventive and promotive services in communities means that ignorance, behavioral inertia, and time constraints lead inexorably to curative services which are overburdened with late-stage emergency care and to more illness, malnutrition and death.

Health and Nutrition Behaviors

At any given socioeconomic level, some households manage to attain a minimum level of nutritional well-being and others cannot cope. This is largely a result of different behaviors of key household members, particularly of mothers and mother-substitutes. Under these conditions,

women's time and skills in procuring food, fuel, and water, preparing and serving food, feeding and breastfeeding children, hygiene and health care behavior, child care practices, and economic activities are a crucial intermediary between poverty and nutritional status of the family. In Bangladesh, for instance, an A.I.D.-funded study found that, holding socioeconomic level constant, the infants with highest morbidity and poorest growth were those who were left on the ground to play, exposing them to human and animal feces. In Indonesia a World Bank-funded project which introduced seemingly minor changes in infant feeding (adding oil and protein and vitamin-rich condiments to the weaning food) had a significant effect on weight-for-height (thinness) of infants five to eight months old -- i.e., those who are at highest risk for developing malnutrition because they are beginning to consume significant amounts of non-breastmilk foods. Less research has been done on food procurement and processing behaviors but it is likely that certain households are better able to withstand seasonal hunger and short-term economic downturns because they use available resources more efficiently.

To sum up, adequate food and health resources are needed to assure adequate nutrition. To combat malnutrition, development programs must determine the factors which restrict household and individual access to these resources and address those constraints. The Agency for International Development has at its disposal research results, program experience, and adequate resources to mount an effective nutrition program.

A.I.D.'S RESPONSE -- ADEQUACY AND CONSTRAINTS

Malnutrition and inadequate food consumption have not improved significantly in spite of two decades of foreign aid and major advances in per capita income and food supply. One is forced to conclude that economic

and agricultural growth per se will not eliminate hunger in the near term. Directed, effective action is required in addition to promoting economic growth.

A.I.D.'s response until now has been restrained but constructive. The Agency has brought coherence, order, and status to nutrition programs and played a major role in undertaking the innovative research and experimentation necessary to develop responsive and effective nutrition interventions. A.I.D.'s leadership role in international nutrition has persuaded other donors -- notably the World Bank, the Italian and Japanese governments, UNICEF, and some private foundations -- to support nutrition efforts.

Now is the time for the Agency to reap what it has sown. The product of two decades of nutrition work is a group of cost-effective interventions for which A.I.D. has comparative advantage: nutrition diagnostics and monitoring, breastfeeding promotion, growth promotion, and nutrition social marketing. A.I.D. deserves to get the return on its investment (and the kudos) by implementing these programs.

The constraints to A.I.D.'s taking the next logical steps are large but not insurmountable: A.I.D./W must consolidate and advocate the existing nutrition policies, the Agency must focus more closely on a few cost-effective programs, more staff time needs to be allocated to nutrition/consumption concerns, and increased budget is required for nutrition work in Africa and for the Office of Nutrition.

POLICY

Formal directives from A.I.D. dating from the early 1970s have consistently stressed the need to address the nutrition problem as an integral part of the development process (Appendix B). The most recent Nutrition Policy states that policies, sectoral projects, and direct

nutrition interventions are synergistic in attacking the problem. In 1985 the Blueprint for Development established quantitative goals for the Agency in relation to nutrition: at least 90 percent of the population should be consuming the minimum FAO calorie requirement¹⁴ and chronic and severe undernutrition should affect less than 20 percent of preschool-aged children.¹⁵

The new agricultural focus statement supports increasing the priority given to nutrition in the ARDN account,

"The focus of the Agency's agriculture, rural development, and nutrition program is to increase the incomes of the poor majority and to expand the availability and consumption of food, while maintaining and enhancing the natural resource base."¹⁶

Given recent indications from Honduras and Peru that food insecurity coincides with deterioration of natural resources, it is likely that two of the three objectives of the ARDN account can be met by designing programs specifically for those at joint environmental and nutritional risk.

The recent Health Policy Paper (Revised), Child Survival Strategy and subsidiary strategies for Diarrheal Disease Control, Nutrition, and Child Spacing all emphasize the importance of nutrition as a determinant of health and acceptance of family planning and the integral role of infant feeding and growth monitoring in the health and child spacing strategies.

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14. 1.2 times the Basal Metabolic Rate, which "allows for minimal movement; it is not compatible with long-term health and makes no allowance for the energy needed to earn a living or prepare food. It could be called the 'survival requirement' and is of practical value in conditions of crisis only, for estimating the short term needs of totally inactive dependent people" (FAO/WHO/UNU Expert Consultation. Energy and protein requirements. Geneva: World Health Organization, 1985. Page 73.)
 15. As stated above, only 2.3 percent of normal children fall below this cutoff point.
 16. A.I.D. Congressional Presentation for FY 1988.

The President's End Hunger initiative for Africa emphasizes the role of macroeconomic policies in determining food consumption and nutrition.

"The fundamental prerequisite for ending hunger in Africa is a radical restructuring of economic decision making."¹⁷

Staff work for the Task Force has shown that there is a vital link between policy reform and nutrition improvement but it provides little guidance on the mechanisms for improving nutrition and food consumption through policy reform. The Africa Bureau has funded a major project to examine these linkages, however.

The structural elements of a coherent nutrition policy are covered by the above documents but they need to be consolidated and given visibility and senior staff support. To accomplish this the Administrator should provide unambiguous guidance on program priorities to Mission Directors and other Senior Staff and demand regular briefings on progress toward goals in staff and budget. The impact of the nutrition program on nutritional status can and should be monitored and results reported to A/A.I.D. annually.

This nutrition initiative, if well-publicized, could provide substantial Congressional and public support for the current foreign assistance program.

STAFF

Because undernutrition is inherently a multisectoral problem, staff from many different sectors have been involved in developing and managing nutrition projects at A.I.D. For the most part nutrition action in the field has been the result of a serendipitous coincidence of strong interest in nutrition on the part of a mission director or the host government and

17. Presidential End Hunger Task Force. Working Group 1. Economic Assistance. 1986.

the availability of a nutrition-oriented staff member in-country or at least in the regional office or regional bureau in Washington. In the past, nutrition-oriented staff were actively recruited even though they filled a variety of job titles (including Health Officer, Food for Peace Officer, and Economist), but such purposive recruitment is no longer undertaken. Many nutrition-oriented staff have moved into management or multipurpose positions -- most typically HPN Officers, where the H and the P crowd out the N. Without highly motivated nutrition-oriented staff, nutrition becomes an also-ran in the intense competition for staff time. If the Agency nutrition program is to be revitalized, management and staff must be rewarded for implementing new nutrition programs.

Nutrition-oriented staff in the Agency are concentrated in ANE and LAC; a severe shortage of nutrition staff exists in the Africa Bureau.

If nutrition is to be given its proper weight in the Agency portfolio, a number of staff changes need to be made:

1. Through recruitment or training, at least one-third of the staff in health should have nutrition expertise and training, at least one-third of the agricultural and rural development staff should have experience and training in consumption analysis, and the position descriptions for both HPN officers and A/RDOs should be revised to stress the equal weight in allocation of staff time to be given to nutrition/consumption project development.
2. Existing and future nutrition-oriented staff should be rotated preferentially to Africa and to those countries in other regions with significant nutrition problems.
3. Each Regional Bureau should designate one staff member who is responsible for nutrition on a full-time basis; and the regional offices should each have one full-time staff member (possibly a

PSC) who spends 100 percent of his or her time on nutrition/consumption.

BUDGET

The nutrition problem can be addressed by programs in several sectors, through policy reform and through food aid, so it is difficult to calculate accurately the Agency budget for nutrition. Given Congressional and public interest in the issue it would be advisable in the future to set up a tracking system to advise the Administrator on budget allocations to nutrition.

The Office of Nutrition has calculated that the Agency allocated \$6.6 million to nutrition in 1973 and \$46 million in 1977.¹⁸ Using a different methodology, the nutrition budget was estimated to average \$20 million per year between 1979 and 1985, when it jumped up to \$52 million, then dropped to \$33 million in 1987 (Table 8, Fig. 11). Nutrition-oriented food aid,¹⁹ for which figures are available only since 1983, rose from \$117 million in 1983 to \$141 million in 1984, then fell back down to \$110 by 1987 (Table 9, Fig. 12).

Several observations on the budget are in order.

- ♦ The nutrition budget represents an insignificant proportion of the total DA, ARDN, and Health accounts compared to the what the legislation suggests and compared to famine relief (Table 9).
- ♦ Nutrition-oriented technical assistance and food aid have both plunged since 1985.
- ♦ The budget for the Office of Nutrition is inadequate to provide technical assistance, carry out a realistic applied research

18. "A.I.D.'s Responsibilities in Nutrition," Cable 1977.

19. MCH, daycare, and preschool feeding programs run by PVOs.

program, and serve a nutrition communication role within the Agency. The real budget has not increased in the last decade.²⁰

- ♦ While effectiveness varies greatly among projects, the most effective interventions currently available -- breastfeeding promotion, growth monitoring, social marketing, and nutrition problem diagnosis and monitoring -- comprise a small proportion of the Agency's current nutrition portfolio.
- ♦ The "nutrition-oriented food aid" figures probably overstate actual nutrition programs in PVOs, because the figures are based solely on program categories.²¹ On the other hand, the figures exclude all food-for-work projects and the programming of Title I and Title III food and local currencies, which may positively affect nutrition.
- ♦ At present most supplementary feeding programs do not appropriately target the food based on nutritional risk and do not include an effective nutrition education component. Based on the A.I.D.-supported Integrated Child Development program in India, each dollar of food requires at least fifteen cents of additional resources to be effective.²² A.I.D provides nothing close to a sufficient amount of complementary resources.

20. The blips in 1985-87 are due to the Congressional pressure to spend millions of dollars on Vitamin A programs which do not merit such resources either based on prevalence or consequences of the nutrition problem or on availability of cost-effective sustainable solutions. The dotted line in the figures adjusts the ST/N budget for the excess expenditures on Vitamin A (over the trend of \$0.4 million per year).

21. In contrast, individual technical assistance projects were reviewed and included in the budget exercise if they met specific design criteria or were known to be nutrition programs by knowledgeable field staff. Because A.I.D. has no systematic tracking system of PVO projects (outside of the Child Survival program), especially those which rely on food aid exclusively, it was not possible to conduct a more detailed review of food aid projects. A.I.D. does not centrally collect information on the programming of Title I and III food and local currency, either.

In summary, the Agency devotes a minor amount of resources to nutrition and those resources could be more effectively programmed both regionally and through improved program focus and design.

PROGRAM FOCUS

A.I.D. and other donors have learned much from the last two decades' work in nutrition. Intensive research and experimentation have yielded a package of proven cost-effective interventions which A.I.D. can now promote broadly. This package consists of

- ♦ nutrition diagnostics and monitoring using nutritional status, food consumption, and other vital statistics to determine the major causes and effects of malnutrition, to design feasible and appropriate responses, and to monitor and anticipate changes in nutrition as a result of program implementation or macroeconomic forces;
- ♦ breastfeeding promotion working within the formal medical community as well as with the at-risk population;
- ♦ growth promotion using growth monitoring to consolidate nutrition education, supplementary feeding programs, and maternal and child health care;
- ♦ nutrition social marketing based on behavioral trials, interactive education materials, and judicious use of mass media.

The feasibility of implementation of these interventions is presented in Table 12. Techniques are currently available to implement all of these interventions although some (like prenatal care) require operations research during implementation to ascertain the most effective way to promote participation and compliance.

22. The very successful World Bank ICDS project in Tamil Nadu matches each dollar of food with \$1.28-2.38.

Nutrition Diagnostics and Monitoring

A.I.D., through the Centers for Disease Control and a handful of research institutions, has been a leader in measuring nutritional status and food consumption and using these data for

- diagnosing the size and nature of nutrition problems,
- designing programs that address nutritional constraints,
- targeting programs,
- projecting impacts of price and income changes on food consumption of specific income groups, and
- evaluating the intrahousehold factors that determine whether household welfare translates into individual welfare.

Notable success in applying this type of analysis to agricultural strategy development and macroeconomic policy analysis have been demonstrated in Egypt, Honduras, Sudan, Tanzania, Sri Lanka, Zambia, and Indonesia. Health strategies in Peru, Ecuador, Sri Lanka, Swaziland, Brazil, and Colombia have been based on analysis of nutrition problems. This capacity has been institutionalized successfully in Chile, Zaire, Botswana, Malawi, Sri Lanka, Kenya, Jamaica, and Central America, with partial A.I.D. support.

One of the greatest failures of consumption analysis in recent years has been the failure to anticipate or detect the deterioration in food consumption and nutrition resulting from the economic recession and structural adjustment. This is especially disturbing since A.I.D. not only has the capability and resources but also because the Agency has made much ado about its commitment to alleviating poverty. In the future, a greater effort must be put into data collection and analysis for monitoring purposes.

Breastfeeding Promotion

A.I.D. has achieved remarkable success in increasing breastfeeding in Indonesia, Honduras, and Panama while simultaneously reducing hospital nursery costs substantially as part of the WELLSTART project. The Agency's unique recipe for success -- working with hospital administration, training health personnel, and community outreach -- has been shown to be necessary because those medical personnel are often misinformed about breastfeeding yet have influence (direct and indirect) over a large population of women who are at risk of not breastfeeding.

Growth Promotion

A.I.D.'s experience with growth monitoring programs in Haiti, India, and the Dominican Republic, the World Bank's program in the state of Tamil Nadu in India, and UNICEF's program in Indonesia have shown that growth monitoring and promotion can be a powerful tool to improve nutrition through informing mothers about their children's growth and providing them with practical advice, child survival technologies, and supplementary food as appropriate. In addition, significant improvement in the cost-effectiveness of food aid is possible when growth monitoring is used to target participation. More operations research is needed on reaching women of childbearing age through growth promotion programs in order to prevent their nutritional deterioration during pregnancy, increase birthweight, and provide screening and treatment for health risks.

Nutrition Social Marketing

A.I.D. can take much of the credit for transforming "nutrition education" from an irrelevant, ineffective and unacceptable intervention to a cost-effective, culturally appropriate, and rewarding one. The Agency's early and continuous support for nutrition social marketing has made available methods for developing and communicating nutrition messages that

make nutrition education a vital part of most nutrition and health programs. Effective nutrition messages are developed in collaboration with the community, tested and evaluated in typical target households, translated into interactive education materials (for growth promotion programs for instance) and use mass media to complement person-to-person communication. Although A.I.D. has used nutrition social marketing only on a small scale, the World Bank has implemented these techniques on a large scale in its Tamil Nadu project with great success.

This package follows logically from A.I.D.'s past efforts which are described briefly below.

A.I.D.'s Historical Role in Nutrition

From the mid 1960s to the mid-1970s, A.I.D., along with most other donors and private groups, thought the "answer" to the world nutrition problem lay in food technology. This was in part due to the mistaken belief that protein and vitamins were the limiting factors in the diet rather than food in general being inadequate. Novel protein sources, fortification, genetic manipulation of plants to supply a better mix of amino acids, and extrusion processing of legumes were thought to be sufficient to solve the problem. In the course of attempting to implement such programs it was found that processed foods often comprise an insignificant portion of the diet of the undernourished population and hence that technological solutions were not reaching the population most in need. For instance the technology of iodizing salt is well known and inexpensive. In all of the Andean countries, where iodine deficiency is prevalent, iodization of salt is a legal requirement. However, iodine deficiency persists as a public health problem, because there is no regular monitoring of iodine deficiency and iodized salt does not reach mountainous areas (where iodine deficiency is the worst) because of transportation difficulties and multiple sources of salt in the commercial market.

Some valuable lessons from this era led to much improved programs in the future, however.

- ♦ Effective and sustainable solutions to iron and Vitamin A deficiencies have been developed through donor coordination (INACG and IVACG, the international consultative groups for iron and vitamin A, respectively, which A.I.D. played a key role in founding), development of alternative delivery systems, and improved nutrition education techniques.
- ♦ The weaning period has been singled out as a particularly high nutritional stress period requiring special attention in programming.
- ♦ An appreciation of the socioeconomic context of the nutrition problem has led to the integration of nutrition concerns in economic policy analysis, agricultural strategies, and health systems.

Realizing that specific nutrient deficiencies were not the major problem, A.I.D. then set out in the 1970s to analyze the nature of the problem. A.I.D.-funded research found that early childhood malnutrition impairs survival, cognitive development, immune function, reproductive outcome, and work capacity. This series of classic studies forms the foundation for the most of our current knowledge of the nutrition problem. Recent A.I.D. sponsored research has found that specific nutrient deficiencies -- vitamin A and iron -- can impair the immune response as well.

A.I.D. was the first major donor to support multidisciplinary diagnosis of nutrition problems in-country as a means of devising solutions (previously malnutrition was considered a purely biomedical problem).

"Nutrition Planning," as this analysis came to be called, has led A.I.D.

and the World Bank into a number of successful nutrition interventions.²³ Toward this end, A.I.D. supported the development of more accurate and useful nutrition survey methods.

Nutrition planning led into consumption analysis of agricultural and economic policies. Consumption analysis allows the policy maker to disaggregate households into food consumption groups to ascertain the impact on at-risk households of increased income or agricultural output. Among other findings, A.I.D.'s efforts in this area have shown based on research in Guatemala, the Gambia, the Philippines, Kenya, and Malawi that commercialization of agriculture ("cash cropping") does not lead automatically either to improved welfare of farm families nor to further landlessness and impoverishment in rural areas. It does, however, make commercial farm families more sensitive to market weaknesses and to counterproductive macroeconomic policies. Even if household income increases, the net nutritional effect is a function of who within the household earns the income, the frequency and form of income, time reallocation away from household production toward commercial agriculture, and changes in the health environment.

Another noteworthy finding of consumption analysis has been that nutritional risk is often associated with environmental risk -- those households which are food insecure due to poor food production, poor off-farm income opportunities, and inadequate food market articulation and infrastructure, are also likely to be living on fragile lands. A recent consumption analysis project in Honduras, for instance, found that small farmers were net purchasers of food and would be adversely affected by

23. Berg, A. "Nutrition Planning is Alive and Well, Thank You." Food Policy 12(4): 365-375, 1987.

increasing the price of maize. While food aid might compensate the poorest farmers for this negative impact, it would at the same time provide a disincentive to the more market oriented small farmers. This consumption analysis also identified a two-track agricultural system: a market oriented, high input sector and a low input, subsistence-oriented, hillside agriculture sector. This in turn led the mission to propose a strategy for the latter group targeted to the worst nutrition regions which combines natural resource management with food security oriented agriculture. This coincidence of natural resource degradation and nutritional risk appears to apply to the Andean region as well and undoubtedly to other mountainous and to arid and semi-arid agricultural regions.

One of the major advances made by A.I.D. in consumption analysis was the extension of the analytical framework to macroeconomic policy issues. Overvalued foreign exchange rates, implicit taxation of the agricultural sector (through taxation of agricultural exports, low administered producer prices and inefficient marketing boards) and high budget deficits (often a result of general consumer subsidies) were found to have negative effects on the rural population and to restrict both food production and consumption of nutritionally at-risk groups.

A.I.D.-funded research also found that consumer subsidies can be affordable and cost-effective if they are designed and targeted properly. Selection of foods to be subsidized (those foods consumed primarily by the poorest), the mechanism for making foods available (ration shops, commercial outlets, health posts, feeding centers), and the means of transferring purchasing power (direct food transfers, price subsidies, participation coupons) all depend on a knowledge of the at-risk population, its access to services, and food acquisition behavior.

In the last ten years, A.I.D. has supported considerable research on nutritional effectiveness of food aid which is now ready to be incorporated into improved program design. Researchers have found that

- ♦ Feeding programs are most effective if they are targeted to children under three years of age and combined with growth monitoring, nutrition education, and maternal child health care.
- ♦ Supplementation of pregnant women is a more efficient way to improve infant nutrition -- through improving birth weight and lactation -- than by supplementing the lactating woman or early introduction of breastmilk supplements.
- ♦ Income-generating activities and child care enhance both participation and nutritional impact.
- ♦ Food for Work programs can have nutritional impact if they are targeted seasonally and geographically and eligibility restricted to the most vulnerable households.
- ♦ Title II programs are most effective when complemented with monetary resources either from A.I.D. technical assistance or from local currency generation.
- ♦ Titles I and III can have a significant positive impact on the food consumption of at-risk households if the food and local currencies are programmed well and if the policy reforms introduced are progressive nutritionally. Conversely, if no thought is given to consumption of at-risk household, food aid and policy reforms can have significant detrimental nutritional impacts.

Social marketing, a concept to evolve from the private sector, was first developed by A.I.D. in nutrition in the 1970s. The Agency supported successful mass media nutrition education programs in the Philippines and Nicaragua in the early 1970s, long before its value for promoting family

planning and child survival technologies had been discovered. Today, the principles of social marketing are not only a vital component of effective nutrition education campaigns but are also central to the Agency's contraceptive and ORT distribution systems and A.I.D.S education.

Recent refinements of the social marketing technique, including the use of behavioral trials in message development and the elaboration of interactive counselling materials, have been pioneered in A.I.D. nutrition and child survival projects. Now with A.I.D. support these social marketing methodologies are being streamlined for use by local institutions. Other donors, notably the World Bank, have followed A.I.D.'s lead in nutritional social marketing to implement highly cost-effective nutrition education programs in Indonesia, India, and Brazil.

During the 1970s A.I.D. was remarkably successful in institutionalizing nutrition training and analysis capability in-country. In Tunisia, Chile, Brazil, Central America, Zaire, Philippines, Peru, the Caribbean, and Lesotho, A.I.D. has supported the development of public and private groups which continue to monitor and advise the governments on nutritional problems.

Since the early 1980s a number of trends have contributed to a reorientation of the nutrition program. The reduction in staff dedicated solely to nutrition has meant fewer and smaller nutrition projects in fewer countries. The Agency has become much more reliant on centrally funded nutrition projects to compensate for the lack of field personnel even though the Office of Nutrition has remained static throughout this period both in staff numbers and in budget.

The Child Survival Initiative, which gave nutrition a belated and minor role, has resulted in even more piecemeal nutrition efforts as peripheral components of large health projects. Recently, some countries

(Ecuador for instance) are beginning to appreciate the central role that nutrition plays in child survival and are rewriting their child survival strategies accordingly. While Child Survival has channeled dollar resources to many PVOs, few additional resources have been made available to complement food aid. Monetization of Title II has proven effective under some circumstances but much more needs to be done to coordinate resources among Titles I, II, and III and between technical assistance and food aid.

DONOR COORDINATION

In recent years both the World Bank and UNICEF have become major donors in nutrition. The Bank has funded large and successful nutrition loans in Brazil, Colombia, India and Indonesia and is starting new loans elsewhere. Its efforts include nutritional social marketing, growth promotion, and improving household food security through targeted food transfers and subsidies. The Bank is also initiating a special food security program in Africa and reviewing its Structural Adjustment loans for potential nutritional impact. A recent review of the Bank's success in nutrition²⁴ credits A.I.D. with undertaking much of the initial research and institution building that made these projects more effective.

UNICEF's successful national growth monitoring program in Indonesia in the early 1980s has been a model for using existing infrastructure to implement programs. In the Indonesian case, growth monitoring was integrated with a national family planning program. A.I.D. collaborated with UNICEF on this program. UNICEF has also played a key role in promoting communications among directors of growth monitoring programs and between researchers and implementers through two major international

24. Berg, A. Malnutrition What Can Be Done? Washington, D.C.: World Bank, 1987.

workshops on growth monitoring, the most recent one attended by A.I.D. staff and consultants. A.I.D. has much to gain from collaborating with UNICEF in technical assistance as well as commodities for growth monitoring and promotion.

The Joint Nutrition Support Program, funded by the Italian government, is implemented by UNICEF and WHO. Its budget is about \$85 million for five years.²⁵ Projects supported by the JNSP range from health infrastructure to food production but nearly all of them have in place a nutrition surveillance system and a growth monitoring program. In addition some critical research efforts are under way, for example a multicountry validation of research originally funded by A.I.D. on the impact of child caretaking behaviors on children's growth.

The Food and Agriculture Organization (FAO) should have a significant program in nutrition but it does not. In 1982 it had \$12 million of projects in operation.²⁶ The bureaucracy of the FAO impedes taking new initiatives in this area.

The International Fund for Agricultural Development, on the other hand, has funded a number of small activities that directly addressed the food security problems of small farmers.

Several donors have sponsored significant research efforts: the World Hunger Program at the United Nations University, underwritten to a great extent by the Japanese, recently inaugurated the World Institute on Development Economics Research (WIDER) in Helsinki, which has devoted most of its efforts to examination of nutrition and consumption issues. The

25. Joint WHO/UNICEF Nutrition Support Programme. Annual Report 1987.

26. Muscat, R.J. Malnutrition in the 1980s: Roles and Operations of the International Agencies. Report to the 9th Session of the UN ADD Sub-Committee on Nutrition, March 1983.

International Agricultural Research Centers, most notably the International Food Policy Research Institute, are devoting some resources to nutrition and consumption research, but they should devote greater attention to the determinants of expanded food consumption.

Because each has a different comparative advantage, it would behoove A.I.D. to join forces with these other donors both centrally and at the country level. In each country, nutrition problem diagnosis should include some assessment of activities and relative strengths of other donors in nutrition.

SUMMARY

The Agency should give higher priority to nutrition because malnutrition constrains the development process, because public support for foreign aid depends on alleviating human suffering, because other high priority activities of the Agency require improved nutrition to be effective, and because of A.I.D.'s legacy as a leader in nutrition. A.I.D.'s ability to make decisive changes in its nutrition program depends to a large extent on staff availability and capability. The number and distribution of nutrition-oriented staff and the job descriptions of HPN and A/ED Officers need to be changed in order to capacitate the Agency to increase its nutrition impact. Existing resources must be better programmed for greater impact and new resources should be made available, particularly to Africa and ST/N, to assure an adequate response to the growing nutrition problems of LDCs. The initial nutrition program focus should be based on magnitude of the problem addressed, successful implementation experience and cost-effectiveness. The following four activities should be considered as the first steps in every mission toward a credible nutrition program:

- ♦ NUTRITION DIAGNOSTICS AND MONITORING to design responsive and effective programs, strategies, and policies and nutrition surveillance to assess changes and project impacts of policy reforms.

- ♦ BREASTFEEDING PROMOTION by working within the formal medical system as well as using community outreach.

- ♦ GROWTH PROMOTION using growth monitoring as a tool to consolidate child survival, supplementary feeding, and maternal nutrition efforts.

- ♦ NUTRITION SOCIAL MARKETING based on problem diagnosis in the community, behavioral trials of messages, interactive counselling around growth promotion programs, and judicious use of mass media.

- ♦ IMPROVING FOOD AID by
 - a) requiring MCH, preschool, and daycare feeding programs to include growth promotion, targeting to pregnant women and children under 3, and nutrition education,
 - b) targeting food-for-work projects to consumption problems of food insecure households,
 - c) ensuring that Title I and III policy reforms and food aid have the most positive impacts possible on food security of high risk populations, and
 - d) complementing food aid with sufficient dollar resources and technical assistance to achieve above objectives.

With these changes, A.I.D. is likely to have a significant impact on food and health insecurity, which in turn have multiplier effects on the overall development process. The nutrition problem is severe, but solutions are within our grasp...can we afford not to act?

May 18, 1988

Table 1. Selected Indicators of Development by Regions*

REGIONS	<u>GNP PER</u> <u>CAPITA</u>			<u>INDEX OF FOOD</u> <u>PRODUCTION</u>		<u>CALORIES PER</u> <u>CAPITA</u>			<u>IMR</u>		<u>U5MR</u>	
	(Current US\$)			(1979-81=100)		(per day)			(per thou)		(per thou)	
	1965	1973	1986	1973	1986	1965	1973	1986	1965	1985	1960	1985
SUBSAHARAN AFRICA	111	187	445	105	99	2098	2074	2039	158	118	285	193
ASIA-NEAR EAST	99	138	352	91	108	2037	2043	2287	144	90	262	147
LATIN AMERICA & CARIBBEAN	307	467	1028	100	96	2115	2204	2319	114	70	197	103
TOTAL	112	165	407	94	106	2053	2059	2232	145	95	263	155

SOURCE: Appendix Tables A-1, A-2.

* Country data weighted by population size. GNP data excludes countries with missing data.

TABLE 2. Prevalence of Preschool Malnutrition* by Decades

	1960s	1970s	1980s
Latin America	21.6 (10)	21.2 (7)	15.3 (7)
Africa	24.6 (5)	26.3 (20)	29.5 (10)
Asia and Near East (excluding Pakistan, Bangladesh, and India)	36.5 (3)	35.7 (7)	36.6 (5)
Bangladesh		91.3	71.7
Pakistan**	81.7		64
India		72.3	
World (excl. BPI)	29.3 (18)	28.8 (34)	29.2 (22)

Note: () number of countries with data.

Source: Table A-3.

*Generally < -2Z weight-for-age but also < 80%, < 75% weight-for-age and prevalence based on clinical signs.

**1980s data based on Sanghvi, personal communication, 1988.

TABLE 3. Prevalence of Inadequate Diets
(87 developing countries)

Food intake level	1970	1980
< 90% FAO requirement	657 million (40% total population)	730 million (34% total population)
< 80% FAO requirement	296 million (18% total population) (45% total undernourished)	340 million (16% total population) (46.6% total undernourished)

Source: Poverty and Hunger. Washington, D.C.: World Bank, 1986.

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TABLE 4. Distribution of Inadequate Diets by Region, 1980

	(A) < 90% FAO requirement		(B) < 80% FAO requirement		(B) as % of (A)
	Millions	% Total population	Millions	% Total population	
Africa	150	(44)	90	(25)	60
East Asia and PRC	40	(14)	20	(7)	50
South Asia	470	(50)	200	(21)	43
Middle East & N. Africa	20	(10)	10	(4)	50
Latin America	50	(13)	20	(6)	40

Source: Poverty and Hunger. Washington, D.C.: World Bank, 1986.

TABLE 5. Projected Number of People and Share of Population with Calorie Intakes Below 90 Percent of FAO/WHO Requirements in Selected Countries, By Regions

(population data in millions)

Region	1990											
					Constant food price				Rising food price (1%/yr)			
	1965		1973		Income growth ^a Low		Income growth ^a High		Income growth ^a Low		Income growth ^a High	
	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number
Latin America	37	72	37	92	15	59	10	41	19	76	12	48
Asia	56	456	49	448	30	394	24	312	34	456	27	363
Middle East	40	34	33	34	20	31	15	23	18	29	16	26
Africa	44	16	53	25	34	29	26	22	38	32	29	25
Total	50	578	46	599	26	513	20	398	30	593	23	462

Source: S. Reutlinger and H. Alderman, "The Prevalence of Calorie Deficient Diets in Developing Countries," World Development 8 (1980), pp. 399-411.

^aLow "income growth" refers to the historical growth rates (1960-74) in per capita income in the respective countries, except that where the growth rate was lower than 1 percent growth was assumed. High income refers to 1.5 times the historical growth rates in the respective countries, or 1.5 percent annually, whichever was greater.

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TABLE 6. Proportion of Low Birth Weight by Region, Weighted by Number of Live Births (in percent)

	1979	1982
Subsaharan Africa	15.8	15.6
Asia-Near East	28.4	28.7
Latin America & Caribbean	10.9	10.9
Average	25.1	25.2
U.S.	7.4	6.9

Source: Table A-5.

TABLE 7. Estimated Prevalence of Anemia by Geographic Region and Age/Sex Category, Around 1980
(population data in millions)

	Children				Men		Women			
	0-4 years		5-12 years		15-59 years		15-49 years			
							Pregnant		All	
	%	Number	%	Number	%	Number	%	Number	%	Number
Africa	56	48.0	49	47.3	20	23.4	63	11.3	44	46.8
Latin America	26	13.7	26	18.1	13	12.8	30	3.0	17	14.7
East Asia ^a	20	3.2	22	5.6	11	6.1	20	0.5	18	8.4
South Asia	56	118.7	50	139.2	32	123.6	65	27.1	58	191.0
Developed regions ^b	12	10.3	7	9.1	3	12.0	14	2.0	11	32.7

Note: Anemia is defined as a hemoglobin concentration below WHO reference values for age, sex, and pregnancy status. Regions are drawn according to United Nations regions. Prevalence rates are estimated from the various studies.

Source: World Health Statistics Quarterly 38 (1985), p. 313.

^aExcluding China.

^bDeveloped regions include North America, Japan, Europe, Australia, New Zealand, and the USSR.

TABLE 8. Agency Nutrition Budget 1979-1987, by Bureau

	1979	1980	1981	1982	1983	1984	1985	1986	1987
Total	18.9	15.8	15.8	18.7	22.8	28.2	51.6	38.2	33.2
ANE	4.5	2.2	3.1	2.2	5.2	14.0	9.7	7.3	5.0
LAC	4.7	3.5	2.8	4.0	2.2	1.9	9.6	4.7	4.5
AFR	1.5	1.1	1.1	1.1	3.4	0.6	5.1	1.9	4.0
Central	8.2	9.1	8.8	11.3	12.1	11.8	27.2	24.2	19.6
ST/N	6.0	7.3	6.5	7.8	8.2	7.5	13.6	10.8	12.4
ST/N adjusted for excess Vitamin A							8.1	5.8	8.5

TABLE 9. Nutrition Expenditures by Account and Year
(\$ millions)

	1979	1980	1981	1982	1983	1984	1985	1986	1987
ARDN	15.2	12.4	8.1	12.9	15.4	20.8	24.4	15.8	13.8
Health	2.9	2.0	6.0	5.2	6.0	6.4	20.0	12.7	8.1
SDA	0.3	0	0.2	0	0	0	2.2	0.2	0.2
POP	0.1	*	*	0	0.1	*	0.2	1.8	1.9
SAHEL	0.3	0.3	0.7		0.1	0.4	0.8	0.4	0.6
CS	**	**	**	**	**	**	2.8	3.0	6.5
EHR	0	0.5	0.6	0.5	0.3	0.1	0.4	0	0
TOTAL DA	18.8	15.2	15.6	18.7	21.8	27.7	50.7	34.0	31.1
ESF	0.1	0.6	0.2	0	1.0	0.5	0.9	4.2	2.1
TOTAL	18.9	15.8	15.8	18.7	22.8	28.2	51.6	38.2	33.2
Nutrition-Related Food Aid ^a		n.a.	n.a.	n.a.	116.9	140.9	132.7	116.9	109.9

^a Includes MCH, Other Child Feeding (Daycare only), and Preschool Feeding programs.

* Negligible amount.

**Nonexistent account.

TABLE 10. Agency Nutrition Budget as Proportion of Functional Accounts and Total Development Assistance
(in percent)

	<u>1979</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	1987
ARDN-N as % total ARDN Account	2.5	2.0	1.7	1.8	2.1	2.9	3.1	2.1	2.0
Health-N as % Total Health Account	2.2	1.5	4.2	3.9	4.3	5.0	7.9	6.0	4.8
Health and CS-N as % Total Health and Child Survival Accounts							7.0	6.3	7.6
DA-N as % Total Development Assistance	1.5	1.2	1.2	1.3	1.5	1.9	2.7	2.0	1.9

TABLE 11. PL480 Title II Voluntary Agency Program Levels
(total and nutrition-related)

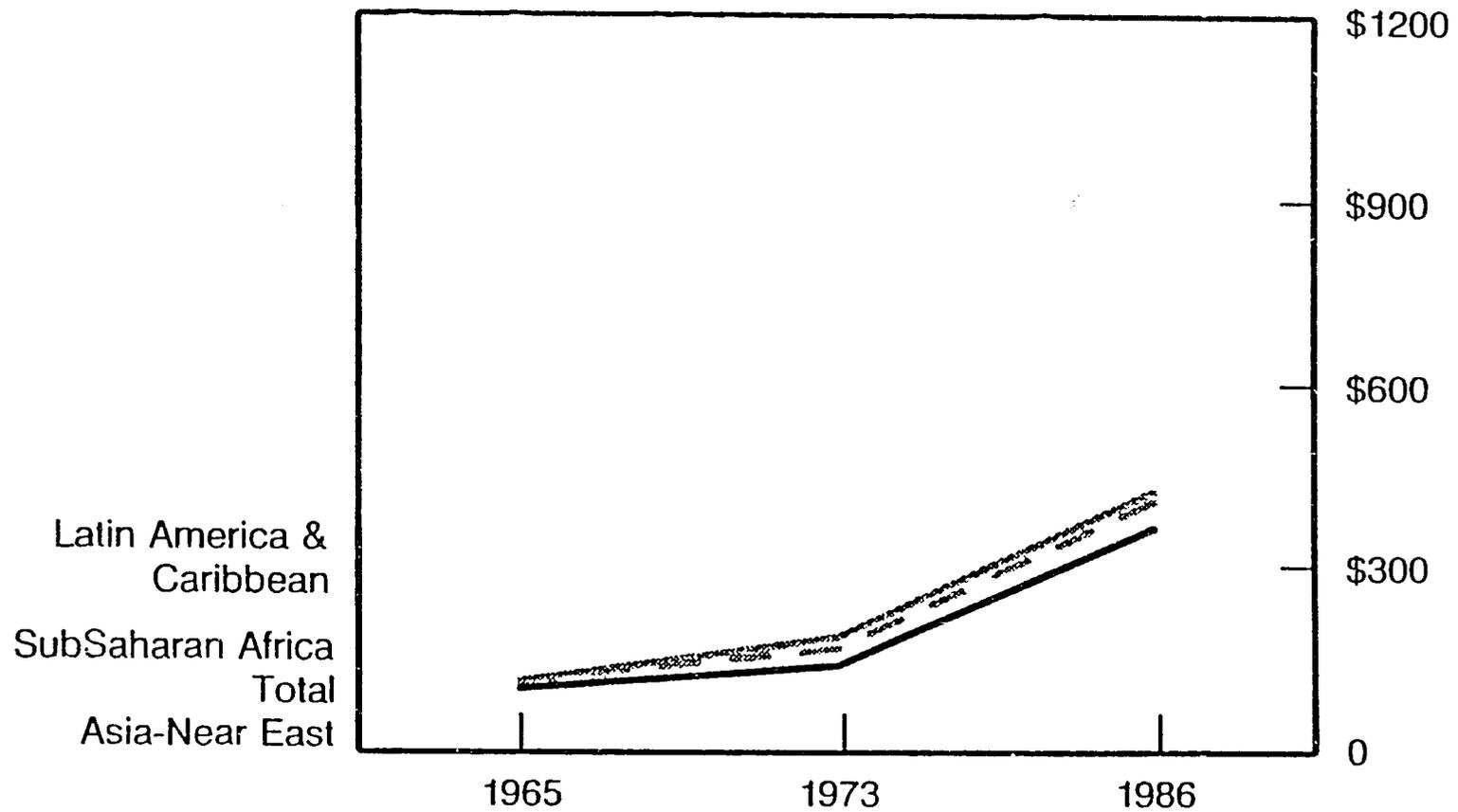
	1983	1984	1985	1986	1987
Agency					
Total Title II					
Value (\$ mill)	557.2	650.0	650.0	758.6	552.3
Total voluntary agency (non-emergency)					
Food (000 mt)	880.9	918.8	871.9	878.8	950.0
Value (\$ mill)	223.8	264.7	235.1	217.4	195.9
Nutrition-related					
Food (000 mt)	420.3	410.6	419.1	422.1	456.9
Value (\$ mill)	116.9	140.9	132.7	116.9	109.9
\$ as % total Title II	21.0%	21.7%	20.4%	15.4%	19.9%
\$ as % total voluntary agency Title II (non-emergency)	52.2%	53.2%	56.4%	53.8%	56.1%
ANE					
Total					
Food (000 mt)	601.3	636.5	574.8	548.7	596.6
Value (\$ mill)	150.5	176.9	149.0	136.4	127.8
Nutrition-related					
Food (000 mt)	260.2	242.2	239.5	237.1	294.3
Value (\$ mill)	73.9	86.8	78.5	69.5	75.7
LAC					
Total					
Food (000 mt)	147.2	146.4	141.3	165.8	187.7
Value (\$ mill)	37.8	44.0	38.4	38.1	35.1
Nutrition-related					
Food (000 mt)	68.7	69.6	65.7	71.9	79.8
Value (\$ mill)	18.0	21.2	18.0	16.6	15.4
AFR					
Total					
Food (000 mt)	132.4	135.9	155.8	164.3	165.7
Value (\$ mill)	35.5	43.8	47.7	42.9	33.0
Nutrition-related					
Food (000 mt)	91.4	98.8	113.9	113.1	82.8
Value (\$ mill)	25.0	32.9	36.2	30.8	18.8

TABLE 12. Interventions: State of the Art

Intervention	Prevalence of nutrition problem addressed	Experience	Feasibility	
			Short term	Medium term
Problem diagnosis & monitoring	Poor majority	Components successfully implemented in at least 25 countries	Diagnosis	Monitoring
Breastfeeding promotion	Mostly urban women and medical system	Successfully implemented in 3 countries	Yes	
Growth promotion	Children under 3 Pregnant and lactating women	Components successfully implemented in several countries	Children's components	Women's components
Nutrition social marketing	Poor majority	Successfully implemented in at least 10 countries	Yes	

FIGURE 1.

GNP per Capita (1986 US Dollars)

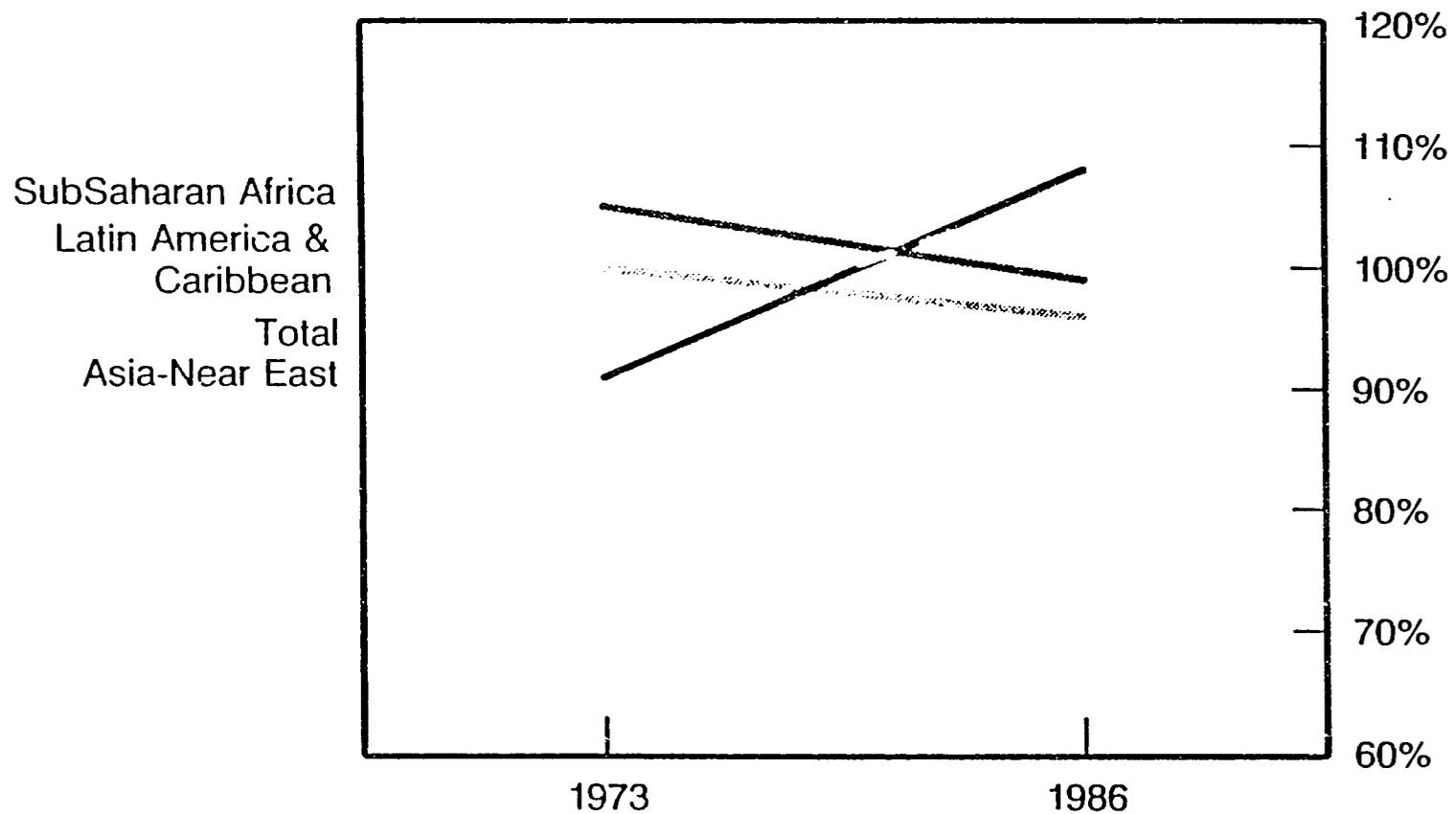


Source: Table 1.

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FIGURE 2.

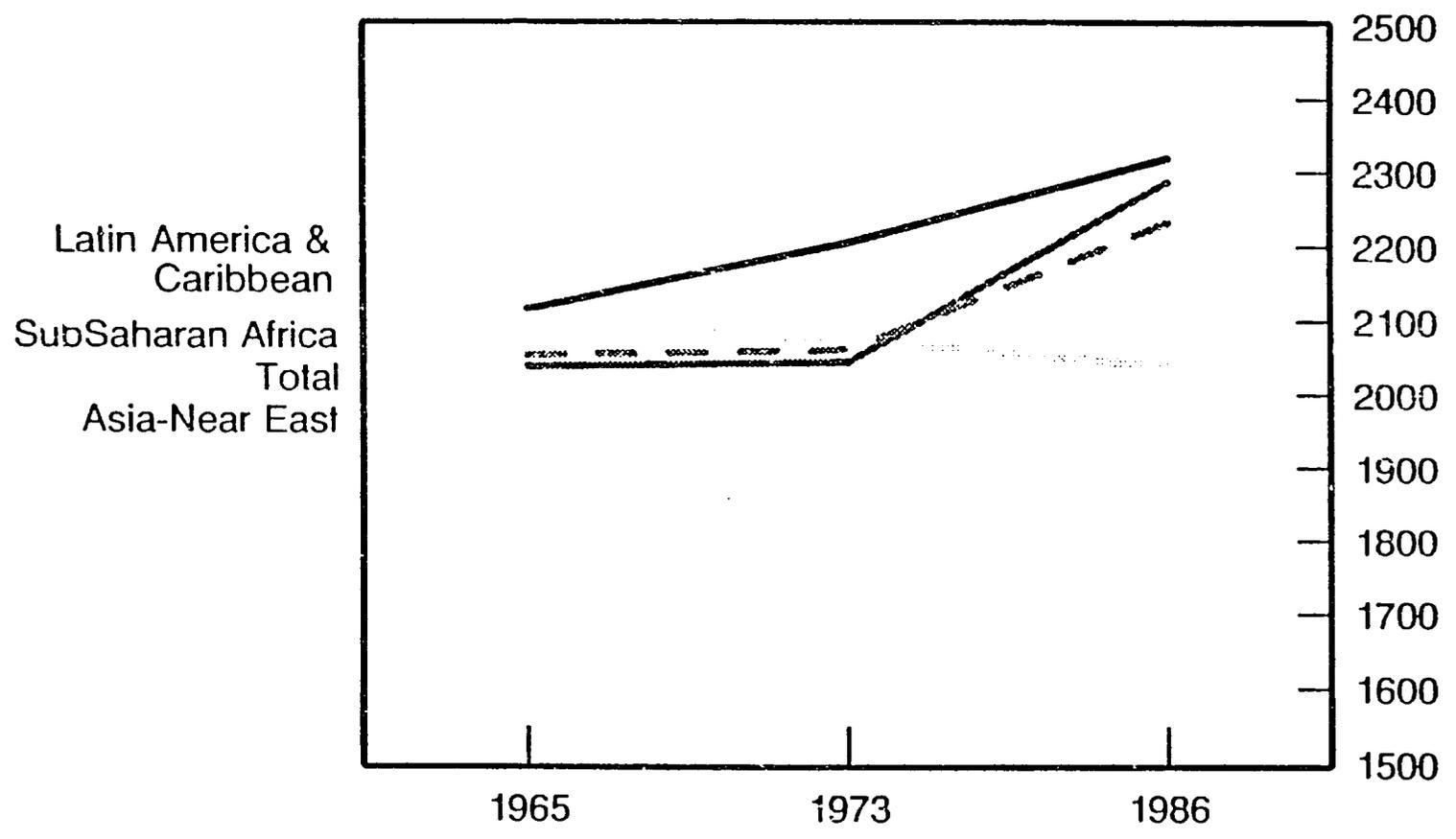
Index of Food Production per Capita (1979 - 1981 = 100%)



Source: Table 1.

FIGURE 3.

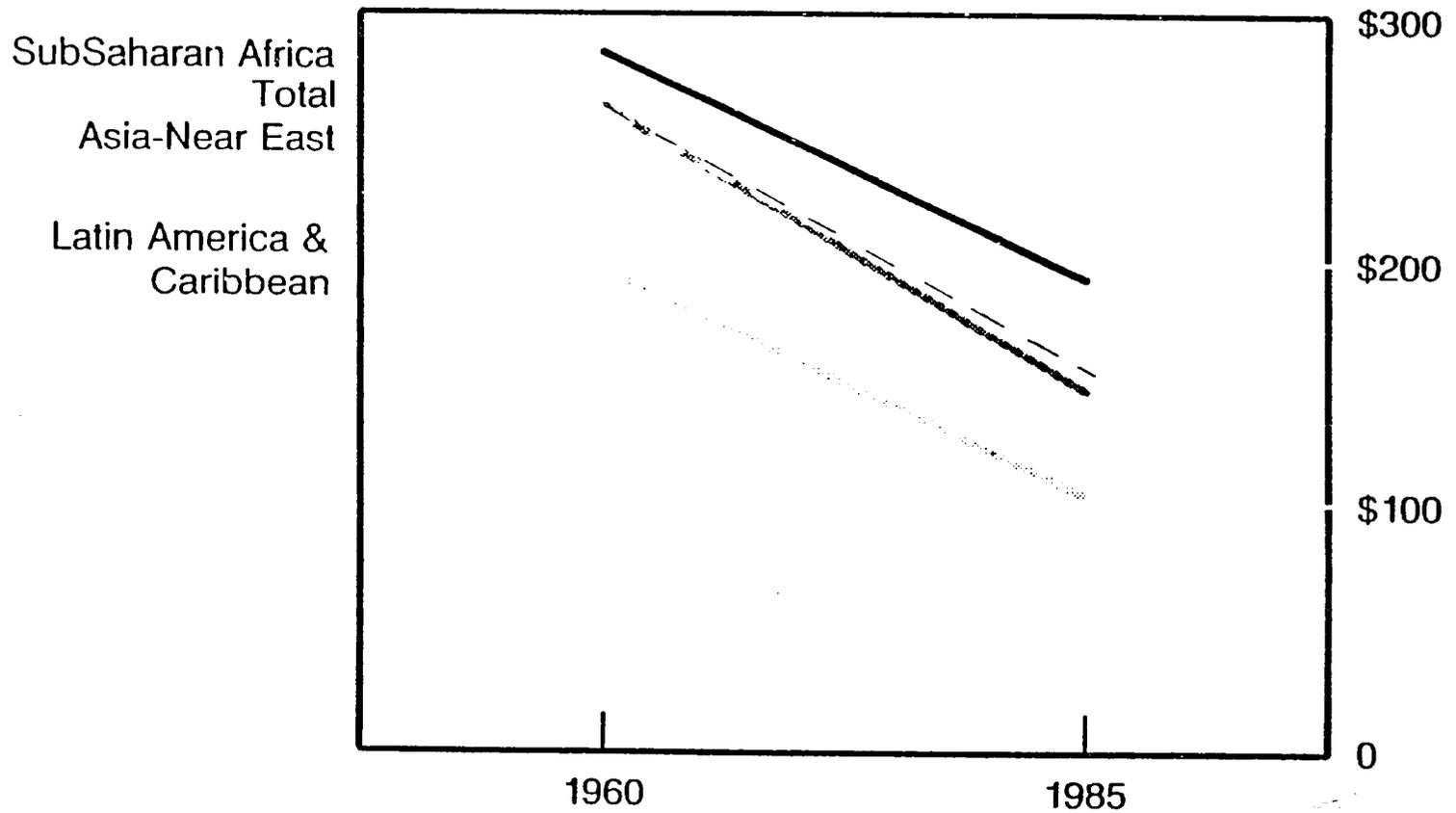
Daily Calories per Capita



Source: Table 1.

FIGURE 4.

Mortality: Children Under Five (per Thousand)

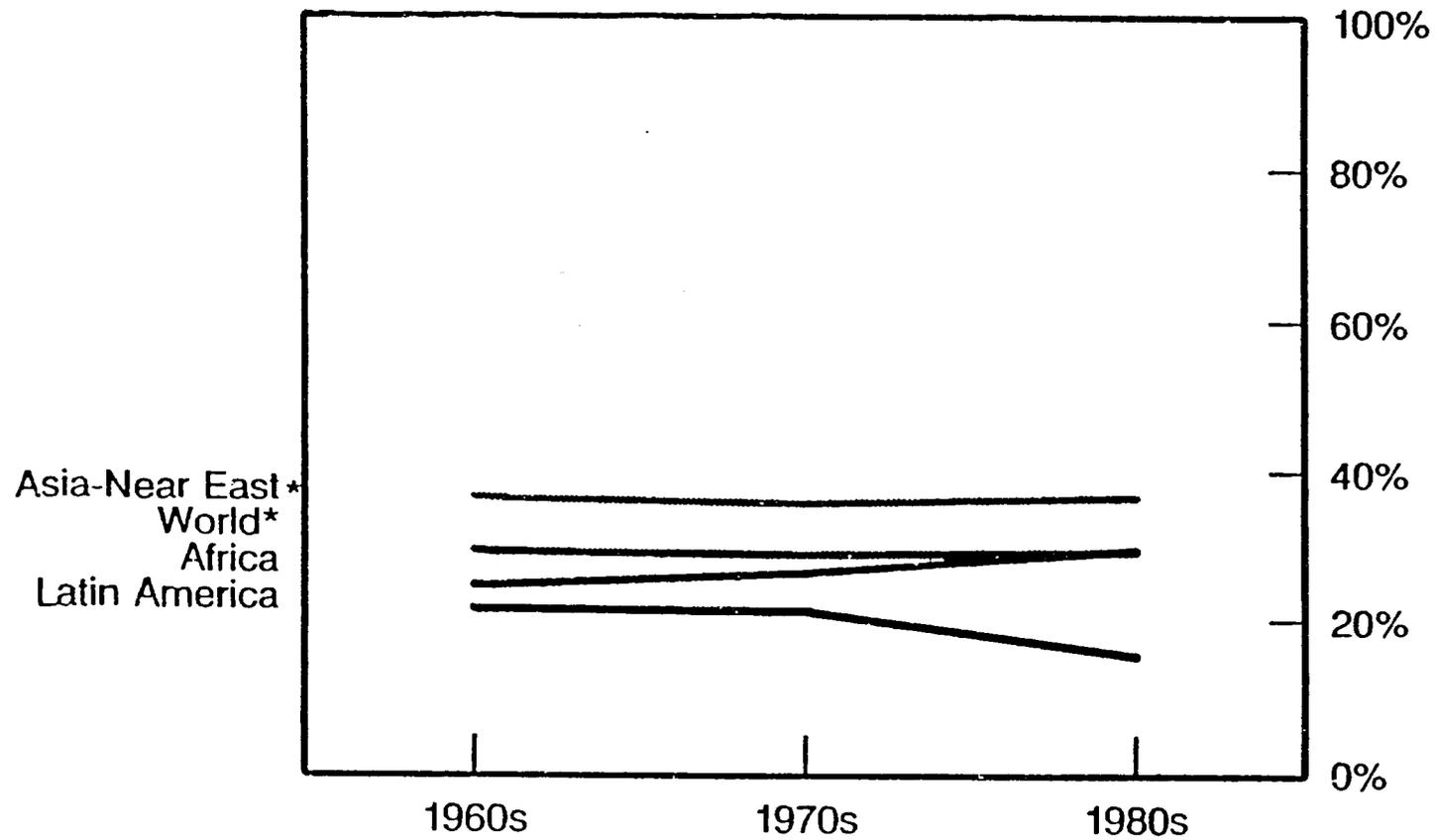


Source: Table 1.

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FIGURE 5.

Prevalence of Preschool Malnutrition

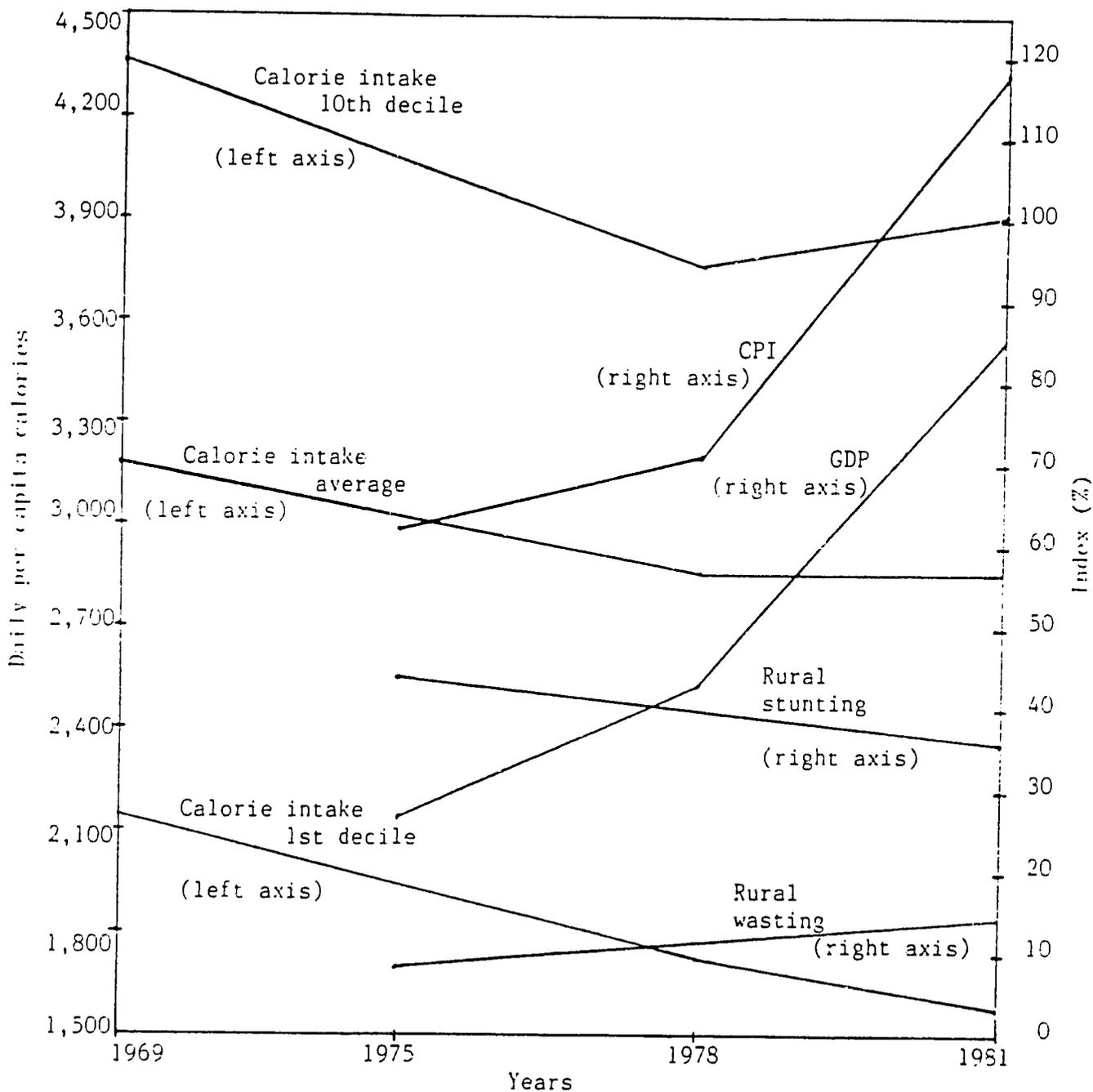


*Excluding Pakistan, Bangladesh & India

Source: Table 2.

16

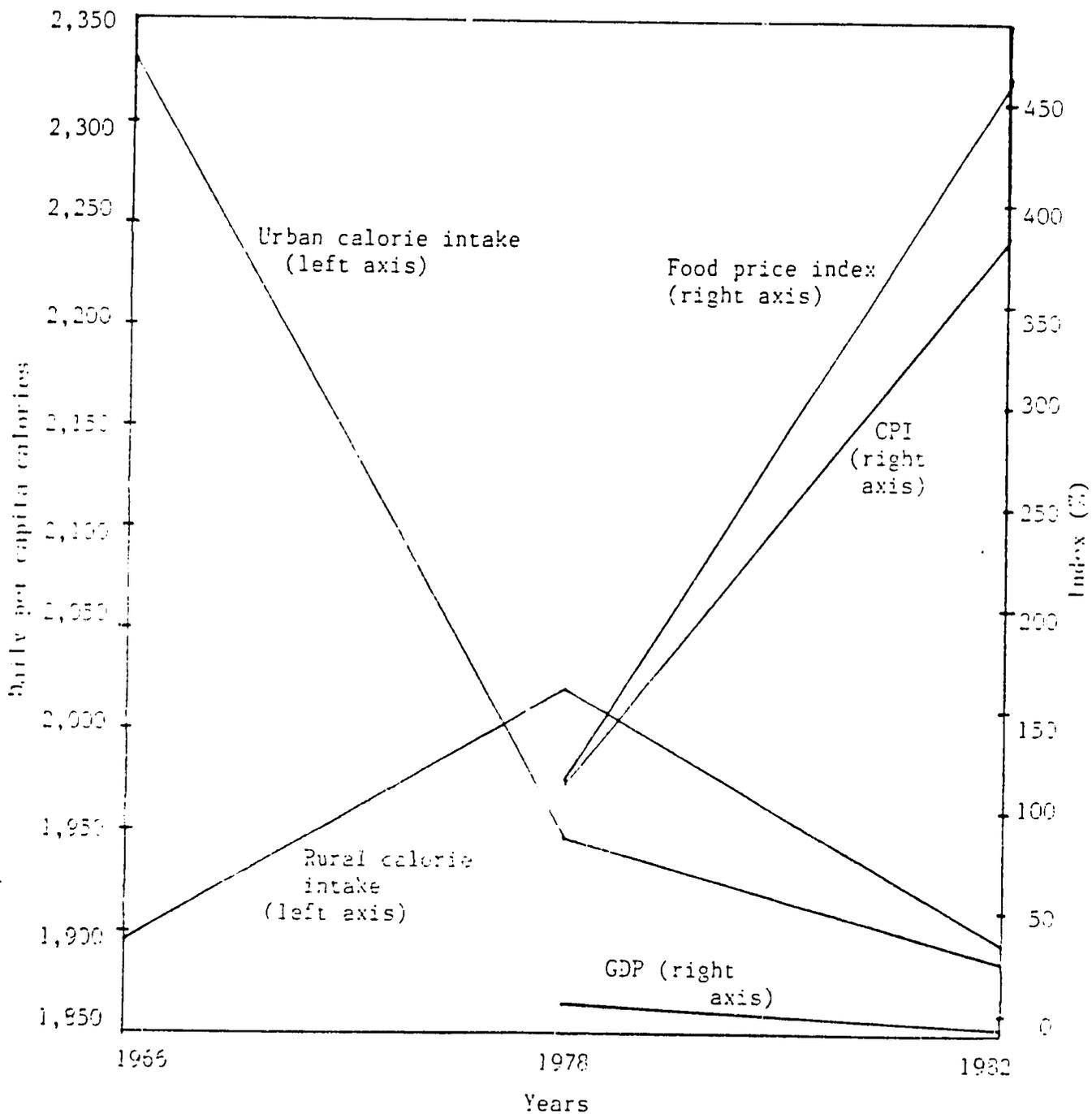
FIGURE 6. Structural Adjustment in Sri Lanka - Behavior of Some Nutritional Indicators



Sources: R. Hood, J. McGuire, and M. Starr, "The Socioeconomic Impact of Macroeconomic Adjustment," report to AID/PPC, 1988; D. E. Sahn, "Changes in the Living Standards of the Poor in Sri Lanka During Macroeconomic Adjustment," World Development 15(6), 1987, p. 816.

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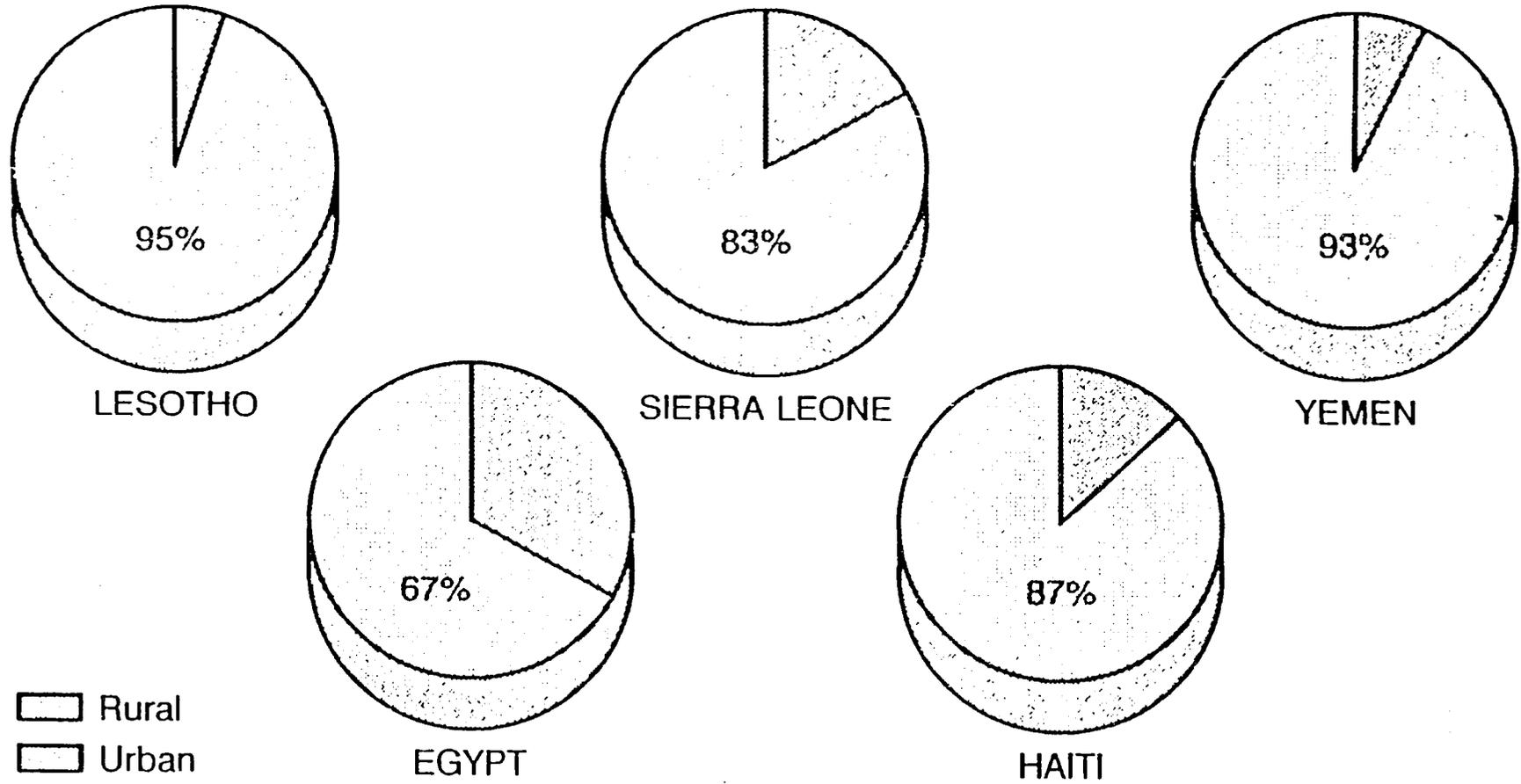
FIGURE 7. Structural Adjustment in Costa Rica - Behavior of Some Nutritional Indicators



Sources: R. Hood, J. McGuire, and M. Starr, "The Socioeconomic Impact of Macroeconomic Adjustment," report to AID/PPC, 1988.

FIGURE 8.

Distribution of Malnutrition

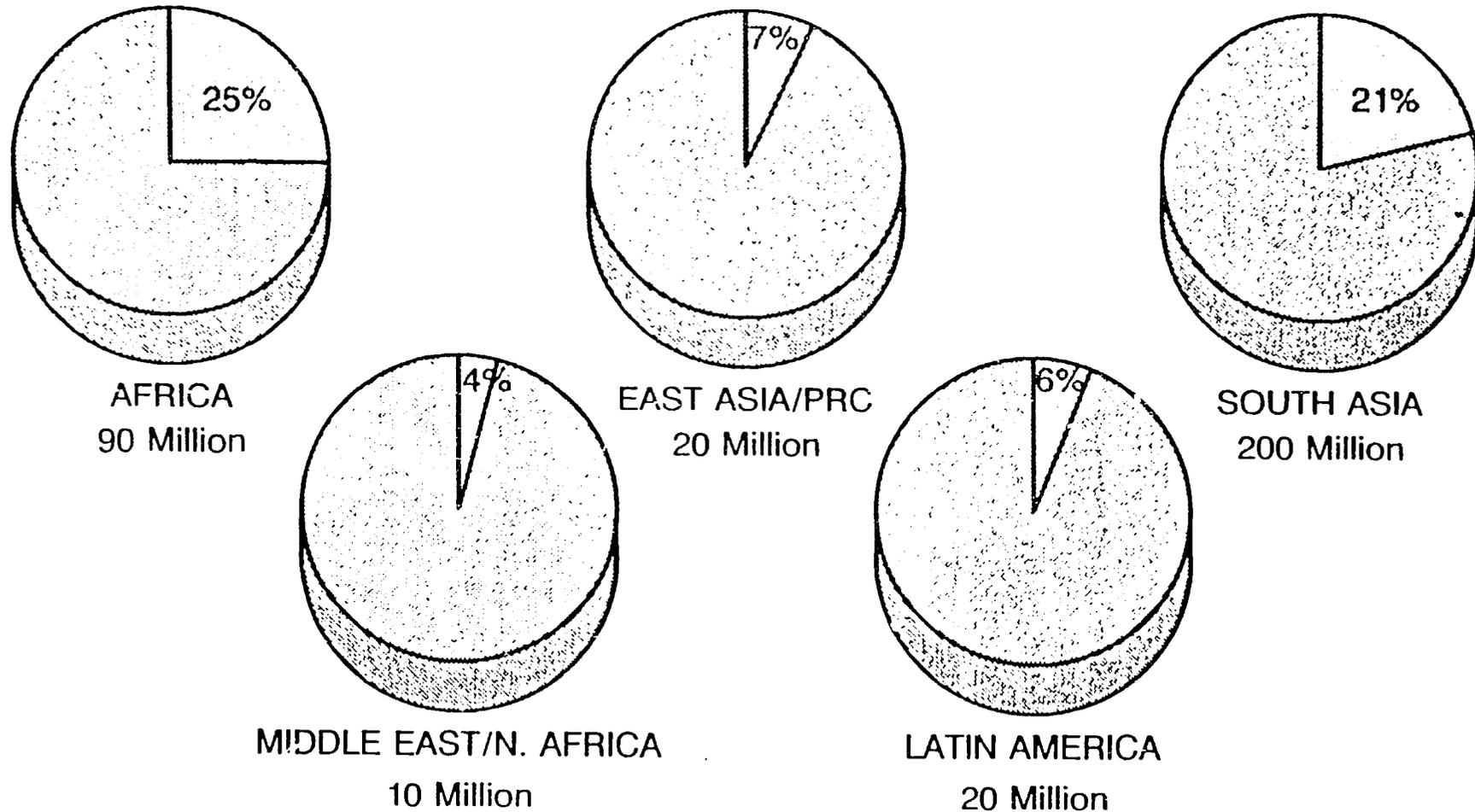


Source: CDC surveys.

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FIGURE 9.

Severely Inadequate Diets (Percentage of Total Population)

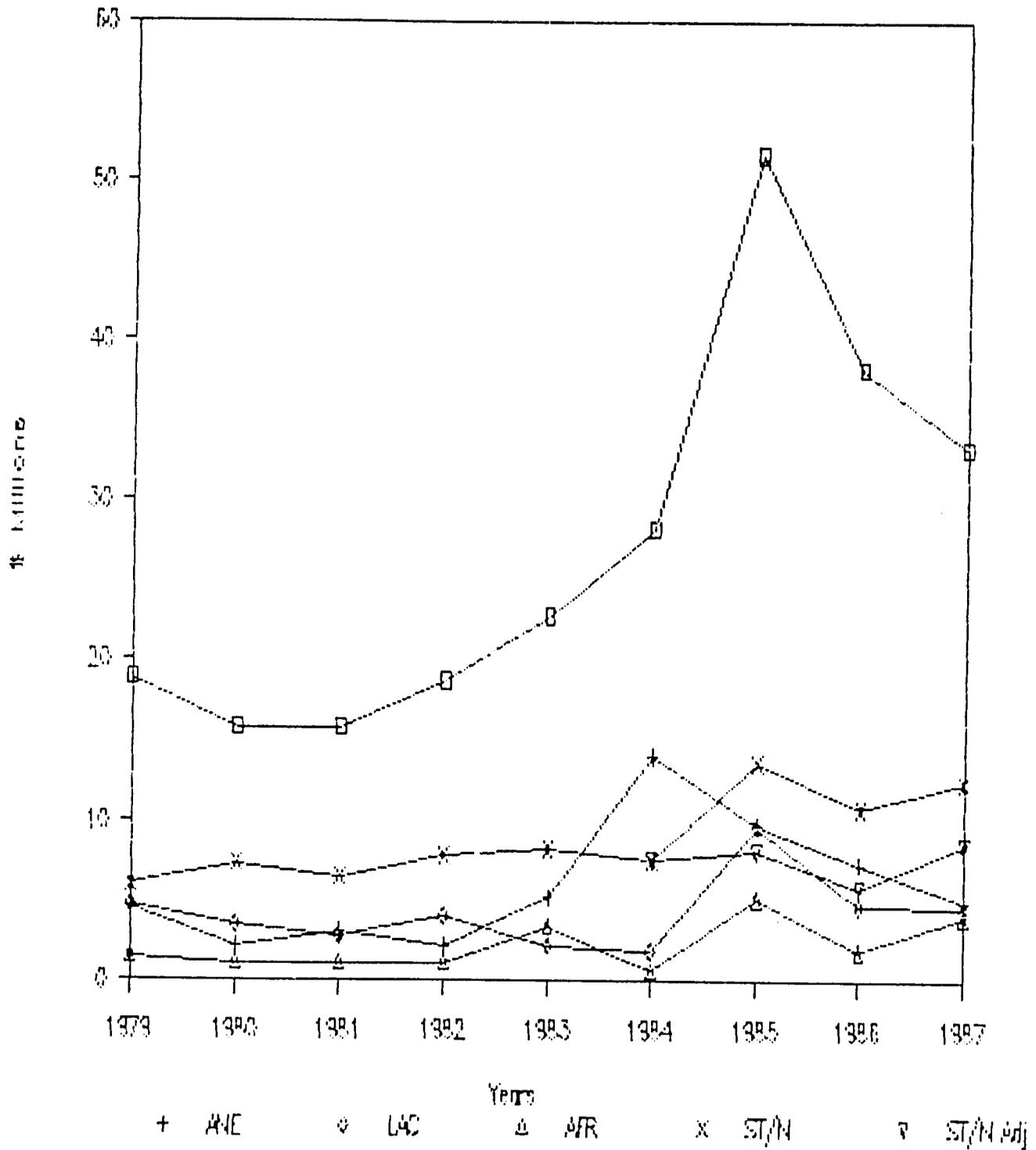


Source: Table 4.

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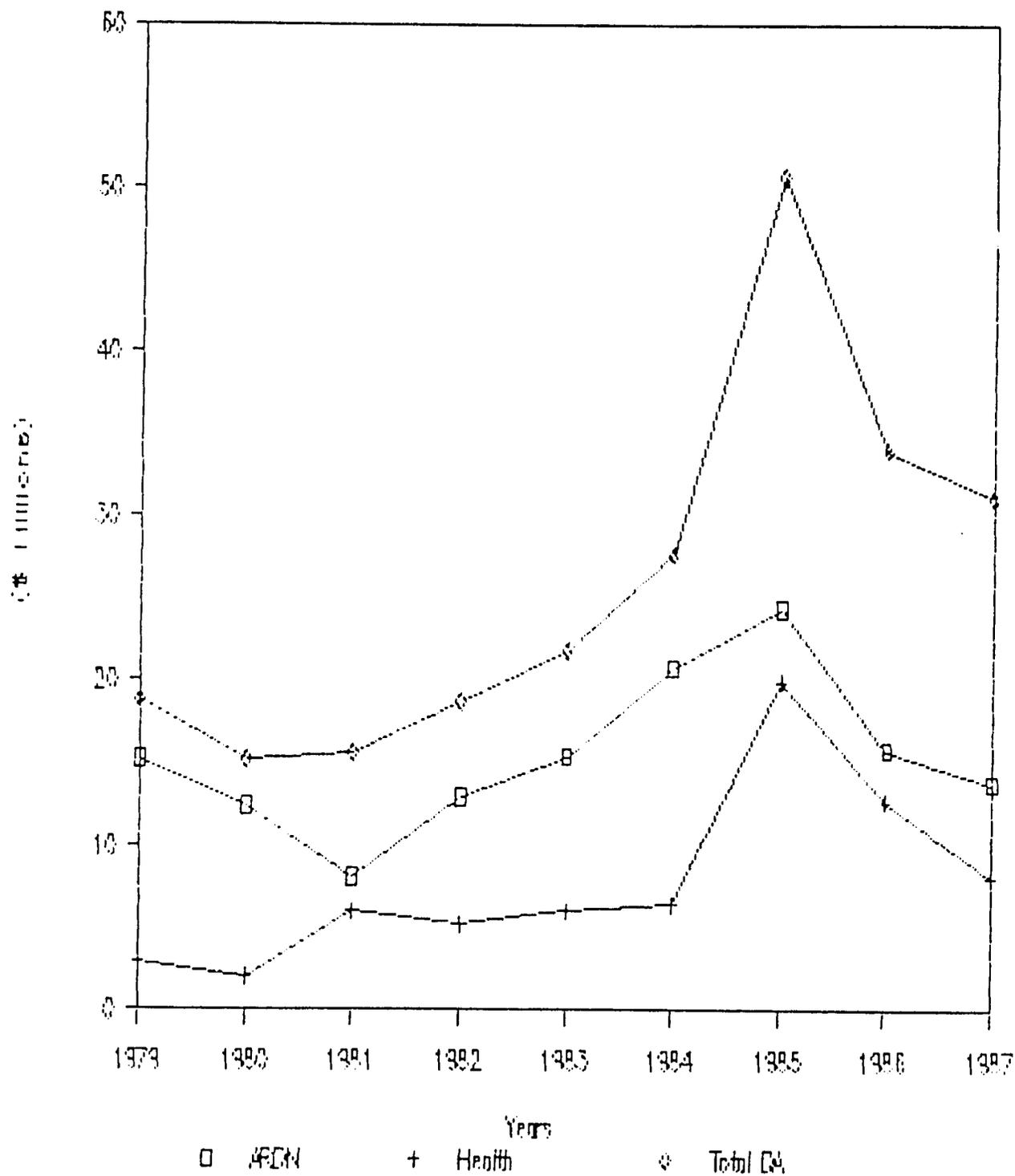
FIGURE 11.

NUTRITION BUDGET BY REGION



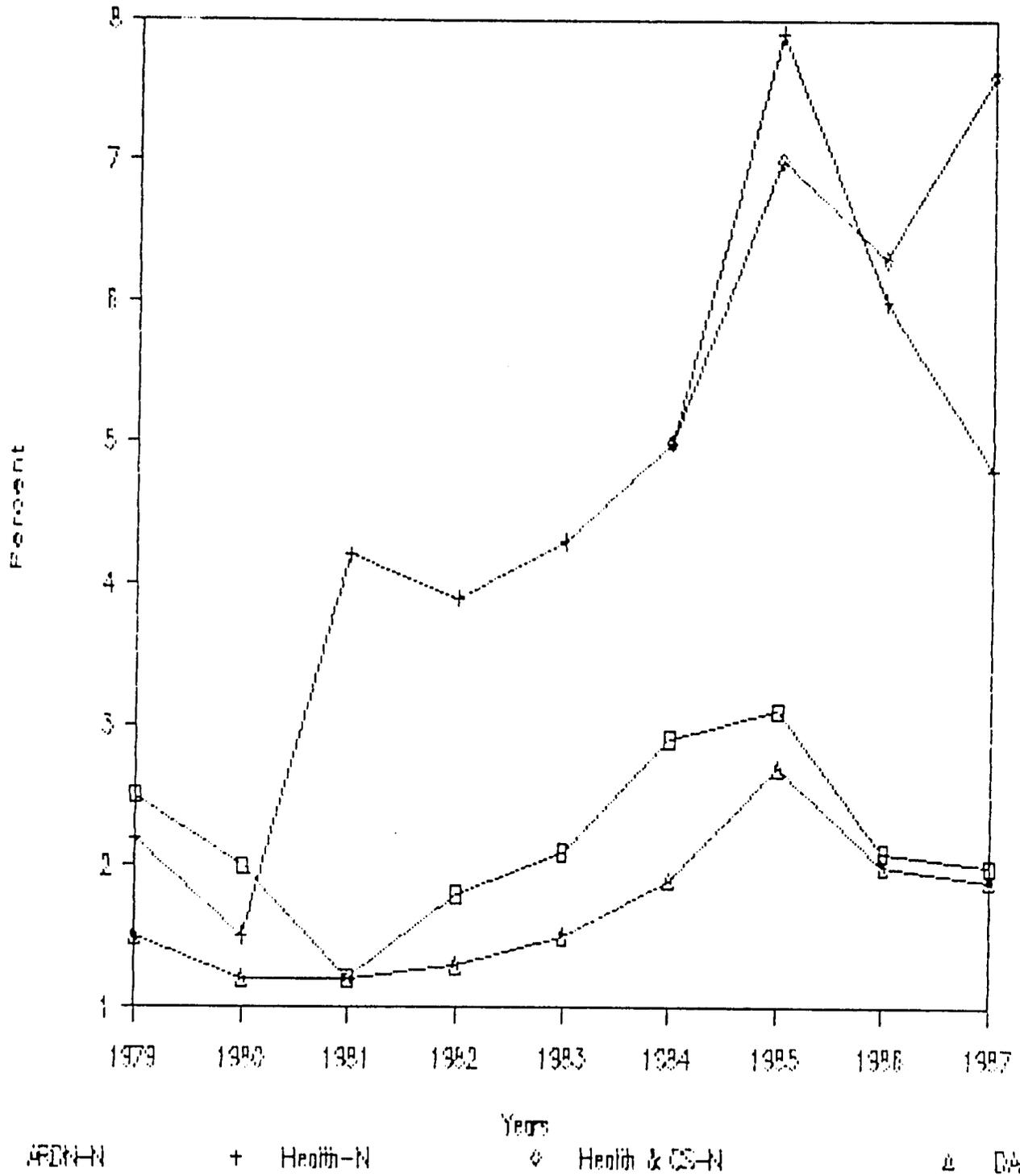
Source: Table 7.

FIGURE 12.
NUTRITION BUDGET BY ACCOUNT AND YEAR



Source: Table 8.

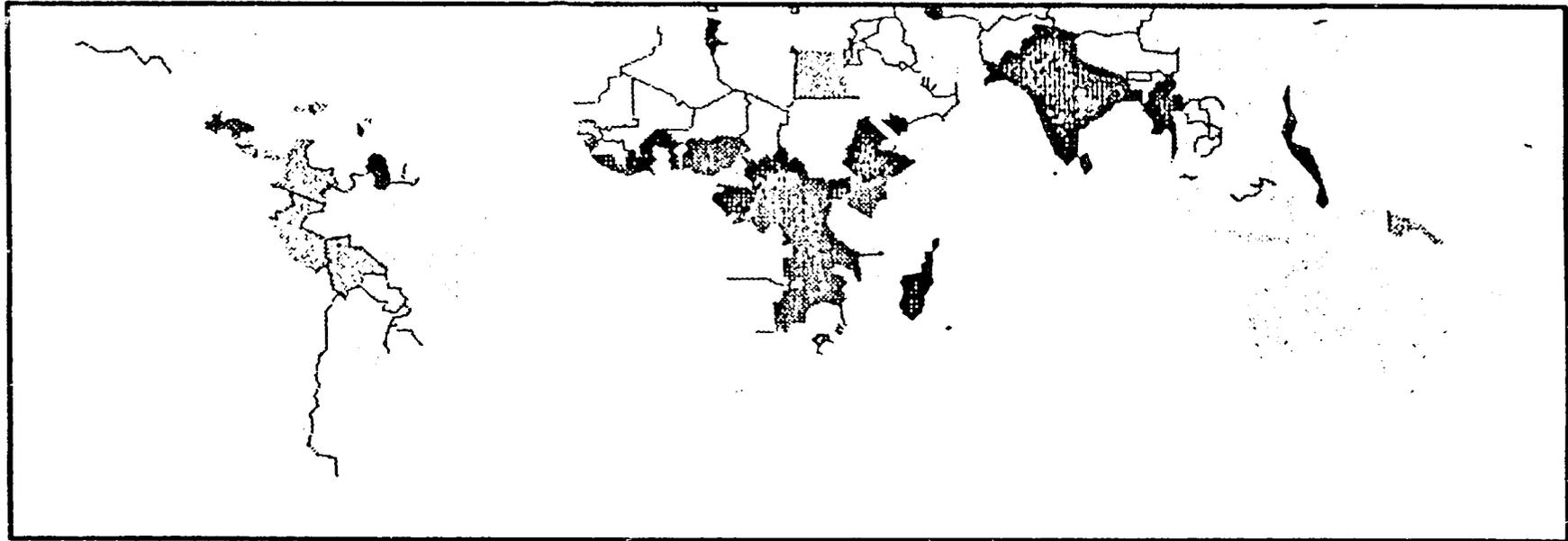
FIGURE 13.
 AGENCY NUTRITION BUDGET AS PROPORTION
 OF FUNCTIONAL ACCOUNTS



Source: Table 9.

MAP 1.

Prevalence of Malnutrition



 Under 20%

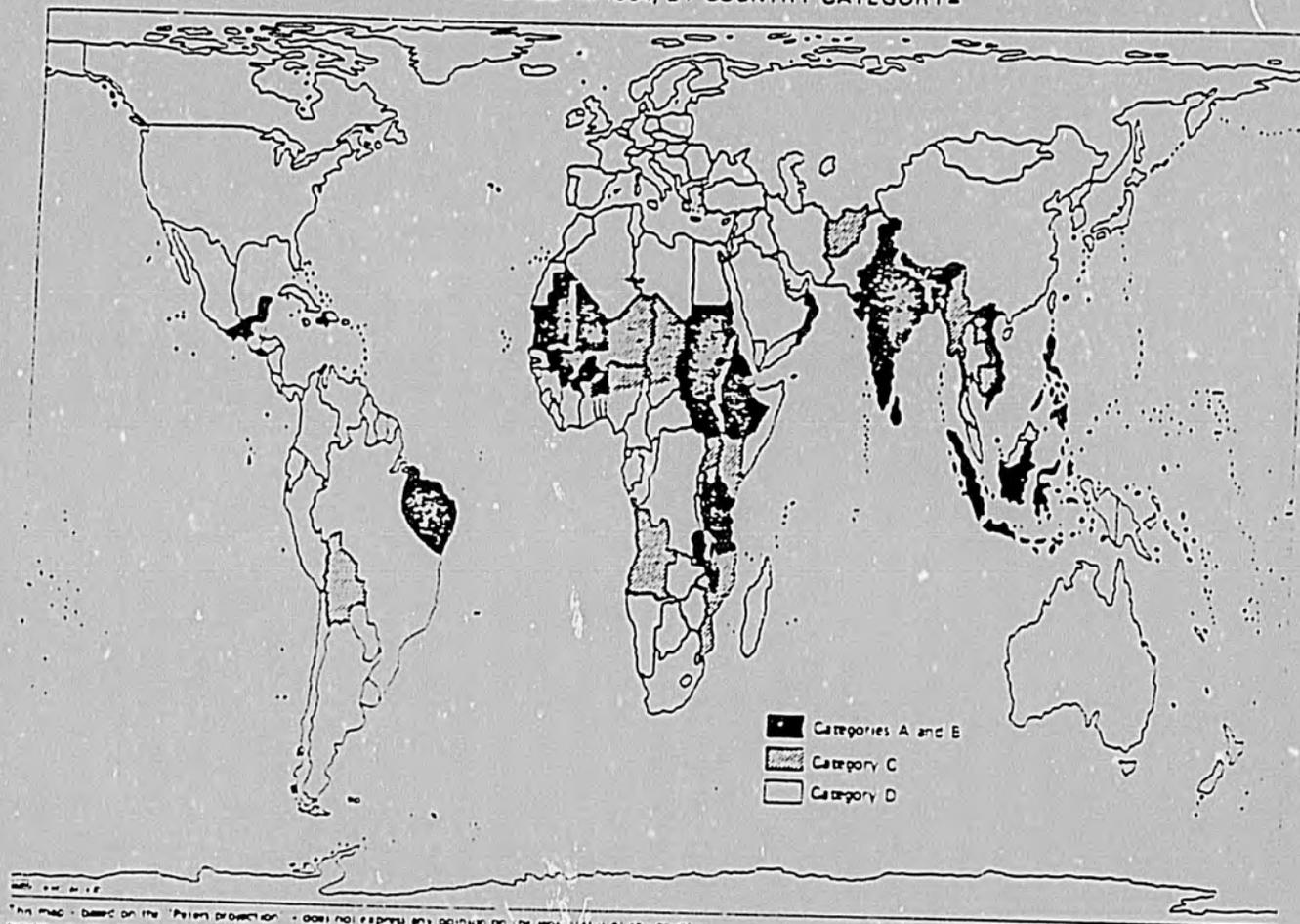
 20 - 30%

 Over 30%

Source: Table A-4.

60-

MAP 2.
THE GEOGRAPHICAL DISTRIBUTION OF VITAMIN A DEFICIENCY AND XEROPHTHALMIA
IN THE WORLD IN 1984, BY COUNTRY CATEGORY^a



^a Category A: vitamin A deficiency a significant public health problem, national prevention and control programme under way.

Category B: vitamin A deficiency a significant public health problem, national prevention and control programme not yet under way.

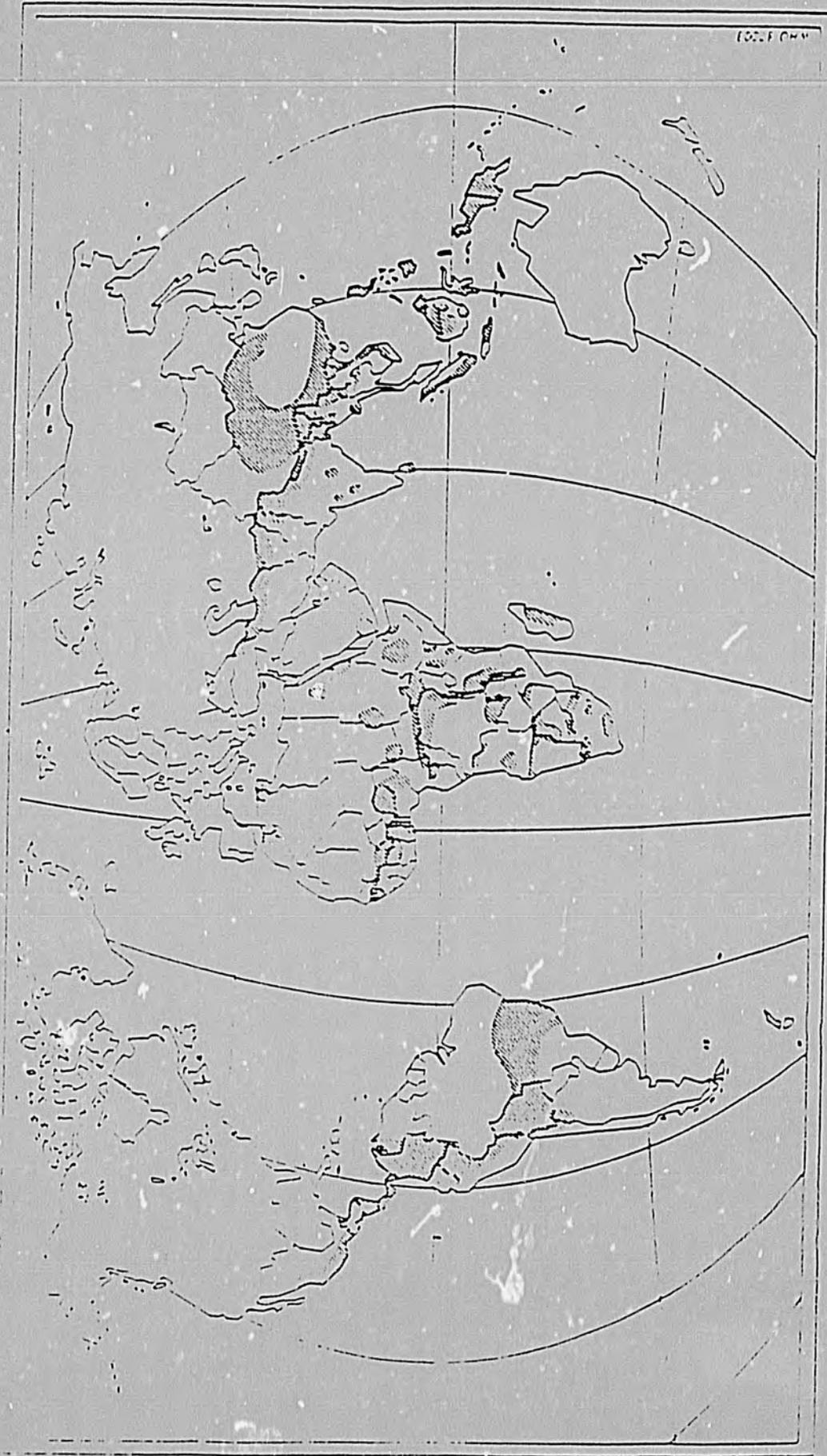
Category C: high probability that vitamin A deficiency is a significant public health problem based on indirect evidence.

Category D: vitamin A deficiency, not a significant public health problem but prevalence picture should be monitored due to reports of sporadic cases.

Source: UN/ACC/SCN, Prevention and Control of Vitamin A Deficiency, Xerophthalmia, and Nutritional Blindness: A Proposal for a Ten-Year Programme of Support to Countries (WHO: NUT/84.5, Rev. 1, 1985).

MAP 3.

DISTRIBUTION OF IODINE DEFICIENCY DISORDERS IN DEVELOPING COUNTRIES



Source: UN/ACC/SCN, A Global Strategy for the Prevention and Control of Iodine-Deficiency Disorders: Proposal for a Ten-Year Programme of Support to Countries (DOC. SCN 87/100 A).

Appendix Table A-1. Selected Development Indicators -
Country Data on GNP and Mortality

REGIONS	POPULATION (millions)			GNP PER CAPITA (current US\$)			IMR (per thou)		U5MR (per thou)	
	1965	1973	1985	1965	1973	1985	1965	1985	1960	1985
SUBSAHARAN AFRICA										
Benin	2.3	2.9	4.0	100	130	260	168	115	168	193
Botswana	0.5	0.7	1.1	90	260	840	107	71	174	99
Burkina Faso	4.6	5.4	7.9	60	70	150	195	144	388	245
Burundi	3.1	3.6	4.7	70	80	230	143	118	258	200
Cameroon	5.8	7.1	10.2	120	210	810	143	89	275	162
Central African Rep	1.7	2.0	2.6	80	120	260	169	137	308	232
Chad	3.3	3.9	5.0	80	100	---	183	138	326	232
Congo	1.1	1.3	1.9	180	340	1,100	121	77	241	122
Cote d'Ivoire	4.2	6.0	10.1	210	330	660	176	105	320	157
Ethiopia	25.4	31.3	42.3	50	70	110	165	168	294	257
Ghana	7.8	9.2	12.7	230	270	380	120	94	224	153
Guinea	4.1	4.8	6.2	---	---	320	196	153	346	259
Kenya	9.4	12.7	20.4	110	180	290	112	91	208	121
Lesotho	1.0	1.1	1.5	60	160	470	142	106	208	144
Liberia	1.2	1.5	2.2	240	330	470	171	127	303	215
Madagascar	6.0	7.2	10.2	110	160	240	104	109	181	97
Malawi	3.9	5.4	7.0	60	90	170	199	156	364	275
Mali	4.6	5.6	7.5	---	90	150	200	174	370	302
Mauritania	1.1	1.3	1.7	150	200	420	170	132	310	223
Mauritius	0.7	0.9	1.0	320	430	1,090	65	25	104	32
Mozambique	8.4	10.1	13.8	---	---	160	171	123	302	252
Niger	3.7	4.5	6.4	170	150	250	180	140	320	237
Nigeria	58.5	71.2	99.7	80	220	800	177	109	318	182
Rwanda	3.2	4.1	6.0	40	70	280	141	127	248	214
Senegal	3.2	4.7	6.6	200	230	370	171	137	313	231
Sierre Leone	2.5	2.9	3.7	---	160	350	220	175	397	302
Somalia	2.9	3.8	5.4	80	120	280	165	152	294	257
Sudan	12.4	15.6	21.9	120	150	300	160	112	293	187
Tanzania	11.6	15.0	22.2	80	120	290	138	110	248	183
Togo	1.6	2.2	3.0	---	170	230	153	97	305	160
Uganda	8.1	10.5	14.7	150	210	---	121	108	224	178
Zaire	17.5	21.3	30.6	180	230	170	135	102	251	170
Zambia	3.6	4.6	6.7	260	420	390	121	84	228	135
Zimbabwe	4.4	5.7	8.4	230	420	680	103	77	182	121
WEIGHTED AVERAGE:				112	184	424	158	118	285	193
				111a	187a	445a				

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Appendix Table A-1 cont'd

	POPULATION (millions)			GNP PER CAPITA (current US\$)			IMR (per thou)		USMR (per thou)	
	1965	1973	1985	1965	1973	1985	1965	1985	1960	1985
ASIA-NEAR EAST										
Bangladesh	60.5	74.4	100.6	70	80	150	153	123	262	196
Burma	24.3	29.0	36.9	70	80	190	125	66	229	91
Egypt	29.4	35.3	48.5	170	270	610	172	93	300	136
India	487.0	586.0	765.1	100	120	270	151	89	282	158
Indonesia	104.8	124.2	162.2	30	120	530	138	96	235	126
Jordan	2.0	2.5	3.5	---	383	1,560	115	49	218	65
Morocco	13.3	16.5	21.9	220	340	560	145	90	265	130
Nepal	10.3	12.2	16.5	70	80	160	184	133	297	206
Pakistan	52.6	66.9	96.2	110	140	380	149	115	277	174
Papua New Guinea	2.1	2.6	3.5	160	370	680	140	68	247	94
Philippines	31.8	39.9	54.7	180	250	580	72	48	135	78
Sri Lanka	11.1	13.1	15.8	160	170	380	63	36	113	48
Thailand	31.0	39.4	51.7	130	240	800	88	43	149	55
Tunisia	4.6	5.4	7.1	230	430	1,190	145	78	255	110
Yemen, Arb Rep.	4.7	5.7	8.0	---	90	550	200	154	378	210
WEIGHTED AVERAGE:				99	138	356	144	90	262	147
				99a	138a	352a				
LATIN AMERICA & CARIBBEAN										
Bolivia	3.8	4.7	6.4	180	290	470	161	117	282	184
Colombia	18.5	22.6	28.4	320	440	1,320	99	48	148	72
Costa Rica	1.5	1.9	2.6	400	750	1,300	72	19	121	23
Dominican Republic	3.8	4.8	6.4	240	440	790	102	70	200	88
Ecuador	5.2	6.6	9.4	---	360	1,160	112	67	183	92
El Salvador	3.0	3.9	4.8	270	340	820	120	65	206	91
Guatemala	4.6	5.7	8.0	300	430	1,250	112	65	230	109
Haiti	4.0	4.8	5.9	80	110	310	158	123	294	180
Honduras	2.3	2.9	4.4	210	320	720	128	76	232	116
Jamaica	1.7	1.9	2.2	500	930	940	49	20	88	25
Nicaragua	1.8	2.3	3.3	320	430	770	121	69	210	104
Panama	1.3	1.7	2.2	490	840	2,100	56	25	105	35
Peru	11.2	14.0	18.6	400	690	1,010	131	94	233	133
WEIGHTED AVERAGE:				307	467	1,041	114	70	197	103
				307a	476a	1,028a				
TOTAL WEIGHTED AVERAGE:				112	165	407				

SOURCE: UNICEF, The State of the World's Children 1987 (Oxford: Oxford University Press, 1987).

World Bank, Social Indicators of Development 1987 (Washington, D.C.: The World Bank, 1987).

World Bank, World Development Report 1987 (Washington, D.C.: The World Bank, 1987).

a/Weighted average excluding countries with GNP data for only two years.

Appendix Table A-2 cont'd

	POPULATION (millions)			INDEX OF FOOD PRODUCTION (1979-81=100)		CALORIES PER CAPITA (per day)		
	1965	1973	1985	1973	1985	1965	1973	1985
ASIA-NEAR EAST								
Bangladesh	60.5	74.4	100.6	86	113	1,964	1,861	1,899
Burma	24.3	29.0	36.9	91	122	1,928	2,134	2,547
Egypt	29.4	35.3	48.5	107	104	2,435	2,558	3,263
India	487.0	586.0	765.1	90	109	2,100	1,954	2,189
Indonesia	104.8	124.2	162.2	91	109	1,792	2,226	2,533
Jordan	2.0	2.5	3.5	57	163	2,282	2,364	2,947
Morocco	13.3	16.5	21.9	113	105	2,182	2,548	2,678
Nepal	10.3	12.2	16.5	113	104	1,931	1,971	2,034
Pakistan	52.6	66.9	96.2	97	100	1,747	2,019	2,159
Papua New Guinea	2.1	2.6	3.5	104	101	1,908	2,111	2,181
Philippines	31.8	39.9	54.7	85	93	1,936	2,049	2,341
Sri Lanka	11.1	13.1	15.8	72	97	2,155	2,169	2,385
Thailand	31.0	39.4	51.7	90	110	2,200	2,334	2,462
Tunidia	4.6	5.4	7.1	107	113	2,296	2,559	2,836
Yemen, Arb Rep.	4.7	5.7	8.0	96	95	2,002	1,990	2,250
WEIGHTED AVERAGE:				91	108	2,037	2,043	2,287
LATIN AMERICA & CARIBBEAN								
Bolivia	3.8	4.7	6.4	103	91	1,863	2,015	2,146
Colombia	18.5	22.6	28.4	87	95	2,174	2,332	2,574
Costa Rica	1.5	1.9	2.6	98	88	2,366	2,563	2,803
Dominican Republic	3.8	4.8	6.4	109	102	1,870	2,194	2,461
Ecuador	5.2	6.6	9.4	105	99	1,942	1,958	2,054
El Salvador	3.0	3.9	4.8	96	90	1,859	1,925	2,148
Guatemala	4.6	5.7	8.0	78	108	2,028	2,150	2,294
Haiti	4.0	4.8	5.9	107	87	2,007	1,947	1,855
Honduras	2.3	2.9	4.4	100	91	1,963	2,093	2,211
Jamaica	1.7	1.9	2.2	103	110	2,232	2,581	2,585
Nicaragua	1.8	2.3	3.3	104	81	2,398	2,426	2,425
Panama	1.3	1.7	2.2	98	93	2,255	2,307	2,419
Peru	11.2	14.0	18.6	124	99	2,324	2,240	2,171
WEIGHTED AVERAGE:				100	96	2,115	2,204	2,319

SOURCE: World Bank, Social Indicators of Development 1987 (Washington, D.C.: The World Bank, 1987).

World Bank, World Development Report 1987 (Washington, D.C.: The World Bank, 1987).

a/Per Capita

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Appendix Table A-2. Selected Development Indicators -
Country Data on Food Production and Consumption

REGIONS	POPULATION (millions)			INDEX OF FOOD PRODUCTIONa/ (1979-81=100)		CALORIES PER CAPITA (per day)		
	1965	1973	1985	1973	1985	1965	1973	1985
SUBSAHARAN AFRICA								
Benin	2.3	2.9	4.0	69	118	2,008	2,017	2,173
Botswana	0.5	0.7	1.1	151	84	2,015	2,104	2,219
Burkina Faso	4.6	5.4	7.9	102	105	2,009	2,152	1,924
Burundi	3.1	3.6	4.7	92	98	2,391	2,275	2,116
Cameroon	5.8	7.1	10.2	116	97	2,043	2,217	2,089
Central African Rep	1.7	2.0	2.6	105	97	2,130	2,240	2,050
Chad	3.3	3.9	5.0	78	117	2,393	1,753	1,504
Congo	1.1	1.3	1.9	99	94	2,255	2,271	2,549
Cote d'Ivoire	4.2	6.0	10.1	84	98	2,357	2,322	2,505
Ethiopia	25.4	31.3	42.3	95	88	1,832	1,704	1,681
Ghana	7.8	9.2	12.7	147	97	1,949	2,199	1,747
Guinea	4.1	4.8	6.2	109	100	1,899	1,925	1,728
Kenya	9.4	12.7	20.4	121	138	2,287	2,257	2,151
Lesotho	1.0	1.1	1.5	139	97	2,065	1,902	2,358
Liberia	1.2	1.5	2.2	106	95	2,155	2,216	2,311
Madagascar	6.0	7.2	10.2	117	99	2,486	2,429	2,469
Malawi	3.9	5.4	7.0	103	94	2,132	2,469	2,448
Mali	4.6	5.6	7.5	87	98	1,860	1,713	1,788
Mauritania	1.1	1.3	1.7	88	88	2,070	1,764	2,078
Mauritius	0.7	0.9	1.0	118	101	2,272	2,416	2,740
Mozambique	8.4	10.1	13.8	133	84	1,982	1,981	1,678
Niger	3.7	4.5	6.4	76	92	1,996	1,943	2,250
Nigeria	58.5	71.2	99.7	100	97	2,185	2,081	2,085
Rwanda	3.2	4.1	6.0	86	98	1,665	1,856	1,919
Senegal	3.9	4.7	6.6	142	107	2,474	2,237	2,342
Sierre Leone	2.5	2.9	3.7	102	99	1,836	1,895	1,817
Somalia	2.9	3.8	5.4	113	89	2,145	1,988	2,072
Sudan	12.4	15.6	21.9	99	108	1,874	2,029	1,737
Tanzania	11.6	15.0	22.2	84	93	1,970	1,944	2,335
Togo	1.6	2.2	3.0	99	90	2,378	2,130	2,236
Uganda	8.1	10.5	14.7	122	112	2,383	2,258	2,083
Zaire	17.5	21.3	30.6	110	100	2,188	2,302	2,154
Zambia	3.6	4.6	6.7	110	93	2,073	2,202	2,137
Zimbabwe	4.4	5.7	8.4	121	99	2,089	2,173	2,089
WEIGHTED AVERAGE:				105	99	2,098	2,074	2,039

Appendix Table A-3 (continued)

Country	Date of nutrition survey	Reference	Percent malnourished	Population (thousands)	Per capita income (US\$=1986)
30 Malawi	1982	E	22.6	7,271	150
31 Maldives (6 islands)	1981	F	56.1	187	300
32 Mauritius	1985	E	23.8	1,032	1,200
33 Nepal	1975	E	69.6	12,185	80
34 Nicaragua	1967	B	15.0	1,750	320
	1982	E	10.4	3,373	790
35 Nigeria	1970	B	23.1	71,274	220
36 Pakistan	1968	B	81.7	52,579	110
	1987 (prelim).	G	64	99,005	380
37 Panama	1967	B	11.9	1,326	490
	1980	E	16.5	2,222	2,170
38 Papua New Guinea	1970	F	35.4(rural)	2,148	160
	1984	E	34.7	3,593	680
39 Peru	1979	F	10.5	14,007	690
	1984	E	12.8	19,017	1,130
40 Philippines	1967	B	41.9	31,771	180
	1978	E	33.2	39,867	250
	1982	E	32.5	56,017	560
41 Rwanda	1976	E	28.0	4,080	70
42 St. Vincent & Windwards	1967	B	27.2	84	180
43 Senegal	1965	B	13.4	3,930	200
44 Sierra Leone	1964	B	30.7	2,548	--
	1978	E	23.2	2,922	160
45 Solomon Islands	1970	B	20.3	180	--
46 Sri Lanka	1976	E	58.2	13,091	170
	1980	E	47.5	16,108	400
47 Swaziland	1984	F	9.7	784	610
48 Togo	1977	E	24.8	2,173	170
49 Tunisia	1969	B	28.8	4,630	230
	1975	E	21.4	5,412	430
50 Uganda	1965	B	30.0	8,064	150
	1977	C	33.2	10,546	210
51 Yemen Arab Republic	1979	A	60.6	5,731	90
52 Zaire	1975	F	28.8	21,336	230
53 Zambia	1965	B	17.0	3,609	260
	1972	B	24.1	4,559	420
54 Zimbabwe	1984	E	20.7	8,694	630

Note: Malnourished is measured as weight-for-age less than -2Z (refs. C, E, F), less than 80% median (refs. A, D), or less than 75% weight-for-age or three or more clinical signs (ref. B). For surveys made in the 1960s, population and income data for 1965; for surveys made in the 1970s,

Appendix Table A-3. Prevalence of Malnutrition, by Country

Country	Date of nutrition survey	Reference	Percent preschool malnutrition	Population (thousands)	Per capita income (US\$=1986)
1 Bangladesh	1975	E	91.3	74,368	80
	1982	E	71.7	103,086	160
2 Barbados	1969	B	16.5	235	530
	1981	E	5.3	253	4,980
3 Bolivia	1981	E	13.9	6,211	540
4 Botswana	1977	C	21.7	650	260
	1984	E	27.0	1,105	840
5 Burma	1985	E	38.1	36,126	200
6 Burkina Faso	1974	F	36.2	5,380	70
7 Burundi	1974	C	24.5	4,573	80
8 Cameroon	1978	F	16.6	10,555	210
9 Cape Verde	1977	C	26.5	271	--
	1986	E	14.7	320	470
10 Central Afr. Rep.	1972	B	39.4	1,970	120
11 Colombia	1968	B	21.0	18,488	320
	1980	E	17.2	27,894	1,230
	1986	H	11.9		
12 Congo	1977	C	32.2	1,306	340
13 Costa Rica	1967	B	13.7	1,482	400
	1978	E	16.0	1,868	750
	1982	F	6.5	2,527	1,380
14 Cote d'Ivoire	1970	C	30.6	5,987	330
15 Dominican Republic	1968	B	13.4	3,806	240
	1986	I	12.5		
16 Egypt	1978	F	16.6	35,341	270
17 El Salvador	1967	B	26.0	3,006	270
	1978	E	20.5	3,878	340
18 Ethiopia	1979	C	28.6	31,284	70
	1982	E	38.1	43,557	120
19 Guatemala	1967	B	32.4	4,568	300
	1977	E	43.5	5,699	430
20 Guinea Bissau	1980	E	24.1	904	170
21 Guyana	1971	B	32.1	710	410
22 Haiti	1978	E	32.0	4,769	110
23 Honduras	1967	B	29.5	2,304	210
24 India	1979	E	72.3	487,000	120
25 Jamaica	1978	E	9.3	1,941	930
26 Kenya	1968	B	26.0	9,404	110
	1979	D	25.6	12,684	180
	1982	E	20.5	21,217	300
27 Lesotho	1976	E	17.8	1,139	160
	1981	E	15.6	1,587	420
28 Liberia	1976	F	18.8	1,483	330
29 Madagascar	1974	C	35.7	7,236	160

(continued)

population and income data for 1973; for surveys made in the 1980s,
population and income data for 1986.

Sources:

A. J. Haaga, C. Kenrick, K. Test, and J. Mason, "An Estimate of the Prevalence of Child Malnutrition in Developing Countries," World Health Statistics Quarterly 38 (1985): 347.

B. J. M. Bengoa and G. Donoso, "Prevalence of Protein-Calorie Malnutrition, 1963 to 1973," PAG Bulletin vol. 4, no. 1 (1974): 26-29.

C. W. Keller and C. Fillmore, "Prevalence of Protein-Energy Malnutrition," World Health Statistics Quarterly 36 (1983): 150-161.

D. UNICEF/Cornell, "Report on the Botswana Workshop on Clinic-Based Nutritional Surveillance Systems and Integrated Data Basis," Gaborone, Botswana, 10-12 January, 1984, p. 60.

E. United Nations Administrative Committee on Coordination/Subcommittee on Nutrition, "First Report on the World Nutrition Situation," Rome, FAO, 1987, pp. 63-64.

F. World Health Organization, "Nutrition: Global Surveillance Through Anthropometric Measurements," Weekly Epidemiological Record 7-11 (1987).

G. Sanghvi, personal communication.

H. DHS Colombia, children 3-36 months.

I. DHS Dominican Republic, children 6-36 months.

Appendix Table A-4. Prevalence of Malnutrition, Most Recent Data

	Date of nutrition survey	Percent malnourished	Reference
<u>Latin-American countries</u>			
Costa Rica	1982	6.5	F
Colombia	1980	17.2	E
El Salvador	1978	20.5	E
Guatemala	1977	43.5	E
Peru	1984	12.8	E
Barbados	1981	5.3	E
Nicaragua	1982	10.4	E
Panama	1980	15.6	E
Dominican Republic	1968	13.4	B
Honduras	1967	29.5	B
St. Vincent & Windwards	1967	27.2	B
Guyana	1971	32.1	B
Haiti	1978	32.0	E
Jamaica	1978	9.3	E
Bolivia	1981	13.9	E
<u>Africa</u>			
Ethiopia	1982	38.1	E
Kenya	1982	20.5	E
Sierra Leone	1978	23.2	E
Uganda	1977	33.2	C
Zambia	1972	24.1	B
Botswana	1984	27.0	E
Cape Verde	1986	14.7	E
Central African Republic	1972	39.4	B
Lesotho	1981	15.6	E
Senegal	1965	13.4	B
Burkina Faso	1974	36.2	F
Burundi	1974	24.5	C
Cameroon	1978	16.6	F
Congo	1977	32.2	C
Cote d'Ivoire	1970	30.6	C
Liberia	1976	20.0	E
Madagascar	1974	35.7	C
Nigeria	1970	23.1	B
Rwanda	1976	28.0	E
Togo	1977	24.8	E
Zaire	1975	28.8	F
Guinea Bissau	1980	24.1	E
Malawi	1982	22.6	E
Mauritius	1985	23.8	E

(continued)

Appendix Table A-4 (continued)

	Date of nutrition survey	Percent malnourished	Reference
Swaziland	1984	9.7	E
Zimbabwe	1984	20.7	E
<u>Asia and Near East</u>			
Philippines	1982	32.5	E
Egypt	1978	16.6	F
Tunisia	1975	21.4	E
Sri Lanka	1980	47.5	E
Papua New Guinea	1984	12.8	E
Pakistan	1987	64	G
Solomon Islands	1970	20.3	B
India	1979	72.3	E
Nepal	1975	69.2	E
Yemen Arab Republic	1979	60.6	A
Burma	1985	38.1	E
Maldives (6 islands)	1981	56.1	F
Bangladesh	1982	71.7	E

Note: Malnourished is measured as weight-for-age less than -2Z (refs. C, E, F), less than 80% median (refs. A, D), or less than 75% weight-for-age or three or more clinical signs (ref. B).

Sources:

A. J. Haaga, C. Kenrick, K. Test, and J. Mason, "An Estimate of the Prevalence of Child Malnutrition in Developing Countries," World Health Statistics Quarterly 38 (1985): 347.

B. J. M. Bengoa and G. Donoso, "Prevalence of Protein-Calorie Malnutrition, 1963 to 1973," PAG Bulletin vol. 4, no. 1 (1974): 26-29.

C. W. Keller and C. Fillmore, "Prevalence of Protein-Energy Malnutrition," World Health Statistics Quarterly 36 (1983): 150-161.

D. UNICEF/Cornell, "Report on the Botswana Workshop on Clinic-Based Nutritional Surveillance Systems and Integrated Data Basis," Gaborone, Botswana, 10-12 January, 1984, p. 60.

E. United Nations Administrative Committee on Coordination/Subcommittee on Nutrition, "First Report on the World Nutrition Situation," Rome, FAO, 1987, pp. 63-64.

F. World Health Organization, "Nutrition: Global Surveillance Through Anthropometric Measurements," Weekly Epidemiological Record 7-11 (1987).

G. Sanghvi, personal communication.

Appendix Table A-5. Incidence of Low-Birth-Weight Infants
By Country and Region

<u>REGIONS</u>	<u>LIVE BIRTHS</u> (in thousands)	<u>PERCENTAGE OF LOW-</u> <u>BIRTH-WEIGHT-INFANT</u>	
		1979	1982
<u>SUBSAHARAN AFRICA</u>			
Benin	186	----	9.6
Botswana	44	----	12.0*
Burundi	212	13.5	13.5*
Cameroon	380	11.0	12.5*
Central African Republic	109	23.0	23.0*
Chad	209	10.5	10.5*
Congo	73	15.0	15.0*
Ethiopia	1,667	13.1	13.1
Gambia	31	14.0	14.0*
Guinea	246	18.0	18.0*
Guinea-Bissau	24	9.0	13.0
Ivory Coast	405	14.1	14.1
Kenya	981	17.5	12.8
Lesotho	57	14.5	7.6*
Madagascar	421	10.0	10.0*
Malawi	342	----	12.0
Mali	369	12.7	12.7
Mauritius	26	----	10.6
Mozambique	501	----	15.7
Niger	298	----	15.0
Nigeria	4,164	18.0	18.0
Rwanda	258	17.0	19.9*
Senegal	291	9.9	9.9*
Sierre Leone	169	----	17.0
Sudan	897	16.7	16.7
Tanzania	901	13.0	14.4
Togo	136	----	16.9*
Uganda	640	10.0	10.0*
Upper Volta	355	21.0	21.0*
Zaire	1,383	15.9	15.9
Zambia	308	14.2	14.2*
Zimbabwe	382	15.0	15.0*
WEIGHTED ** AVERAGE:		15.4	15.1
		15.4 ^a	15.2 ^a
		15.8 ^b	15.6 ^b

Table A-5 cont'd

	LIVE BIRTHS (in Thousands)	PERCENTAGE OF LOW- BIRTH-WEIGHT-INFANT	
		1979	1982
<u>ASIA-NEAR EAST</u>			
Afghanistan	824	----	20.0
Bangladesh	4,283	50.0	50.0*
Burma	1,394	20.0	20.0*
Egypt	1,561	13.5	7.0
Fiji	18	13.9	13.9
India	23,430	30.0	30.0
Indonesia	4,754	18.0	14.0
Jordan	162	7.3	7.3*
Laos	164	18.0	18.0*
Morocco	974	----	8.6
Pakistan	3,897	27.0	27.0
Philippines	1,783	19.5	19.5
Paupa New Guinea	138	25.0	25.0
Sri Lanka	433	21.0	27.0
Thailand	1,473	13.0	38.0
Tunisia	229	7.3	7.3
Turkey	1,619	----	7.5
WEIGHTED ** AVERAGE:		28.1	27.1
		28.1 ^a	28.4 ^a
		28.4 ^b	28.7 ^b

<u>LATIN AMERICA & CARIBBEAN</u>			
Barbados	5	9.6	9.6*
Bolivia	263	----	10.0
Colombia	845	10.0	10.0*
Costa Rica	66	8.5	8.5*
Domonican Republic	215	15.4	15.4*
El Salvador	208	12.8	12.8*
Guatemala	301	17.9	17.9
Jamaica	60	10.2	12.0
Panama	57	11.0	10.3
Peru	726	9.0	9.0
WEIGHTED ** AVERAGE:		11.4	11.2
		11.4 ^a	11.3 ^a
		10.9 ^b	10.9 ^b

TOTAL WEIGHTED ** AVERAGE:		24.2	27.5
		24.3 ^a	24.5 ^a
		25.1 ^b	25.2 ^b

UNITED STATES		7.4	6.9

SOURCE: "The Incidence of Low Birth Weight: An Update," Weekly Epidemiological Record 27 (6 July 1984): 205-211.

*The 1982 estimates are assumed to be the same as in 1979 because no new information was available.

**Weighted by number of live births.

^aWeighted average excluding countries with data for only 1 year.

^bWeighted average excluding countries marked by an asterisk.

Summary - A.I.D. Statements on Nutrition

1973 AID Nutrition Program Strategy

1977 AID's Responsibilities in Nutrition (Cable)

1978 Agricultural Development Policy Paper

1981 Food Aid and Development Policy Discussion Paper

1982 Food and Agricultural Development Policy Paper

1982 Nutrition Policy Paper

1982 AID Nutrition Strategy Paper

1982 Health Policy Paper

1985 Blueprint for Development

1986 Child Survival Strategy

1986 Diarrheal Disease Control for Child Survival Strategy

1986 Health Assistance Policy Paper (Revised)

1986 Diarrheal Disease Control for Child Survival Strategy

1987 Nutrition Strategy for Child Survival

1987 Child Spacing for Child Survival

1987 Presidential initiative to End Hunger

1987 New Focus Statement for ARDN Account

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Summary of A.I.D. Nutrition Statements 1973-87

1973 "The A.I.D. Nutrition Program Strategy"

Combatting malnutrition is a high-priority objective in the Agency.

preschool children and pregnant and nursing women as its prime target

- Agriculture
 - expand low-cost protein sources in crops
 - expand total food production core element in attack on malnutrition.
- Health
 - study and combat synergy of nutrition and infection
 - integrate it into health and family planning
- Education
 - overcome ignorance and low motivation to improve behavior
- Food technology
 - low-cost staple protein foods
- child feeding program (food aid) integral part of broader strategy
- Population
 - integrate health, population, and nutrition; determine relationship between population growth and nutrition

1977 "A.I.D.'s Responsibilities in Nutrition"

A.I.D. should pursue more actively

- (1) determining and improving nutrition/consumption effects of development policies
- (2) developing nutrition components of integrated services for the poor -
 - food aid structures used

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- earmark title I for subsidized consumption
- incorporate nutrition into low-cost health systems

Increasing food production not enough, must affect income distribution and dietary intake patterns. Landless laborers and urban slums worst. Children in "first years of life" and P & L mothers.

Increase agricultural output/employment and income generation. "Production increases should occur in a manner which seeks explicitly to increase the employment and hence purchasing power of low income groups," particularly landless.

1978 "Agricultural Development Policy Paper"

- (1) Address malnutrition through increased food supply (usually then domestic production) and employment generation.
- (2) Increase access by the poor to nutrition-related health, education, and food distribution services. Targeted food distribution and nutrition programs.

1981 TPCA, "A Strategy for Focusing A.I.D.'s Anti-Hunger Efforts"

Increase food production and expand purchasing power.

1981 "Food Aid and Development"

"Relying on people's purchasing power in the market place to close the food gap would require almost ten times as much food on a global basis as would be required by using systems that reach the poor directly."

"(PL480's) usefulness as a development resource is likely to be more circumscribed the lower the priority given to broadly based equitable growth."

1982 "Food and Agricultural Development Policy Paper"

Objectives of food and agricultural assistance: increased food availability (production, economic efficiency) and improved food consumption (employment, incorporate nutrition into agriculture policies and programs), direct distribution to severely malnourished and temporarily food-short.

1982 "Nutrition Policy Paper"

- (1) Priority on undernutrition.
- (2) Improve nutrition through sectoral programs complemented with direct nutrition programs.

- (3) Incorporate nutrition concerns into project identification design, targeting, monitoring and evaluation and institutional development.
- 1982 "Health Policy Paper" - basic health services should include growth monitoring, nutrition education, and supplementary feeding where feasible. Malnutrition a major health problem; improvements in health and nutrition mutually reinforcing. Prenatal screening with nutrition education and supplementary feeding where necessary.
- 1985 "Blueprint for Development"
- A.I.D.'s objectives - targets
- (1) Economic growth 2% or more.
 - (2) Reduced food inadequacy: 90% of people consume \geq 1.2 BMR reduce chronic and severe undernutrition to $<20\%$ preschool aged children.
 - (3) Reduce infant mortality to <75 ; child mortality to <10 , life expectancy of 60+.
 - (4) Increase primary school enrollment to 90% or more for boys and girls with 70% completing 4+ years. Raise adult literacy above 50% men and women.
 - (5) Access of 80% of couples and a wide range of voluntary family planning services.
- 1986 "Health Policy Paper - Revised"
- Malnutrition contributes to replacement mortality.
- Objectives:
- Reduce infant and early childhood mortality and morbidity (includes nutrition).
 - CS as basis for building comprehensive health care system.
 - Ensure sustainability of CS gains.
 - Develop new technologies and delivery systems for CS.
- 1986 "Child Survival Strategy"
- ORT (Diarrheal Disease Control)
 - immunization

- nutrition
- birth spacing

1987 "Nutrition Strategy for Child Survival"

Improved child feeding	\	
Growth monitoring	/	> Primary
Maternal nutrition	\	
Vitamin A	/	>Secondary
Iron	/	

1986 "Diarrheal Disease Control for Child Survival Strategy"

- Effective case management using ORT
- Nutritional management

1987 "Child Spacing for Child Survival"

- Breast feeding a traditional component of birth spacing.
- Too closely spaced children jeopardize maternal nutrition and child health and nutrition.

1987 Refined focus for Agency's agricultural programs:

"The focus of the Agency's agricultural, rural development, and nutrition program is to increase the incomes of the poor majority and to expand the availability and consumption of food, while maintaining and enhancing the natural resource base."

1987 "Presidential End Hunger Initiative"

Macroeconomic policy reforms and program sector assistance

Development Fund for Africa - no year, no functional accounts, no project assistance.

Improve private sector efficiency.

Improve competitiveness of markets.

Improve capacity of local organizations.

"The fundamental prerequisite for ending hunger in Africa is a radical restructuring of economic decision making..."

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APPENDIX TABLE C-1. OBLIGATIONS FOR NUTRITION 1979-1989

	1979	1980	1981	1982	1983	1984	1985	1986	1987
263-0065	99 ES	406	240				166		
263-0203							399 ES	1,995	1,120
278-0245		196 ES							
278-0270								200 ES	450
279-0035		100 H							
279-0065		162 H	65	100	142	75	350		
279-0082								158 H	10
367-0144				12 FN	25		33		
366-0476					2,000FN	8,900FN	1,900FN		
						2,200 H	2,000H		
305-0511									539 CS
380-0073								400 CS	100
								400 H	
351-0475							130 ES		
								250 H	
391-0491									
						500 ES	200	2,000	
396-0334									
398-0350									1,000 FN
482-0004					2,040 H	816 H	872 H		
492-0252	270FN								
492-0319	833 H								
493-0291						156 H			
497-0285	3,075 FN	900	225						
497-0305		400 H	1,760	800			1,040 H	1,600	
497-0325			798 H	399 H			266 H		
497-0336				562 H		375	1,819 H	300	300
				375 FN	938	938	562		
504-0073	115 FN	110	15	660					
505-0017								75 H	
505-0029							50 H	12	
505-0032								50 H	
511-0468	438 FN	500							
511-0526					5 H	10			
511-0569					27 H	49	73 H	15 H	60 H
									92 CS
511-0590									204 CS
							120 FN		
							34 H		
511-0599								21	
								75 CS	150
								298 H	22
511-0601									
515-0127		135FN	47						
517-0120	40 H								
517-0174				1	164 H	84			160
517-0239									53 H
518-0006		106 FN	4						
518-0015									288 CS
			325 H	199	6	5	268		
518-0018					149 FN				
518-0033								31 H	

(continued)

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Appendix Table C-1 (continued)

	1979	1980	1981	1982	1983	1984	1985	1986	1987
519-0182	200 FN								
519-0203									
519-0222		200 FN	138	142					
519-0253		175 FN							
519-0300									112 CS
									44 H
519-0308									300 CS
									85 H
									150 ES
519-0329								220	
520-0232	312 FN								
521-0075	779 FN								
521-0091	363 H	119	100	450	294	296	129	176	50
521-0138		500 EH	550	500	252	120	385		
521-0141		215 FN							
521-0159						57 H	119	134	
521-0194							150 CS	120	
522-0124	150 FN	250 FN							
522-0153		3 P	3		5	7	11	6	
		58 H	31	52		15	67	32	81
									400 ES
									145 CS
527-0166		440 FN	546	549	926	912	1,382		
527-0184		100 FN	100						
527-0186		300 FN	250	243					
527-0196		150 FN		150	125				
527-0219							220 FN		
	110 P								
	1,320 H								
527-0230							189 P		50
527-0231			300 FN	125	100	100			
527-0247					125 FN	125	110	212	50
								88 H	
527-0248						88 FN	50	75	65
								62 H	
527-0261								38 H	
						60 FN	120	53	3
527-0294							104 FN		
							160 H	120	
527-0297							9 FN		
								11 H	
527-0308								714 H	
527-0309									1H
527-0311								107 H	187
532-0045	78 FN								
532-0064								80 H	
538-0022	480 FN		255	267					
538-0149								28 H	289
596-0065	280 FN	100							
596-0104			100 FN	692					
596-0115							3,200 H		320
596-0116							2,600 H	1,880	210
598-0616									400 FN
									500 H
603-0014					986 ES				

(continued)

C-2

Appendix Table C-1 (continued)

	1979	1980	1981	1982	1983	1984	1985	1986	1987
608-0158	118FN		6						
608-0170							135 CS		
608-0171									135 CS
612-0207		18 H	42	72	18				
615-0216					62 h				
					62 P				
615-0219					25 H				
631-0040	230FN								
631-0051						82 H			
631-0056									121 CS
									329 H
632-0066	30 FN								
632-0220			382FN						
632-0221							341 FN 1,065		1,505
645-0220									120 H
650-0026		20FN	4						
660-0055	823FN								
660-0079				1,014FN	2,000		1,286 FN		
660-0086							11 H		
660-0101									500 CS
660-0107							425 H	250	
664-0255	4FN								
664-0284	32FN								
664-0297	32 H								
669-0165					175 H	67	151 H	181	323
					15 P				
679-0005		227 h							
679-0006							188H		
680-0207	195FN	627							
683-0208	260 SH	257	200		75	411	140 SH	90	
683-0254									150 CS
								147 SH	350
685-0242							211 SH	45	
685-0250			500 SH				400	50	
688-0227								120 SH	170 SH
692-0228									182 H
698-0398							155 H	25	
698-0513							1,750 CS		250
879-0001									32 H
879-0006									20 H
879-0010									200FN
904-0002	220 FN								
904-0006	1,338 FN	1,417	1,750	1,750	1,864	2,123			
930-0096	49 FN		93	250	246	290	230	90	225
931-0023	17 FN	106							
931-0045	360 FN	400	240	400	50	540	3,675	5,430	3,527
							350 H		50
931-0077	263 FN			400					
931-0228	375 FN								
931-0227	264 FN	251	200	200		300	266	70	773
					275 H		200	200	50
931-0262	212 FN	198	669	492	433	702	900	694	972
931-0452	172 FN								
931-0471	90 FN								
931-0799	297 FN	300							
931-0831	509 FN	381	840	600	940	500	550	500	550
931-0838	270 FN								

(continued)

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Appendix Table C-1 (continued)

	1979	1980	1981	1982	1983	1984	1985	1986	1987
931-1010	869 FN	728		1,347			1,722		
			1,497 H	1,493	1,200	800	1,102	950	1,575
931-1012	330 H	950	950	950	1,108	711			1,800 CS
931-1018							49 FN		
								105 CS	140
								14 H	7
931-1055	4 H								
931-1064	300 FN	800		300	450	440	1,075		550
931-1065	300 FN	500	151	300	300	350	297	525 H	175
931-1124	491 FN			40				419	
931-1155		366 FN							
931-1157		192 FN							
931-1171	279 FN	50	350	350	735	360	648	412	
931-1196		215 FN		200					
			200 H		150	200	275	325	325
931-1274		1,085 FN	227	168	215	360			571
921-1275		321 FN	124	100	250	300		88	
931-1276	625 FN	217	271	17					
931-1309			750 FN	1,400	2,900	2,650	2,585	1,242	273
931-1315		180 FN							
932-0632	300 FN								
932-0955									3 P
936-0643								106 P	203
936-3017									25 P
936-3023						20 H	10 H	25	25
									61 P
936-3030								66 P	17
936-3032								16 P	16
936-3034									12 P
936-3035								3 P	8
936-3037									4 P
936-3040								1,450 P	1,330
936-3041								190 P	171
936-3042									20 P
936-5053							456 FN		34
							442 H	473 H	463 H
936-5057							104 H	91	129
936-5113									500 H
936-5901			50 H	50	50	42	50 H	5	
936-5920							309 H	240 H	
936-5927								216 CS	320
					186 H	156	524 H	336	8
936-5928								105 CS	
						98 H	370	355	
936-5932							29 H	25	100
936-5939							151 H	55	
936-5951							160 CS	83	240
							42 H	153	193
									300 FN
936-5952								95 CS	
							65 H	55	120
936-5969									232 CS

(continued)

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Appendix Table C-1 (continued)

	1979	1980	1981	1982	1983	1984	1985	1986	1987
938-0142	300 SA								
		300 FN	400						
938-0206				500 FN	600	750			
938-0228			31 SA						
			26 H	18	105	105			
938-0261							1,680 FN		
938-0267							2,209 SA	1,485 H	800
								215	192
938-0284								1,741 FN	
938-0501							44 CS		
938-0502							548 CS		
938-0503							344 H		145
938-0505							86 H	26	35
938-0506							60 CS		
							1,385 H		
938-0510							75 H	2	
938-0513							52 H		
938-0515							94 CS		
							47 H		
938-0516								130 CS	
938-0517								198 CS	
938-0518								179 CS	
938-0519								150 CS	
938-0520								168 CS	
938-0521								335 CS	50
938-0522								125 CS	
938-0523								220 CS	
938-0524								340 CS	
938-0528									460 CS
938-0701							455 FN	211	767
938-0702							1,302 FN		379
938-0703							2,230 FN	3,036	1,143

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Appendix Table C-2
A.I.D. Projects with Nutrition Components -
Projects Ever Funded

263-0065	79-	E	Egypt - Urban Health Delivery system (2% ES)
263-0203	85-	E	Egypt - Child Survival (3% ES 85-86; 14% ES 87)
278-0245	80-	E	Jordan - Health Education (20% ES)
278-0270	86-	E	Jordan - Primary Health Care Nursing Development (10% ES)
279-0035	76-86	AD	Yemen - Applied Health and Nutrition (CRS)(100%)
279-0065		E	Yemen - Tihama Primary Health Care (10% H 87 only)
279-0082	86-	E	Yemen - Accelerated Coop for Child Survival (5% HE)
298-0141	75-79	A	Near East Regional -- Nutrition Education (CRS)
298-015810	--	C	Near East Regional - LSU Nutrition
367-0144	82-	E	Nepal - PVO Co-Financing-OPG (SCF)(5% FN only; 0% P,H)
386-0380	68-76	A	India - Nutritional Foods Development
386-0476	84-90	ACD	India - Integrated Child Development Services (100%)
386-0511	87	E	PVO's for Health II (15.4% CS, HE)
388-0073	86-	E	Bangladesh - Urban Volunteer Program (20% CS HE 85-86; 20% CS 87; 30% HE 87)
391-0394	74-77	A	Pakistan - Nutrition Planning and Research
391-0404	79	A	Pakistan - Vitaminization of Flour
391-0475	82-	E	Pakistan - Primary Health Care Aga Khan (2% ES, 0% H 85-86; 5% ES, 0% CS, 5% H 87)
391-0491	84-90	AD	Pakistan - Food Security Management (10%)
398-0334	--	AC	Near East Regional - Private Sector Regional Nutrition (100%)
398-0356	--	C	Near East Regional - Technical Services in Vitamin A (100%)
439-0066	63-75	A	Laos - Public Health Development (Food Project, CRS)
482-0004	83	E	Burma - Primary Health care II (West. Consort.) (40% H)
492-0085	68-73	A	Philippines - Nutrition Support
492-0252	74-81	AD	Philippines - Food and Nutrition (100%)
492-0319	79-84	AD	Philippines - Bicol Integrated Health, Nutrition, and Population Project (33%)
492-0252		C	Philippines - Food and Nutrition
492-0320	--	C	Philippines - Food and Nutrition Outreach
493-0179	60-76	A	Thailand - Protein Food Development
493-0266	72-77	A	Thailand - Nutrition
493-0291	78-	E	Thailand -- Rural Primary Health Care (7.8% HE)
497-0285	?	C	Indonesia - Rural Works II (15%)
497-0305	80-90	AD	Indonesia - Village Family Planning - Mother/Child Welfare (40% H 85-86; 44.2% H 87)
497-0325	81-89	AD	Indonesia - Comprehensive Health Improvement Program (13.3% HE)
497-0336	82	E	PVO Co-Financing II-OPG (75% HE, FN; 0% EHR, SDA)

504-0073	78-86	ACD	Guyana - Weaning Food Development (100%)
504-0088	--	C	Guyana - Weaning Foods II
505-0017	86	E	Belize - Child Survival Technical Support (HOPE)(15% HE 85-86; 5% HE 87)
505-0029	85	E	Belize - Breast is Best League - OPG (100%)
505-0032	86	E	Belize - Maternal and Child Health (CARE)(20% HE 85-86; 40% HE 87)
505-0037	88-	E	Belize - Child Survival Support (15%
511-0439	68-78	A	Bolivia - School Feeding and Nutrition
511-0468	76-82	ACD	Bolivia - Nutrition Improvement (APD)(100%)
511-0484	--	C	Bolivia - National Nutrition Improvement
511-0536		E	Bolivia - Tiwunacu Rural Health (5% H)
511-0567		C	Bolivia - Low Cost Shelter through Private Sector
511-0569	87	E	Bolivia - Self-Financing Primary Health Care (13.6% CS + HE 85/86; 11.5% CS; 30% HE 87)
511-0590	85	E	Bolivia - Oral Rehydration Therapy Growth Monitoring (CRS)(40% FN, HE, CS 85/86; 51% CS 87; 40% HE/CS, 87)
511-0599	86	E	Bolivia - Water and Health (CARE)(15% HE/CS 85/86; 11.1% CS, HE 87)
511-0601	88	E	Bolivia - Child Survival PVO Network-1 (SCF)(12.6% CS)
512-0174	63-74	A	Brazil - Food for Peace-Planning and Supervision
512-0288	71-76	A	Brazil - Food Fortification
513-0271	75-76	A	Chile - Child Nutrition
513-0281	75-80	A	Chile - Nutrition Development
513-0305	77-80	A	Chile - Child Recuperation Centers - Evaluation and Training
513-0311	77-79	A	Chile - Mapuche Nutrition Education
513-0316	79-80	A	Chile - Multisectoral Community Development (PVO-OPG)
514-0197	76-81	A	Colombia - Nutrition Evaluation
515-0121	76-82	A	Costa Rica - Nutrition Program
515-0127	76-81	AD	Costa Rica - Soybean Product and Food Mix Processing (100%)
517-0107	75-81	A	Dominican Republic - Health/Nutrition Sector Development
517-0120	79-	E	Dominican Republic - Health Sector II (0.5% HE)
517-0174	83	E	Dominican Republic - Health and Nutrition Education OPG (CRS)(50% HE)
517-0239	87	E	Dominican Republic - Child Survival (80% HE)
518-0006	80-82	A	Ecuador - Food Processing and Fortification (OPG-CARE)(100%)
518-0015	85	E	Ecuador - Integrated Rural Health Delivery System (6.5% H, CS 85/86; 30% CS, 0% H 87)
518-0018		C	Ecuador - Rural Youth Development Foundation (4-H)(100%)
518-0033	86	E	Ecuador - Strengthening Community Organization (SCF)(20% HE)
518-0071	88-	E	Ecuador - Child Survival (20% HE, CS)

518-0112	72-75	A	Ecuador - Family Food and Nutrition
519-0167	73-85	A	El Salvador - Contx-Technical Support
519-0182	78-82	ACD	El Salvador - Nutrition Improvement (100%)
519-0203	78-81	AC	El Salvador - Caritas Food, Nutrition and Health Education
519-0222	79-83	ACD	El Salvador - Nutrition Production/Education (OPG/PVO)(100%)
19-0253	80-84	AC	El Salvador - Health and Nutrition (100%)
519-0281	84	CE	El Salvador - Health and Jobs for Displaced Families-OPG
519-0300	87	E	El Salvador - Community Based Integrated Rural Development (12% H, CS)
519-0308	87	E	El Salvador - Health Systems Support (0% 85-86; 0% HE, 10% CS, ES, 0.9% H 87)
519-0329	86-87	AD	El Salvador - Maternal Child Health Care Promotion (100%)
520-0232		C	Guatemala - Food Productivity and Nutrition (100%)
521-0075	76-81	ACD	Haiti - Nutrition Improvement (100%)
521-0077	75-77	A	Haiti - Training Primary School Teachers in Nutrition
521-0091	79-88	AD	Haiti - Rural Health (10% HE)
521-0138	80-87	AD	Haiti - Community Integrated Nutrition and Education (OPG-PVO)(100%)
521-0141	80-83	ACD	Haiti - Nutritional Blindness Prevention (HKI)(100%)
521-0159	84	E	Haiti - Urban Health and Community Development II-OPG (Medico-Social)(10% HE)
521-0194	85	E	Haiti - Mobilizing Mothers for Child Survival (HAC)(5% CS 85-86)
522-0065	65-76	A	Honduras - Maternal Child Health
522-0124	76-81	ACD	Honduras - Nutrition (100%)
522-0153	80-88	AD	Honduras - Health Sector I (1% P, H 85/86; 10% HE/CS/ES 87)
522-0216	88	E	Honduras - Health Sector II (10% CS, 0% H)
524-0117	76-81	A	Nicaragua - Nutrition Program Development Grant
524-0128	78-82	AC	Nicaragua - Nutrition Improvement Program
527-0001	74-79	A	Peru - National School Lunch Program
527-0166	74-86	AC	Peru - Program Development and Support (100%)
527-0180	78-80	A	Peru - Improved Feeding Capability-Caritas OPG
527-0184	79-82	AD	Peru - DALPRA Community Food Production (CARE)(100%)
527-0186	80-84	ACD	Peru - CARE Urban Feeding Program (CARE)(100%)
527-0196	80-84	ACD	Peru - Expanded Improved Feeding Program (CRS)(100%)
527-0210		C	Peru - Nutrition Policy and Planning
527-0219	79-86	AD	Peru - Extension of Integrated Primary Health (20% FN, H)
527-0230		C	Peru - Integrated Family Planning and Health (5% HE, PN)
527-0231		E	Peru - Reforestation Food for Work Program (50% H, FN)
527-0247	83-87	ACD	Peru - SAWS/OFASA Expanded Feeding Program (50% HE, FN 85/86; 50% FN, 0% H 87))

527-0248	84-87	ACD	Peru - CARITAS Feeding Program (OPG)(50% FN, HE 85-86; 65% FN, 0% H 87)
527-0261	84-83	AC	Peru - Basic Infrastructure in Pueblos Jovenes (30% FN/H 86; 4% FN, 0% 87)
527-0270		C	Peru - National Nutrition Development
527-0285	87-91	AC	Peru - Child Survival ACTION (30% H, CS)
527-0294	85	E	Peru - Peruvian PVO Health Promotion Network (Seton Institute)(40% FN, HE)
527-0297	85	E	Peru - Nutrition for Child Survival Program (CARE)(25% FN, HE)
527-0307			Peru Food Assistance Support Program
527-0308	86-87	AD	Peru - Private Sector Child Survival (68% HE)
527-0309	86-	E	Peru - Training Physicians and Nurses (10% HE)
527-0311	86	E	Peru - Reduction in Child Mortality (Johns Hopkins)(30% HE)
532-0045	77-84	AD	Jamaica - Rural Community Nutrition-Income Improvement (100%)
532-0064	81-88	A	Jamaica - Health Management Improvement (4% HE)
538-0022	78-82	ACD	Other West Indies-Eastern Caribbean Region - Caribbean Regional Nutrition (CFNI)(100%)
538-0149	86	E	Eastern Caribbean Region - Immediate Health Care (HOPE)(5% HE)
596-0065	76-82	AC	Regional Office Central America and Panama - Regional Nutrition-INCAP (100%)
596-0104	81-86	ADC	Regional Office Central America and Panama - Regional Nutrition Technical Outreach (100%)
596-0115	85-89		Regional Office Central America and Panama - Oral Rehydration Therapy, Growth Monitoring and Nutritional Education (40% HE)
596-0116	85-90	AD	Regional Office Central America and Panama - Technical Support for Food Assistance Programs (80% HE)
598-0616		E	Regional Office Central America and Panama - Management Res. Project (100% FN, 34% HE)
603-0014	83-85	ACD	Djibouti - Nutritional Outreach (100%)
608-0123	75-77	A	Morocco - CRS Nutrition Grant
608-0135	76-80	A	Morocco - Nutrition Systems Study Unit
608-0141	76-78	A	Morocco - Nutrition Education, Phase II
608-0158	79-82	AD	Morocco - CIDERA School Grant (OPG)
608-0170			Morocco - ??
608-0171	86	E	Morocco - Family Planning Support III (9% CS)
608-0207	80	E	Malawi - Rural Piped Water (2.5% H)
612-0226	88	E	Malawi - Multiple Assistance Schemes in Health (10% H)
612-0230		C	Malawi - Human Resources and Institutional Development (100%)
615-0216	78	E	Kenya - Family Planning Management AMREF (20% H)
615-0219	83	E	Kenya - Primary Health Care II (5% H)
631-0040	79-82	ACD	Cameroon - Nutrition Advisory Services (100%)

631-0051		E	Cameroon - Northern Wells Phase II (CARE)(10% H)
631-0056	87	E	Cameroon - Maternal Health (Drew, Harvard, AED)(15% CS, 15% HE)
632-0066	76-80	ACD	Lesotho - Nutrition Planning and Research (PVO)(100%)
632-0220	81-84	ACD	Lesotho - Nutrition Planning II (100%)
632-0221		C	Lesotho - Agricultural Production and Institutional (25%)
641-0074	76-79	A	Ghana - Agricultural Rehabilitation/Health Promotion
645-0220	85	E	Swaziland - Primary Health Care (19% CS 87; 12% H 87)
650-0026	78-82	AD	Sudan - Wadi Halfa Community Development: Nutrition Education (PVO)(100%)
660-0055	75-81	ACD	Zaire - Nutrition Planning-FY75 (100%)
660-0079	82-87	AC	Zaire - Area Nutrition Improvement (100% FN)
660-0086	81	E	Zaire - Basic Rural Health (ECZ)(10% H)
660-0101	84-	E	Zaire - School of Public Health (100%)
660-0107	85	E	Zaire - Basic Rural Health II (ECZ)(10% H 85-86)
664-0255	69-77	ACD	Tunisia - Institute of Nutrition and Food Technology (100%)
664-0284	79-79	ACD	Tunisia - Nutrition Planning (100%)
664-0289	76-78	A	Tunisia - Tunis Sud-Nutrition Education
664-0296	78-	E	Tunisia - Rural Community Health (5% HE)
664-0297	77-82	AD	Tunisia - Integrated Preschool Feeding (100%)
669-0165	83	E	Liberia - Primary Health Care Project (U. of Haw.(MX)) (5% H 85-86; 10% H 87)
679-0005	80-83	AD	Congo - Nutrition Education Development and Training (PVO)(100%)
679-0006	84-85	AD	Congo - Nutrition Education II (CARE-PVO)(100%)
680-0207	79-83	ACD	Benin - Benin Soya Nutrition (CRS-PVO)(100%)
683-0208	78	E	Niger - Rural Health Improvement (Tulane/Africare)(10% SH)
683-0254	86	E	Niger - Health Sector Support (10% CS, HE, SH 87; 4.2% SH 85)
685-0242	84	E	Senegal - Rural Health Source II (6% SH 85-86; 5% SH 87)
685-0250	81-86	AD	Senegal - Millet Transformation (100% FN)
688-0227	86	E	Mali - Integrated Family Health Services (10% SH, 10% H, 0% H 85-86)
693-0228	87-	E	Togo - Health Sector Plug. (20% H 87)
698-0170	68-72	B	Africa Regional - West African Workshop on Nutrition
698-0317	69-72	B	Africa Regional - African Regional Workshop on Nutrition
698-0318	69-72	B	Africa Regional - East African Workshop on Nutrition
698-0392	75-79	A	African Regional - MCH/FP/Nutrition Training and Development
698-0398	77	E	African regional - Strengthening Health Delivery Systems II (Boston U/CDC)(5% H)
698-0513	85	E	African Regional - African Child Survival (UNDP)(50% CS)

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879-0001	84	E	PVO Co Financing (40% H)
879-0006	85	E	South Pacific Regional - SPC Multi Program Support (10% HE)
879-0010	87-88	C	South Pacific Regional - Project Development and Implementation (100%)
904-0002	77-84	ACD	FVA - Maternal Child Health Assessment (100%)
904-0006	78-86	ACD	FVA - Title II Outreach (50%)
904-0304	69-70	B	FVA - Milk Vitaminization
904-0310	73-80	A	FVA - Pakistan Food for Peace
926-0046	75-80	A	International Training - Hunger Awareness Program for Foreign Students
930-0096		C	Nutrition and Development
930-0700	85	E	PPC - UNICEF
931-0001	67-69	BD	ST/N - Milk Vitaminization
931-0005	67-67	B	ST/N - Food for Peace Commodity Evaluation
931-0006	67-67	B	ST/N - Nutrition Program
931-0007	67-68	B	ST/N - Child Feeding Programs
931-0009	67-68	B	ST/N - Combat Malnutrition
931-1018	78-86	AE	ST/N - Communication for Child Survival (AED)
931-0023	73-85	ACD	ST/N - Volag Nutrition Capabilities (100%)
931-0045	74-89	AD	ST/N - Development of Vitamin A Delivery System (100%)
931-0061	74-78	A	ST/N - Nutrition Education Evaluation
931-0077	76-84	ACD	ST/N - Clinical Assay of High Protein Food FY76 (100%)
931-0160	73-79	A	ST/N - International Nutrition Planning Program
931-0225	76-87	AC	ST/N - Soybean Utilization (100%)
931-0227	76-87	AD	ST/N - Combating Iron Deficiency Anemia (100%)
931-0231	76-81	A	ST/N - Improved Nutrition Value of Wheat Foods
931-0262	76-87	AD	ST/N - Nutrition Planning/Analysis FY76 (100%)
931-0305	67-69	B	ST/N - Conf Child Feeding
931-0308	-69	B	ST/N - Nutrition Development (MIT conf?)
931-0413	-67	B	ST/N - Development of Foods
931-0437	-68	B	ST/N - High Protein Supply
931-0452	66-80	AD	ST/N - Sorghum Protein Content and Quality (100%)
931-0455	66-77	A	ST/N - Investigation of Mortality in Infants
931-0457	66-68	B	ST/N - Liver Disease Study
931-0458	66-73	A	ST/N - Extending Protein Concentrates
931-0459	66-78	A	ST/N - New Protein Sources (Graham)
931-0460	66-69	B	ST/N - Influence Nutrition on Cognition
931-0461	67-72	B	ST/N - Soy Based Food Development
931-0471	66-80	ACD	ST/N - Improvement of Nutritional Quality of Wheat
931-0481	67-75	A	ST/N - Improving Nutritive Value Cereal Foods
931-0482	67-78	A	ST/N - Extrusion Processing (Hornstein?)
931-0483	67-73	A	ST/N - Lysine Enrichment of Wheat Flour
931-0484	67-68	B	ST/N - Rice Milling Process
931-0492	68-78	A	ST/N - Nutritional Improvement Rice by Fortification

931-0508	69-79	A	ST/N - Measurement of Waste from Malabsorption
931-0519	70-76	A	ST/N - Protein Utilization in Man
931-0529	71-77	A	ST/N - Clinical and Subclinical Malnutrition (Cali study)
931-0530	71-78	A	ST/N - Influence of Maternal Diet on Offspring (Bacon Chow)
931-0544	71-78	A	ST/N - Corn Fortification Field Testing
931-0550	72-76	A	ST/N - Effects Enrichment/Malnourish on Children (Winick study)
931-0568	74-77	A	ST/N - Community Level Interventions
931-0580	74-79	A	ST/N - Improvement of Nutritional Quality and Production of Barley
931-0585	74-78	A	ST/N - Cost Control -Vitamin A Deficiency
931-0592	75-77	A	ST/N - Improved Water Supplies
931-0611	75-78	A	ST/N - Maternal Nutrition and Infant Morbidity
931-0615	75-78	A	ST/N - Extrusion Processed Foods (Hornstein)
931-0625	76-80	A	ST/N - Effect of Protein-Calorie-Interventions
931-0633	76-79	A	ST/N - Fortification of Sugar with Iron
931-0709	66-71	B	ST/N - School Lunch Assistance Peru
931-0759	-69	B	ST/N - Pre-school Nutrition Program
931-0774	67-67	B	ST/N - Nutrition Pamphlets
931-0793	67-69	B	ST/N - Protein Food Process
931-0798	67-72	B	ST/N - Fifth Malnutrition Conference
931-0799	75-81	ACD	ST/N - Nutrition Scientific/Technical Support (100%)
931-0801	69-72	B	ST/N - National Nutrition Education Program
931-0803	68-70	B	ST/N - Nutrition Child Feeding Technical S
931-0804	68-72	B	ST/N - Scientific and Technical Information - LIFE
931-0831	68-86	ACD	ST/N - Food and Nutrition Technical Services (Crowley)(100%)
931-0834	69-?	A	ST/N - Professional Exchange Travel Grant
931-0836	67-72	B	ST/N - Nutrition Testing - Chile
931-0837	67-72	A	ST/N - Nutrition Training
931-0838	74-81	ACD	ST/N - Guidelines for Pre-School Interventions (100%)
931-0845	69-74	A	ST/N - Evaluation Used AID Procured FPC
931-0846	69-76	A	ST/N - Incentive Grants--Nutrition
931-0872	70-79	A	ST/N - Evaluation of Nutrition Education
931-0879	70-78	A	ST/N - Evaluation of Child Feeding
931-0883	70-73	B	ST/N - Evaluation of Child Feeding
931-0885	70-80	A	ST/N - Analysis and National Planning
931-0907	70-72	B	ST/N - Transport and Storage Cost Etc
931-0911	70-75	A	ST/N - Evaluation of High Protein Foods
931-0921	71-72	B	ST/N - Mini-Conference Foods LDCs
931-0926	71-73	A	ST/N - Evaluation Corn-Soy-Milk Project
931-0927	71-77	A	ST/N - Inter-Regional Utilization
931-0963	73-80	A	ST/N - LDC Nutritious Food Feasibility Grants
931-0993	74-79	A	ST/N - New Approaches - Mass Media
931-0998	73-76	A	ST/N - Mass Media Technology - Nutrition

931-1010	79-88	ACD	ST/N - Changing Maternal/Weaning Practices (100%)
931-1011	78-79	A	ST/N - Nutritional Needs Under Stress (CRSP)
931-1012	79-84	AD	ST/N - International Center for Diarrheal Diseases Research (50%)
931-1018		E	ST/N - Health Communication (7% FN, ES, HE)
931-1055	78-80	AD	ST/N - Educational/Health/Nutritional Policies (INCAP study)(100%)
931-1064	77-88	ACD	ST/N - Nutrition: Dietary Surveys/Surveillance (100%)
931-1065	79-86	ACD	ST/N - Technical Assistance Nutrition Education (100%)
931-1124	79-84	AC	ST/N - Nutrition/Agricultural Production Research (100%)
931-1155	76-82	AD	ST/N - Special Products Input-Nutrition Education Materials (100%)
931-1157		C	ST/N - Small Research Food & Nutrition (100%)
931-1171	77-86	ACD	ST/N - Economic Analysis of Agricultural Policies (100%)
931-1198	77-87	ACD	ST/N - Integration of Nutrition/Health Services (100%)
931-1274	80-86	ACD	ST/N - Consumption Effects of Agricultural Policies (100%)
931-1275	80-88	CD	ST/N - Public Food Program Analysis (100%)
931-1276	79-82	ACD	ST/N - Nutrition Evaluation (100%)
931-1295	77-78	A	ST/N - Community Level Nutrition Meharry
931-1309	81-86	ACD	ST/N - Functional Implications of Malnutrition (100%)
931-1315	78-81	ACD	ST/N - Proposed CEAP Involvement in Bolivia (100%)
932-0068	75-78	A	ST/POP - Planning Assistance
932-0069	75-78	A	ST/POP - Meals for Millions Foundation
932-0392	77-78	A	ST/POP - Meharry Medical College
932-0631	77-82	A	ST/POP - Integrated System of Nutrition and Primary Health Care
932-0632		F	ST/POP - Fertility Impact of Different Family Planning Program (actual figs. reported to 936-3040, 50% of combined BF activities 100% BF only)
932-0955		F	ST/POP - Family Planning International Assistance(actual figs. reported to 936-3040, 50% of combined BF activities 100% BF only)
936-0643		F	ST/POP - Population Policy Research (actual figs. reported to 936-3040, 50% of combined BF activities 100% BF only)
936-3017		F	ST/POP - RAPID-II (actual figs. reported to 936-3040, 50% of combined BF activities 100% BF only)
936-3023	84	E	ST/POP - Family Health and Demographic Surveys (Westinghouse)
936-3030		F	ST/POP - Strategies for Improving Service Delivery(actual figs. reported to 936-3040, 50% of combined BF activities 100% BF only)

936-3032		F	ST/POP - Population Information Program III (actual figs. reported to 936-3040, 50% of combined BF activities 100% BF only)
936-3034		F	ST/POP - Family Planning Enter. (actual figs. reported to 936-3040, 50% of combined BF activities 100% BF only)
936-3035		F	ST/POP - Population Policy Initiatives (actual figs. reported to 936-3040, 50% of combined BF activities 100% BF only)
936-3037		F	ST/POP - Expanding FPS -- Women Mgrs. (actual figs. reported to 936-3040, 50% of combined BF activities 100% BF only)
936-3040		F	ST/POP - Natural Family Planning (actual figs. reported to 936-3040, 50% of combined BF activities 100% BF only)
936-3041		F	ST/POP - Family Health International (actual figs. reported to 936-3040, 50% of combined BF activities 100% BF only)
936-3042		F	ST/POP - Family Planning Services (actual figs. reported to 936-3040, 50% of combined BF activities 100% BF only)
936-5052	85-87	E	ST/RUR - Grants to Universities
936-5057	85	E	ST/RUR - Joint Health MOU's (10%) HE
936-5100		C	ST/N - PVO Program Support
936-5104		C	ST/N - Nutrition In-service Training
936-5106		C	ST/N - Private Food Industry in Nutrition
936-5107		C	ST/N - Overcoming Vitamin A Deficiency
936-5108		C	ST/N - Nutrition and International Agriculture
936-5110		C	ST/N - Consumption Analysis of Food and Agriculture
936-5113		C	ST/N - Nutrition, Education and Social Marketing Fld Support (100%)
936-5116		C	ST/N - Overcoming Vitamin A Deficiency
936-5901	81	E	ST/H - Health Development Planning and Management (APHA/Pitt/JHU)(5% HE)
936-5920	85	E	ST/H - PRICOR (15% H, 85/86)
936-5927	83	E	ST/H - Technology for Primary Health Care (8% HE exc. WHO)
936-5928	84	E	ST/H - Diarrheal Disease Research (ICDDR/B)(10% HE 85/86 exc. WHO)
936-5932	83	E	ST/H - MEDEX (5% H 85/86; 10% H 87)
936-5939	84	E	ST/H - Oral Rehydration Therapy HELP (as reported to ISTI)
936-5951	85-86	E	ST/N - CSAP (as reported to ISTI)
936-5952	85	E	ST/N - Applied Diarrheal Disease Research (HIID)(10% HE, CS)
936-5969	87	E	PRITECH II (8% CS 87)
938-0142	78-81	AD	FVA - Meals for Millions Foundation (100%)
938-0206	82-85	AD	FVA - Meals for Millions Foundation (100%)
938-0228	81-85	D	FVA - Seventh Day Adventists World Service (SAWS)(15%)

938-0261	85	E	FVA - PVO Matching Grant (Meals for Millions Foundation)(100%)
938-0267	85-90	AD	FVA - Cooperative for American Relief Everywhere (CARE)(as reported to ISTI)
938-0284	86	C	FVA - Vitamin A (Eye Care)(100%)
938-0501	85	E	FVA - International Eye Foundation (as reported to ISTI)
938-0502	85	E	FVA - SCF (as reported to ISTI)
938-0503	85	E	FVA - CARE (as reported to ISTI)
938-0505	85	E	FVA - WVRO (as reported to ISTI)
938-0506	85	E	FVA - Helen Keller International (100%)
938-0509	85	E	FVA - SAWSO (0%)
938-0510	85	E	FVA - PCI (as reported to ISTI)
938-0513	85	E	FVA - MIHV (as reported to ISTI)
938-0515	85	E	FVA - Catholic Relief Services
938-0516	86	E	FVA - CARE (as reported to ISTI)
938-0517	86	E	FVA - Africare (as reported to ISTI)
938-0518	86	E	FVA - WVRO (as reported to ISTI)
938-0519	86	E	FVA - AMREF (as reported to ISTI)
938-0520	86	E	FVA - Esperanza (as reported to ISTI)
938-0521	86	E	FVA - PCI (as reported to ISTI)
938-0522	86	E	FVA - PLAN (as reported to ISTI)
938-0523	86	E	FVA - CRS (as reported to ISTI)
938-0524	86	E	FVA - SCF (as reported to ISTI)
938-0526	87	E	FVA - Meals for Millions (100%)(as reported to ISTI)
938-0701	85-88	ACD	FVA - Title II Program Enhancement (25%)
938-0702	85-86	ACD	FVA - Food Needs Assessment (100%)
938-0703		C	FVA - Title II Outreach (50%)
938-0704	87-C	ACD	FVA - Title II Outreach (50%)

KEY:

- A - CDIE Project Data Base
- B - CDIE Early Project Data Base
- C - PPC Project Data Base 12/10/87
- D - PPC Project Data Base 02/01/88
- E - ISTI Project Data Base
- F - Georgetown NFP Data Base

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