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The Effectiveness of Maternal and Child Health Supplementary Feeding Programs: An Analysis of Performance in the 1980's and Potential Role in the 1990's

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10. Abstract (optional - 250 word limit)
This report finds that P.L. 480, Title II food aid has played an important role in supporting maternal and child health supplementary feeding programs in the 1980's. The report recommends 12 specific changes if that role is to continue in the 1990's. The report is based on numerous interviews with A.I.D. personnel in Washington and in USAID Mission, PVOs, multilateral agencies, and key international experts; and incorporates an extensive literature review of MCH evaluations conducted over the period from 1976 through 1989.

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**THE EFFECTIVENESS OF MATERNAL
AND CHILD HEALTH (MCH)
SUPPLEMENTARY FEEDING PROGRAMS**

**AN ANALYSIS OF PERFORMANCE IN THE 1980S
AND POTENTIAL ROLE IN THE 1990S**



**AGENCY FOR INTERNATIONAL DEVELOPMENT
Bureau for Food for Peace and Voluntary Assistance
Office of Program, Policy and Management
Washington, D.C.**

September, 1990

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AND CHILD HEALTH (MCH)
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AND POTENTIAL ROLE IN THE 1990s**

**Prepared for the Agency for International Development
under Contract No. PDC-0262-I-00-7151-00**

by

**Jose O. Mora
Joyce M. King and
Charles H. Teller**

**LOGICAL TECHNICAL SERVICES CORPORATION
International Nutrition Unit**

September 1990

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

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EXECUTIVE SUMMARY

From 1976 to 1989 the PL 480 non-emergency Maternal and Child Health (MCH) supplementary feeding program has reached an average of 11.3 million beneficiaries in 39 countries. Programs wholly supported by U.S. food aid were implemented by U.S. PVO cooperating sponsors, and U.S. food was contributed to MCH feeding programs administered by the World Food Program. Although, with the exception of the WPF, it is the largest program of its kind in the world today, food commodities reached just a small fraction of the mothers and children suffering persistent nutritional problems during the period.

This review of the written and verbal performance record of MCH feeding programs in general and PL 480 programs in particular was commissioned due to recent concerns about the effectiveness of these programs and the phase-out by PVOs of a number of long-standing programs, especially in Africa where nutritional conditions worsened in the 1980s.

Findings:

- 1. In the 1980s, PL 480, Title II food aid has played an important role in supporting maternal and child health (MCH) supplementary feeding programs in the developing world. If this role is to continue in the 1990s, major changes will be needed in program orientation, design, funding and implementation.**
- 2. Supplementary feeding continues to be needed to improve the food consumption of high-risk women and children in impoverished population groups in developing countries. This is particularly true in countries and sub-national regions where malnutrition and chronic or seasonal household food insecurity affect large portions of the population, such as much of Sub-Saharan Africa.**
- 3. MCH feeding programs can be effective in improving the dietary intake and nutritional status of recipients. There is some evidence in PL 480 Title II evaluations done in the Philippines, India, Morocco, Haiti, and Sri Lanka, that MCH feeding programs can be an effective means of improving health and nutritional status of vulnerable populations, if certain conditions are met.**
- 4. In the 1980s the number of PL 480 MCH feeding programs and beneficiaries has been declining, particularly in Africa. World totals have declined only slightly, Asia totals have substantially increased while African totals have declined over 50% from 1983 to 1989.**
- 5. Evaluations have generally not been adequately designed to demonstrate the nutritional impact of PL 480 MCH feeding programs. Twenty-seven A.I.D. funded evaluations which were conducted on 22 programs were reviewed. Seven of these took adequate samples for determining impact, but none used pre-test, post-test control group designs necessary to isolate the impact of feeding on the recipients.**
- 6. MCH programs have been shown to increase the demand and utilization of health services, improve nutritional knowledge of recipients, and serve to transfer income to the poor.**

This evidence, however, is not strong enough to support the recommendation that these be made major program objectives.

7. **When effective, the critical elements for success are**
 - (a) adequate initial assessment of the magnitude and causes of food and nutrition problems of the target population;
 - (b) locally appropriate project designs with objectives, targets, and indicators based on the assessment;
 - (c) full involvement of the recipient community in design and implementation, particularly women and women's organizations;
 - (d) a sustained supply of culturally appropriate food to meet a significant proportion of the nutrient gap;
 - (e) strong managerial capabilities, operational capacity and technical support of the implementing organization;
 - (f) complementary interventions -- particularly educational and primary health care inputs;
 - (g) feasible, cost effective targeting criteria for reaching those most in need and susceptible to food insecurity;
 - (h) functional administrative systems for transportation, storage and delivery and funding mechanisms to support and monitor them;
 - (i) built-in monitoring, evaluation and management information systems for generating information needed for timely control and correction.

8. **The major constraints to effective MCH programs have been:**
 - (a) perceived program ineffectiveness due to poor implementation and inadequate evaluation;
 - (b) low priority by governments and PVOs given to supplementary feeding relative to development objectives;
 - (c) inadequate needs assessment and critical design thinking;
 - (d) insufficient technical, managerial and operational resources of the implementing organizations;

- (e) funding gaps unmet by recipient governments or donors;
- (f) cumbersome program administration requirements.

Recommendations

Selection and planning of future MCH feeding projects should depend on the following technical and operational considerations:

1. **Adequate assessments of the community and household food security and nutrition problems and an analysis of the role of food aid compared to other alternatives in the solution to the problem.**
2. **Locally appropriate program designs** that include the minimum critical elements known to be associated with successful programs (listed above).
3. **Incorporation of micro-nutrient supplementation** whenever needed and feasible, particularly iron and folic acid for pregnant and lactating women and vitamin A supplementation for both women and children.
4. **Plans for phase-out or phase-over** in collaboration with donors, other PVOs, recipient governments, and target communities.
5. **Plans for sustaining health and nutritional benefits** of the MCH program based on knowledge of the economic and institutional infrastructure.

A.I.D. policy and operational support for feeding programs should be revised along the following lines:

6. **Shift emphasis to quality and effectiveness from overall coverage** (i.e., deliver a better package of program components to the core of targeted beneficiaries.)
7. **Target programs and self-targeting commodities on pregnant and lactating mothers and children under 24 or 36 months of age.** Adequate attention must be given to prevent or compensate for leakages.
8. **Encourage the use of alternative approaches and institutions** for reaching vulnerable populations not reached by the existing recipient government health system.
9. **Integrate MCH feeding with other development programs** such as income generating activities and community development projects.
10. **Place more emphasis on operational research** to explore innovative targeting and design concepts and on field testing improved implementation strategies.

11. **Encourage more extensive but judicious use of monetization schemes by testing implementation of the more flexible regulations now available.**
12. **Develop training for strengthening the institutional capacities of MCH program sponsors, USAIDs and host governments for problem assessment, program design, monitoring and evaluation and accountability for food and monetary resources. The stress should be on building institutional capacity in recipient governmental and non-governmental institutions.**

To implement these recommendations A.I.D. should engage in policy dialogue in-house, and then with other donors, PVOs and host countries. To initiate this dialogue, analyses of successful programs which have had adequate evaluations should be distributed along with this report.

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SUPPLEMENTARY FEEDING PROGRAMS:
AN ANALYSIS OF PERFORMANCE IN THE 1980s AND
POTENTIAL ROLE IN THE 1990s**

I. INTRODUCTION

"It (MCH feeding) is justified only in extreme poverty areas. It goes against people's dignity."

—International Nutrition Adviser

"It's (PL 480 Title II) a resource that can be used much better than it is now."

—USAID Health/Development Officer

Food distribution programs for mothers and children at risk of malnutrition have been for several decades among the most visible interventions aimed at improving the nutritional and health status of the poor in developing countries. Maternal and child health (MCH) supplementary feeding programs¹ have been implemented together or in connection with MCH services in many countries. Many of them have been supported through PL-480 Title II U.S.A. food donations. Given the substantial amount of both food and monetary resources spent in these programs, assessing their actual nutritional effectiveness and identifying the conditions under which program impact can be expected and measured, is of critical importance. Inconsistent results of impact evaluations have raised questions about the potential effectiveness of MCH supplementary feeding programs. A downward trend in the number of these programs has been observed recently, particularly in Africa. This has caused much concern on the part of the donor community, especially and most understandably A.I.D.

A number of MCH feeding program evaluations have been undertaken throughout the 1980s. Although inconsistent in some respects, the results of such evaluations, as well as those of interviews with experienced program managers and implementers, provide important lessons on what can reasonably be expected from such programs. It is also possible to better understand what does and does not work, to identify critical elements that should be incorporated in the planning and implementation process to improve program effectiveness, and to have a clearer idea of the potential role of food aid in MCH supplementary feeding in the next decade.

The purpose of the present study is to review the role and effectiveness of MCH supplementary feeding programs, and to make recommendations for improved program design, performance and impact for the 1990s. Process and impact evaluations of MCH feeding programs have become increasingly important in view of the declining trend in food surpluses and other

¹ Though the term "MCH supplementary feeding programs" is used throughout the report, the authors use the label only for ready recognition and intend rather "programs that reach nutritionally vulnerable mother and child populations within or without MCH institutions."

foreign aid resources in advanced countries. This makes it imperative to ensure making the best use of limited resources to optimize program effectiveness.

The objectives of the study are:

1. To assess the potential and actual effectiveness of MCH supplementary feeding programs as they have been implemented in developing countries in the 1980s.
2. To identify major constraints and critical elements affecting program effectiveness.
3. To analyze the potential role of PL 480 Title II project food aid in MCH supplementary feeding programs in developing countries.
4. To formulate recommendations for improved program performance and impact in the 1990s.

The study was specifically focused on the planning, implementation and evaluation of supplementary feeding interventions distributing free or subsidized foods to preschool children and to pregnant and lactating mothers, with emphasis on those programs supported through PL 480 Title II. Other types of food interventions such as disaster relief operations, school feeding programs, food fortification, food for work schemes, and institutional supplementary feeding in hospitals or nutrition rehabilitation centers, were not included in the review. Because the study was financed by A.I.D./FVA, relevant facets of food aid as a major component of MCH feeding programs and their political ramifications were also covered to the extent that they relate to the planning, implementation and effectiveness of such programs.

II. METHODOLOGY OF THE STUDY

"Problems are not just with MCH, but with food aid which has no client input, but is donor designed."

—USAID Food Officer

"We need to know why we are using food."

—PVO Management Consultant

A. Literature review

Secondary sources of information were primarily reviewed, including MCH supplementary feeding program evaluation reports, journal articles and reports from special studies carried out in the 1980s. A reference list of the documents reviewed is included as Appendix 1. Given time and budget limitations, field visits to ongoing programs were not contemplated. PL 480 Title II project evaluations carried out in the 1980s were reviewed. The original intention was to focus on those performed after a 1985 AID/FVA review. However, some of these recent evaluations (Bolivia, India ICDS/SNP, Guatemala) examined the program implementation process only, sometimes in great detail (India, Guatemala), but did not include assessment of impact or did not provide impact data that could be analyzed (Honduras, Ghana, the Dominican Republic).

Assessment of effectiveness in the present review was thus heavily based on programs covered by the 1985 AID/FVA report, which included in-depth analyses of comprehensive evaluations carried out between 1980 and 1985 of five PL-480 Title II MCH feeding programs in Haiti, Morocco, Philippines, Senegal and Sri Lanka, plus two Indian projects (ICDS and Tamil Nadu). Hence, our general conclusions on effectiveness do not greatly differ from those of the 1985 report. The review of program evaluation documents was complemented with the results of special studies conducted either before or after 1980, including recent assessments of the observed and expected implications of phasing out programs in Lesotho and Senegal.

The following program/project evaluations were covered in the study:

1. **With impact data reported (see Appendix 2)**

- Morocco. Food Aid and Nutrition Education Program. Gilmore et al, 1980.
- Philippines. MCH and Day Care Programs. Blumenfeld et al, 1982.
- Sri Lanka. Thripasha Program. Community Systems Foundation, 1982.
- Haiti. Nutrition and MCH Program. Seventh Day Adventist World Service. Harrison and King, Management Sciences for Health, 1983.
- Senegal. PL 480 Title II PPNS Program. Echenberg, Stubbs and King, International Science and Technology Institute (ISTI), 1984.

- India, ICDS. USAID Assisted ICDS Impact Evaluation, 1989. Anderson (doctoral dissertation), 1989.
- India, Tamil Nadu. Martorell, 1986; Berg, 1987; Balachander, 1989.
- Ghana. An Evaluation of the Ghana PL 480 Title II Program. Conducted by Planning Assistance for USAID/Ghana. December, 1989 (averaged weight gains only).
- Honduras. Implementation and Impact Evaluation of PL 480 Title II Program. Winrock International Institute for Agricultural Development, 1987. Data analysis not provided; conclusions only.
- Dominican Republic. Title II Enhancement Project, CARE. Summary Report, 1988. No impact found, but pitfalls in evaluation design.

2. With no impact data reported

- Bolivia. Analysis of PL 480 Title II Commodity Rations. Katona-Apte, 1986.
- India. Program Review of CARE MCH (ICDS and SNP) Title II Program, King et al, 1986. CRS Targeted Maternal Child Health Education Project, King et al, 1987.
- Guatemala. PL 480 Programs. John Snow International, 1988.
- Lesotho. Phaseout of CRS MCH Program: Implications for the Future. Planning Assistance, in collaboration with CDC, Learmonth, King, Serdula, 1988.
- Senegal. PL 480 Title II Process Evaluation, Hagelman, 1988. Predicted Effects of CRS Phaseout of PL 480 Title II Food from PPNS Program, in collaboration with CDC, King and Hauck, 1989.
- Zaire. USAID/ORT Food for Peace PL 480 Title II MCH Project. Combating Malnutrition in Urban Kinshasa. Jay A. Drosin, 1989.

B. Personal interviews

To complement the literature search, personal interviews were conducted with staff from implementing agencies, including private voluntary organizations (PVOs) and local institutions, as well as A.I.D. staff. Persons to be interviewed were selected who had significant experience and expertise in the planning, implementation and/or evaluation of supplementary feeding programs, and were available in the Washington-New York area or could be reached by telephone or through field visits by the consultants for other purposes. The objective of the interviews was to gather the views and opinions of different experts on critical issues related to MCH feeding programs design and implementation, as well as to the role of food aid. Appendix 3 provides a list of the persons interviewed.

In analyzing the information gathered from the interviews, it was clear that opinions on the different issues were to a large extent related to the individual's professional orientation and institutional role. The opinions were not shared just on the basis of the facts, but of the interviewees' perceptions of reality, as well as on their perceptions of the interviewer's role. There were several levels for the content analysis of the interviews and their degree of favorability towards MCH supplementary feeding:

1. **Regional and national perspectives.** The Indian specialists have had greater experience in MCH supplementary feeding programs than those from any one country in Latin America or Africa.

2. **Operational level.** Those working at the grassroots level, thus dealing with every day issues of survival and addressing basic human needs and suffering, tend to be more favorable toward both a participatory and a "welfare" approach targeting food to the poorest of the poor.

3. **Professional orientation.** Nutrition specialists, particularly those who have worked in more experimental, small scale or successful integrated nutrition/MCH projects, are generally more positive to MCH supplementary feeding than doctors and health personnel, economists and sociologists.

4. **Vested interests.** Political and religious leaders and many PVO decision-makers recognize the institutional and patronage advantages of both supplementary feeding and food aid. Contrasting opinions are expressed by those working in relief type agencies as compared with more developmentally-oriented institutions.

C. **Review Meetings**

A number of review meetings were held with FVA officers to discuss the findings of the study. A preliminary draft of the report was reviewed by a group of consultants, and their comments were discussed individually and in a consultant meeting carried out together with FVA officers. A second draft was reviewed by a large group of A.I.D., PVO and other experts. Their comments were discussed in a one-day meeting held at FVA on March 27, 1990, and many of their remarks and suggestions were incorporated in the final draft.

III. BACKGROUND AND CONCEPTUAL FRAMEWORK

"We need to get back to the causality (of malnutrition)"

—PVO HQ Food Program Director

"Nutrition is our umbrella for other child survival activities; a motivation to bring back infants after their shots are completed."

—PVO HQ Child Survival Advisor

A. Magnitude of the Nutrition Problem

Information on trends in nutritional indicators from 1960 to the most recent year available, including food production, energy supply, and infant and child mortality data as well as anthropometry indicators, was recently compiled by the United Nations (1987, 1989). In most parts of the world nutrition has improved over the last 25 years. According to FAO (1985) per capita food supplies measured as energy (calorie) equivalents of food items available for human consumption increased during the last three decades in the developing world, from 1980 calories in 1961-63 to 2350 in 1979-81. However, in the 1980s Sub-Saharan Africa has suffered long-term declining per capita food availability and continued high malnutrition (Figures 1 & 2). It is estimated that about one-quarter of sub-Saharan Africa's population, more than 100 million people, faces chronic food insecurity (World Bank, 1989). The total number of infant and child deaths are thought to be still increasing, in contrast to most other regions.

National figures ignore actual distribution of food between regions, income classes or within families, and some regions and population groups usually have substantial deficits. Proportions of the population having marginal access to food, as estimated by the World Bank, have risen significantly in Africa, whereas they have fallen in South and South East Asia, Central America and the Near East (Table 1). Overall, the prevalence of underweight in preschool children significantly declined in Latin America from the 1960s to the 1980s, whereas it increased in Africa and remained stable in Asia/Near East, with no changes in the worldwide figures (Table 2). Improvements in nutritional status of the 1970s ceased, on the average, in the 1980s. Generally, malnutrition has increased or remained high in much of Africa, remained stable in Central and South America, and decreased in Asia. Economic deterioration, as well as severe drought and political instability, have contributed to the overall decline in Africa, and no further improvement in South America, the latter contrasting with previous progress. Relevant information is enclosed in Panels 1 to 6 and Figures 3.1 and 3.2 of Appendix 4.

FIGURE 1

Change in Dietary Energy Supply by Region
 (Source: figures provided by FAO and reported in the Supplement to the First Report on the World Nutrition Situation, ACC/SCN, 1987)

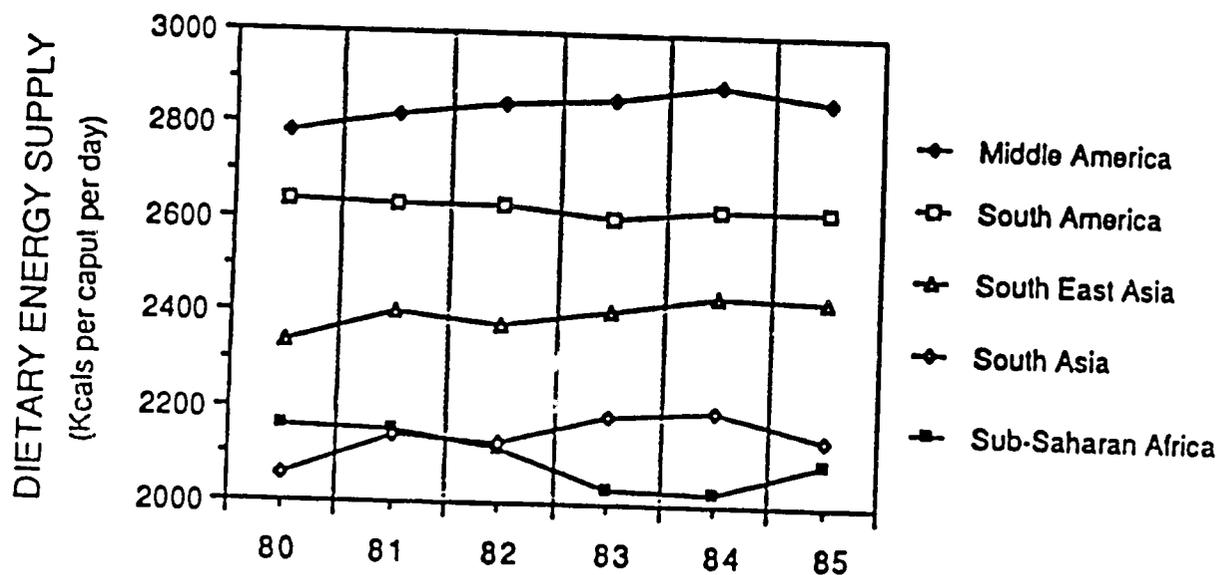


FIGURE 2

Change in Food Production by Region
 (Source: figures provided by FAO and reported in the Supplement to the First Report on the World Nutrition Situation, ACC/SCN, 1987)

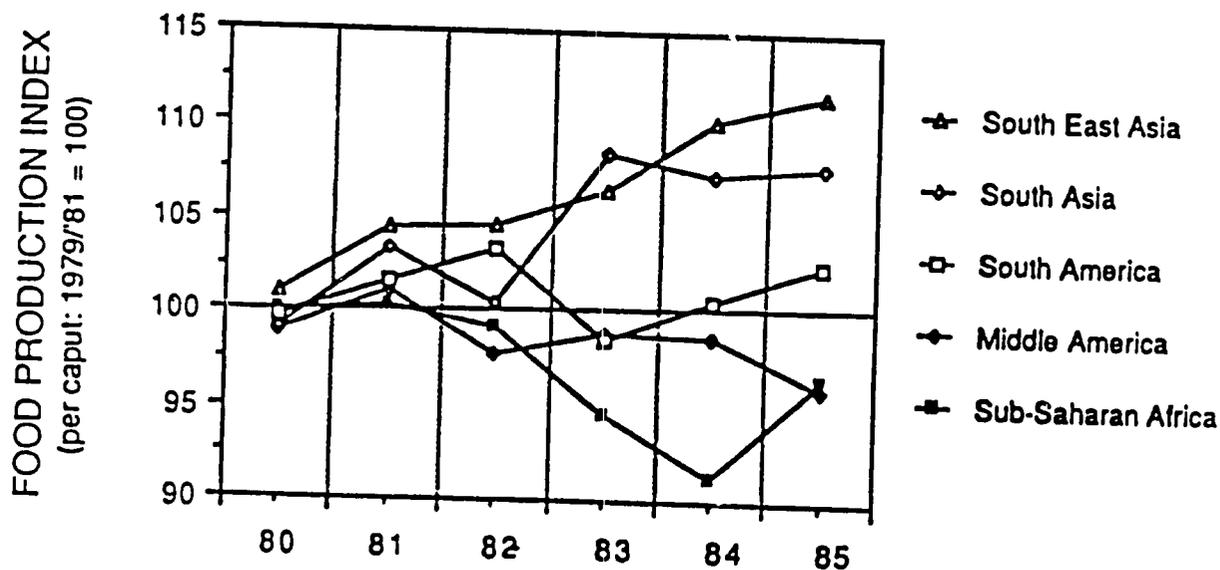


Table 1. Prevalence of energy deficit diets in developing countries.

| Region | % of deficient pop. | | Population (millions) | |
|----------------------|---------------------|-------|-----------------------|-------|
| | > 10% | > 20% | > 10% | > 20% |
| South Asia | 50 | 21 | 470 | 200 |
| Sub-Saharan Africa | 44 | 25 | 150 | 90 |
| E.Asia/Pacific | 14 | 7 | 40 | 20 |
| Latin America/Carib. | 13 | 6 | 50 | 20 |
| M.East/N.Africa | 10 | 4 | 20 | 10 |

Source: World Bank Estimates, 1986.

Table 2. Percent prevalence of underweight* preschool children 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/Near East** | 36.5 (3) | 35.7 (7) | 36.6 (5) |
| TOTAL | 29.3 (18) | 28.8 (34) | 29.2 (22) |

Note: () number of countries with data

* Generally < 2 Z weight-for-age, but also < 80%,
< 75% weight-for-age and selected clinical signs

** Excluding Bangladesh, India, Pakistan

Source: McGuire, 1988.

Nutritional surveys indicate that the high risk period for malnutrition encompasses the prenatal period and the first 18 months of life (Calloway et al, 1988; Zerfas and Teller, 1990). Cross-sectional studies show that the prevalence of low weight-for-age and low height-for-age, already significant at birth in many countries, increase substantially throughout the first 18-24 months, usually coinciding with the weaning period, and remain steady thereafter (Figure 3). This is confirmed by longitudinal observations revealing that the incidence (new cases) of malnutrition sharply declines after 18-24 months to the extent that few new cases are seen in the third year of life. In spite of the evidence, however, this particular early risk period has not been given enough emphasis when targeting MCH feeding programs (to pregnant/lactating women and < one year olds).

The problem of low birth weight merits special attention due to its relation with perinatal and infant mortality, as well as its health and development implications throughout childhood. Low birth weight, often closely linked to maternal malnutrition, is one of the major causes of neonatal mortality. It is also an important contributory factor to the risk of an infant subsequently dying from infections. A WHO review updated in 1984, estimated that about one in every six infants born in developing countries had low birth weight (equal or below 2,500 grams). In some parts of Asia the ratio is close to one in two. A graphic summary of the world situation can be seen in Figure 4.3 of Appendix 4. In most developing countries, approximately half the infant deaths occur in the first month of life, the neonatal period (WHO/UNICEF, 1986). Neonatal deaths may account for between 42 and 63% of infant mortality (see Figure 4.4 in Appendix 4). The prevalence of low birth weight can be significantly reduced by measures aimed at prevention, detection and treatment of maternal malnutrition and anemia. This has clear implications for MCH supplementary feeding which rarely succeeds in effective targeting of pregnant women.

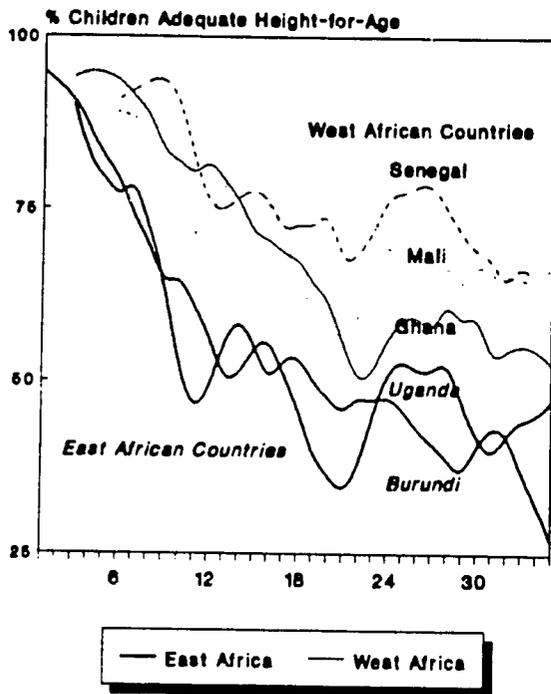
B. Trends in PL 480 Title II Food Aid for MCH Feeding

Data on current food aid in general are given in Table 3, and on recent trends in food aid for MCH feeding programs in Appendix 5. In 1989, the World Food Program (WFP), the European Economic Community (EEC), and six countries (U.S.A., Canada, Japan, Australia, France and West Germany) through bilateral arrangements, accounted for 95% of the nearly 9 million metric tons of total food aid sent to the developing world (Table 3). The three major donors (U.S.A., WFP and EEC) contributed above 77% of the total. About half of the total food aid was shipped to Sub-Saharan Africa and North Africa/Middle East (25% each), somewhat above one third (34%) to Asia & Pacific, and 12% to Latin America/Caribbean. U.S. bilateral food aid had a somewhat different geographical distribution: 36% to North Africa/Middle East, 29% to Asia & Pacific, and about 17% each to Sub-Saharan Africa and Latin America.

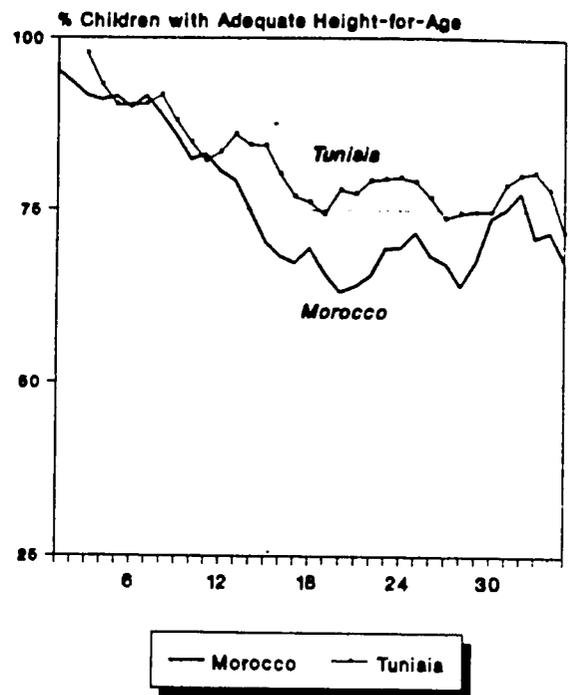
Close to one-fourth (23%) of the total food aid in 1989 was for Emergency Relief, as compared to about half (49%) non-project (sales) and 28% project (programs) food aid. About 81% of the U.S.A. food aid was non project, 14% was project, and only 5% was emergency relief. The proportion of project food aid amounted to 69% of the WFP, as compared to only 14% of either the U.S.A. or the EEC. Only 16% of project food aid from U.S.A. went to MCH (2% of total), as compared to 25% (3.5% of total) from EEC and 11% (7% of total) from WFP.

Figure 3

East and West Africa

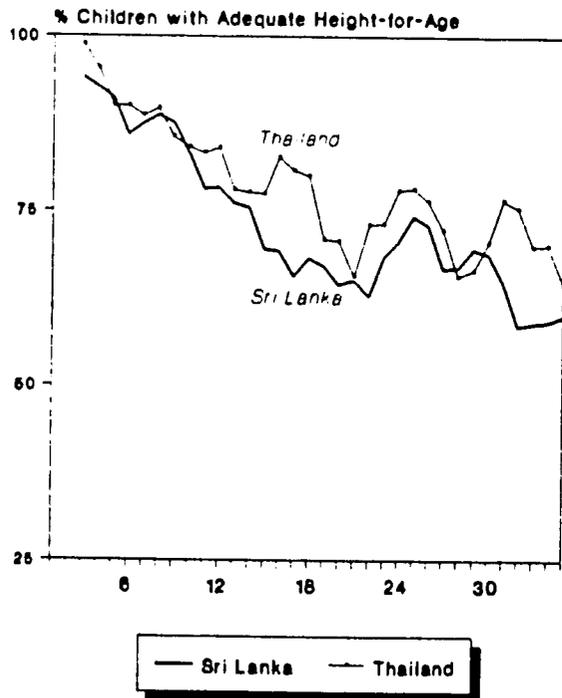


North Africa

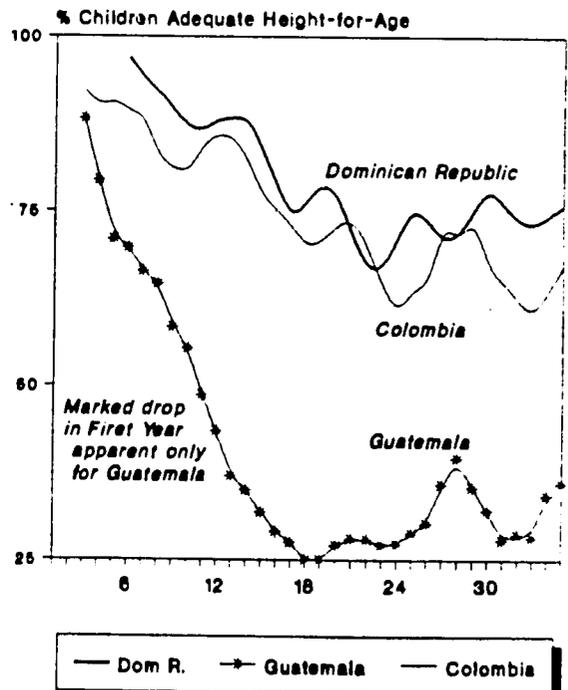


Percent Children with Adequate Height-Age

Asia



Latin America



Adequate Height-Age : Above -2 SD from Reference Median [DHS Data]

Source: Zervas and Teller, 1990

TABLE 3

TOTAL FOOD AID (IN 1,000 METRIC TONS) BY THE THREE MAJOR DONORS
1989

| | EEC | | USA | | WFP | | TOTAL | |
|--------------------------|------|----|------|----|------|----|-------|-----|
| | MT | % | MT | % | MT | % | MT | % |
| TOTAL FOOD AID | 1440 | 16 | 3754 | 42 | 1721 | 19 | 8913 | 100 |
| <u>BY REGION</u> | | | | | | | | |
| Sub-Saharan Africa | 388 | 27 | 634 | 17 | 575 | 34 | 2281 | 26 |
| North Africa/Middle East | 253 | 18 | 1328 | 36 | 366 | 21 | 2151 | 24 |
| Asia & Pacific | 368 | 26 | 1098 | 29 | 587 | 34 | 3059 | 34 |
| Latin America/Caribbean | 121 | 8 | 677 | 18 | 193 | 11 | 1096 | 12 |
| Europe | 310 | 21 | 16 | -- | --- | -- | 326 | 4 |
| <u>BY CATEGORY</u> | | | | | | | | |
| Emergency Relief | 627 | 43 | 174 | 5 | 532 | 31 | 2028 | 23 |
| Non project | 617 | 43 | 3056 | 81 | --- | -- | 4373 | 49 |
| Project | 197 | 14 | 523 | 14 | 1189 | 69 | 2512 | 28 |
| - Agric/Rural Devlpmt. | 49 | 25 | 69 | 13 | 800 | 67 | 1296 | 52 |
| - Nutrition Intervention | 49 | 25 | 81 | 16 | 127 | 11 | 175 | 11 |
| - Food reserve | 7 | 4 | --- | -- | 10 | 1 | 39 | 1 |
| - Other devlpmt projects | 91 | 46 | 373 | 71 | 253 | 21 | 903 | 36 |
| <u>BY BENEFICIARIES</u> | | | | | | | | |
| Refugees | 130 | 9 | 78 | 2 | 533 | 31 | 1174 | 13 |
| Other relief benefic. | 181 | 13 | 80 | 2 | 153 | 9 | 677 | 13 |
| Vulnerable groups | 49 | 3 | 78 | 2 | 127 | 7 | 271 | 3 |
| Market | 954 | 66 | 3371 | 90 | 56 | 3 | 5135 | 58 |
| Others | 126 | 9 | 147 | 4 | 851 | 50 | 1657 | 18 |

Source: World Food Programme. The Food Aid Monitor No. 1, Autumn 1989.

Trends in the number of PL 480 Title II MCH beneficiaries covered by voluntary agencies (Volags) from 1976 to 1989, as well as in the proportion of MCH to total food for development beneficiaries (including MCH, school-feeding, pre-school feeding, other child feeding and food for work), are seen in Table 5.1 and in Figures 5.1 and 5.2 of Appendix 5. There was a significant increase in total food-for-development beneficiaries during the period 1976-1982 from about 26 to 38 million, followed by a noticeable decrease throughout the period 1983-89 down to about the 1976 levels. However, the total number of MCH beneficiaries has had considerable less variation, ranging from 8.6 million in 1976 to 12.4 in 1987 (with an annual average of 11.3 million), and the proportion of MCH to total food for development beneficiaries increased from 33.4% in 1976 (31.4% in 1976-83) to 45.2% in 1989 (41.5% in 1983-89). This is mostly the result of a substantial increase from 30% to 47% in Asia/Near East, whereas a dramatic decrease occurred in Africa from 67% to 41% and to a lesser extent in Latin America from 43% to 36%. As expected, the worldwide figures are heavily influenced by the Asia/Near East Region, the most populated, which comprises about 80% and 77% of the total and MCH beneficiaries, respectively.

Important regional changes have occurred between 1983 and 1989 (Figures 5.3 to 5.8 of Appendix 5). Whereas worldwide the total number of Volags food for development beneficiaries has declined, that of MCH beneficiaries has remained practically unchanged, thus the proportion of MCH to total has significantly increased. Again, the Asia/Near East region accounts for most of the worldwide trend, with decline in total but increase in MCH beneficiaries. In Latin America, the overall total went up, while that of MCH remained steady. On the contrary, in Africa there has been a dramatic reduction in the number of both total and MCH beneficiaries, the latter being proportionally greater.

Five major points should be stressed: (1) worldwide there was a consistent increase in the total PL 480 Title II beneficiaries, from 40 million in 1976 to 54 in 1986, with peaks in 1980-81 and 1985 at about 77 and 69 million, respectively; (2) the proportion of food for development to total PL 480 Title II beneficiaries went down from 90% in 1976 to about 70% in 1986; (3) the percentage of MCH to total food for development has gone up basically as a result of a reduction in the latter; (4) the significant decline in MCH beneficiaries in Africa has been compensated by a modest proportional increase (though large in absolute numbers) in Asia/Near East; and (5) Africa has experienced a dramatic reduction in both total and MCH PL 480 Title II beneficiaries. Finally, while the total PL 480 Title II beneficiaries covered by the World Food Programme (WFP) has gone up from 9.9 to 15.6 million, that of MCH practically has not changed.² The perspective of population growth must be added; some African populations are more than doubling in 25 years.

C. Rationale and Expected Effects of MCH Supplementary Feeding

1. **Rationale.** MCH supplementary feeding programs have been extensively implemented in developing countries to improve the nutrition and health status of mothers and children at risk of malnutrition. Their rationale rests on the assumption that, by increasing family food availability through distribution of food commodities, the dietary intake of the recipients will increase and this, in turn, will improve their nutritional and health status. Low family food

² See: Assessment of the PL 480 Outreach and Enhancement Grant Programs, Appendix III. By Bremer-Fox et al, 1987.

availability and deficient individual dietary intake are known to be frequent causes of malnutrition and ill health in vulnerable populations. This has led to the opinion that if there is family or individual shortage of food, supplementary food must be beneficial.

In non-emergency situations, the nutritional status of vulnerable groups is the final outcome of a complex set of factors, including access to food. Family access to food is determined by the purchasing power of the household and the extent of self-provisioning (e.g. food production for self-consumption in rural households). Therefore, enhancing the access of the poor to food could theoretically be achieved by increasing their income, by increasing home food production, by reducing the price of food, and/or by direct food interventions, e.g., providing free or subsidized foods to target groups. Raising the income, assets and productivity of the poor, and reducing the price of food staples are at best long-term goals, since they imply social and economic reforms on a national and international level to allow for sustained economic growth and social equity in developing countries. Food subsidies or direct food distribution to target groups are seen as a more feasible, attractive and politically appealing alternative, at least in the short-term. However, approaching mothers' and children's well-being in the broader developmental context involves taking measures to address the causes of poverty, that is, to foster equitable socioeconomic development.

Increasing the quantity and quality of food available to low-income households through distribution of significant amounts of acceptable foods should result in improved dietary consumption. However, prevalent intra-household food distribution patterns may not allow the additional food available to result in increased dietary intake of the target individuals. Intra-family food distribution is often unequal: pregnant and lactating women and small children usually have a disproportionately low share compared with their requirements and are less likely to benefit equally from increases in food availability. More significantly, the net increase in energy and nutrient intake of the target individuals is also a function of their health status. Health and nutrition education and primary health care services are likely to enhance the food intake effect and the potential for nutritional impact from MCH supplementary feeding programs.

Greater weight gain as calorie intake increases, other things being equal, seems obvious. The critical question is how to significantly increase the dietary intake of poor populations at risk, particularly of mothers and children, without interfering with the process of social and economic change. Targeted MCH supplementary feeding is one option that has political attractiveness because it provides a concrete and acceptable form of immediate action to improve the conditions of the poor without waiting for the long-term effects of socioeconomic development.

2. **Expected nutritional effects.** The impact of direct feeding on a child's nutritional status has been clearly demonstrated in emergency situations, and in hospital and clinical settings with children recovering from severe malnutrition and wasting (therapeutic feeding). The effect of take-home supplementary feeding has also been documented in experimental studies where families with children at risk of malnutrition or already malnourished have been regularly provided food supplements in such a way that a significant increase in dietary intake by the target individuals is achieved (Martorell et al, 1976; Rao et al, 1977; Mora et al, 1981; Swaminathan et al, 1983). In Colombia, the difference in growth at 36 months between randomly allocated supplemented and control children was about 0.5 kg. and 2.2 cm, and the prevalence of moderate-to-severe malnutrition was 8.8% in the supplemented group compared with 20.6% in the controls (Mora et al, 1981).

In contrast, the anthropometric response of children to MCH supplementary feeding programs in the community has been less consistent (Anderson et al, 1981a; Beaton and Ghassemi, 1982). Besides common operational problems affecting the implementation of large scale programs, poor effectiveness may be at least in part due to the fact that, under non-emergency conditions, the nutritional status of the child also depends on a complex of factors other than the availability of food. Disease, particularly infectious diseases such as acute diarrhea whose incidence is the highest between 6 and 18 months, has been shown to be a major cause of malnutrition, by decreasing food intake and diminishing food absorption and utilization, while increasing nutritional needs (Chen & Scrimshaw, 1983). Thus the food component is necessary but insufficient to ensure improved nutritional status or reduced mortality.

Improving sanitation and hygienic practices to prevent child's diarrhea, expanding immunization coverage, the extensive use of oral rehydration therapy for diarrhea, and other measures to raise health status may be as effective in improving child nutrition as increasing food availability. Even where food availability is a critical problem, complementary actions in addition to food distribution are needed to improve health and nutrition. Systematic nutrition education to promote more equitable intra-family food distribution and appropriate mother/child feeding practices, as well as interventions to improve the health status of mothers and children, are thus necessary complementary interventions without which food distribution is less likely to improve nutritional status.

The extent to which food consumption can be raised may depend not only on the magnitude of the food deficit, the type and quality (e.g. nutrient content, cultural acceptability) of the food commodities and the quantity of the rations distributed, but also on biological and cultural characteristics of the target individuals that may influence the resulting additional intake and the ensuing anthropometric response. Biological adaptations to chronic underfeeding have been described, including reduction in voluntary activities and retardation in linear growth (stunting).

Stunting is now recognized as an adaptation mechanism to chronically deprived environments (probably through successive generations) that lowers nutritional needs through a reduction in body size. Stunted growth is amenable to prevention but only partially reversible once installed, which has clear implications for both designing and evaluating the impact of MCH feeding programs. A focus on prevention in early ages is likely to be more effective. Older stunted children may not be responsive to increases in food offered beyond what would be adequate for their body size nor to show a substantial improvement in linear growth.

Wasting (low weight-for-height) is susceptible to short-term improvement as well as to long-term "spontaneous recovery" as a result of progressive stunting. However, diminished appetite as a biological mechanism preventing the stunted child (once recovered from wasting) from gaining extra weight was shown long ago in clinical settings (Ashworth et al, 1969). This is particularly important in view of the common pattern of malnutrition observed in many developing countries where stunting is highly prevalent while wasting is relatively infrequent. Low weight-for-age, commonly used to assess the nutritional impact of feeding interventions, is mostly a reflection of small body size, and this may limit its potential for improvement in older stunted children.

Inadequate maternal nutrition affects both the fetus and the mother. Experimental field trials have shown an impact of supplementary feeding interventions for undernourished women on mean

birth weight, on the prevalence of low birth weight, and eventually on perinatal and neonatal mortality. This has been shown in experimental studies conducted in Guatemala, Colombia, and the Gambia (Lechtig et al, 1975; Mora et al, 1978; 1979; Prentice et al, 1987). The magnitude of the impact on mean birth weight has ranged from 40 to 800 grams, and the estimated dose response would be about 40 g. per 10,000 additional calories (Lechtig et al, 1975). The total calories consumed during pregnancy seems to be most important. The presence and magnitude of the response appear to be contingent upon the women's nutritional stores before or at the beginning of pregnancy and the amount of net supplementation attained. Total intake should be large enough (through ration size and length of supplementation) to raise initial nutritional stores above a minimum threshold level to sustain increased fetal growth.

To have a maximum impact, supplementation should be targeted to women at risk (e.g., those with low weight-for-height or arm circumference) and be initiated as early as possible during pregnancy so as to cover at least the second and third trimesters. In the Gambia, prenatal supplementation of inadequately nourished mothers during the wet season increased mean birth weight by 225 g., and decreased the prevalence of low birth weight from 28% to 5% (Prentice et al, 1987). In Colombia, birth weight was increased by 181 g. among mothers with low weight-for-height early in pregnancy, whereas no or negligible impact was observed among women with adequate weight (Herrera et al, 1981). In Guatemala, supplementation reduced the prevalence of low birth weight from 29% to 13%, but only in the most disadvantaged mothers (Lechtig et al, 1977). By the contrary, when well-nourished pregnant women were supplemented, no impact on birth weight was found (Rush et al, 1980).

Although it is recognized that selective and targeted maternal supplementation (e.g. to low weight-for-height women) should be an integral part of a package of prenatal and postnatal services (including proper health care) aimed at improving health and nutritional status of both women and children, maternal nutrition has been a largely neglected area in practice. Actions to improve maternal nutrition may be initiated before pregnancy (as early as during adolescence, e.g., through the school period) and between pregnancies, and continue throughout pregnancy and lactation.

3. **Conditions for nutritional effectiveness.** It can be inferred from the above discussion that certain conditions should be met to demonstrate an impact of MCH supplementary feeding programs on nutrition and health status. First of all, confirmation that the MCH supplementary feeding intervention indeed occurred is essential. The ultimate measure is the extent to which the customary nutrient intake of the target individuals and populations increased. This is contingent upon a number of factors such as:

a. **the magnitude of the nutritional problems** and the extent to which the intervention rightly addresses an existing cause of malnutrition in the target population. That is, how suitable is the feeding intervention to meet deficiencies in family and/or individual food availability and consumption that are causing malnutrition? This involves consideration of the causes of malnutrition in the particular context, the role of family food availability and dietary intake, and the design of appropriate rations (size, energy and nutrient content, and cultural acceptability) to meet the intake gap.

b. **the quality of program design and implementation:** whether food rations and distribution systems are appropriate; supplements are rightly targeted to those at greatest

need; good quality and culturally acceptable rations are given regularly in adequate amounts and with sufficient duration; appropriate measures are taken to prevent leakages to the extent possible; and the essential additional program inputs and MCH services are provided.

c. the degree of family and individual compliance with the food intervention. What is the net increase in dietary intake resulting from the consumption of supplementary foods?

Second, the magnitude of the nutritional impact may also be determined by the individual biological susceptibility to anthropometric changes in response to nutritional interventions and the consequent selection of outcome indicators (pregnancy weight gain, birth weight, height-for-age, weight-for-height, weight-for-age) for the age and nutritional conditions of the target beneficiaries. In preventive programs, the outcome would be maintenance of good nutritional status of the individuals at risk rather than anthropometric improvement.

Finally, the quality of the evaluation design is critical. Comparisons between the growth of groups differing only in program participation (ideally using prospective rather than retrospective data) are crucial, as well as the control of confounding variables (socioeconomic status, morbidity, age, initial growth status, seasonality). Disaggregating the data by small age groups (e.g. 6-12, 12-18, 18-24 months) is important to assess the impact on younger children, which can be masked in wider age groups such as 0 to 60 months.

4. **Expected non-nutritional effects.** Dissatisfaction with MCH supplementary feeding as a vehicle for nutritional improvement of mothers and children has apparently led food aid agencies to turn their attention to other potential benefits of food distribution programs, such as the use of food as an "incentive" to increase attendance to public health and other services, or as an "income transfer" to poor families. This has prompted the search for unexpected or unmeasured potential subsidiary benefits not reflected by nutritional measurements and thus usually not included as program outcomes in impact evaluations. Beaton and Ghassemi (1982) contended that "physical growth is only one, and not necessarily the most important one, of many potential benefits" of supplementary feeding programs. The following potential benefits have been proposed:

a. Increased demand and utilization of health services and participation in preventive programs (e.g. other MCH services, prenatal care, child's growth monitoring, immunizations, ORT, family planning and other child survival interventions), that is, food may be used as an incentive to improve MCH attendance.

b. Reduced morbidity and mortality as a result of improved utilization of preventive health services, improved nutritional status (reduced severity and duration of infections), or their interaction.

c. Improved nutritional and health knowledge and feeding behavior, including improved intra-household food distribution and weaning practices, as a result of educational activities linked to food distribution.

d. **Income transfer (redistribution of income effect)** leading to improved socioeconomic conditions of the target families and individuals and, eventually, to nutritional improvement in the long term when the economic value of the rations is significant.

e. **Other proposed potential effects** include increased levels of children's voluntary physical activity presumably leading to improvement in psychosocial development, and encouragement of community initiatives (e.g. mobilization of women's groups) to realize the development potential of the target population.

5. **Potential negative effects.** Some negative effects of MCH supplementary feeding have been suggested:

a. **Potential decline in breastfeeding** (particularly when milk or milk powder is used as a supplemental food for infants), and other negative effects on weaning practices.

b. **Diversion of government resources and of precious and scarce staff time** at MCH services in the logistic and administrative duties related to food distribution, and MCH dependency on food.

c. **Changing people's preference** for foods not available locally that would need to be imported (when using donated food).

d. **Inducement of household dependency** from food handouts by promoting a welfare mentality among the poor, and marking the participants with an undesirable social stigma.

e. **Causing disunity** in communities where only a small percentage of needy may receive limited food allocations.

f. **Creating or increasing national dependency** through disincentive effects on local food production, thus working against the desirable long-term objective of achieving national and household self-reliance (the country and its institutions may become dependent from food aid).

g. **Generating corruption** at various levels within and outside the implementing agencies and among the population.

D. Previous Reviews of MCH Supplementary Feeding Programs

In 1981, Anderson et al published a comprehensive review focused on evaluation methodology and outcome variables of MCH supplementary feeding programs. The general conclusion was that although overall the programs had little effect on growth, nutritional effectiveness could be demonstrated when enough supplemental foods actually reached the target population and an appropriate impact evaluation design was used. There was a wide variation among the programs reviewed in the anthropometric response to supplementation: nutrition rehabilitation centers showed the greatest response, and on-site feeding tended to have somewhat

more impact than take-home programs. The greatest improvement appeared to be in the most malnourished children.

The authors also analyzed the costs of preschool feeding programs, including nutrition recuperation centers, in a number of countries. The annual costs per child fed in take-home and on-site programs (more expensive) generally ranged between \$10 and \$30, with food constituting about 50 to 90% of program costs. As expected due to inclusion of variable proportions of well-nourished children, the cost per child malnourished was higher, ranging between \$45 and \$290. Leakages (substitution and sharing) were estimated as high as 40 to 70 percent. The report provides guidelines for program design and implementation, including an "Intervention Design Checklist" with practical criteria to assess the need for supplementary feeding in the community (Anderson et al, 1981 b).

Another more frequently quoted comprehensive analysis of MCH feeding programs is the report by Beaton and Ghassemi published in 1982, which was heavily based on the previous review carried out by Anderson et al, and included the results of about 200 child feeding interventions ranging from research studies to large scale service programs, most of which used physical growth as their major outcome measure. The general impression gained from the review was that food distribution programs directed toward infants and young children were rather expensive for the measured benefit; in fact, anthropometric improvement was surprisingly small. However, the reviewers contended that physical growth might not be the most important outcome of these type of programs, and suggested that an assessment of their true effects and benefits should include non-nutritional outcomes, such as increased use of health services and improved feeding patterns which, if occurring, should be reflected in improved growth in the long term.

Most programs demonstrated some degree of nutritional benefit (Anderson et al, 1981; Beaton and Ghassemi, 1982). This was more significant in relatively small scale research and pilot interventions, while large scale service programs were more likely to show no impact. Effectiveness appeared to depend on the management quality of the program, the extent of the nutritional deprivation of the recipient population, the ration size, the total food intake attained after supplementation, the recipient's level of participation in the program, and the synergistic effect of the food supplement and the health status. Leakages of the distributed food through selling outside and sharing within the whole family, and displacement of food that would otherwise have been consumed, were identified as common problems reducing the expected net increase in dietary intake by the target beneficiaries, thus limiting nutritional impact.

In 1985, the Bureau for Food for Peace and Voluntary Assistance of A.I.D. reviewed PL 480 Title II program evaluations performed between 1980 and 1985, in terms of impact and program operations, and made specific recommendations to improve program effectiveness. More than fifteen A.I.D. program evaluations were reviewed, including five in-depth analyses of their impact on the nutritional status of program participants (Sri Lanka, Philippines, Morocco, Senegal and Haiti).

The A.I.D./FVA review documented positive nutritional results related to program participation. Program components and qualities, in addition to the food, appear to contribute significantly to nutritional impact: growth monitoring, educational activities for mothers, a well-defined targeting strategy, and integration with health services. Coverage of target populations was

low in most countries, and sharing of food by all members of the family was a consistent finding in the evaluations. There was an association between mortality rates and program participation. Programs were reported to increase utilization of health services and knowledge of proper feeding practices. The report suggests that impact evaluations which are very costly should be undertaken only where basic program components are in place and where prospective rather than retrospective studies can be done.

Important policy and program decisions were made by A.I.D. as a result of that review and the different evaluations made. Targeting and ration guidelines were revised; some programs were redesigned and improved, particularly with respect to targeting of smaller children and trying out different sized rations. Increased awareness of needs and limitations in MCH supplementary feeding was achieved: generally recognized was that food alone does not lead to improved nutritional status and that the other components may be of equal or greater import than the food input; that outreach to neediest populations from program sites was essential; and that training, manuals, and better-prepared health/nutrition workers were vital. What was not changed, despite the knowledge available and strong recommendations in that direction, was targeting of the pregnant woman and the lactating mother; and too many less vulnerable preschoolers remained in programs. As a result of the 1985 review, special studies were commissioned (e.g., on "Targeting: A Means to Better Intervention", on "Methodologies to Evaluate Nutritional Impact"), special technical meetings were held (e.g., on "Nutritional Aspects of Project Food Aid"), technical manuals were prepared (e.g., "Manual to Assess the Cost and Effectiveness of Title II Projects"; "Project Food Aid, A Guide for the Design of Food-Aided Development Projects"), some innovative program approaches began to be implemented, and new program evaluations were carried out, although most of them focused exclusively on the implementation process.

IV. RESULTS OF THE STUDY

A. Program Effectiveness

*"A good MCH program doesn't need food."
—PVO Headquarters Nutrition Officer*

*"MCH programs are the number one priority because they focus on the most vulnerable, but we need to see that they are targeted."
—PVO Food Advisor*

*"You never dare end the MCH programs. There is a moral responsibility not to do more damage."
—USAID Food Officer*

1. Nutritional impact

The impact evaluations reviewed provide evidence of nutritional impact of MCH feeding programs in the Philippines, India, Morocco, Haiti and Sri Lanka.^{3 4} Thus, a general conclusion of the review is that properly designed and implemented MCH supplementary feeding programs can be effective in improving and/or maintaining the nutritional status of the target beneficiaries. It is noticeable, however, that little emphasis has been given in MCH programs to supplementary feeding of pregnant and lactating women in both program design and evaluations, thus data of programs' impact on the nutritional status of mothers and newborns are scanty. Most MCH programs include women of reproductive age (the mothers of enrolled small children) but as child caretakers rather than targeted vulnerable individuals in their own right and within programs that emphasize concern for women's health and nutritional status.

When MCH supplementary feeding significantly increases customarily deficient children's food intake, a significant impact on physical growth can be demonstrated, particularly among children under two years of age, which is manifested in either prevention or recuperation from malnutrition. Program evaluations in Sri Lanka, Philippines, Morocco and India attributed the observed improvement in anthropometric indicators of children to program inputs. This conclusion is supported by the repeated finding that age at entry, initial nutritional status and length of participation in the program were associated with the magnitude of nutritional change. It had already been asserted that carefully designed and implemented programs targeted to families and

³ However, none of the evaluations entirely fulfilled the requirements for internal validity, that is, to conclusively attribute eventual changes in nutritional status to the program's feeding component. The use of retrospective evaluation designs, the lack of adequate control groups, the post-hoc nature of the evaluations, and the inability to fully control confounding variables (self-selection, regression to the mean) are major design flaws that preclude drawing stronger conclusions (Cornell, 1984).

⁴ A ten-year update review of the Beaton and Ghassemi study on supplementary feeding programs was commissioned by FAO in 1989 and prepared by Ghassemi. Although still in draft form (1/90), the overall conclusion is that during the 1980s no in-depth nutrition impact evaluations were found that could change the major conclusions of the former report. (Personal communication, P. Lunven, FAO)

individuals at nutritional risk, and ensuring regular provision of appropriate food commodities and their consumption by the recipients are likely to show a nutritional impact comparable to experimental projects (Swaminathan et al, 1970; Rao et al, 1977; Anderson, 1981).

The weight gain difference between supplemented and control groups varies considerably, and the prevalence of moderate-to-severe malnutrition may be reduced by as much as 50% (Anderson, 1981). A recent evaluation of the ICDS Program in India (1989) found that, in spite of severe and continuous drought, severe malnutrition was reduced by 5% in the most drought affected areas and by 37% in those areas less affected by the drought. In the Tamil Nadu Integrated Nutrition Program in India, selective short-term feeding (3 to 6 months) with a wheat-based weaning food targeted to children malnourished or failing to grow who were selected through monthly growth monitoring, was associated with a 50% decrease in serious malnutrition (less than 70% of median weight for age). In both of the Indian programs, monthly growth monitoring and nutrition education were also properly implemented as basic interventions. Furthermore, careful selection and intensive training and retraining of community workers, strengthened role of women and women groups as project implementers, and a functional monitoring and evaluation system were key elements of program success (Martorell, 1986; Berg, 1987).

The magnitude of the impact on growth was consistently found to be related to length of program participation in Sri Lanka, Philippines and Haiti, as well as in India. The impact has been also consistently greater among children under two years of age, with little or no impact among older preschool aged children, and the improvement has been greater the more malnourished the children. This suggests that the youngest children, including those already malnourished, are generally the ones more likely to benefit from the program. Unfortunately, children older than two years of age, who are usually at lower risk and less likely to show anthropometric improvement, represent a relatively large proportion of the recipients in most MCH feeding programs.

When the initial nutritional status of the target children is only marginally deficient and/or the net increase in dietary intake is negligible because of small or infrequent rations, sharing or substitution, a nutritional impact is not likely to occur (Lesotho, Panama, El Salvador). In a review of the quality and impact of various types of feeding programs supported by PL 480 Title II and operated by voluntary agencies in India in the 1970s, it was concluded that the lack of impact observed was due to the low level of supplementation (about 15% of daily requirement or less than one third of the nutrient gap), high levels of sharing and substitution resulting in a small net intake increment and a large percent of the nutrient gap left unfilled, and low coverage of the affected population (Sahn et al, 1980). Anderson et al (1981) found that in a number of programs the net increase in intake of the target populations ranged from 45% to 70% of the food distributed, due to problems of leakage and substitution. With some improvements in rations and greater sensitivity in new Title II guidelines, many of these problems, nevertheless, continued to be found in program evaluations performed in the 1980s. Though there were improvements in the Title II guidelines insofar as meeting the realities of household leakages, many of these problems persisted in programs evaluated in the 1980s.

The impact of MCH feeding programs on the mother and the newborn was not assessed in the evaluations reviewed. Special studies of ICDS in India conducted by Anderson (1989) confirmed a significant impact (mean difference of 230 g.) on the weight of children at one month (presumably also on birth weight) of food and nutrient (iron and folic acid) supplementation during pregnancy.

This is in agreement with previous experimental and quasi-experimental studies. Weight for length was also positively associated with supplementation through six months. Maternal under-nutrition (low weight-for-height) in a large proportion of the Indian women underscored the need for supplementation and may explain the greater impact on infant weight compared to other studies. Increased duration of supplementation in order to cover at least the third trimester of pregnancy, and addition of iron and folic acid enhanced the impact on infant weight.

The failure of some evaluations to show significant impact on nutritional status can also be generally attributed to inadequate project design or implementation, or to poor evaluation design. To ensure a nutritional impact, programs should include measures to significantly raise food intake by increasing supplement intake and reducing leakages, e.g. by augmenting the size of the ration to compensate for the latter, and/or by using special foods tailored more specifically to individual family members (e.g., weaning foods, special foods for pregnant women.)

In general, it would be expected that any type of food related intervention actually enhancing food availability and increasing the dietary intake of individuals at high risk of malnutrition should have a measurable nutritional impact. This would be more likely when the supplemented diet provides an increased amount of energy and/or nutrients that are deficient in the basic diet, including minerals and vitamins. Since energy rather than protein appears to be the limiting factor in many cases, it would follow that food commodities and increased intake generally may not need to be nutrient specific (unless clear evidence of identifiable specific dietary deficiencies exists, such as vitamin A, iron or folates) but to provide a balanced source of energy, protein and micro-nutrients. Particularly, there is a need for more energy-dense commodities.

Reaching a certain level of calorie and nutrient intake is often a necessary but not sufficient condition for effectiveness. It is clear that other MCH program components, besides food, contribute significantly to nutritional and health impact of MCH programs. Key MCH elements are pre and perinatal care, breastfeeding support, child's growth monitoring, nutrition and health education, prevention and control of diarrheal diseases (including oral rehydration therapy), and expanded coverage of immunizations. However, when feeding is implemented as an integral part of good quality MCH services, it is usually not possible to single out the nutritional impact of the food component.⁵

There are some clarifications to be made in regard to our assessment of nutritional effectiveness based on the projects reviewed. First, the basic criterion used was anthropometric, that is, significant difference in changes in anthropometric indicators between project participants and non-participants, or at least significant reduction over time (pre-post designs) in the prevalence of malnutrition among the participants after controlling for potentially confounding variables. MCH feeding programs are usually designed to accomplish nutrition objectives, thus impact evaluations generally focus on measuring nutritional outcomes (e.g., anthropometric changes). Changes in physical growth alone may not necessarily be the only, perhaps not even the best, indicator of impact. Other important indicators may be changes in mortality and morbidity, as well as in the

⁵ In this case, although it may be suggested that the complementarity of inputs might have enhanced the nutritional impact of food distribution, the argument would be weakened by the possibility that an ineffective supplementary feeding component may piggy-back onto effective MCH services for an impact of food to be claimed.

demand for preventive health services, or in the child's voluntary activity and psycho-social development. It has been suggested that a decline in child mortality may increase the prevalence of malnutrition as the number of malnourished children may be augmented by survivors not fully recovered from malnutrition who would have otherwise died in the absence of mortality reduction interventions, including supplementary feeding. This would make it advisable to use incidence rather than prevalence of malnutrition as an impact indicator.

Second, a quantitatively measurable improvement in nutritional status is more likely to be found when complementary interventions addressing other direct or indirect causes of malnutrition are implemented. The immediate objective of MCH supplementary feeding is to increase family and individual food availability and intake, which are only some of the factors affecting nutritional status, thus food alone is not likely to have a significant nutritional impact, except in emergency situations of acute food scarcity. Changes in the recipient's food intake would be a more reasonable outcome to be measured in impact evaluations. Admittedly, measuring anthropometry is operationally less complex than assessing food intake. However, the latter seems to be a more reasonable and achievable outcome, and it would further allow the contribution of feeding to overall program outcomes to be singled out. Therefore, every effort should be made to assess changes in food intake. This may require some operational research for the development of simple, low-cost, semi-quantitative methods (some efforts in this direction have already been made by INCAP/Guatemala).

Third, our conclusion that MCH supplementary feeding programs can be nutritionally effective is based on the examination of available reports of PL 480 Title II impact evaluations conducted in the 1980s (the same used for the 1985 A.I.D./FVA review, with the addition of only two carried out after 1985.) Fifty-nine food aid studies were made in the 1980s as listed in Appendix A. Twenty-seven of them were strictly MCH food aid process/impact evaluations of 22 programs. Nine of these attempted to provide impact data, and seven were used in this impact analysis. In spite of methodological flaws, they provide some evidence of what can be achieved by properly designed and implemented programs. Though the programs were not considered the best or worst, they were programs for which evaluations had been requested by USAIDs and which AID/W agreed to fund or help with funding because they offered promising availability of data and reasonable presence of the components to make improvement of nutritional status possible. Thus, they were a self-selected sample of undetermined bias. The sampling of impact evaluations among total evaluations is adequate (7 or 9 of 27; 26 or 33%) but whether or not they are representative of all programs is harder to substantiate.

Impact evaluations capable of attributing nutritional impact to program components have been found to be very costly. A frequent contention made in the interviews was that usually program beneficiaries do not receive sufficient supplements to warrant looking at nutritional impact. The World Food Program (WFP), in reviewing the available evidence about nutritional impact of MCH feeding, concluded that measuring nutritional impact is very difficult and too costly, and thus should not be done; rather than wasting resources in performing costly nutritional impact evaluations of dubiously effective programs, WFP proposes to emphasize the incentive effects of food aid (e.g., on the use of health services, on productive activities) and its role for structural adjustment in the 1990s. While an occasional, more rigorous impact evaluation may be justified (at a probable cost of \$.5 million), there is an urgent need for simpler assessment methodologies, preferably built-in mechanisms that are conceived at the assessment/design stage. To ensure uniformity and

comparability, guidelines would be useful giving two or three models depending on data availability, e.g., comparing nutritional status of new entrants with that of children enrolled more than 9-12 months by age group; longitudinal weight gains for children where registers are maintained; etc.

Cost and cost-effectiveness. Not all the evaluations reviewed provided data on costs or attempted to estimate cost-effectiveness. This has usually been a major problem in MCH supplementary feeding evaluations, thus, little information is generally available that may allow comparisons between projects. Comparing costs is further restricted by the lack of adequate impact data, and by differences in program objectives, scope, and quantity and quality of services delivered, as well as due to lack of standardization in cost estimations. Annual costs per intended beneficiary are often used for comparison purposes. In Tamil Nadu, the estimated annual per beneficiary cost was \$9.41 to \$11.67; the cost of the feeding component declined over time as the proportion of eligible malnourished children diminished. Data on the estimated costs of the food supplements in the ICDS program were not available; other costs per beneficiary reached \$2.78. The estimated cost per beneficiary per year in Morocco was \$34.47, with food accounting for more than half of the total. In the Philippines, it ranged between \$23.02 for CRS and \$31.89 for CARE; the average cost to supply 1000 calories of food value to any recipient was \$0.16 and \$0.21, respectively, as compared to \$0.21 and \$0.23 for moderate-to-severe malnourished children (the target population). Cost estimations in Haiti were made for fiscal year 1982-83, with averages of \$46.73 per participant (children and mothers), \$85.68 per nutrition clinic program child, \$55.08 per child weighing, \$102.82 per mother educated, and \$102.82 per participating family. The cost per improved child in Haiti was estimated as \$101.10 for the Seventh-Day Adventist World Service Project, as compared to \$129.00 for the Bureau of Nutrition Program, and \$47.36 for an integrated project.

Anderson et al (1981) estimated the cost per participant child per year of five feeding programs implemented in the 1970s to range from approximately \$14 to \$95 (in four projects it ranged between \$14 and \$25). Food was the most expensive component in all the programs, representing from 54% to 76% of the total cost of the program. As expected, on-site feeding programs are more expensive than take-home, with local operating expenses accounting for most of the difference. Total costs per malnourished child reached ranged between \$24 and \$290, depending on whether the program was explicitly targeted to malnourished children. This estimation becomes less relevant in preventive programs targeted to young well-nourished children with the purpose of preventing malnutrition. Various cost-effectiveness measures were used, including the cost per net increase in calorie and protein intake (e.g., \$0.04 to \$0.27 per 100 calorie net intake increase) and per closing average calorie and protein gap (e.g., \$0.20 to \$1.03 per closing average child's calorie gap).

The annual per capita cost of integrated primary health care projects implemented in the 1970s and early 1980s ranged between \$10 and \$35 (Watkin et al, 1980; Wilcox et al, 1984; Berg, 1987), and those including a feeding component tended to be more expensive. Cost differences are to a great extent related to the number of services delivered. In reviewing supplementary feeding programs, Kennedy and Alderman (1987) and Pinstrup-Andersen (1988) arrived at similar cost estimations per intended beneficiary per year ranging from \$6 to \$160. Estimations per malnourished child served reached \$40 to \$493 (Kennedy and Alderman, 1987). In a recent World Bank study (Mateus, 1989), estimations were made of costs per beneficiary per year and per 1000 calories delivered for a variety of food distribution programs in Latin America and the Caribbean region, including MCH PL 480 Title II and WFP supported programs. Costs per beneficiary per

year ranged between \$16.25 and \$56.64, with figures clustering around \$35.00. Costs per 1000 calories delivered ranged between \$0.11 and \$0.90, with some clustering around \$0.35. However, these estimations were based only on the value of food and do not include other program costs which are reported to represent between 10% and 49% of total country program costs; unfortunately, the latter were not disaggregated by program.

A recent analysis of cost figures from eight projects indicate that programs in Africa are ten times more expensive (\$31.24 per beneficiary) than in Latin America (\$3.24 per beneficiary), excluding the value of food and ocean freight (Bremer-Fox et al, 1987). This is mostly because transportation costs in Africa were about ten times higher (\$5.68 versus \$0.67 per beneficiary). Total costs per beneficiary in the most expensive program in Africa (Sudan/ADRA) were over 45 times those of the least expensive program in Latin America (Bolivia/ADRA). This would indicate significant economies of scale in Title II programs. The African programs were roughly one-tenth as large, on the average, as those in Latin America (38,000 beneficiaries compared to 400,000, with total costs virtually identical), and both within regions and within countries, program ranking by cost per beneficiary and by size of the program was the same. Overall, Title II programs had extremely low cost per beneficiary as compared to typical agricultural projects. Analyses of how program costs are shared among funding sources were even more revealing: because of higher program costs, African governments actually paid as much as ten times the amount per beneficiary as Latin American governments; African beneficiaries themselves paid more per person than their Latin American counterparts (\$1.46 vs. \$1.01); the PVOs paid a much larger share of total program costs in Africa than in Latin America (21% vs. 9%). Indeed, it cost PVOs over 26 times more to feed a person in Africa than in Latin America.

2. Incentive effects on the use of MCH services

The potential incentive effects of feeding on the use of MCH services by the poor have been frequently highlighted. They have been convincingly demonstrated by most of the evaluations reviewed, particularly in Senegal, Sri Lanka, Lesotho, Philippines and Guatemala. The food incentive has been instrumental in introducing women to preventive health services and health education. Current MCH supplementary feeding programs in Pakistan are said to have been designed with the specific objective of increasing the demand and utilization of MCH services.

However, if MCH services are not valued for their quality and perceived benefits to the population, then using food as an incentive to motivate people to utilize them might be a too expensive and a non-sustainable means of increasing demand. It may also threaten the long term viability and utilization of the services. Once feeding programs are phased out, the demand for health services is likely to drop if, as is frequently the case, the quality of services is not concurrently improved and food becomes the principal incentive for participation. In Senegal and Lesotho, phasing out of the food component of MCH services lowered mothers and children's attendance thus diminishing children's surveillance, health education opportunities and demand for preventive malaria medications and antiparasitic protection. Interestingly, the rates of immunization and use of ORT were less affected.

Theoretically, good quality MCH services would not need food as an incentive, though preventive services suffer from poor attendance (unperceived need), especially in Africa. There is the risk that the incentive may become a permanent part of the package. However, there seems to

be a legitimate role for the use of food when previously unproven services are being introduced among poor populations with good reasons to lack confidence in government services. Evaluations in Mexico, Haiti, Chile and Tanzania suggest that, when services are perceived as worth the trouble, the decline in attendance, when the initial incentive is withdrawn, is significant but attendance rates are higher than they were before the incentive (J. Pines, personal communication). In several cases, use of the incentive has been an efficient way to build attendance at health facilities.

Selective targeted feeding is most efficiently used as an incentive to bring those at greatest need to be exposed to MCH services and to raise their demand for them, when in the mean time service quality is improved. The short-term nature of the incentive should be emphasized, as well as the need for services to have sufficient quality to stand on their own. Only when opportunity costs of bringing children to a MCH service or pick up the food are very great can the continued use of food mainly as an incentive be justified. At any rate, using supplementary feeding only as an incentive for demand of MCH services would restrict its coverage to that of the health services which, in most developing countries, are not readily accessible to the neediest population. Assuring food security to the neediest households is coming to the fore in food aid objectives because the neediest households often have little access to MCH or other health services. This would dictate using separate new avenues to reach the "food insecure" who do not have access to health services even though the desirable complementary interventions might not be readily available.

3. Impact on morbidity and mortality

Significant effects on morbidity and/or mortality have been observed in some evaluations and, as noted earlier, reducing mortality may mask nutrition improvements (saving lives that figure in the malnourished rates). While the adequate delivery of MCH services is likely to have a positive impact on both morbidity and mortality, improved nutritional status may diminish the severity and duration of infectious diseases, though not their incidence. Impact of MCH supplementary feeding programs on health was reported by Anderson et al (1981). In Senegal, Guatemala and Haiti, an association was found between lower child mortality rates and program participation. A significant reduction in morbidity rates was seen in Peru, even in the absence of an impact on growth (Baertl, 1970). The synergistic effects of combining food supplementation and control or treatment of infection in reducing morbidity were demonstrated in Narangwal, India (Kielmann et al, 1978).

On the other hand, frequent anorexia resulting from recurrent infections may reduce food intake and hence limit the impact of nutrition interventions. However, a recent analysis of a field supplementation trial in Colombia found that the growth difference between supplemented and control children at three years of age was substantially greater among those children with high incidence of diarrhea (Lutter et al, 1989). The ration distributed was large enough to cover all members of the family with an average of 600 calories and 30 g. of protein per day; due to leakage and substitution, the net increase per child was only 220-320 calories and 18-22 g. of protein. This level of actual supplementation completely offset the negative effect of diarrheal disease on growth, thus suggesting that combining supplementation and diarrheal disease control programs would provide a highly targeted setting to increase nutritional effectiveness.

4. Educational impact

MCH supplementary feeding programs are supposed to be accompanied by a systematic educational component to ensure more lasting program effects through improvements in feeding practices. Food distribution is thought to provide an appropriate environment and a suitable opportunity to educate mothers and transmit specific nutrition education messages. Mothers' attendance at MCH services to pick up the food increases their contact with preventive services that would not otherwise be demanded and provides an incentive for them to be receptive to educational activities. In practice, however, the educational component of MCH feeding programs has been weak or non-existent, with little use of effective educational materials or techniques; thus its contribution to improved feeding practices has been limited. Few of the programs reviewed systematically implemented an educational component beyond providing directions or demonstrations on the appropriate use of the food distributed. Notable exceptions are the Food Aid and Nutrition Education Program in Morocco and the Nutrition Communication and Behavior Change Component of the Indonesian Nutrition Development Program, whose significant nutritional impact was attributed mostly to their educational components. In Senegal, participant mothers were more likely to give malaria prophylaxis to their children than mothers not enrolled, and the use of audiovisual aids made a difference in mothers' knowledge.

The quality and intensity of nutrition education provided within MCH feeding programs varies substantially from one program to another, and relatively little attention has been directed towards evaluating the programs' educational impact in terms of changes in knowledge and feeding practices. Almost all of the MCH evaluations noted inadequacies in this component: theoretical and complex talks; few audiovisuals; limited techniques for teaching often illiterate mothers. Some program evaluations concluded that the educational activities contributed to program's impact, but none examined the contribution of MCH feeding to educational goals. At any rate, this impact is expected to be contingent upon the quality and appropriateness of the educational approach and messages rather than upon the food component itself. In the CRS/CARITAS Applied Nutrition Education Program (ANEP) in the Dominican Republic, intensive growth monitoring and nutrition education, as part of a community development approach with no food distribution, were shown to reduce the prevalence of moderate-to-severe malnutrition in children by more than 40% in three years (LTS, 1988).

5. Income transfer effect

MCH supplementary feeding programs also provide a source of additional income to the target populations through either selling of the supplements or savings resulting from less money spent purchasing food, or both. It has been proposed that the immediate program objective might not be nutritional improvement but income transfer (income redistribution) which might have nutritional effects in the long run. Supplemental food may be considered as an income-in-kind which may have a better chance of improving nutrition than other forms of income transfer (Thomson, 1986). The income transfer concept was initially raised in the context of appropriate selection of commodities in specific food aid projects. If MCH supplementary feeding is seen as an income transfer rather than as a nutritional intervention, then the substitution problem becomes less important, and the selection of commodities and rations may be based on criteria of efficiency in income transfer terms rather than in nutritional terms.

The economic value of the typical MCH feeding rations may be significant when compared to the regular income of beneficiaries. Anderson et al (1981) estimated that the monetary value of food delivered to provide between 185 and 960 calories per day ranged between \$6.68 and \$41.90 per child/year. The economic value of the monthly family ration was estimated as \$6 in Senegal (18% of the rural family income), \$5.70 in Guatemala (20% of rural income) and \$31.50 in Lesotho. The food rations, even when targeted to only mother and child, may represent a sizeable proportion of the target population family income, thus increasing purchasing power. Although the calorie elasticity of income may be very low among the poorest, the increased income may be used according to family perceptions to cover other more pressing needs such as clothing, fuel, rent, savings for eventual emergencies, or income generating investments. The potential effects of MCH supplementary feeding as an income transfer mechanism have not been sufficiently explored.

B. Characteristics of Effective MCH Supplementary Feeding Programs

The 1985 review summarized the important components or characteristics that make for an effective MCH supplementary feeding program.

- Programs should be linked to **disease prevention and central health activities** such as primary health care services which should minimally include oral rehydration therapy, education, and referral of high risk children to medical services.
- Programs with **nutrition education** for participating mothers and caretakers; at a minimum, it was suggested that the education component demonstrate both the value of food for the child's health and how to prepare and feed the food.
- Programs should have **regular weighing** of children to assess weight progress and to assess the program's nutritional impact, as well as to identify high-risk children and serve as an educational tool for mothers.
- The programs should be **targeted** to the nutritionally vulnerable, at-risk members of poor households. Priority should be given to geographic targeting, locating programs in those areas where hunger and malnutrition are most prevalent.
- Programs should provide a recording of prevention results as well as recuperation from malnutrition and maintenance of nutritional status to demonstrate program achievements.

These characteristics were further refined in the present study and are complemented as follows:

- Adequate problem assessment before deciding on the need for food aid; an analysis of the nutrition problems and their causes and the relative roles played by food availability and consumption shortages and by health-related problems is critical.

- **Appropriate design of MCH or other program to reach vulnerable women and children including a simple evaluative mechanism and attainable, realistic objectives that can be reached with the resources available.**
- **When nutritional status changes are the stated objectives, the project or program should specify how the key complementary interventions are to be ensured; these include particularly nutrition and health education linked to growth monitoring and promotion, prevention and control of diarrhea, expanded immunization coverage and medical referral.**
- **Community mobilization and participation in the choice of appropriate rations, targeting criteria and coverage attainable.**
- **Realistic assessment and plans for improving the often weak technical and operational capabilities in developing countries.**
- **PVOs have often assured functional administrative support systems -- logistics, supplies, transportation, storage and delivery systems -- through a combination of funding sources in the community, local government, U.S. grant, PVO and other donor support. The continued smooth delivery of the food ration is a key requirement for achieving a valid food-assisted program.**
- **Strong managerial capabilities are critical as is the adequate selection, training, and motivation of program staff. Technical support systems including staff training, retraining and technical backstopping, supervision, monitoring and evaluation are other essential components.**
- **Finally, a functional, simple, monitoring, evaluation and management information system is needed.**

C. Major Constraints to PL 480 Title II Feeding Programs

"(Food Aid) is a political issue more than anything."
—PVO HQ Health Director

"I refused to use my budget to transfer the food for political purposes."
—Former Provincial Medical Director

"Food gave my health workers power -- they got into the transport business."
—District Medical Officer

"We're just running a trucking company and drop-off system."
—USAID Health/Development Director

"The health incentive is questionable. If the (MCH) program were a quality one, the women would probably participate without food."
—Food for Peace Officer

1. Political and institutional constraints and the role of food aid

PVOs have traditionally played a major role in PL 480 Title II as both advocates and implementers of MCH feeding and other programs using donated food commodities, with CARE and CRS sharing a large proportion of the programmatic burden. From both recent program evaluations and interviews carried out for this study, a decline in CRS institutional commitment to MCH supplementary feeding programs is perceived. Questions about the potential use of food aid are being raised by both host countries and PVOs, particularly in Africa. This is probably due to a number of reasons.

a. **Perceived ineffectiveness of MCH feeding programs.** Disappointment with the perceived ineffectiveness of MCH feeding programs has been suggested as a major factor responsible for the declining interest in MCH feeding programs and, particularly, in food aid as a development resource. Lack of demonstrable impact of programs involving large amount of resources and cumbersome implementation is certainly discouraging and may generate much frustration. However, actual or presumed ineffectiveness may also be used as an excuse (rationalization) to justify phasing out politically controversial feeding programs without engaging in an endless political debate. On the other hand, a local government expression of interest may not always reflect real commitment to nutrition and the poor but its intention to use donated food for political patronage purposes (e.g. elections). A general feeling among implementing PVOs is that local governments are politically motivated but not interested in the nutritional impact. Other opinions are that governments see valuable resources used for programs with uncertain achievements.

b. **Changing developmental priorities.** The emerging negative attitudes towards both MCH feeding and food aid appear to be more the result of changing developmental priorities and orientation in developing countries as well as increasing sensitivity of PVOs to the

contemporary development thinking. The emphasis now is on a shared partnership of community-based processes of sustainable change, in contrast to an earlier view of a donor-recipient relationship of material transfer. While local governments and PVOs unanimously endorse emergency food aid and recognize that it is necessary in disaster situations, there are conflicting opinions on the utility of supplementary feeding in non-emergency situations. This is probably motivated in part by increasing awareness and local perceptions of the economic and political ramifications of food aid, which would make it harder for food aid advocates to convince local decision-makers about its developmental potential.

Some country governments and institutions are also becoming increasingly critical of their past developmental orientation, policies and programs, which involves not only questioning the developmental potential of food distribution programs but also their costs and the comparative advantages of spending resources in other program alternatives. MCH supplementary feeding is thought by some to lower the self-dignity and self-image of the beneficiaries, and to delay effective social change and divert government's resources (in management, logistics and administration) from more cost-effective and development oriented interventions, without helping people to move to higher living standards and eventual self-reliance. Ideological reasons are prominent in Africa.

In contrast with more developmentally perceived programs such as Food for Work (FFW), MCH feeding programs are not seen as developmental by local governments, PVOs and even USAID missions. Programs are often donor-designed, with no local input, thus they are often regarded as externally generated charitable and paternalistic activities to provide temporary material relief, in contrast to efforts towards sustained change with the active and willing participation of the communities and in response to their objectives. Some even see food aid as a powerful and potentially disruptive influence, and as a means of control or influence, contrary to efforts to advance community-determined and self-reliant people's own development. In Africa, poor countries and communities are said to need and want "aid for food, not food aid", and a related slogan has become popular: "Eat what you grow, grow what you eat". Five CRS food aid programs in Africa will be phased out in 1990 allegedly due to lack of government cooperation or as per governments' requests. Other PVOs before CRS have phased out of food-supported development programs in Africa (Church World Service/Lutheran World Relief; CARE).

The PVOs often have had to make the choice between serving as major food handlers or concentrating their skills on community development projects. Increasingly they see the food handling role disparaged and even antithetical to development work, while approval and encouragement are readily at hand for community activities. Managing large quantities of food, initially challenging and rewarding to PVOs, has become less interesting in terms of budget and image. Donor agencies with less pressure to push surplus foods are insisting on quality programs. At the outset, food was seen as a major add-on to resources and an enhancement of the PVO image with the donor public; thus there was a willingness to assume the difficult role of food handler, a role however with which they have become increasingly disenchanted as the developmental impact potential of MCH faded over the decade.

c. **Economic and financial issues.** The opinions and attitudes of food aid agencies seem to be determined also by organizational and financial considerations. Although recognizing the potential of food aid as an important economic resource for the organizations, prevalent views highlight limitations to the use of food aid related to administrative and logistical

requirements and costs, operational difficulties, and organizational policy or management issues. This is thought to be in contrast with the programming requirements of more flexible, process-oriented, and less expensive approaches to developmental assistance, which may at least partially explain the general hesitancy of PVOs to use food aid resources.

MCH feeding programs are not perceived as cost-effective by some PL 480 Title II PVOs. Most of them consider food aid programs as a financial burden, especially in Africa where, as shown earlier, operational costs are several times higher than in other regions, to the extent that internal transport and related logistic costs may well exceed the value of the commodity, and are not always covered by the local government. Costs would be a critical consideration for local governments as well. In reality, scarce funding is provided to support carrying out food aid programs thus making food a costly resource for PVOs to use. Program costs appear to be a crucial consideration in recent PVOs' reappraisals of food aid programs in Africa.

In theory, the basic PL 480 Title II funding requirement should be made up from contributions from A.I.D., the PVOs, the national government, and the beneficiaries. As a result of increasing costs and relatively low operational funding due to limited A.I.D. financial support, decreasing contributions from governments and non significant total beneficiary contributions, PVOs may have to make use of their own discretionary program funds to meet eventual funding gaps. Even if they agreed that food aid can have a positive impact, there is a strong perception that the cost and management effort required makes it much less cost effective than other forms of aid. Monetization of donated food commodities has been suggested as a mechanism for PVOs to generate some of the funds needed to meet eventual operational funding gaps. PVOs have begun to test it with caution. While their new role as traders of food commodities is not generally welcome, they are carefully balancing monetization trade-offs vis a vis potential disruption of local marketing systems by the diversion and placement of food intended for the poor.

Some A.I.D. missions have been reluctant to provide administrative support and operational funds for food aid programs. PVOs often complained about A.I.D.s Outreach and Enhancement Grants specifying the purposes as expanding and improving programs by securing additional program inputs, but not for meeting increasingly high direct program operational costs. Furthermore, PVOs find that the handling of food aid must take priority over program considerations, and an inordinate amount of time may be spent to satisfy complex accounting and reporting requirements. An example of this would be the administrative burden in managing funds coming from the beneficiaries, due to recent A.I.D. regulations. One PVO staff member stated that food handling takes 75% of time available, with the small remaining balance for program considerations.

Some PVOs feel that donors do not have a sufficient understanding of PVO challenges and realities, and while much more is expected of them in terms of program quality, improved targeting notably and assuring the presence of other MCH components, they have received little financial help. The suggestion was repeatedly made in interviews that funds required for internal transportation, storage and handling must be provided by donors along with the food as neither PVOs nor recipient governments would be able to finance such costs from their own budget, as was recently the case in Senegal. PVOs are more inclined to commit their own funds to more viable development activities than to pay more for something that in their view has questionable impact.

A.I.D.'s food aid direction has evolved over the decade from earlier strong support of PVO developmental approaches with food resources to a reduced interest in the required investments those programs entail. Particularly in Africa, A.I.D. seems to be increasingly comfortable with more economical emergency and extended emergency feeding, given the difficulties of supporting PVO operations in sub-Saharan Africa capable of realizing longer term goals. A.I.D. is frustrated by the lack of convincing evidence of meeting health objectives with food aid and paucity of data to support the validity of investment. Many areas in Africa show declining per capita food availability. Though Asian nations exhibit higher rates of malnutrition, Africa runs an increasingly close second, with rates that have increased over the last decade. With soaring demographic growth rates and, in many areas, a decreasing food supply (and health services which reached only a small percentage of the population in the past becoming even more inadequate due to population pressure), the next decade is likely to require urgent attention from the international donor community. World Food Program has increasingly moved in with food supplies, to some degree off-setting the effects of CRS' departure from several countries.

If the development community is not to accept taking steps backward in Africa--whether host governments, AID/Washington, USAID Missions, PVOs and other donors--the severity of constraints in Africa will have to be accepted as a challenge, not a reason for inaction. CRS overcame some of the funding difficulties in the past with a program of beneficiary contributions which had potential for self-sustainability in some situations. CRS also depended largely on its own parish distribution network. These two important support mechanisms are being lost as CRS departs from many African countries. With the problems of distance, dispersion of rural villages, lack of adequate storage and transport, weak and underfunded counterpart ministries, the field looks bleak indeed. For new food handlers and for the old, the specter of audits and potential corruption are always threats looming in the background. Chances for food spoilage, loss, and theft are enhanced in the African environment.

Earlier, evaluators of the funding pressures on PVOs and the special stresses apparent in Africa, recommended the possibility of A.I.D. contracting food handling institutions if the Agency feels committed to providing food support to Africa. New solutions are required which, hopefully, will keep sight of the need to correct current structural inadequacies in some part, e.g., begin building a rural infrastructure and, to the degree possible, use food aid as a resource. While all eyes look to monetization, as discussed elsewhere, it is not a panacea and in this instance would not provide essential funding for large infusions of the technical support that is likely to be required in the 1990s. A.I.D. and World Food Program should pool resources and seek feasible interventions jointly with assistance from the entire donor community.

d. **Changing relationships between PVOs and local counterparts.** An additional constraint to using food aid in MCH feeding programs frequently raised by PVOs relates to their shifting relationships with local counterparts. Relationships between PVOs and local institutions, previously defined in terms of donors and recipients, are rapidly changing into collaborative arrangements with shared responsibilities. As more collaborative relationships are established, questions of motivation and unwanted foreign policy influence that comes with bilateral agencies' use of food aid are frequently raised. Hence multilateral donors may be preferred (WFP/EEC) to avoid the political stigma, and also because of more readily available support and flexible regulations. As partnership is emphasized as key to project sustainability, further emphasis is given to new relationships between PVOs and their local counterparts which may or may not wish

to request or accept food aid. The PVOs are talking increasingly of becoming institution builders with less "hands-on" management. To do that successfully will require increased technical capacity. With A.I.D. personnel moving into more of a generalist realm, new roles may be emerging in A.I.D.-PVO relationships/complementarities.

PVOs are increasingly expected to play the role set out for them by governments that have taken control of food supply and feeding programs. In India, CARE and WFP provide the foods needed and assist with MCH components as agreed; neither CARE nor other donors are to put in place large MCH components that would not be totally replicable. In the immediate post-Independence era, PVOs often had to assume leadership for national feeding programs, which is less frequently the case today.

2. Organizational and operational constraints

a. **Local technical expertise and operational capacity.** The Ministries of Health or Social Welfare, which are usually responsible for the key MCH components, including food distribution, are often the weakest and most under-funded Ministries, and the necessary commitments are not made. The question always arises, however, as to what extent the limitation of resources is a real constraint to such commitment. At any rate, feeding programs, especially large ones, entail types of management and logistical support that are often unfamiliar to Ministries of Health. Health services are not especially well suited for the implementation of food distribution programs and often do not want to distract limited human and financial resources in activities perceived as not directly health related. There is a bias toward centralized decision-making, planning and logistics management. Political instability with high turnover of staff is also frequent, as is political use of food, lack of resources, and absence of a unified PHC strategy.

Deficient local managerial and operational capacity is an important constraint pointed by PVOs. This has been a major problem in Ecuador, where the Ministry of Health has not been able to operate efficiently the "Leche-Avena" program supported under PL 480 Title II, thus making it unlikely to show a nutritional impact. The technical weaknesses of the local implementation institutions are coupled with deficient budgets and poor existing infrastructure for program implementation, and result in low service coverage, particularly in dispersed areas where accessibility to the population at greatest risk is a problem.

Many of the complaints raised by the health services focus on the large amount of work involved in handling the commodities (health workers frequently object to being turned into clerks, accountants or cooks), which impairs staff motivation. Therefore, health staff tend to leave much of the operational burden to specialized food agencies (e.g., PVOs) and, when coordination is not efficient, full integration of the feeding component within the MCH routine services is not achieved. In some cases, as in Senegal, conflicting relationships developed between the PVO and the Ministry of Health due to either disparate objectives and developmental orientation or personality problems. PVOs are frustrated when they are unable to control the program elements of the large integrated MCH networks in which they participate or to directly improve program operations. Some interviewers contended that food aid is usually less effective in dealing with chronic food shortages than in emergency situations, because the local political and bureaucratic considerations impede addressing the real food and nutrition issues.

b. **Inadequate planning and project design.** In the interest of promoting MCH feeding programs and the use of food aid, programs are often planned and designed without adequate problem assessment and understanding of the type, extent and severity of the nutrition problems to be addressed as well as of their immediate socioeconomic and biological determinants. Food is usually too easy to get from the donors, and this has led to the artificial prioritization for non-nutrition and developmental purposes. Understanding the constraints to improved food intake at the household level is critical and requires good knowledge of the community social and cultural context. Frequently, the target communities have not been involved in program planning and implementation that is crucial for program success through active community participation. This may include the provision of local facilities, foods, and personnel and monetary contributions. The handling of these contributions became an important issue affecting the implementation of the MCH program in Senegal and several other countries. Many MCH designs have not stated realistic objectives and identified how constraints will be overcome or resources obtained for a sound health program because PVOs have often offered food only or food plus the growth chart, and have not carried out the collaboration and project development with local governments. This style is changing as PVOs move away from "hands-on" project direction. MCH designs need more attention to simple built-in monitoring/evaluation mechanisms that will generate sufficient data for indicating progress and eventually impact.

c. **PVOs' technical expertise.** PVOs' capabilities have often been less than adequate. CRS noted that 75% of its human resources are expended in food handling, and that this very vital first component (assuring regular delivery of the food) cannot be neglected in analyses of food assistance programs' quality. Some PVOs are severely understaffed. Some have made a systematic effort to strengthen their technical and administrative capacity to respond to the increasing needs of food aid programs, and A.I.D. has been instrumental in facilitating it by providing PL 480 Outreach and Enhancement Grants. A recent assessment of the PL 480 Outreach and Enhancement Grant Programs (Bremer-Fox et al, 1987) revealed their importance to both partially meeting the funding gap in food aid programs and improving PVOs technical and operational efficiency. However, it was suggested that resources were not adequate to keep PVO operations going in situations like Africa where costs were many times higher than in other parts of the world. The report made clear that A.I.D. would have to be innovative indeed if PVOs and Title II foods are to continue operating and being available in sub-Saharan Africa. The idea was put forward that either PVOs or other contractors might be hired to act as A.I.D. food handlers, paid for as any other service is paid for. As PVOs move away from food, their body of food programming and handling expertise will be progressively decreased and partially in search of work in the same area. Such a corps of ex-PVO, ex-AID food programming and handling experts already exists as a private organization (Marine Overseas Corporation) and other groups from disbanded food programs could be formed. Such food experts could not only plan and oversee the necessary food distributions, but have the primary purpose of training local staff, identifying structural constraints, and deciding how food can best be used in order to transfer resources to the poor. World Vision is currently involved in training local voluntary agency staff in Africa how to design and implement food-assisted projects. Another source of unified strength from PVO food programming and handling knowledge and expertise is the Food Assistance Management group under a former CARE employee.

The PVOs who wish to move away from the food emphasis and into more of an institution-building role will require more expertise in food security, as well as health and nutrition expertise if they are to continue working in fields that address malnutrition. PVOs moving to acquire more

technical staff could complement AID's emphasis on management generalists in field missions rather than specialized technical staff.

D. Targeting Guidelines and Practices

"Don't dump food and money on solving hunger in Africa."

—PVO HQ Food Program Director

"Targeting is very easy to say, very tough to do."

—USAID Nutrition/Health Officer

1. **Targeting of MCH programs and food aid.** Evaluations of MCH programs helped MCH and food aid administrators and programmers to make special efforts during the 1980s to refine targeting guidelines and practices, with considerable success in many instances. Prime examples of improved targeting are Asian programs in India, Sri Lanka, the Philippines and Indonesia. Optimal targeting has come to mean not only reaching the nutritionally vulnerable but also making the most cost-effective use of resources in programs that reach the neediest and most susceptible of responding to intervention. The principal recommended targeting mechanisms are priority ordering of geographic areas within national settings according to economic level and prevalence of malnutrition, and identification of the most suitable institutions and social groupings therein; and then selection of the most vulnerable population, infants and weanlings, pregnant and lactating women, and undernourished preschool children.⁶ The Tamil Nadu Project in India provides a good example of successful individual targeting for short-term supplementary feeding based on the child's growth performance, a practice which is, however, confronted by high rates of recidivism. Strict targeting is not always feasible due to increasing costs, resource limitations and operational difficulties.

Depending on their objectives, MCH programs are curative (recuperating severely malnourished children from severe illness), preventive (maintaining healthy status or lowering malnutrition incidence rates of children in health, social service or women's club centers), or, as is more often the case, a combination of preventive and curative in take-home programs. In harmony with the guidelines, some programs now concentrate on prevention among all under two or under three year olds while older malnourished preschoolers are admitted under the curative arm; such MCH feeding activities, focused on the youngest, are often closely allied with Child Survival programs and funding.

2. **Food targeting problems in the household.** Strategies for getting food into the mouths of the most vulnerable have been less successful. MCH take-home food is shared among family members in the majority of programs with resulting dilution of nutrients intended for targeted recipients. Commodities less appealing to adults, such as CSM, are somewhat self-targeted to children, whereas leakages are greater for adult preferred or high value items like powdered milk and oil. Though studies have demonstrated that small children ingesting but 40-60% of the intended

⁶ Mary Ann Anderson has written a reflective essay on "Targeting Food Aid" in Nutritional Aspects of Project Food Aid, UN Subcommittee on Nutrition, 1986.

ration are however given an increased proportion of the food available in the household due to the presence of the supplement (Anderson et al, 1981), the amount of food delivered in the context of average family size is usually small.

Effective targeting of nutrients to pregnant and lactating women has also been thwarted as demonstrated by Mora et al (1978). The hypothesis proposed -- that reduced intake of the food ration by the intended beneficiary was not due to sharing and substitution in the family, but converted into increased buying power -- has not been explored further. Neither have other issues relative to the social factors operating in the household that may affect food intake, or possible rejection of food by the intended recipient and the causes (overestimated needs, anorexia), raised by Beaton and Ghassemi in 1982, been studied in depth.

Little if anything was initiated in the 1980s to try out new strategies for increasing intake of at-risk women despite the advent of Child Survival programs and greater awareness of the effect of maternal malnutrition on infant health. The first step is to institute targeting priorities for pregnant women, something not yet done in MCH programs for the most part, to focus nutrition monitoring on them as well as on the smallest children, and to place equal emphasis on maternal health/nutrition concerns as on infant health and nutrition.

3. **Coverage of vulnerable population.** Successful national targeting strategies also imply levels of coverage for the country as a whole. Just as it cannot be said that the available food is always beneficiary-targeted, neither have the MCH programs achieved a satisfactory level of coverage of the vulnerable population of the world ("effective coverage"), if we assume a reasonable goal to be one fourth to one third. Most nationwide programs reach 5-10% of under five children while community programs reach nominal percentages in relation to total needy. For the most part MCH programs (which operate within health centers) are inherently limited by the extent of national health coverage. The World Bank (Malnutrition, November 1988) estimates that, excluding India, Pakistan and Bangladesh where rates are more than twice as high, about 30% of children under five are malnourished (under -2 Z, 80% or 75% weight-for-age). In most of the countries evaluated during the 1980s, the range of coverage for food programs was below 10% of the under five population, with higher coverage rates for malnourished children. PVO attempts to reach large numbers of beneficiaries have often resulted in poor targeting. Thus "coverage" is sometimes in conflict with "targeting" goals. It is very difficult to institute new graduation criteria in MCH programs that have been ongoing. The same families are accustomed to staying in the program year after year with new babies continuing women's eligibility. Graduation criteria are important to provide room for new mothers, especially where there are long waiting lists of families who have never benefitted from the program. The time-in-program should be based on interval necessary to present basic nutrition/health messages to mothers, a period usually thought to be optimal at two years. In some of the evaluations, it was evident that programs became stagnant and communities accepted that certain enrolled women had the right to remain throughout childbearing years. Time-in-program is of course directly related to program cost effectiveness.

4. **PVO difficulties with targeting expectations.** Targeting guidelines have been particularly progressive and have quite expectedly outdistanced the slower process of field implementation. Reasons for falling short of optimal targeting and coverage lie in the reality of field conditions, in the complexities of handling food aid, and in the lack of resources for adopting the new targeting strategies. With the best of intentions to enforce stricter targeting, national leaders

have difficult political choices in designating the administrative areas to be included, and workers at the center level often do not understand about targeting strategies and find themselves having to make triage-like decisions in a community where those selected may be only slightly poorer than those who are excluded.

From their food handling point of view, the voluntary agencies sometimes must alter storage and transport arrangements, and they perceive major increases in handling costs per delivered kilogram of food as beneficiary groupings become less concentrated due to smaller numbers of eligible recipients at distribution points. Community-based projects are more easily managed. In projects such as PUSH/Philippines and HMIP/Jamaica, it was found that it was more effective to concentrate limited resources (and increase local coverage) in the most at-risk communities (Wilcox et al, 1984).

It is not always feasible, however, to arrange the delivery of small quantities of food to communities that may be far from others. Attempts to work with needy but highly dispersed communities in sub-Saharan Africa have resulted in high costs for transporting, handling and storing food supplies, which discouraged a number of PVOs. However, in much of the world, in clusters of communities PVOs can work effectively with food aid; their unique capabilities in mobilizing community leaders is especially important as donors and leaders become more aware of the need for communities to assume the long-range responsibility for MCH feeding programs.

In small-scale projects, achievement often appears closer to the ideal of reaching a high percentage of the targeted population with a reasonable package of services in a relatively cost effective manner. With exceptions such as CARE's effective cooperation with the nationwide child development feeding program in India, voluntary agencies' skills and philosophies seem more in tune with the smaller scale approach. There was some initial attraction for many in the 1960s to use the abundant surpluses in larger scale food programs which were often diluted MCH packages but reached meaningful national coverage numbers. In addition to new guidelines from Washington, PVOs had also to work out conflicting views about targeting priorities with USAID missions, not always satisfactorily. An example was profound disagreement between the USAID mission, which insisted that food aid be targeted to urban malnourished only, and the PVO providing food aid in Zaire, which eventually resulted in the discontinuation of that agency's food aid program.

5. **Effect of historical context on MCH.** The concept of needy or target populations has evolved dramatically from the initial food aid years of the 1950s when it was assumed that populations of the developing world, especially rural dwellers, were universally and uniformly needy and PVOs were not expected to follow strategies other than their own, to today's guidelines and evaluation judgments on carrying out optimal targeting strategies, which may prescribe a highly dissimilar placement of PVO field staff and structure than currently constituted. Many of the MCH programs of today have their genesis in family feeding programs and sometimes retain vestiges of earlier paternalistic, essentially untargeted programs "for the poor". Those that were built upon and around church structure tended to evolve with church thinking (increasingly, but unevenly, to developmental objectives as well as charitable ones) rather than with donor agency changing guidelines.

E. Ration Quantity and Quality

"There are such incredible food deficits in this country that just to get food out is a real service."

—USAID Nutrition/Health Officer

"We should give food as treatment, for a limited time and in limited amounts, only if contributed by the community."

—Government Director of Nutrition

1. **Obstacles to optimal intake of rations.** Current Guidelines on Title II food rations for MCH programs take note of the major obstacles that inhibit sufficient intake by the targeted recipients for the achievement of program objectives: sharing and substitution, or "leakage", as well as losses caused by attendance rate and percent of food actually delivered.⁷ The Senegal and Cameroon evaluations made in the early 1980s note that targeted beneficiaries may consume only 6-11% of intended calories when taking into account insufficient deliveries, attendance and leakages. The Gambia assessment indicated that during the most stressful period, the hungry season, a month's ration lasted from two meals to two days in the household.

It is well known that of the food programmed for MCH beneficiaries in take home programs, a substantial portion will not be consumed by the intended beneficiary. A frequent effect of on-site feeding is that the amount of food given at home is reduced for the enrolled member. Some studies demonstrate that children, especially the smallest, may receive an increase in their overall intake in the presence of supplemental food despite sharing the latter within the family. The available data and interpretations of how supplemental foods are used within households are equivocal, as is the relationship between physiological need and actual intake of offered foods.

Beaton and Ghassemi (1982) found some evidence of increased intake according to need and other instances where there was no such relationship, and offered interpretations with regard to rejection of food because of anorexia or overestimated needs of target children. Mora et al (1978) found that when supplemental food was given to pregnant women (and to all other household members as well), a nearly proportionate amount of household food was displaced by the consumed supplement and that the net intake increase was but 16% of the intended 100%. Other studies show that part of the donated food is sold out and not replaced by other food. It is evident that knowledge of household behavior in the presence of supplemental food is important for determining the foods and ration levels most likely to have an impact on the targeted population. MCH Title II Guidelines written in early 1988 suggest that programmers estimate the extent of sharing and substitution "leakages" and cover these anticipated "losses" with extra food. Although this may have an impact on

⁷ In the evaluations that looked at food delivery, the data indicate that, inevitably, there are shortfalls in the amounts of food delivered compared with amounts programmed. Usually PVOs do not permit "backfeeding" (i.e., giving two rations a second month if the first was missed), and therefore somewhat lesser than programmed rations are received by beneficiaries. Most reports were highly positive about the success of food deliveries as far as the distribution points. The problems that occur include those in U.S. ports as well as foreign ones, lack of inland transport, warehousing, etc. The fact that delivery is usually smoothly handled by experienced PVOs should not mask the substantial time devoted to food handling, estimated by one agency at 75% of human resource time available to the program.

the actual net increase in dietary intake, it is not a substitute for actions to prevent leakages, such as specific education and the use of self-targeting foods.

2. **Self-targeting foods.** Another way of increasing the extent of ration consumption by the intended beneficiary is to use self-targeting foods, ones most likely to be consumed only by these beneficiaries due to the nature of the food and/or its packaging. Some blended foods would be primarily appropriate for infant and weanling gruels. Title II foods are distinguished more for their universal adaptability (except for blended foods like CSM, CSB and WSB) than for a self-targeting image for the MCH vulnerable population. The blended foods have been found to be just as palatable to adults as small children. Milk is as appropriate for morning tea as it is for children's porridge. Oil poses a special dilemma because it is a household staple in all cultures and not only likely to be shared but sometimes sold, yet it is an important commodity to offer because it would increase caloric density in gruels which is needed by at-risk children and for catchup growth following infections and diarrheal episodes. Special foods (methi biscuits) that are consumed only by pregnant and lactating women have been designed and used successfully in India to prevent sharing in maternal supplementation programs (Mital and Gopaldas, 1985; 1986).

Packaging and promotion are effective but usually too expensive for programs as found by Kolasa in 1984.⁸ A potentially effective tool for assuring that the targeted beneficiaries receive an adequate share of the ration or replacement with household food is nutrition education, but findings in most of the 1980s evaluations show this component to be weak and not often used for this purpose.

3. **Food rations for an income transfer effect.** When selection of commodities for MCH programs is based on incentive objectives (to utilize health or other services), rather than nutritional outcomes, Title II guidelines suggest that income transfer value be weighed as well, e.g. by determining the value of the donated foods according to local market prices for the same or similar foods. Prior to the 1980s, income transfer was a primary concern in Food For Work programs, but not a formalized criterion for selection of MCH foods. CRS, in Africa in the early 1980s strongly advocated the provision of rations sufficient to raise household revenue to a level (the level of marginal propensity) that would permit the release of supplementary foods for targeted children. Methodologies to find an evaluative approach to this objective were recommended (King and Seaton, 1982) but never developed or tested.

During the 1980s as programmers became aware that intended beneficiaries were not the only consumers of the commodities provided and that nutritional impact was difficult to achieve, greater attention was paid to food aid as income in kind and the effect of income transfer on the recipients. Reutlinger and Katona-Apte (1982) defined the "best commodity" for income transfer to be that with the highest monetary value to the recipient and the lowest relative cost to the donor. They suggested that nutritional content should be the primary selection factor only in instances when: (1) all of the donated food is likely to be consumed; (2) consumption by targeted beneficiaries is assured; (3) special foods are needed for nutrition education; (4) appropriate weaning foods are not

⁸ Cited by Anne Fleuret in "Prospects for Household-level Research on Consumption and Nutrition Effects of PL 480 Title II Food Aid", April, 1985.

available at home or for purchase locally; or (5) beneficial nutritional tradeoff is present. Otherwise, since most food aid programs also function by increasing the income available to the household, both the calorie value and income transfer value should be maximized.

Those who favor household targeting for the future will find this approach highly relevant and worth of field testing. However, factors such as the common inequitable intra-household distribution of food and control of family income, and the low calorie elasticity of income among poor households, would make it uncertain whether such income transfer effect would be reflected in improved intake and nutritional status of the target population (mothers and children). No specific studies have been done to show whether this approach has positive or negative impact on the nutritional status of the vulnerable groups. The results of some studies indicate little, if any, short-term impact of increasing income on the nutritional status of children (Kennedy, 1987). The potential effects of nutrition education linked to income transfer schemes on intra-household food distribution patterns and food intake of mothers and children have not been explicitly explored.

4. Available commodities and suitability for MCH. In terms of the foods offered and their suitability for MCH, PVOs have shown great understanding in the face of abrupt discontinuation of foods (milk, recently) and substituted the most appropriate foods available. Unless foods are processed locally, the suitable commodities for weanlings are the blended foods which were specifically designed for this group. Throughout most of the 1970s, it was thought that the developing world would be able to produce the necessary calories but that more expensive protein rich foods would be in short supply and best provided in food aid programs, an idea further favored by the more cost-effective shipping costs of protein. More recent research has shown that children are more often deficient in calories than in protein in countries where the diet is based largely on cereals. Protein deficiency occurs primarily in parts of Africa where tubers of low protein content are the staples (Anderson et al, 1981).

Many of the current protein-rich Title II foods were especially created during the "protein gap" era for distribution in MCH programs. Though nutrient-rich, the foods are not sufficiently calorie-dense for catch-up purposes (e.g., for promoting optimal growth of seriously malnourished children and/or following diarrheal episodes). Thus, a repeated recommendation in evaluations from the late 1970s through the 1980s has been the need for calorie-dense foods. Oil can be added to infant gruels to achieve a higher caloric density; however, oil is not always kept for this purpose, and training and nutrition education may not be adequate to assure that program managers and mothers understand and are motivated to incorporate oil properly.

The development of a calorie dense catch-up food for infant feeding, to be prepared as a weaning gruel, and the use of a short-term intensive feeding approach for seriously malnourished children and for those recovering from acute diarrhea, have been proposed by Weil et al (1987). In 1988, AID/W and USDA explored the possibility of a new catch-up food which would improve upon the density of CSM. Such food was primarily conceived to meet the temporary needs for post-diarrheal cases. The cornmeal-based prototype had a caloric density of 140-150 calories per 100 milliliters in prepared form (corn-soya blend has a density of 65 calories and instant corn-soya-milk -- not currently available -- 100 calories per 100 ml.). No further steps were taken in this regard. In the meantime, Archer Daniels Midland Company has independently developed a prototype product with oat flour which is being tested for storage stability; it has a density of approximately 150 calories per 100 ml. when prepared as a weaning gruel, and a protein level of

14% per 100 grams. If storage tests are positive, further tests would be required to ascertain whether the steaming process used is sufficient to achieve adequate digestibility or whether further precooking would be required. A very preliminary trial has been conducted in which oil was added to ICSM to achieve 120 calories per 100 ml. when prepared as a weaning gruel; the results suggest that adding oil to an ICSM-type product may also be a means of increasing caloric density.⁹ If pursued, these technological advances should provide new commodities or encouragement to the mixing of oil and blends prior to distribution or use for programs in the 1990s. They would also facilitate using food as a medicine, as was successfully tested in Haiti.

5. **Seasonal considerations in programming of rations.** Often noted in the evaluations of the 1980s, especially in Africa, was the need for unusual distributions during the seasons in which food is scarcest and health problems, especially diarrhea and dehydration, are most severe. African countries with a severe hungry season would need extra rations for those months of hardship, as suggested in evaluations of the Gambia and Senegal programs. Under the new Title II Guidelines for meeting household deficits with extra food for non-targeted members, presumably these special short-term extra rations could also be part of the programming process.

6. **Ration considerations for sustainability.** Finally, deciding which foods lend themselves most readily to phase over planning has had little or no attention in the 1980s, a period of economic recession, with countries finding difficulty in meeting transport commitments and little or no chance of phasing in contributions for local foods. As the need for community participation is recognized as the mainstay for feeding programs¹⁰, program planning with the community (and the selection of imported commodities with due consideration to local agricultural products) becomes increasingly important for MCH programs. Emphasis on local foods and knowledge of their availability and uses fit more readily with community-based programs.

⁹ Personal Communication, Robert P. Weil, Jr., Technical Assistance Division, U.S. Department of Agriculture.

¹⁰ A country like Costa Rica which has been highly committed to the support of school feeding and health center feeding programs has concluded that the communities must take on an increasing share of the burden for their continuation (unpublished Evaluation of INCAP/ROCAP Project to provide technical assistance to feeding programs in Central America and Panama, May 1989.)

F. Community Participation

"Even if the volume is smaller, it is better to start with something people want."

—PVO HQ Food Officer

"It's got to be the community that manages the feeding program."

—PVO Country Nutrition Director

If MCH supplementary feeding programs are to be successful, involvement and active participation of the community is essential. It has been suggested that for these programs to succeed, communities should be involved from the beginning in assessing their nutrition situation and problems, and in deciding whether or not to have an MCH feeding program and if so, how it should be designed (Anderson et al, 1981). With the exception of ICDS/India, Tamil Nadu and Jamkhed, where there was some community participation in the planning stage, the programs reviewed failed to follow this recommendation. Rather, programs were planned from the top, and program implementers managed to elicit community participation to a variable degree through informing and motivating the target population, and designing incentives for participation. While in principle this is not a difficult task when commodities are freely distributed to poor people, special efforts are always needed to reach those at greatest need to whom program activities are to be targeted. These are usually the same people who are less likely to make use of public health services and to participate in welfare programs. How to increase the frequent low levels of participation of the poorest of the poor has been a common challenge in all programs.

Community participation may range from active involvement to passive acceptance. Usually, the impetus comes from outside rather than from the community; nevertheless, the community can be motivated to ensure long-term survival of the program by using the service, cooperating in its daily administration, and providing some basic inputs. In the ICDS program of India, project staff contacted the villagers during the three-month pre-project phase, motivated them and worked with them in planning program activities, and in selecting a site for the program services and a community volunteer to be trained as community worker. Communities contribute to the program with the provision of materials and/or labor for building the service centers, and in cash, and villages' committees supervise program implementation. The Tamil Nadu Integrated Nutrition Project and the Jamkhed Comprehensive Rural Health Project in India are examples of some community involvement in needs assessment and project implementation, including the local provision of food for supplementary feeding and community volunteers to supervise the feeding. Motivation of the participants to attend the program regularly, to comply with supplement consumption, and to put nutrition education messages into practice has been problematic. Integrating feeding programs within good quality MCH services has been used successfully in Chile, Thailand, India and Sri Lanka as a means to enhance participants' motivation.

Many of the programs reviewed were implemented through women's organizations such as "mothers' clubs" (prominent in Bolivia and Ecuador). Women represent the most important and too often unrecognized resource for community mobilization and identification of targeted families for MCH programs or feeding/nutrition activities outside the health system. The formation of women's working groups, as in Tamil Nadu transforms passive recipients into active participants. Motivated women's groups may become powerful driving forces in the community and may actively engage in income generating and other program activities, as in the Dominican Republic, Peru and Ecuador.

Community volunteers, mostly women, are the most valuable human resources in several programs, particularly in rural areas. Volunteerism is more difficult in urban slums where the poor are struggling to survive and time is a precious commodity (in rural areas, too), yet it has been promoted successfully by the Organization for Rehabilitation through Training (ORT) in urban Kinshasa, Zaire. In Africa, women usually have lower literacy rates than men, undertake most of the agricultural burden and are responsible for seeing that food is on the table for the family and as caretakers of their children; however, they are offered few opportunities for participating in the community programs supported by development agencies due to traditional patterns of male domination, lack of literate skills and lack of time. They constitute the natural nucleus for feeding/child care community activities, and are often encouraged in that direction by many of the PVOs.

G. Integration with Other MCH Services and Child Survival Interventions

"(With feeding) we are losing out on motivating them to take care of their health first."

—Government Director of Nutrition

"Everything revolves around growth monitoring and its consciousness-raising effects on the mother."

—PVO Country Nutrition Director

Food alone is usually insufficient to affect nutritional status of program participants in non-famine situations. A number of MCH program components, in addition to the food, often account for program effectiveness, thus highlighting the importance of integrating supplementary feeding with MCH primary health care services. The entire ICDS conception and structure are based on the premise that food inputs (both local and imported) need to be accompanied by other essential elements, notably health and education components, if they are to result in nutrition and health status improvements, thus an integrated package of health, nutrition and education services is provided.

The most effective MCH programs have usually included nutrition and health education of mothers, child growth monitoring and promotion, and timely referral of morbidity cases requiring medical treatment. This is generally accomplished by incorporating the feeding component as an integral part of MCH services. Food supplements may be distributed as part of a deal with mothers by which health services and food are provided in exchange for regular participation in educational and other MCH activities, and mothers pay a small fee which in some programs is waived for the very poor (the primary target group). In Senegal, funds so generated were used to cover local salaries, whereas in Lesotho, they were used for management, transportation and other MCH expenses, and in Zaire to create rotating funds to initiate income generating projects.

The importance of nutrition education was demonstrated in Indonesia, Morocco and Sri Lanka, where MCH supplementary feeding programs had a strong education component. Program effectiveness was partially attributed to the educational activities and the provision of health services, although the specific contribution of single program components could not be ascertained. By contrast, in Lesotho, the weakness of the educational component seemed to be as important as poor targeting and inadequate food rations in accounting for lack of nutritional effectiveness of the MCH

program. Nutrition education is likely to be more effective when family food availability is not a major problem or when it is increased by supplementary feeding.

In Morocco, Senegal and Indonesia, a strong educational component appeared to make a real difference in improving both the nutrition knowledge and the child care practices of participating mothers. However, nutrition education often fails to go beyond improving nutritional knowledge so as to change attitudes and produce lasting behavioral modifications positively affecting feeding practices. The education component is frequently limited to instructions on the use of the supplements distributed, or to general untargeted messages given in a prescriptive manner. Most process evaluations point to the a need for significant improvement in the educational component of MCH feeding programs.

The potential of growth monitoring (GM) as a motivational tool and as an entry point for education of mothers and the community was demonstrated by the Indonesia and Morocco evaluations, and its nutritional effectiveness even in the absence of supplementary feeding was shown in the Dominican Republic. GM has been used successfully in Indonesia and India as a screening tool to target MCH services, including supplementary feeding, as well as a tool for assuring that target participants consume supplements without reduction of other intake. In some projects inadequate growth performance has been used effectively as a prima facie indication of dilution and substitution, so that many mothers soon begin following instructions more faithfully.¹¹ Unfortunately, GM is often one of the weakest components of MCH programs, with a tendency to become merely a measurement ritual with no action and follow-up, thus it is not perceived by mothers to be worth the effort and time spent in attending the clinics. Low coverage of GM and poor reliability of the data collected are mentioned frequently as major reasons for the absence of impact data in MCH feeding program evaluations, as documented in Guatemala.

Actions for the prevention and control of infectious diseases, such as immunizations and hygiene education, deworming, and promotion of oral rehydration therapy (ORT) for diarrhea appeared to make a significant contribution to program impact in Sri Lanka and India (ICDS). Measles prevention by immunization would be expected to significantly improve nutritional status of children in areas where measles epidemics are frequent (Koster et al, 1982). ORT has been shown to have a nutritional impact, particularly when accompanied by nutrition education with emphasis on appropriate feeding during and after diarrhea (Nalin, 1983). On the other hand, timely supplementary feeding may prevent much of the growth stunting associated with diarrhea (Lutter et al, 1989).

Finally, appropriate and timely referral for medical treatment, including direct feeding in nutrition rehabilitation services when required, is as key as the provision of preventive health services, as has been found in Haiti. A functional referral system is more easily established when there is a full integration of MCH services than when supplementary feeding is implemented in isolation. Under some circumstances MCH supplementary feeding programs are carried out by NGOs in dispersed or hard to reach rural areas not directly accessible by the health system, which are often the most needy; although available evaluations have not specifically focused on this issue, it seems obvious that this type of programs need to establish formal or informal connections with

¹¹ J. Pines, personal communication

the health system that would allow them to ensure adequate referrals of the frequent cases needing medical treatment. On the other hand, supplementary feeding does not always need to be implemented within the health sector, particularly when health services are not accessible to the neediest target groups. In many African countries, only a small percentage of the population have access to health services and it is not the neediest who attend them. Feeding programs have built women's groupings and could do much more. Community action programs commonly build a pharmacy or a health post which may then make the area eligible for a paramedical person; the same has been done in PVO food programs requiring communities to build a warehouse to be eligible to receive food commodities.

In Honduras, mothers' clubs combined food distribution (milk only) with self-help programs, resembling food-for-work approaches but under the MCH rubric to the consternation of health-oriented planners. In Bolivia and the Dominican Republic, women's clubs combined nutrition and growth monitoring and nutrition promotion with and without targeted supplementary feeding. These examples of minimal packages outside the health system deserve more support and encouragement than they have had in the past. Ways are needed to help them add simple components such as arm circumference screening measurements and access to health workers for curative care and nutrition and health education.

H. Other Complementary Inputs

"Cooperatives and home gardens are cheaper than food programs."

—PVO HQ Food Officer

"It's the foods that should mobilize the community."

—PVO Community Nutrition Supervisor

Other complementary inputs, especially income generating activities and community development projects such as small enterprise development, that may or may not be integrated within the MCH system, have been shown to be important in successful feeding programs. Income generating activities, such as family and community gardens and breeding and raising of livestock, are successfully implemented by the CRS Nutrition and Child Survival Program in rural Ecuador, as part of strategies for phasing-out MCH supplementary feeding. In the USAID/ORT Food for Peace PL 480 Title II MCH Project in Zaire, funds generated through monetization of donated commodities and the selling of cornmeal at low prices to program participants are used to cover program operational costs, physically upgrade MCH facilities, support farmgate prices for corn farmers, and promote the local production of a low cost weaning food. In Guatemala, mothers' fees for food are used for building community facilities and to fund family gardens projects that may contribute to reach nutritional goals. Water supply and sanitation projects implemented in connection with MCH supplementary feeding are also expected to contribute to enhance their nutritional impact. Community development projects and income generating activities may be effective in minimizing dependency of beneficiaries and promoting self-reliant development.

I. Long-Term Program Development

"We do not intend to get into MCH supplementary feeding."

—PVO HQ Food Resource Manager

"I expect Title II and WFP to provide stocks well into the next century."

—International Food/Nutrition Advisor

1. **Sustainability.** Food aid guidelines have not been explicit about expectations for sustainability in MCH programs. Program designs and annual program plans often ignore the entire question and are approved year after year. Yet, programmers and development staff increasingly expect some degree of planning for eventual phase out or phase over of food aid. Most MCH program submissions satisfy this expectation by referring to eventual income generating activities that will make the MCH community of mothers self-sustainable rather than by making provisions for MCH institution-building. In fact, most of the attempted activities have had little success, despite promising starts, for example CRS' oilseed projects in a number of countries. Poor planning and follow-up characterized these projects, and they were found to require far greater inputs of technical assistance and funds than expected. Sound exceptions seem to be the phasing-over of national programs in Chile, Colombia and Costa Rica, as well as the recent positive experience of the CRS Nutrition and Child Survival Project in Ecuador in preventing the negative impact of MCH feeding phase-out by successfully promoting income generating activities in the community (Mora et al, 1988). On the whole, there has been too little thought given to what will

happen when food aid in MCH programs ends and to the entire question of sustainability, or preserving the integrity of the MCH program in question.

The quality of MCH programs varies enormously. The MCH label is that of the highest priority feeding program because it is intended to reach the most vulnerable women and small children. In reality, on one end of the scale, it may be a thinly disguised name for an open-ended family feeding program. At the other end, combined with growth monitoring, nutrition and health education, immunizations, and referral, it is a top priority health/human development program. Unlike Emergency and Food for Work programs that have innately limiting time frames, MCH programs serve continually renewed clients because there are always new mothers and new babies, but food aid should be a temporary input (except for persistently deprived situations) and its eventual removal both anticipated and unthreatening to the continuity of the other MCH components, e.g., by continued supplementary feeding using local foods.

Designs that expect food aid to serve as an incentive seem to imply a temporary need for this component, which will have a natural time interval to accomplish the objective. This is an unjustified assumption. Food has indeed served effectively as an incentive for attendance and participation rates, but it is not a short-term input which can then be withdrawn with resulting changed beneficiary behavior, e.g., mothers coming regularly for preventive health activities without food being available. "Trade-off" might more accurately describe the process of women deciding to come to health facilities for weighing and nutrition education when their time is rewarded with a food package. Few examples are available to demonstrate behavior after an "incentive" program, but the predicted effects of food withdrawal in Senegal and Lesotho point to the need to improve the support base of MCH services with a feasible phase-over plan before abrupt termination of the food incentive.

2. **Phase-out and phase-over.** The best examples of sustainable phased over programs are those where better economic conditions prevail. Costa Rica is often cited as are Colombia and Cuba. Both India and Sri Lanka have developed products made from imported and local foods and have made major commitments to programs for vulnerable groups. Governments must be interested, involved and able to invest the funds. Community support in the long run is considered the important element, an area often neglected in food assistance programs. Even in Costa Rica, such efforts are just beginning in the school feeding program. Occasionally programs have been phased over, as in Tunisia and Ecuador, and another free food source (Section 416) than Title II has undermined previous groundwork to transfer responsibility to host governments. As new needs arise, such as structural adjustments, the effort is postponed.

Of greater concern is recent experience with phase-out of food aid without adequate transition. In a number of instances food aid long available to MCH programs has been suddenly removed with little or no planning or substantive help in making a program transition. These are phase-outs. Several instances of such phase-out are too recent for the actual effects to be more than predicted at this time. In assessments to make those predictions, informed guesses are that the preventive health programs (growth monitoring, nutrition education and probably immunizations) will terminate with the food aid, that economic effects will be felt especially for the poorest and marginal families, and that community groupings of mothers, often for mobilization of others for health activities but also for social and economic bonding, will be threatened. In Senegal, the nurses

felt betrayed by the sudden termination of food aid, often expressing the idea that a reliable tool for health mobilization had been taken away.

V. CONCLUSIONS

*"Don't use food as an end."
—PVO HQ Food Manager*

*"We need the analytical capacity to assess
what is working; the ability to recognize
failure and correct it."
—Former PVO Technical Adviser*

A. Program Effectiveness

1. The trends in the nutritional situation of developing countries in the 1980s revealed an increasing need for MCH supplementary feeding programs and eventually for food aid, particularly in certain countries in Africa, where large segments of the population are exposed to permanent or seasonal food insecurity that places them at high risk of malnutrition.

2. There has been, however, a declining interest in and decreasing coverage of MCH feeding programs and food aid for MCH and for development programs in general, especially in Sub-Saharan Africa. A number of PVOs have revised and changed their policies in regard to food aid in general and MCH feeding in particular, and some of them are less interested in advocating and implementing food aid programs.

3. When properly designed and implemented, MCH Supplementary Feeding Programs can be effective in improving the nutritional status and hence the health conditions of the recipients. Enough evidence of nutritional effectiveness has so far accumulated to justify MCH feeding programs selectively targeted to families and/or individuals with permanent or seasonal deficiencies in food availability and/or intake that place them at high risk of malnutrition and, at the same time, make them more like to be benefitted. There is still ample justification for MCH feeding programs in developing countries in areas with food insecurity when the institutional, technical and managerial capacity to implement them effectively exists or can be developed and/or strengthened shortly. Out of 58 PL 480 Title II MCH supplementary feeding programs implemented in the 1980s in 39 countries, 22 were formally evaluated and 9 (40% of all programs) were intended to be impact evaluations. (We could not use data from 2 of the 9.) It can be assumed that a certain extent of self-selection is occurring because programs that can be evaluated for impact generally have better data and, therefore, better management and other components. However, the impact evaluations were not chosen in countries considered to be best or worst scenarios. Therefore, the results may be considered representative of what can be achieved. It is difficult to state with certainty in any case that the results are strictly attributable to the program components because of the lack of control groups.¹²

Anthropometric measurements do not provide the means of singling out the contribution of feeding to overall nutritional status. Because value of the many components contributing to nutritional status are unknown, assessing changes in food intake would be a more achievable short-

¹² Lack of evidence of nutritional effectiveness of MCH feeding programs was also prominent in a recent, unpublished, update review of the same subject by FAO (P. Lunven, FAO, personal communication).

term outcome of MCH feeding programs, but would require the development of low-cost rapid assessment techniques.

It is also acknowledged that such programs will not lead to long-term sustainable outcomes unless accompanied by explicit actions aimed at improving the general socioeconomic conditions of the population, in particular, their ability to produce or acquire and consume food of adequate quality and quantity, and ensure its optimal biological utilization. These actions are also important to prevent the potential negative effects of feeding programs in the target population, as it is restricting their duration to the minimum needed to protect the vulnerable individuals during the highest risk period. MCH supplementary feeding programs should be seen as temporary measures to protect the vulnerable groups as part of community development actions. Parallel improvements in socioeconomic development should permit phasing them out smoothly when the need no longer exists.

4. Many MCH supplementary feeding programs implemented in the 1980s have not taken full advantage of the potential of MCH feeding for nutritional improvement mostly because of design and/or implementation problems. Despite targeting guidelines and continuing documentation of urgent need, supplementary feeding of women during pregnancy and lactation has been generally given low priority and/or not evaluated in most MCH programs. Pregnant women are not targeted for nutrition surveillance or given sufficient priority in MCH feeding programs. Neither has sufficient emphasis on the smallest children (<2) been achieved.

5. MCH supplementary feeding has also been used as an incentive for MCH and primary health care services demand and utilization, especially of preventive services. There is, however, a potential risk of creating a need for a permanent incentive if adequate provisions are not made to ensure a concomitant improvement in the quality of MCH services. The incentive effect may be best conceived as a complement rather than a substitute of the nutritional objectives. By emphasizing the incentive in addition to the nutritional objectives of MCH supplementary feeding, its nature may become more developmental than welfare oriented.

6. Potential beneficial effects of MCH supplementary feeding programs on outcomes other than the nutritional, health and service use incentive ones have not been systematically evaluated. From the information currently available, the evidence is not strong enough to justify them on such grounds. Nutritional objectives (e.g., increased food intake, improved nutritional status) should be primary in designing and evaluating MCH feeding programs.

7. Although MCH supplementary feeding involves an income transfer to the recipient families, the potential, risks and implications of conceiving, planning and implementing it as an explicit income transfer mechanism have not been fully documented. A number of unanswered questions would make it premature to recommend using MCH feeding programs with such an explicit purpose.

8. Sustainability of MCH supplementary feeding programs should be ensured from their inception for as long as the need persists. The potential for sustainability is enhanced by firm political commitment to nutritional improvement, as well as by realistic program design and implementation features. Sustainability of food aid MCH feeding programs is more problematic

when plans for phasing over or phasing out are not carefully designed and implemented from their inception.

9. There is a general feeling that, besides emergency situations, feeding programs would only make sense in extreme poverty areas with continuing or seasonal emergencies, or when targeted to dependent families in situations of extreme poverty and persistent conditions of food insecurity. These "pockets" of extreme poverty can be identified and supplementary feeding (and food aid) used with welfare and relief rather than nutritional or developmental purposes. Another view contends that targeted MCH supplementary feeding remains an essential part of good MCH services and would be justified and useful if used temporarily during well defined high risk or vulnerable periods (e.g., pregnancy, lactation, and first two years of life). The emphasis on the short-term nature of MCH supplementary feeding is pertinent in view of a number of well established permanent programs initiated decades ago from which both the implementing institutions and the recipients have become dependent. Long-term MCH food distribution programs were reported to have encouraged a welfare mentality in Lesotho, to the extent that it had become "a way of life" for the recipients.

B. Critical Elements for Nutritional Effectiveness

Critical elements for the implementation of effective MCH supplementary feeding programs are identified on the basis of the experience so far accumulated.

1. **Adequate problem assessment.** A first element is adequate documentation of the magnitude of the nutrition problems in the country, region or community, and assessment of their determinants at the community, family and individual level, including the relative role played by food availability and consumption problems, as well as that of morbidity. This includes a clear understanding of prevalent feeding practices and the constraints to food intake at the household and individual levels. The assumption that where malnutrition exists there is a need for food may not be warranted.

2. **Design: attainable objectives; evaluation.** Based on the above assessment, programs to reach vulnerable woman and child populations within or without the health system would designate objectives within reach of the resources, setting, and other constraints. Where other vital components for achievement of nutritional status improvement or maintenance are not certain, lesser outcomes such as suggested earlier (e.g., improved dietary intake) should be considered. From the outset, simple evaluative mechanisms should be part of the design, again appropriate to the resources and setting.

3. **Community mobilization.** Community mobilization and awareness of their food and nutrition needs, with special emphasis on the need and potential for supplementary feeding, is also important.

4. **Appropriate food rations.** Culturally acceptable supplemental foods need to be selected with participation of community members and food rations designed with sufficient quality and quantity to meet the identified calorie and nutrient intake gap, to be supplied long

enough to make a difference in total intake in the long term. Local foods are preferable whenever available.

5. **Targeting.** Effective targeting criteria and strategies should be designed and implemented to reach those population groups, families and individuals at most need and likely to be benefitted, usually pregnant and lactating women and children under two years from communities and families exposed to permanent or seasonal food insecurity. Geographic, demographic, community, household and individual targeting criteria and strategies are used contingent upon the specific circumstances.

6. **Appropriate complementary interventions.** Of great importance is the concurrent implementation of key complementary interventions, particularly nutrition and health education linked to growth monitoring and promotion, prevention and control of diarrhea (especially the promotion of oral rehydration therapy), expanded immunization coverage, and timely medical referral for treatment of morbidity. When operational conditions are severely restricted, the minimum effective package would include nutrition and health education in addition to feeding.

7. **Local technical and operational capabilities.** Adequate technical and operational capacity of the implementing institutions is required. This is a significant constraint in many developing countries.

8. **Functional administrative support systems.** Effective logistics, supplies, transportation, storage and delivery systems, and efficient funding mechanisms to regularly support them are crucial for program operation.

9. **Managerial skills.** Strong managerial capabilities and efficient technical support systems (staff training, retraining and technical backstopping; supervision, monitoring and evaluation) are critical, as is the adequate selection, training and motivation of program staff.

10. **Timely information for program management.** Especially important is a functional monitoring, evaluation and management information system for collection, processing, timely analysis, interpretation, and regular feedback of information required for ongoing decision-making and motivation at all levels of program implementation.

C. **Constraints to PL 480 Title II MCH Programs**

Besides the general constraints often observed in the current design and implementation of MCH supplementary feeding programs regardless of the source of supplemental foods utilized, the following are critical constraints specific to PL 480 Title II MCH feeding programs as planned and implemented in the 1980s.

1. **Political and institutional constraints.** PVOs have been major advocates and implementers of food aided MCH feeding programs. Some deterioration of PVOs' interest and host countries' political commitment to MCH feeding and food aid has been observed in the 1980s. Although perceived program ineffectiveness as evidenced by inconsistent evaluation results has no doubt played a role, there are other important factors to which such changing commitment could be

attributed: changing developmental priorities in developing countries, especially in Africa; economic and financial considerations related to funding gaps, administrative burden, increasing operational costs and difficulties; and changing relationships with local counterparts.

Many PVOs began as relief agencies with charitable motivations, but as they have gained experience in dealing with the problems of poverty, they have tended to identify themselves with peoples' felt needs and become more engaged in development activities. This apparently led them recently to articulate institutional policies that stipulate the conditions under which food aid could be considered an appropriate resource to be used in a developmental context, so that food is utilized selectively and not just because it is there and will continue to be available for bad or for good. Currently prevalent developmental principles are intended to be based on peoples' determined needs rather than merely on resource availability. Food, ideally produced locally, is thought to be best used in response to the expressed needs of the community. It should be noticed, however, that not all PVOs share this view, and some have decided that food aid is an available resource that can be used as a developmental tool under certain circumstances, e.g., when the need for food is well documented, needy groups are identifiable, appropriate targeting is feasible, and local institutional, organizational and managerial capabilities exist or can be developed.

2. **Organizational and operational constraints** related to the local institutions responsible for program implementation, which are often technically weak and under-funded, lack management and logistical capabilities, and have difficulty accessing the populations at greatest risk. PVOs' less than adequate technical capabilities and poor program planning, inadequate problem assessment and lack of systematic critical thinking, poor community participation, and the use of food aid for non-nutrition or developmental purposes all tend to jeopardize program effectiveness.

3. **Technical and resource constraints to targeting.** Although targeting guidelines were improved in the 1980s, with some tendency to concentrate on prevention and thus on younger age groups, targeting practices confront resource limitations and operational difficulties. Strict geographic and individual targeting often increases costs, and is difficult to implement under the reality of field conditions. Effective coverage of the vulnerable populations is not frequently achieved, with even lower coverage than achieved by MCH services. It appears that advances have been made in reaching the most vulnerable children with health services (growth monitoring, ORT, immunizations), though surprisingly few MCH/primary health care and MCH feeding programs are programmed together in USAID Missions. Complementing child survival with supplementary feeding to ensure continuity is often a missed opportunity.

4. **Ration quantity and quality.** Optimal intake of food rations has not been achieved. Actions to prevent leakages, such as effective education and use of self-targeting foods are not extensively implemented. PL 480 Title II food commodities are not self-targeting nor are they sufficiently calorie dense for catch up growth purposes. Little or no thought is given to phase-over considerations in the selection of foods.

5. **Long-term program development.** There has been little actual concern about MCH programs' sustainability and phasing out or phasing over of food aid. Food components have been phased out without adequate transition to prevent negative effects on the recipients. The lack of initial assessments and careful design result in unacceptable, unplanned open-endedness of the feeding component in MCH programs.

D. The Role of Food Aid

The experience of the 1980s has indicated that there are several legitimate roles of food aid, and that these roles appear to be acceptable by most of the participating countries, institutions and communities:

1. **Nutritional improvement.** There may be other objectives of food aid, but without nutritional improvement there is little reason to go through all the cost and effort. Well-planned, targeted and implemented programs can have nutritional impact, particularly in a preventive nature with pregnant mothers, and of a rehabilitative nature for young children which need catch-up growth. Food as temporary medicine is an acceptable approach, even among the most development-oriented PVOs.
2. **Social welfare.** Experienced field workers know that there is an important role for food aid for communities in chronic food shortage areas and families who live in extreme poverty. There is usually a certain percentage of disadvantaged families (widows, homeless, landless) for whom supplementary food is a safety net to help their children get through the early, vulnerable years. Regardless of food availabilities, this group falls between the cracks.
3. **Temporary emergency and relief situations.** Throughout the 1980s, there were countries and highly vulnerable people that really benefitted from food aid. Lives were saved and people were oriented to get back to their communities without long-term dislocation. There is wide consensus on the need for food in most emergency situations, including natural and man-made disasters.
4. **Program enhancement.** Incorporating a feeding component may be an integral part of an established MCH, PHC or other social development program, and vice-versa. It permits offering those complementary health, educational and income-generating services need for nutrition improvement. It also serves as an incentive for participation in preventive and promotive health activities. In this way, changes in food habits and practices can be fostered through timely and relevant growth monitoring/promotion and nutrition education. Programs work that are focused on the causes of maternal and infant mortality and malnutrition and set rigorous criteria for beneficiaries.
5. **Developmental and participatory.** Only a few of the food aided programs have gotten the communities involved from the beginning in assessing their food and problems. This usually takes an extensive time period of consciousness-raising, problem posing and education so that people understand the need and importance for targeting and time-limited supplementary feeding and other actions that address illness and child care. There also needs to be collaboration with other ministries and aid programs, particularly those that deal with problems of household food insecurity, unemployment and lack of purchasing power. The mothers' groups that show the most promise are those that have been able to maintain profitable income-generating projects.
6. **Monetization.** Programs that can monetize imported food in order to buy local food are becoming more popular among development-oriented PVOs. What is also needed is for this new revenue to be invested in strengthening the technical and operational capacity of MCH

programs, which can only be partially successful due to the dollar requirements of technical assistance.

7. **Political and strategic considerations.** The reality is that developed countries have self-interest-oriented foreign assistance plans that often include food aid. They have often been used in humanitarian situations to promote good will and, sometimes, in the hope of preserving the stability and peace of the world.

8. **Structural adjustment.** Since the mid-1980s, food aid has also been intended to mitigate the social cost of structural adjustment policies in developing countries, particularly by the World Food Program.

VI. RECOMMENDATIONS

A. Policy Recommendations

1. **Policy dialogue.** In view of the recent trends in attitudes and opinions among host countries and PVOs (international and local) about the effectiveness of MCH supplementary feeding programs, A.I.D. should engage in renewed and intense policy dialogue, both in house and with PVOs and host countries, and provide convincing evidence on the usefulness of MCH feeding to meet social/humanitarian as well as nutritional, health and educational objectives. The goal is to increase the political will of both donors and implementors. A.I.D. central, regional bureau and mission attention, staffing and funding must increase if PL 480 Title II MCH feeding is to contribute more effectively to development and if U.S. presence via PVOs and food are to continue in Africa. A task force with specific objectives and responsibilities should be established.

2. **Need for well-designed impact evaluations.** There is a need for more well-designed and documented impact evaluations of model programs. Well documented case-studies of ongoing effective programs could be used to highlight the potential of MCH feeding and the conditions and critical elements for effectiveness under different circumstances. Supporting study visits from policy makers and interested parties to familiarize themselves with the planning and implementation process of such programs may also be contemplated. Examples of "model programs" to be considered would be rural-based India/ICDS, urban-based Zaire/Organization for Rehabilitation through Training, community-based Ecuador CRS Child Survival, and eventually the proposed Gambia/CRS targeting pregnant women if implemented as planned.

State-of-the-art impact evaluations are expensive and certainly not always justifiable, except for a few case studies to be used for learning and demonstration purposes. Currently, FVA requires that a feasibility study be carried out first to determine if the basic program is operating adequately, that there is a definitive need by decision makers for such an evaluation, and that there is adequate data available or in-country capability for collecting reliable information. Rather than assessing these conditions in retrospect, however, there is an urgent need to ensure that minimum impact data are collected as part of the required project monitoring and management information system. A built-in evaluation system should be set up from the project inception, ideally taking advantage of the initial problem assessment. The lack of appropriate baseline information was a prominent reason for the absence of impact assessments in a number of the evaluations reviewed. Simple, feasible, realistic and low-cost evaluation designs and methodologies, and the corresponding guidelines for project planners and implementers, should be worked out and field tested, with adequate pre-post comparisons and eventual use of "new entrants" from expansion areas as comparison groups (selecting strictly comparable "control" groups is not usually feasible). Cost information should always be available. Simple measurement methodologies are also needed for key outcomes such as family and individual food intake (e.g., "simplified dietary assessments" such as the one developed by IVACG for identifying families at risk of vitamin A deficiency).

3. **Overall strengthening of PCH and MCH in particular.** Increased priority should be given to A.I.D. policies to strengthen PHC/MCH services in developing countries, as part of overall Child Survival and Health and Nutrition Sector Strategies, as well as of regional and country strategies. Improved quality and coverage of MCH services and PHC in general is a

prerequisite for the effective implementation of both child survival and MCH feeding interventions. Concurrent improvement in service quality is also key for sustainability of outcomes when MCH feeding is used as an incentive to increase the demand and utilization of MCH services. Though MCH supplementary feeding has been often oversold and overdone, it remains an essential part of good MCH services in food deficit areas or where access to adequate food is a problem. Health programs with targeted food make sense when the need exists, whereas MCH food programs without health services may not, except for food insecure populations not reached by the health system where improving food availability and consumption may be a legitimate objective in itself.

4. **Making more extensive but judicious use of monetization.** More flexible regulations are now available that will facilitate better and more extensive use of monetization wherever it may improve program efficiency and enhance the achievement of nutritional goals without negatively affecting the economy of the recipient country. While commercial sales may reduce direct program benefits to the poor thus contradicting the fundamental character of Title II, monetization proceeds may be used to buy local supplemental foods, partially cover operational costs, and strengthen program technical and managerial resources to improve program effectiveness on the poor. A.I.D./W has recently prepared a Monetization Manual for PL 480 Title II and Section 416 (b) Programs which provide clear and more flexible guidelines. This would allow PVOs to use monetization as a major new way to generate the kinds of funds needed. Monetization has already been used effectively in India by CARE and in Zaire by ORT and it is being tested by CRS in a number of countries. AID might want to assist with some field trials to learn whether the expected returns in restructuring programs of different types are worth the potential investment. Monetization is not a panacea for saving and/or improving MCH or other programs to improve the health of vulnerable populations, but it is a highly useful source of new funding for local costs and could facilitate phase-over transition, for example, with the possibility of purchasing local food and paying training costs for preparing takeover. Particularly with the PVOs talking about promoting institutional improvements, the proportion of local costs presumably would be high while the PVOs would, in turn, need to add technical expertise to their portfolios from own and AID funding. International agencies might join in extending expertise to the PVOs for large training activities.

African governments and organizations should understand from the outset the potential of such operations and help decide whether monetization is risky with their more fragile local markets. Other concerns are, of course, satisfying Bellmon and Usual Marketing Requirements amendments.

5. **Reorientation of MCH supplementary feeding programs toward the community.** This is especially important in regard to the promotion of community participation and ownership of the program, and may include a number of changes: (a) introduce programs only as a response to felt community needs; (b) strengthen the educational and training elements; and (c) promote community participation in all stages of program planning and implementation. The goals are to facilitate the community being in charge, running the program, and ensure participation among the poorest of the poor. Community mobilization is facilitated when the community is already organized and when women's groups are effectively motivated, trained and involved in all phases of program planning and implementation. Women are usually readily available to participate actively in community development activities if they are given the tools to do it. Besides fees for services and other in-cash contributions, the community may be able to mobilize important human resources for program implementation, if they firmly believe in the program goals and strategies.

6. Strengthen outreach and decentralization of Ministries of Health.

Strengthening the technical capacity, coverage and quality of service delivery of MCH systems should be a top priority for developing country governments and international donors and institutions. The need for enhanced outreach to rural areas and administrative and technical decentralization is also felt. A functional MCH service delivery system is a pre-requisite for large scale implementation of MCH supplementary feeding. However, unnecessary dependence on the Ministries of Health should be avoided when health services coverage is low. New innovative approaches to reach the poorest population, even outside the regular MCH system, need to be developed and field tested (e.g., the extensive primary school infrastructure). Since existing health infrastructures do not reach the groups at greatest need, other more direct mechanisms that do reach the poorest but lack the desired components to make them full-fledged MCH programs should be accepted as valid channels, albeit with less ambitious health objectives or even a social welfare approach.

While the most reasonable objective for MCH supplementary feeding programs is direct nutrition and health improvement, formulating primarily social welfare and humanitarian objectives for MCH feeding programs may be legitimate under certain circumstances, particularly when focused on extremely deprived population groups exposed to permanent or seasonal severe food insecurity. Rather than keeping confusing objectives as a result of the conflict between "relief" and "developmental" objectives of MCH feeding, projects with emergency and humanitarian objectives can still be implemented developmentally by emphasizing self-reliance, institution building and more lasting nutritional impacts. Formal or informal links between such feeding programs for MCH populations and the health system are, of course, desirable for medical referral needs.

B. Technical Recommendations

1. **Ensuring adequate assessment of nutrition and household food security problems and options.** This is key for decisions on program design, and for the development of the educational component. Good understanding by both program and community people of the causes of malnutrition and the relative role of family food availability and unfavorable dietary practices, and systematic critical thinking, should precede any decisions regarding the design of nutritional interventions, including whether food distribution is needed. The intervention design checklist proposed by Anderson (1981) may be used as a basis for such assessments.

Once community and household food insecurity is ascertained and the need for supplemental food to increase access to food and intake of the vulnerable groups is identified, several options may be contemplated, including supplementary feeding using either local or imported (donated) food commodities. This would require an analysis of the feasibility and potential of the different options, including an assessment of the existing institutional technical and financial resources, and the availability of the required infrastructure for project implementation. Other potentially effective interventions to improve food intake of the vulnerable population may be considered, such as community kitchens as in Peru, food stamp schemes as used in Sri Lanka and Jamaica, and targeted, subsidized staples (general subsidies have been found not to be cost-effective because of disproportionate share by non-needy population). Well-designed studies of the relative cost-effectiveness of different interventions are still needed, as well as more understanding of what is feasible and appropriate under different circumstances.

2. Appropriate program design based on certain minimum conditions, especially problem assessment and formulation of realistic nutritional objectives (including reduction of low birth weight), and ensuring high quality of services and systematic integration of nutrition/health education, and promotional growth monitoring.

Growth monitoring and promotion (GM/P) should be incorporated systematically to all MCH programs whenever feasible. It is an essential component of MCH programs, with potential to improve health and nutritional status if adequately linked to action, namely nutrition and health education, supplementary feeding and referral for medical treatment. This implies using a combined promotional and curative approach. GM/P offers a unique opportunity for frequent contact and interaction of community health workers with mothers for provision of primary health care services, including supplementary feeding, and for imparting nutrition and health education suitable to the existing conditions of the child and the family. When implemented together with MCH feeding interventions, GM/P can be used as an effective screening and targeting tool to identify children at risk or already malnourished, and to establish eligibility for targeted supplementary feeding or the need for medical attention. GM/P is also a means to gather nutritional information needed for program monitoring and decision-making, as well as for impact evaluation.

Special efforts need to be made to strengthen the nutrition and health education component of MCH programs. Systematic nutrition education for improvement of feeding practices and reduction of supplement leakages is critical for effectiveness of MCH feeding programs. Long-term behavioral modifications in feeding practices may be best achieved through participatory approaches where community workers and mothers interact for joint problem posing/solving and developing the commitment to act. A stronger focus of MCH feeding programs on behavior change is needed, including communication strategies for improved maternal nutrition and weaning practices.

3. Incorporation of micro-nutrient supplementation whenever needed and feasible. This is especially important in regard to iron and folic acid supplementation for pregnant and lactating women, in view of the well documented high prevalence of nutritional anemia in pregnant and lactating women. Vitamin A supplementation of mothers and children in endemic areas should also be considered as recommended by IVACG.

4. Strengthen the technical capacity in food consumption and nutrition of USAID and PVOs. There is a substantial need to improve the technical background, training and support for people working in the PVOs, government ministries and also A.I.D. missions. The MCH feeding programs require innovative ideas and creative energies to address the many constraints outlined in this report. The felt need for additional food consumption and nutrition expertise at the central levels in some of the US-based PVOs is high, as it is the regional and national program level. The strategy of regional technical advisors in food and nutrition is recommended, but these positions should be provided more financial and technical support from headquarters. In country, the food program officers who are usually highly skilled in administration and logistics should be complemented by full-time technical nutrition officer/advisors, and vice-versa. At the Mission level, where there is usually a personnel shortage in the nutrition area, Food-for-Peace officers should not work in isolation from the health and agriculture officers. Ideally, one could argue for a technical food and nutrition person who could cover both Food-for-Peace and the consumption aspects of agriculture and health portfolios. However, it is recognized that AID missions are becoming less technical rather than more so, therefore, thought needs to be given to

the creation of Regional Teams of technical consultants, including PVOs. In the meantime, available Food-for-Peace officers should be provided refresher training to update and improve their technical skills (e.g. in targeting, assessment, growth monitoring/promotion, nutrition education, management information systems, nutrient quality, etc.).

5. Ensuring program sustainability by long-term planning of phase-out and phase-over. Two essential ingredients for smoother phase-outs less harmful to the direct and indirect beneficiaries are guidelines and the resources for carrying them out. This indirect effect should also be considered in phase-out planning, which is not simply deciding on fair criteria but on humane and least disruptive ways of achieving phase-out for beneficiaries and others. Guidelines could suggest minimum intervals for notification of program users (not only government officials), and types of replacement activities depending on the economic level of the community. Funding and technical assistance will likely be necessary to achieve satisfactory results. Specific feasible criteria for beneficiaries graduation and for planning program phase-out or phase-over need to be systematically used. Phase-out and phase-over will require closer collaboration between international donors, PVOs, governments and communities.

For food aid assisted MCH programs, sustainability might take several forms: the MCH program is continued with locally procured foods; the same or similar MCH activities continue without food aid; or income-generating activities replace the economic support provided by the food for the MCH mothers/families. Project design and resources for transition are two of the key issues. If an MCH project foresees that local foods will one day be able to replace the imported ones, as would be expected, the design should ensure that the temporary foods are the best for attaining this objective; i.e. they might be similar or the same foods to ensure replaceability. Or if the program intends to supplement what is grown locally (and can eventually be contributed to the program) a phase-in plan for these foods to be added to donated foods should be a part of the design. Where there is no hope for the foreseeable future that foods can be contributed but the program should continue as a valid MCH nutritional or income transfer program, the design should predict how long that situation will prevail based on economic factors. At the end of the period, the need for the same basis of continuation should be reconsidered or changed to a different expectation.

6. Planning for sustainability according to socioeconomic situation in MCH areas. The first step would seem to be that of recognizing the different socioeconomic levels of MCH settings which in turn imply lesser and greater chances for sustainability:

Level one - MCH settings that are the poorest and where almost everyone is poor. It is often difficult to reach the poorest communities which might be isolated and not be served by an MCH. When the opportunity is present to have an MCH facility in a very poor area, it should be recognized that food will have to be provided indefinitely and that sustainability is unlikely for whatever number of years it takes to bring about a change in economic level. MCH food should be programmed accordingly. More difficult is the food distribution center in very poor areas that are not in the health structure. Here, the ministries of education infrastructure and PTAs can be used, because these usually have the best coverage in inaccessible areas. Perhaps a social and educational label is more appropriate than a health one in those cases but a decision should be made about whether they merit food aid support. Literacy and income generating activities are usually requested in these settings.

Level two - MCH settings that are at the poverty line with a mix of families above and below. In such cases, food aid could be limited to a number of years, used as an incentive, with a design that limits food to each group of families for two years, and the community to four years. Accent would be on mother and community education with a program that could fairly meet these needs and then go on to a different community; the concept of all mothers and all children would not be followed. Home visits would be targeted to the highest risks, and their participation in income generating projects promoted.

Level three - MCH settings that are better off and have a well established food aid program which requires careful transition to keep mothers coming. These are often in marginal metropolitan areas where migrant and transition families need a safety net. Income and employment generating activities should be the major emphasis with more attention to technical assistance along these lines. The objective would be to retain the health service utilization and introduce mothers to new opportunities for breaking the cycle of poverty and household food insecurity.

C. Operational Recommendations

1. Strengthen the technical and operational capacity of implementing institutions. This would include providing sufficient technical and financial support for institutional development, logistics, supervision, materials, decentralization schemes and local training. Some PVOs are now giving higher priority to local MCH institution building.

2. Emphasize program quality and effectiveness rather than overall coverage. Criteria for program performance assessment and evaluation should give precedence to quality coverage ("effective coverage" of the population at risk) and quality of services (regularity and adequacy of food delivery, complementary actions, etc.) over general coverage (total number of beneficiaries). Current concern of implementing institutions is to reach high absolute coverage thus often a large proportion of low risk individuals (e.g. well-nourished children older than 24-36 months) are enrolled.

3. Promote flexible, feasible and cost-effective targeting strategies and practices. Strategies for geographic, seasonal, household and individual targeting need to be developed and field tested. The greater impact of MCH supplementary feeding on children under two years of age, as well as the potential of intervening during pregnancy and lactation, should be more fully utilized as a guide for targeting. The demographic focus should be on pregnant and lactating women, children under 24 months of age, and undernourished children older than 24 months. Self-targeting foods for pregnant and lactating mothers and calorie dense catch up foods for infants should be developed, tested and used intensively. Innovative approaches to reach the neediest pregnant and lactating women that are not covered by the regular MCH services need to be encouraged and field tested (e.g., taking advantage of traditional birth attendants and healers, and other health care systems). Although better targeted programs may somewhat increase the costs per beneficiary or per calories delivered, they are likely to reduce costs per individual benefitted which is far more important as an indicator of cost-effectiveness. At any rate, differences in transportation costs would make inter-regional comparisons irrelevant unless feasible options exist to reduce those costs.

When malnutrition is widespread or clustered at certain times of the year and in identifiable pockets, geographic targeting might be enough; however, when it is of a lesser magnitude and disperse, the need for more household and individualized targeting may arise. However, too-strict individual targeting may increase costs substantially. PVO complaints in regarding to targeting difficulties need to be examined seriously to know whether the expectations with regard to targeting food aid are excessively demanding, what the price is for optimal targeting and a reasonable time frame for achieving it. The evaluations suggest that not much has been done in many instances to implement new targeting strategies, and that most cost increases are anticipated ones that might occur if pressures are sustained to restructure existing programs, especially large-scale, older programs often rooted in former family feeding. New guidelines undoubtedly should be well ahead of implementation but they should be feasible and be accompanied by the necessary resources to permit their application. Many PVOs perceive that only Title II users must do without supporting funds, support that appears to be more urgent with the application of narrower targeting strategies.

The Guidelines might be clarified with regard to retaining an MCH label in instances where beneficiary targeting is not really practicable, e.g. households receiving less than 80% of required nutrients, and for whom PVOs program extra food. If growth monitoring and nutrition education are components of these programs, it might be important to retain the MCH identity, and add other community feeding programs temporarily, such as FFW or emergency. It is suggested that other non-MCH feeding programs such as Food for Work and Emergency programs be used to meet higher household deficits.

4. **Systematic integration of income generating activities and community development projects.** Coordination and/or integration is needed with efforts to address the underlying causes of poverty and underdevelopment, such as improvement of literacy skills, maximizing income transfers, farm-to-market roads, grains storage, small enterprise development, decrease in female workload, etc. Income generating activities and community development projects linked to food distribution, in addition to preventing dependency and ensuring long-term sustainability of MCH services, would allow making use of food as a development resource. Income generating projects may provide an effective means to enhance sustainability and prevent potentially negative consequences of food distribution programs, e.g., generation of a welfare mentality that erodes individual initiative and self-reliance. Food may be used as an incentive for productive activities.

5. **Encouragement and provision of increased support to operational research and management information systems.** A number of technical and operational issues need to be approached through systematic operational research. These include simple and low-cost approaches and methods for built-in impact evaluation; the use of growth monitoring and management and information systems as targeting, motivational and decision-making tools; utility of ongoing problem-solving field research; participatory solution-testing; simple and rapid methods for the assessment of household food security and consumption; determinants of intrahousehold distribution and use of donated food; and development and field testing of self-targeting commodities.¹³ Also

¹³ Some PVOs, such as Save the Children, Foster Parents Plan, CRS, World Vision, CARE and Freedom from Hunger do invest significant resources in pursuing innovative research on these issues.

to be explored are feasible and cost-effective targeting strategies and practices, criteria for selection of food commodities and methods for determination of adequate ration size.

PVOS are expected to do more than estimate household deficits in their programming; they are to provide or ensure the presence of ingredients that will achieve their stated health or socioeconomic objectives, expressed in terms of impact on the targeted beneficiaries. Thus, they need to know what normally happens in newly enrolled or formerly enrolled households in the presence of supplemental food, information that is not sought in national household consumption studies. A.I.D. should provide more support for this and other problem-solving types of research.

APPENDIX 1

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APPENDIX 1

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APPENDIX 2

**SUMMARY OF PL 480 TITLE II MCH SUPPLEMENTARY FEEDING
IMPACT EVALUATIONS IN THE 1980s**

**SUMMARY OF PL 480 TITLE II MCH SUPPLEMENTARY FEEDING
IMPACT EVALUATIONS IN THE 1980s**

| <u>Country/ Program</u> | <u>Methodology</u> | <u>Findings</u> |
|--|---|--|
| Sri Lanka Triposha MCH Program | Retrospective longitudinal data were gathered from existing records kept in health clinics. Using this data, it was possible to compare nutritional status of long term participants in the program to new entrants of the same age. | <ol style="list-style-type: none"> 1. Children in each group who participated in the program were better off than those who did not. 2. Impact was due to the package of services including immunizations, weighing, parasite control. Food was an effective incentive to participation in the program. The level of impact probably would not have been reached without the food. 3. Uniformly, for all age groups, the rate of malnutrition was lowest among those with the longest participation in the program. |
| Philippines Day Care and MCH Programs | <ol style="list-style-type: none"> 1. Day Care Program: a comparison of the statistical significance of nutritional improvement between participants, a comparison of the percentage change in the nutritional status of participants and non-participants, a comparison of the rate of nutritional improvement for participants and non-participants. Longitudinal growth data were analyzed from day care centers and matched villages without centers. 2. MCH Program: secondary longitudinal growth data were used to measure absolute weight changes and changes in standard weight-for-age of program participants. | <ol style="list-style-type: none"> 1. MCH and Day Care beneficiaries appeared to have experienced considerable weight gain. 2. For the Day Care program, participants gained on the average 6.5% standard weight-for-age in a six-month period, while the non-participants improved 3%. The total total percentage of program participants who improved was higher and the percentage who declined was lower than for non-participants. 3. In a sample of 238 cases from the MCH program, 53% improved, 25% remained the same and 23% declined. Those who improved experienced substantial weight gain - 6% increase in standard weight-for-age in six months. 4. Those who entered the program in the worst condition had the greatest tendency toward improvement. |

Annex 2 (continued)

**Country/
Program**

Methodology

Findings

Morocco
Nutrition/
Education
Program

1. Secondary data were used to compare the nutritional status of program participants enrolled over a 2 year period to new entrants controlling for age and nutritional status at entry.
2. Secondary data were used to compare nutritional status of program participants receiving only food to those receiving food and education.

5. In both the MCH and the Day Care Center evaluations, the evaluators noted that weight gain by participants compares extremely favorably with the best known results achieved in other supplementary feeding programs worldwide.

1. The program resulted in a 69% reduction in moderate and severe malnutrition of program participants.

2. The addition of an education program to the feeding program significantly improved the program impact. In 1975, with food alone, 33% of children were malnourished. In 1978, with a combination of food and education, only 11% of the participants were malnourished.

Senegal
MCH Program

1. Study of changes in longitudinal growth data of program participants.
2. Comparison of mortality rates with nutritional status of participants and non-participants.

1. Program participation rates and time in program were significantly related to growth of children under 2 years of age.

2. There was not a significant difference in growth, as defined by weight-for-age, between participants and non-participants of similar age and economic status from the same villages.

3. Mortality rates in the most vulnerable age groups were consistently lower for program participants than for non-participants.

Haiti
Community
Nutrition
Program

Study of changes in longitudinal growth data of program participants by age and nutritional status at entry.

1. Of a sample of 343 children who attended the program, 82% improved their weight-for-age in a four month period. Of this group 89% were originally malnourished; 52% were seriously malnourished (second and third degree).

Appendix 2 (continued)

Country/ Program

Methodology

Findings

India/ICDS

2. In a sample of 132 children entering the program as second degree malnourished, approximately 71% improved to first degree or normal in four months. Of 49 third degree malnourished children, 69% improved to second or first degree. Although 31% did not move out of third degree in the four month period, 95% improved in weight-for-age by an average of 12 percentagepoints.

In follow-up growth surveillance, 78% of the original third degree malnourished children continued to improve during a four to ten month period. More than 25% improved to the mild malnutrition category.
 3. Of the 343 children who completed the four month program, 72% continued to come for weighing. Of these, 70% improved their weight-for-age or stayed the same.
1. Comparison of baseline and follow-up surveys in two USAID-assisted districts, with a three-year interval. Data on coverage of growth monitoring, immunization, and supplementation (food, vitamin A, iron/folic acid) were compared, as well as knowledge of ORT, and nutritional status of children. A severe drought affected some of the project areas in the interim period between measurements.
 2. Retrospective cohort design to compare children from supplemented (179) and non-supplemented (501) women at 1 month and 2-6 months of age.
1. Significant improvements in GM coverage (monthly weighings), in percent of children with growth charts, and completeness of the charts. Notable increase in coverage of children 12-72 months with vitamin A and of women with iron/folic acid supplements. Severe malnutrition declined by 37% in the drought-free areas compared to only 5% in the drought-affected areas.
 2. Adjusted mean weight at 1 month of supplemented infants was 230 g. greater. Low weight/age was 24% compared to 50% in the controls. Supplementation during last two trimesters and addition of iron/folic acid double the impact on infant weight.

Appendix 2 (continued)

| <u>Country/ Program</u> | <u>Methodology</u> | <u>Findings</u> |
|------------------------------------|--|--|
| India/Tamil Nadu | Pre-post design comparing baseline vs. final evaluation. Also comparisons of project and control blocks using staggered enrollment. Physical growth, morbidity and mortality data. | 55% reduction in severe malnutrition over 72 months in Phase I, 24% over 48 months in Phase II, and 35% over 38 months in Phase III. Percent children enrolled in supplementary feeding dropped from 40% to 25% of those weighed. Clinical signs of malnutrition reduced from 21.4% to 3.4%. |

APPENDIX 3A

**STRUCTURE OF INTERVIEWS
ON MCH SUPPLEMENTARY FEEDING PROGRAMS**

APPENDIX 3A

STRUCTURE OF INTERVIEWS ON MCH SUPPLEMENTARY FEEDING PROGRAMS

- A. The interviewed will be informed about the scope of work of the review: FVA/PPE is sponsoring a review of the role and effectiveness of MCH Supplementary Feeding Programs worldwide. The objective of the study is to draw lessons learned from programs implemented throughout the current decade and make recommendations for improved program design, performance and impact in the 1990s. An LTS team is compiling and synthesizing information about program performance from secondary sources, including program evaluations and relevant literature published in scientific journals. The team is interested in complementing the literature review with the views, experiences and opinions of a number of key field staff and experts familiar with MCH Supplementary Feeding program's design, implementation and evaluation, including A.I.D. and P.V.O. staff, as well as researchers and consultants.
- B. The interviews will focus on the following topics and questions of especial relevance to the study:
1. Under what conditions is MCH supplementary feeding a necessary intervention to address nutrition and health problems in developing countries?
 2. Based on your knowledge and experience, what nutritional, health and other effects are expected from MCH Supplementary Feeding Programs? Are current expectations realistic? What could be reasonably expected?
 3. What are the critical elements leading to MCH feeding program effectiveness? What would be the administrative and technical requirements for implementing effective programs? Critical elements might be related to program design, management, targeting strategies, food rations and content, implementation approach, other interventions (education, growth monitoring, etc.).
 4. What type of programmatic approaches have tended to be more successful? Small community-based, highly targeted, heavy use of local foods, substantial national coverage, integration into MCH or other government programs, etc.
 5. Are there serious nutritional problems (e.g. in the country you are currently working) that are or should be addressed through MCH supplementary feeding programs? Are on-going MCH feeding programs designed and effectively implemented to address nutrition and other health problems? What kind of promising innovative approaches are being or should be implemented?

APPENDIX 3A (continued)

6. What, in your opinion, have been major constraints or obstacles in the development and implementation of effective MCH supplementary feeding programs?

7. What would be the role for food aid in MCH supplementary feeding programs in developing countries? Under what conditions it would be advantageous using imported donated rather than local foods? What are the perceived advantages and disadvantages of food aid for developing countries? What is your opinion about the use of food aid as a development resource? What are the major constraints to it and how can they be overcome? What innovative approaches could be used to improve the use of food aid as a development resource? What is your experience and opinion about "monetization" schemes, its advantages and disadvantages?

8. National governments and institutions, including PVOs and other implementing agencies, have divergent views in regard to the usefulness of MCH feeding programs in development? In your opinion, are those conflicting views related to the concept of MCH feeding as such, to the issue of food aid, or both? What are major issues in this regard?

9. Looking to the future, what should be the role of MCH supplementary feeding in efforts to improve health, nutrition and the quality of life in the 1990s? What would be your recommendations for improving MCH feeding program effectiveness in the 1990s?

10. What would be the role of food aid in MCH feeding programs in the 1990s? What would be the role of Title II, PL 480? What should A.I.D. do to improve the development impact of food aid?

APPENDIX 3B

PERSONS INTERVIEWED

**APPENDIX 3B
PERSONS INTERVIEWED**

ADRA

William Disinger, Senior Advisor, Child Survival
William Jenson, Director, Commodity Supported Development

Africare

Katherine Puffenberger, Food Resource Program

Aga Khan University (Pakistan)

Jack Bryant, Chair, Community Health Science
Vincent Dewitt, Coordinator, Rural PHC
Kausar S. Khan, Sociologist, Senior Instructor
Falak Naz Rehman, Field Director, Rural PHC
Inayat Thaver, Coordinator, Nutrition

AID/W

Neen Alrutz, Nutrition Advisor, AFR
Mary Ann Anderson, Public Health Advisor, ST/H
Julie Klements, Nutrition Advisor, LAC
Tom Marchione, FFP
Pat Rader, Food for Peace Advisor, AFR
Hope Sukin, Food and Nutrition Evaluation Advisor, FFP

CARE

Michael Cottam, Director, Dominican Republic
Lizette Echols, Director, Food Assistance
Barbara Jackson, Project Director, Guatemala
Katherine McKaig, Assistant PHC Coordinator
Curt Schaeffer, Deputy, Latin American Region

CRS

M. Arora, Nutritionist, New Delhi District, India
Helen Bratcher, Nutrition Advisor
Donna Fabiani, Small Enterprise, Latin America
Michael Frank, Data Management and Analysis
David Holdridge, Coordinator, Africa Region
Susana Larrea, Child Survival Director, Ecuador
Rajalakshmi Ramakrishnan Nair, Nutritionist, Bombay District, India
Don Rogers, Policy and Program Office
Peter Shiras, Director, CRS/Nairobi, Kenya
Lennie Vargas, Regional Advisor, Latin America

Appendix 3B (continued)

Foster Parents Plan International

Victor Lara, Director, Child Survival

National Academy of Sciences

**Polly Harrison, Director, International Health, National Institute of Medicine
(former food aid consultant)**

Planning Assistance

Joe Coblenz, Food Advisor, INCAP/ROCAP

Project Hope

Bettina Schwetlhelm, Advisor, Child Survival

Save the Children

**Gretchen Berggren, Head, Child Survival
Warren Berggren, Director, PHC Program
Juana M. Mendez, Training, Child Survival**

SIDA

Ted Greiner, Nutrition Advisor, SIDA

UNICEF

**David Alnwick, Nutrition and Health Program Officer, Nairobi, Kenya
Peter Greaves, Nutrition Advisor
Francesca Monetti, JNSP Coordinator**

USAID

**James Beebe, Program Officer, Liberia and Sierra Leone
Felipe Biamby, FFP, Port-au-Prince, Haiti
David Eckerson, HPN Officer, Port-au-Prince, Haiti
Paul Ehmer, HPN Officer, Lome, Togo
Heather Goldman, Health and Nutrition Advisor, Islamabad, Pakistan
Peter Goussens, FFP, Port-au-Prince, Haiti
Lee Hougan, HDO, Santo Domingo, Dominican Republic
Dale Humphrey, FFP, Guatemala
Maurice Kernisas, FFP, Port-au-Prince, Haiti
Lowell Lynch, FFP, REDSO/ECA, Nairobi, Kenya
Genette Merentie, FFP, Port-au-Prince, Haiti
David Nelson, Nutrition/Health Advisor, Quito, Ecuador
Tom Ray, FFP, Nairobi, Kenya**

WFP

J. M. Boucher, Chief, EPR
M. Gnocchi, Regional Manager, ODL
H. Gotzmann, Senior Evaluation Officer
R. C. Gupta, Acting Regional Manager, ODP
P. Lunven, Director, ESN
Y. Mengesha, Officer-in-Charge, ODE
J-P Nastorg, Chief, EPE
O. Owusu, Policy Analyst, EPR
D. J. Shaw, Economic Adviser, EPD
Ben Slimane, Regional Manager, ODW

World Vision

David Beltz, Food Aid Coordinator

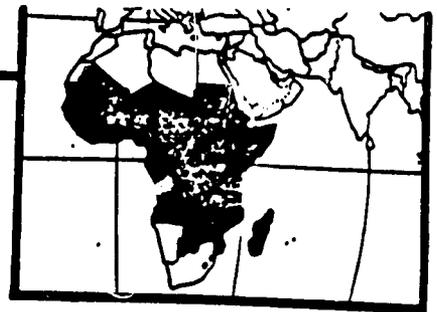
International Nutrition Experts

Rema Balasundaram, Nutritionist, formerly of ICDS
Naomi Baumslag, Nutrition Expert, Women's International Public Health Network
James Becht, Consultant (formerly Freedom From Hunger)
Serigne MBaye Diene, Nutrition Consultant and Ph.D. candidate (former Director of Nutrition, Senegal)
Hussein Ghassemi, Nutrition/Food Aid Consultant
Shanti Ghosh, Nutrition Advisor
Tara Gopaldas, Nutrition Advisor
William Hagleman, Consultant for CRS
Maarten Immink, Researcher, IFPRI
Mushtaq Khan, Director, Nutrition Planning Commission, Pakistan
Betty Mlingi, Nutrition Consultant, Tanzania
John Mudusu, Director of Nutrition, Uganda
Tina Sanghvi, Nutrition Consultant
Betsy Stephens, Public Health Consultant, ISTI
Joe Wray, Public Health Nutrition Expert, Columbia University
Alfred Zerfas, Nutrition Expert, International Nutrition Unit, LTS

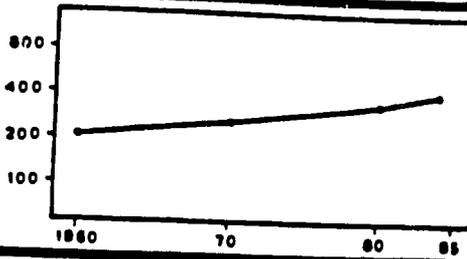
APPENDIX 4

MAGNITUDE OF THE NUTRITION PROBLEM IN DEVELOPING COUNTRIES

Panel 1 Sub-Saharan Africa

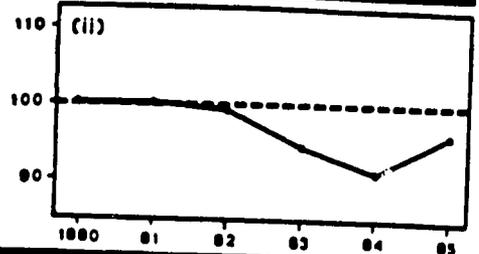
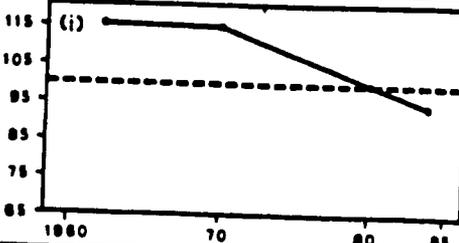


A. Total population (millions - log scale)



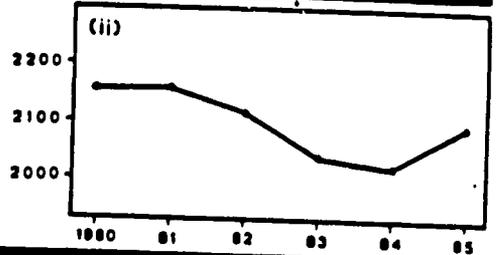
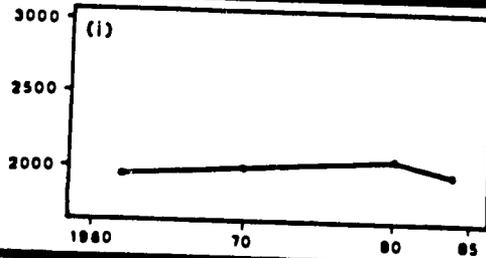
B. Index numbers of per caput food production (1979/81 = 100)

- i. 1960-85 (3-year averages)
- ii. 1980-85 (annual)



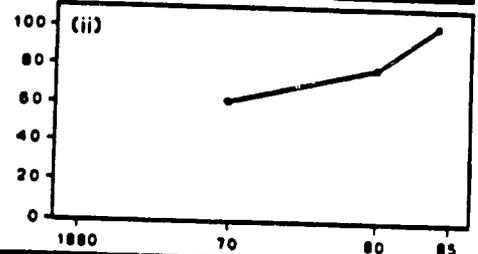
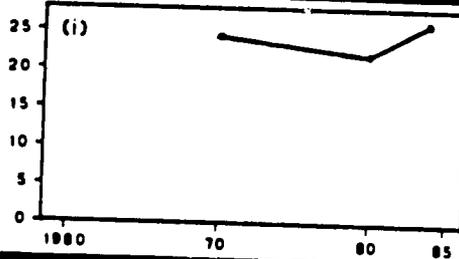
C. Dietary energy supply (Kcals/caput/day)

- i. 1960-85 (3-year averages)
- ii. 1980-85 (annual)



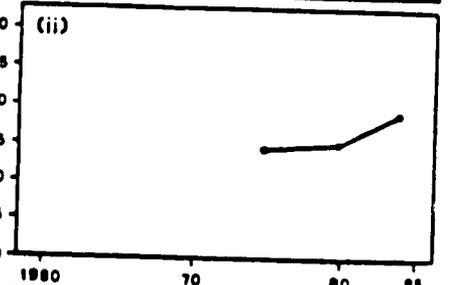
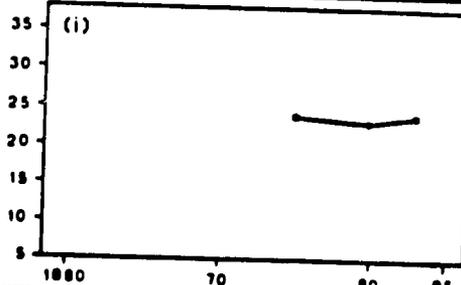
D. Undernourished population (DES < 1.2 BMR)

- i. percent
- ii. numbers (millions)



E. Underweight children (< 2 SD weight-for-age)

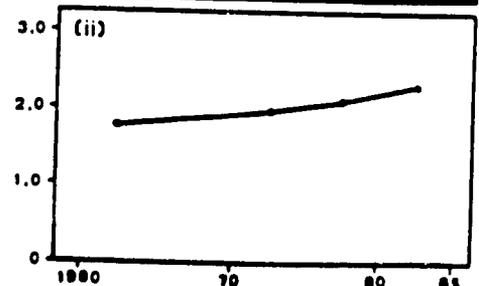
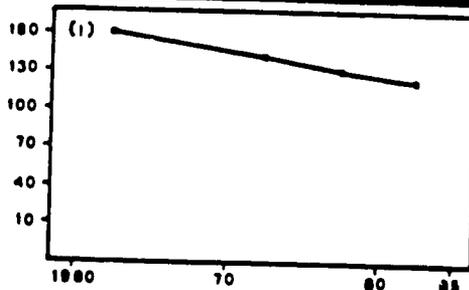
- i. percent
- ii. numbers (millions)



F. Infant mortality*

- i. Number of deaths/1000 live births
- ii. Number of deaths/year (millions)

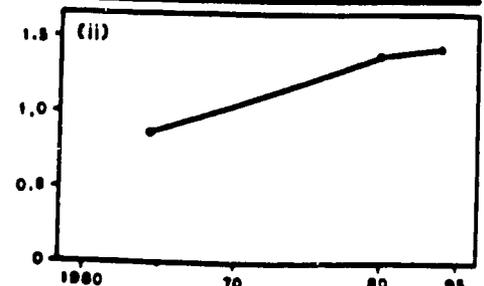
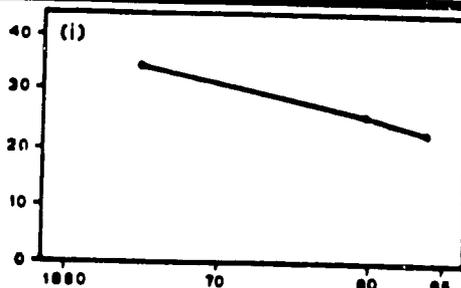
* Infants 0-12 months



G. Child deaths*

- i. Number of deaths/1000 children/year
- ii. Number of deaths/year (millions)

* Children 12-60 months

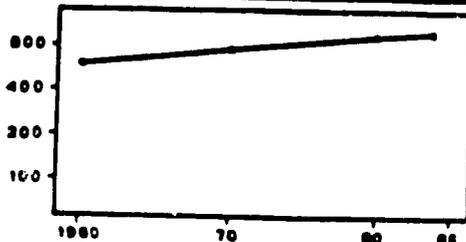


Source: United Nations, ACC/SCN, 1987.

Panel 2 South Asia

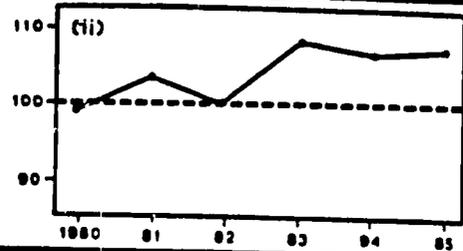
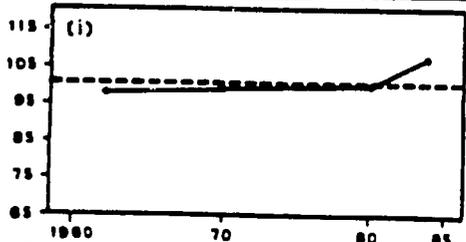


A. Total population (millions - log scale)



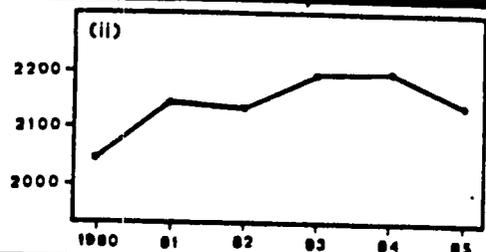
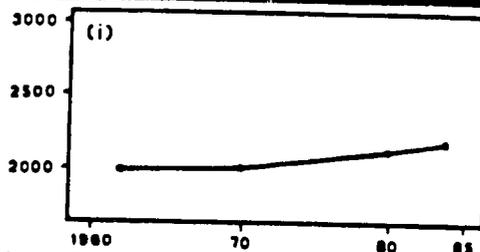
B. Index numbers of per caput food production (1979/81 = 100)

- i. 1960-85 (3-year averages)
- ii. 1980-85 (annual)



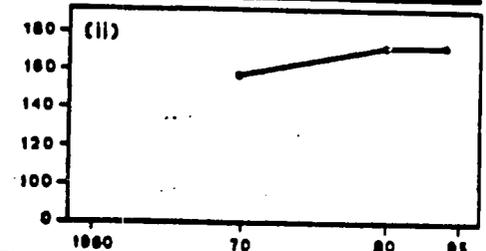
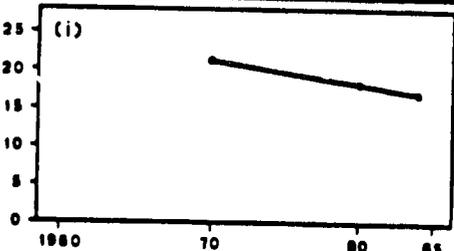
C. Dietary energy supply (Kcals/caput/day)

- i. 1960-85 (3-year averages)
- ii. 1980-85 (annual)



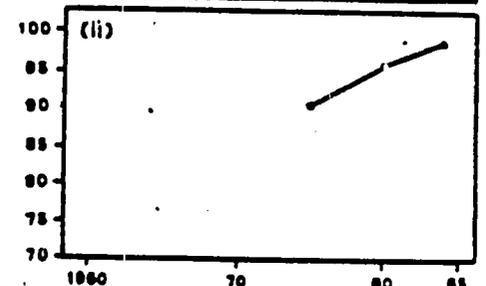
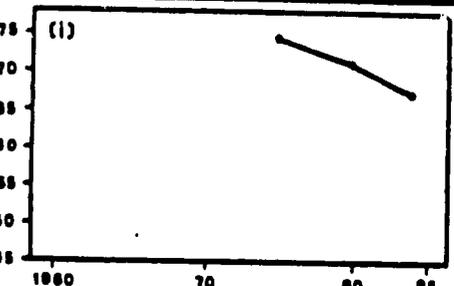
D. Undernourished population (DES < 1.2 BMR)

- i. percent
- ii. numbers (millions)



E. Underweight children (< 2 SD weight-for-age)

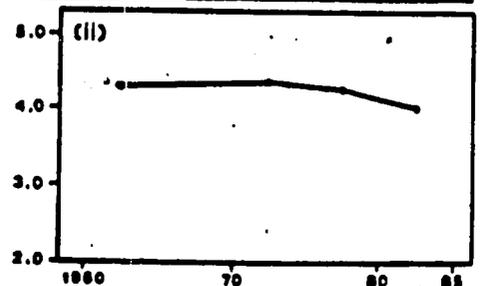
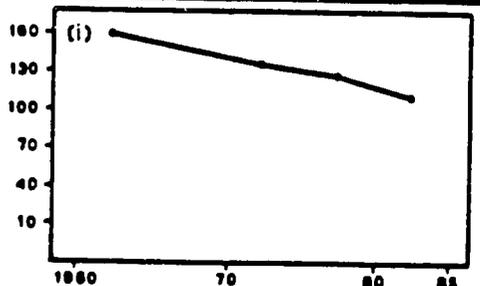
- i. percent
- ii. numbers (millions)



F. Infant mortality*

- i. Number of deaths/1000 live births
- ii. Number of deaths/year (millions)

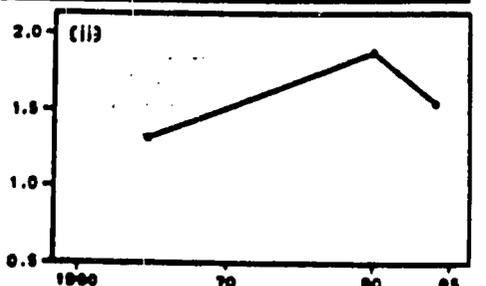
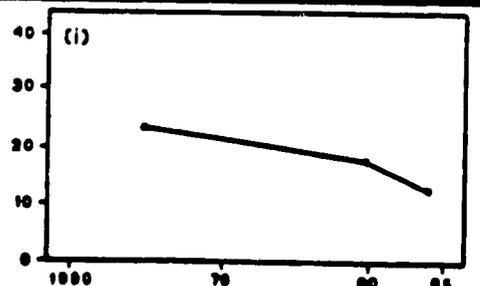
* Infants 0-12 months



G. Child deaths*

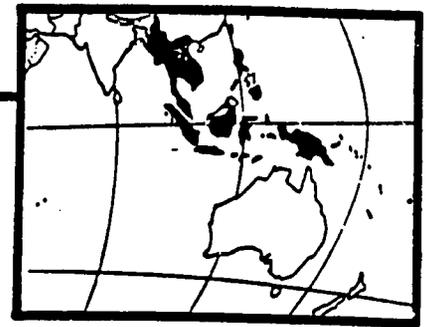
- i. Number of deaths/1000 children/year
- ii. Number of deaths/year (millions)

* Children 12-60 months

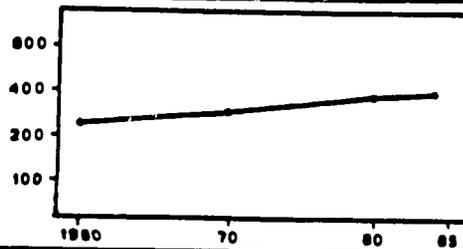


Vertical axes on shaded graphs are different from those in other country groupings. (Source): United Nations, ACC/SCN, 1987).

Panel 3 Southeast Asia

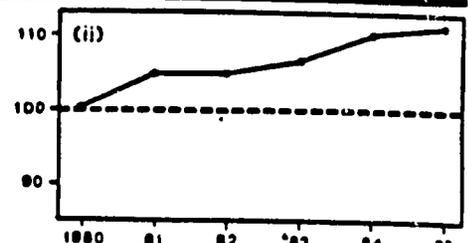
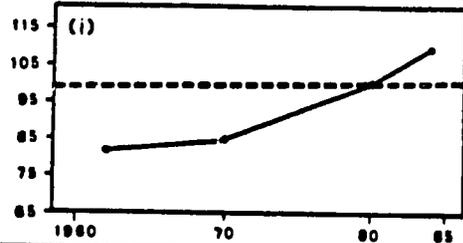


A. Total population
(millions - log scale)



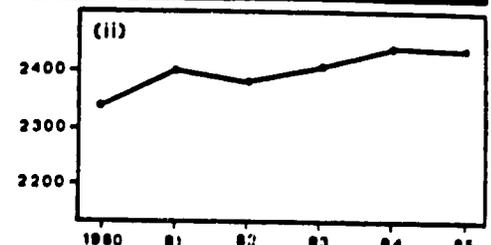
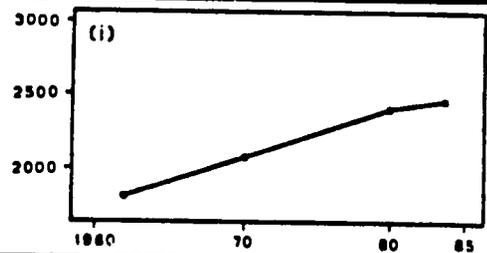
B. Index numbers of per caput food production
(1979/81 = 100)

- i. 1960-85 (3-year averages)
- ii. 1980-85 (annual)



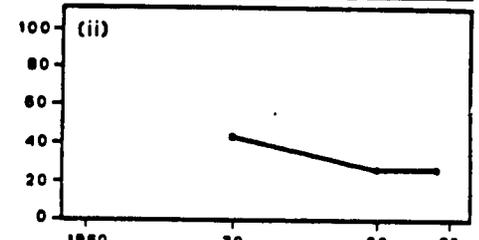
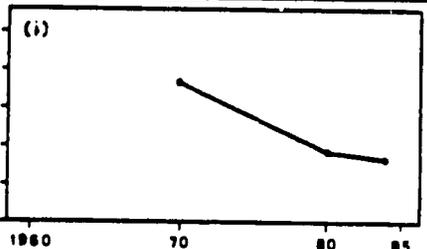
C. Dietary energy supply
(Kcal/caput/day)

- i. 1960-85 (3-year averages)
- ii. 1980-85 (annual)



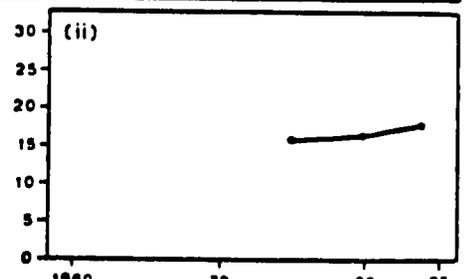
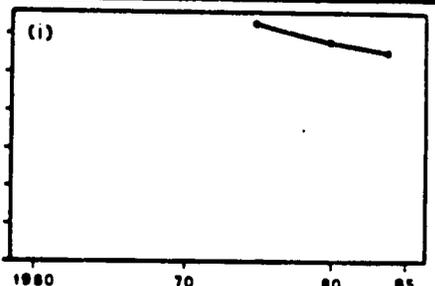
D. Undernourished population
(DES < 1.2 BMR)

- i. percent
- ii. numbers (millions)



E. Underweight children
(<2 SD weight-for-age)

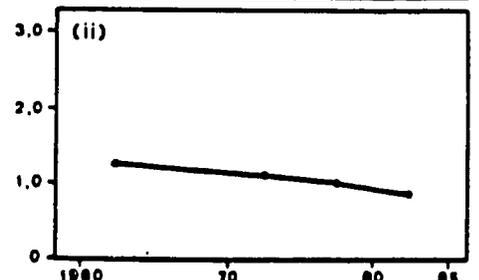
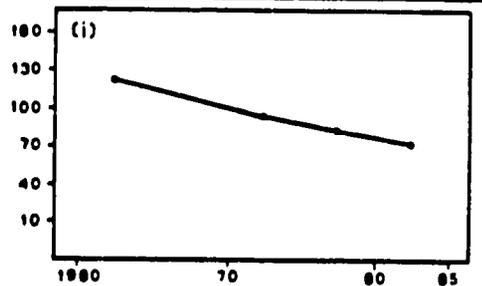
- i. percent
- ii. numbers (millions)



F. Infant mortality*

- i. Number of deaths/1000 live births
- ii. Number of deaths/year (millions)

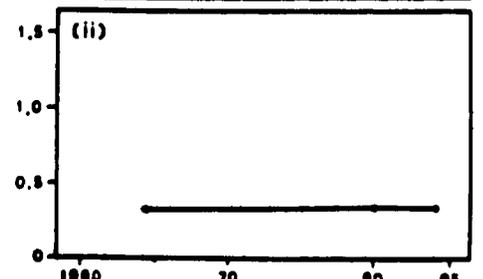
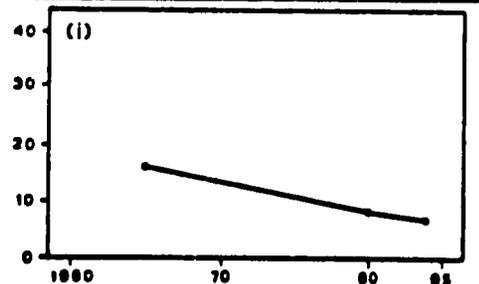
* Infants 0-12 months



G. Child deaths*

- i. Number of deaths/1000 children/year
- ii. Number of deaths/year (millions)

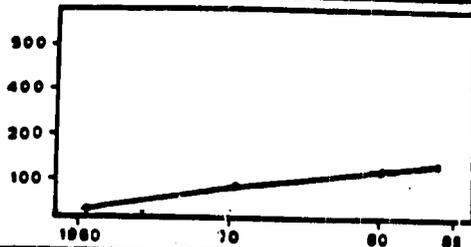
* Children 12-60 months



Panel 4 Middle America/Caribbean

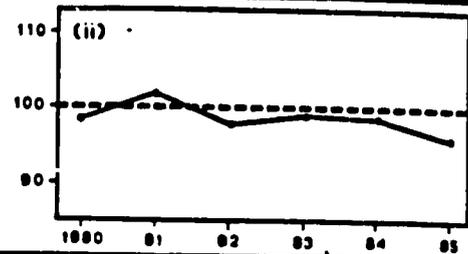
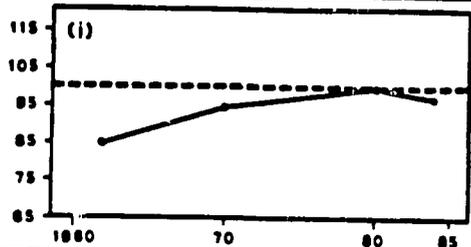


A. Total population (millions - log scale)



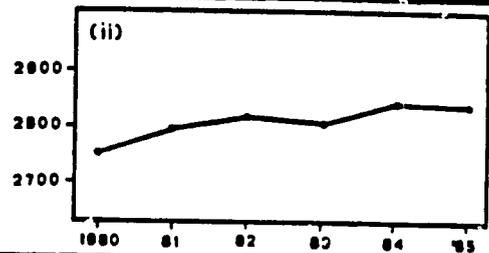
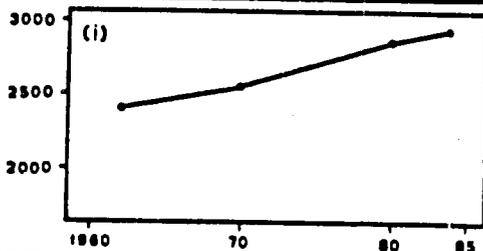
B. Index numbers of per caput food production (1979/81 = 100)

- i. 1960-85 (3-year averages)
- ii. 1980-85 (annual)



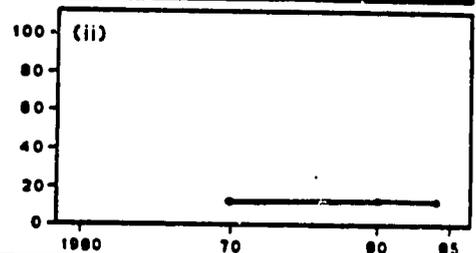
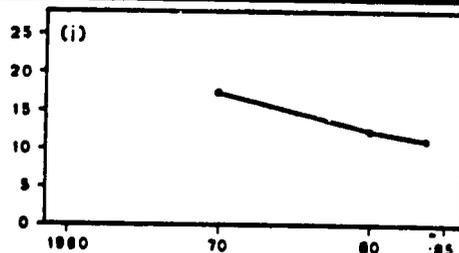
C. Dietary energy supply (Kcal/caput/day)

- i. 1960-85 (3-year averages)
- ii. 1980-85 (annual)



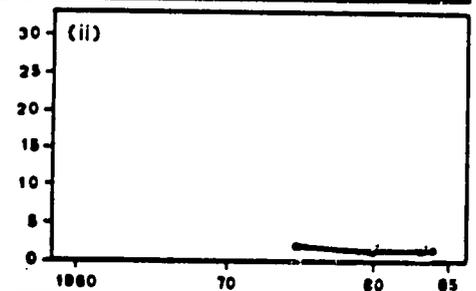
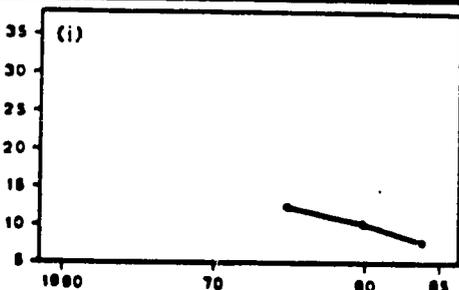
D. Undernourished population (DES < 1.2 BMR)

- i. percent
- ii. numbers (millions)



E. Underweight children (<2 SD weight-for-age)

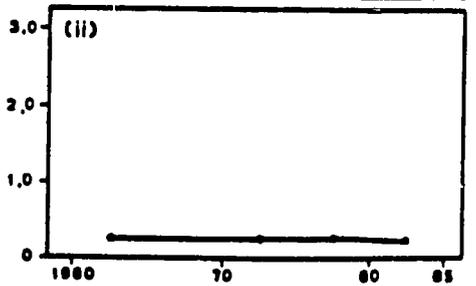
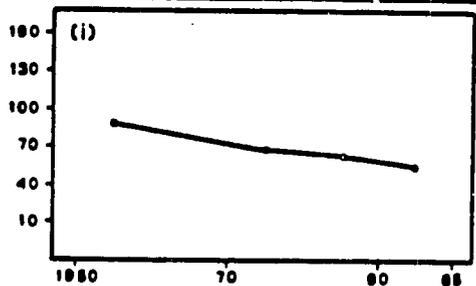
- i. percent
- ii. numbers (millions)



F. Infant mortality*

- i. Number of deaths/1000 live births
- ii. Number of deaths/year (millions)

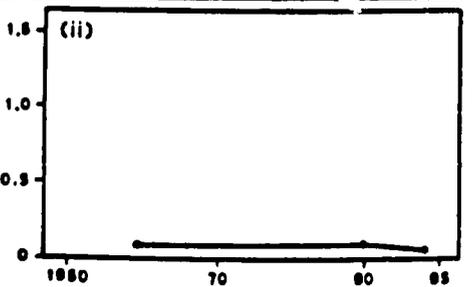
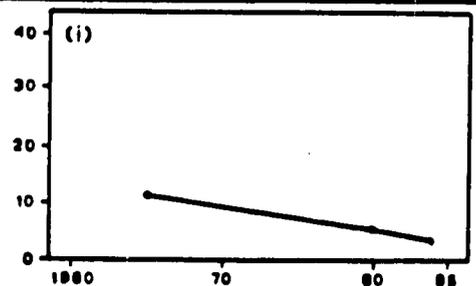
* Infants 0-12 months



G. Child deaths*

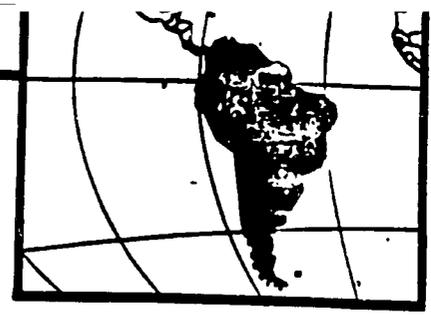
- i. Number of deaths/1000 children/year
- ii. Number of deaths/year (millions)

* Children 12-60 months

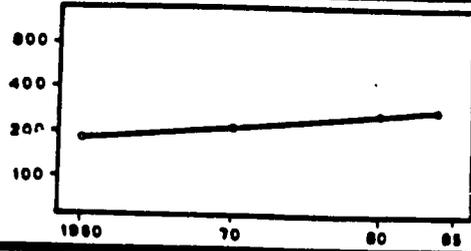


(Source: United Nations, ACC/SCN, 1987)

Panel 5 South America

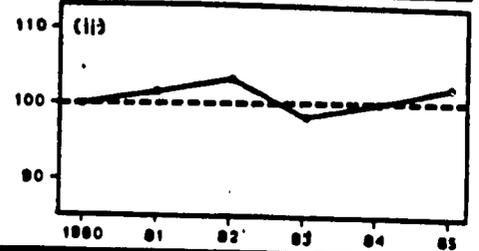
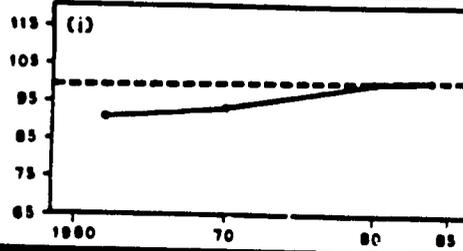


A. Total population (millions - log scale)



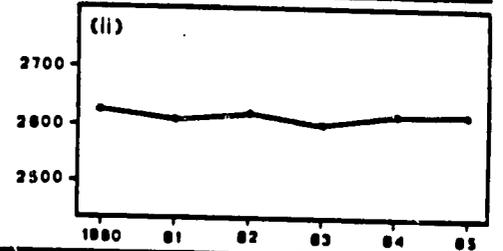
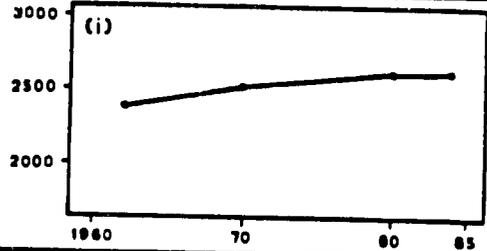
B. Index numbers of per caput food production (1979/81 = 100)

- i. 1960-85 (3-year averages)
- ii. 1980-85 (annual)



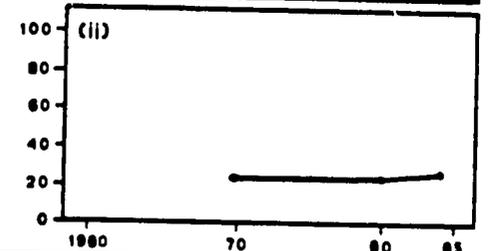
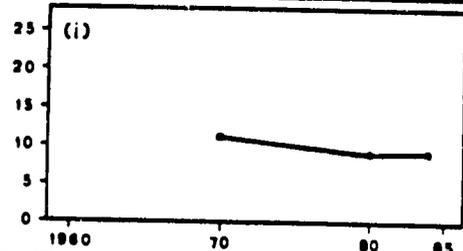
C. Dietary energy supply (Kcals/caput/day)

- i. 1960-85 (3-year averages)
- ii. 1980-85 (annual)



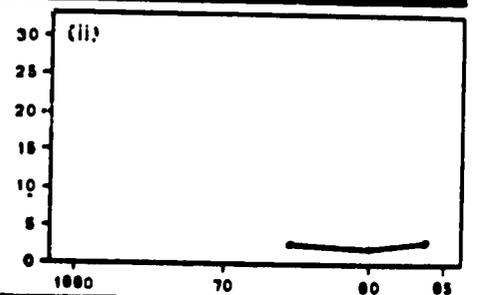
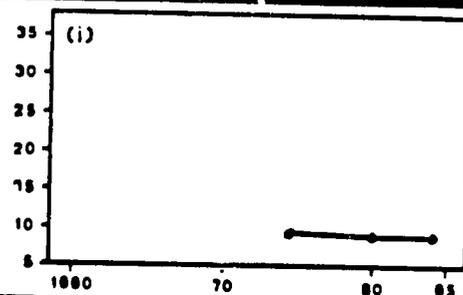
D. Undernourished population (DES < 1.2 BMR)

- i. percent
- ii. numbers (millions)



E. Underweight children (< 2 SD weight-for-age)

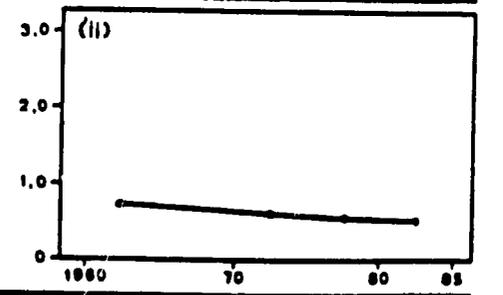
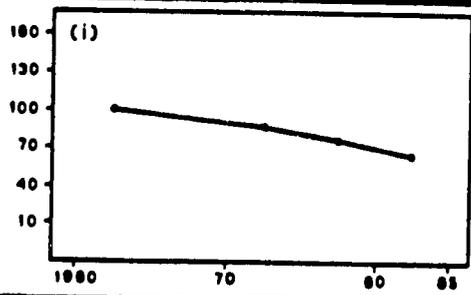
- i. percent
- ii. numbers (millions)



F. Infant mortality*

- i. Number of deaths/1000 live births
- ii. Number of deaths/year (millions)

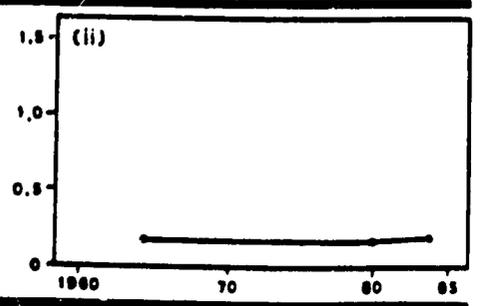
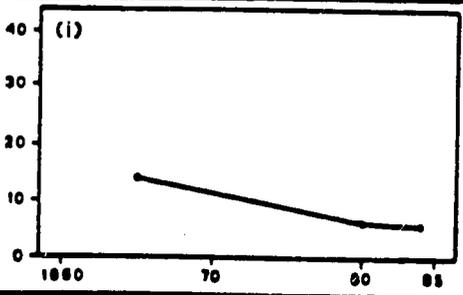
* Infants 0-12 months



G. Child deaths*

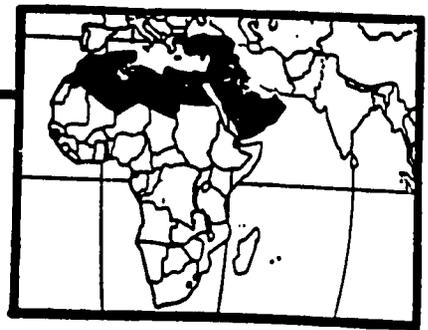
- i. Number of deaths/1000 children/year
- ii. Number of deaths/year (millions)

* Children 12-60 months

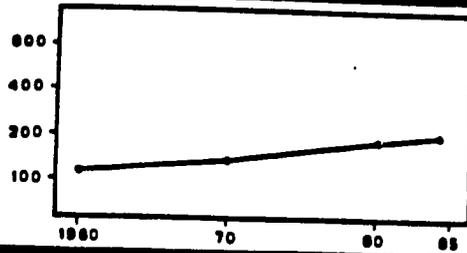


(Source: United Nations, ACC/SCN, 1987)

Panel 6 Near East/North Africa

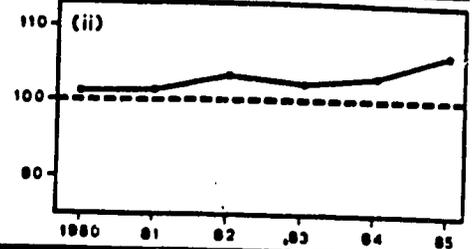
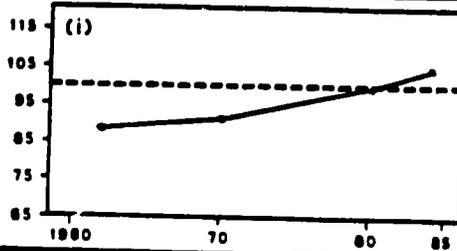


A. Total population (millions - log scale)



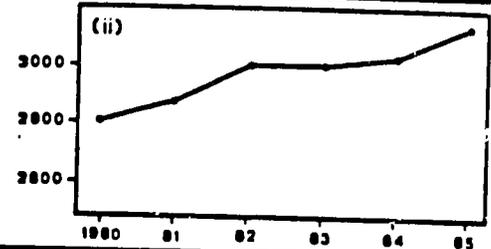
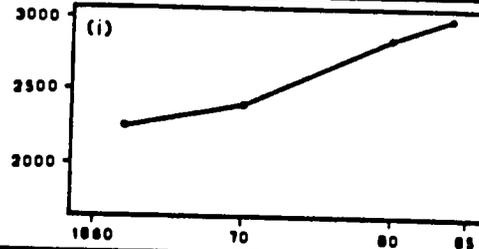
B. Index numbers of per caput food production (1979/81 = 100)

- i. 1960-85 (3-year averages)
- ii. 1980-85 (annual)



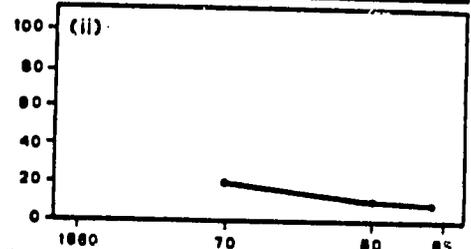
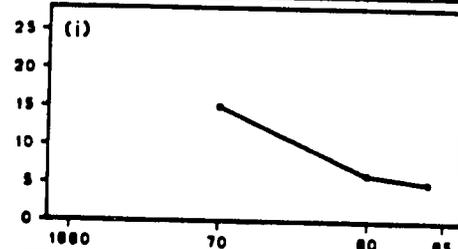
C. Dietary energy supply (Kcal/cap/day)

- i. 1960-85 (3-year averages)
- ii. 1980-85 (annual)



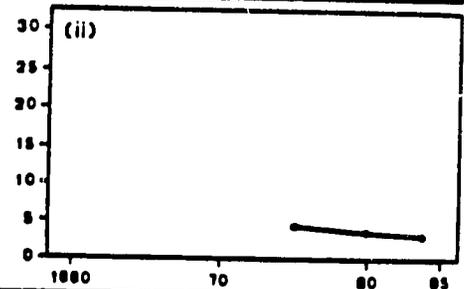
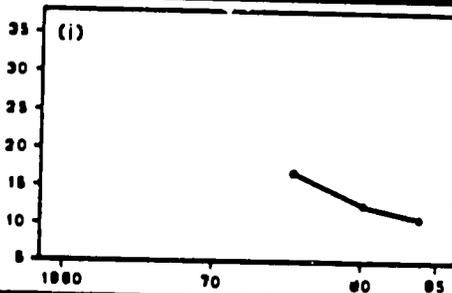
D. Undernourished population (DES < 1.2 BMR)

- i. percent
- ii. numbers (millions)



E. Underweight children (< 2 SD weight-for-age)

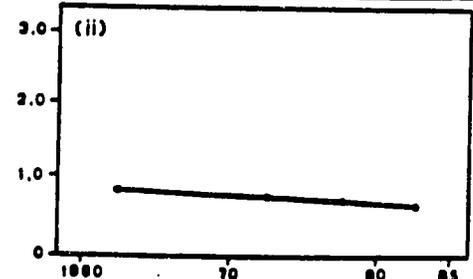
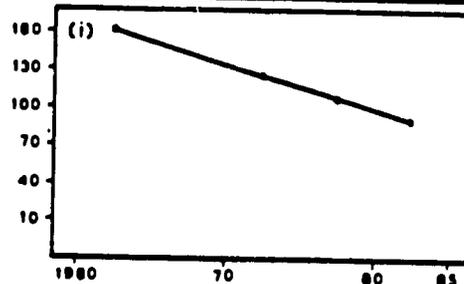
- i. percent
- ii. numbers (millions)



F. Infant mortality*

- i. Number of deaths/1000 live births
- ii. Number of deaths/year (millions)

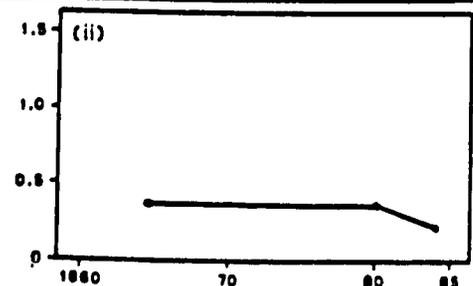
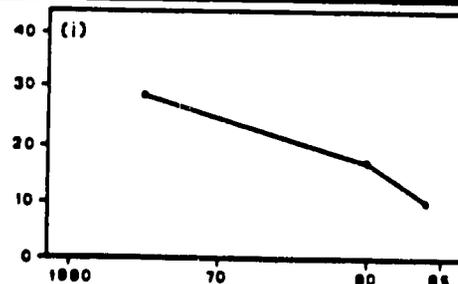
* Infants 0-12 months



G. Child deaths*

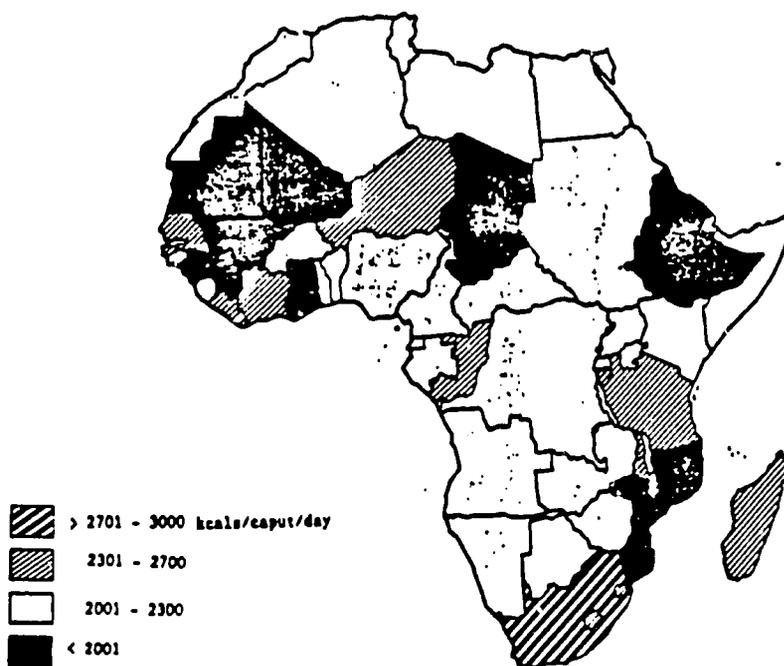
- i. Number of deaths/1000 children/year
- ii. Number of deaths/year (millions)

* Children 12-60 months



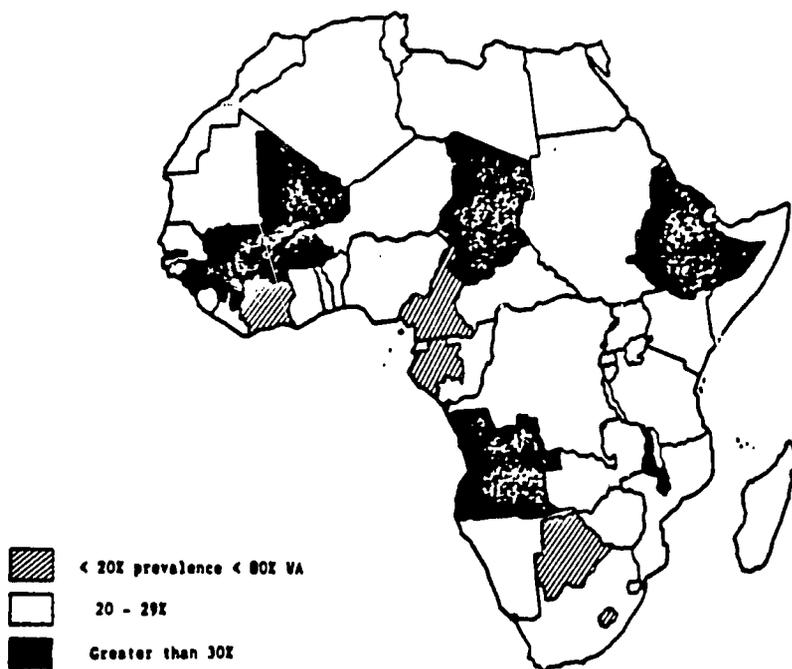
(Source: United Nations, ACC/SCN, 1987)

FIGURE 4.1 Food Availability (Kcals/caput/day) in Subsaharan Africa, 1979/81.



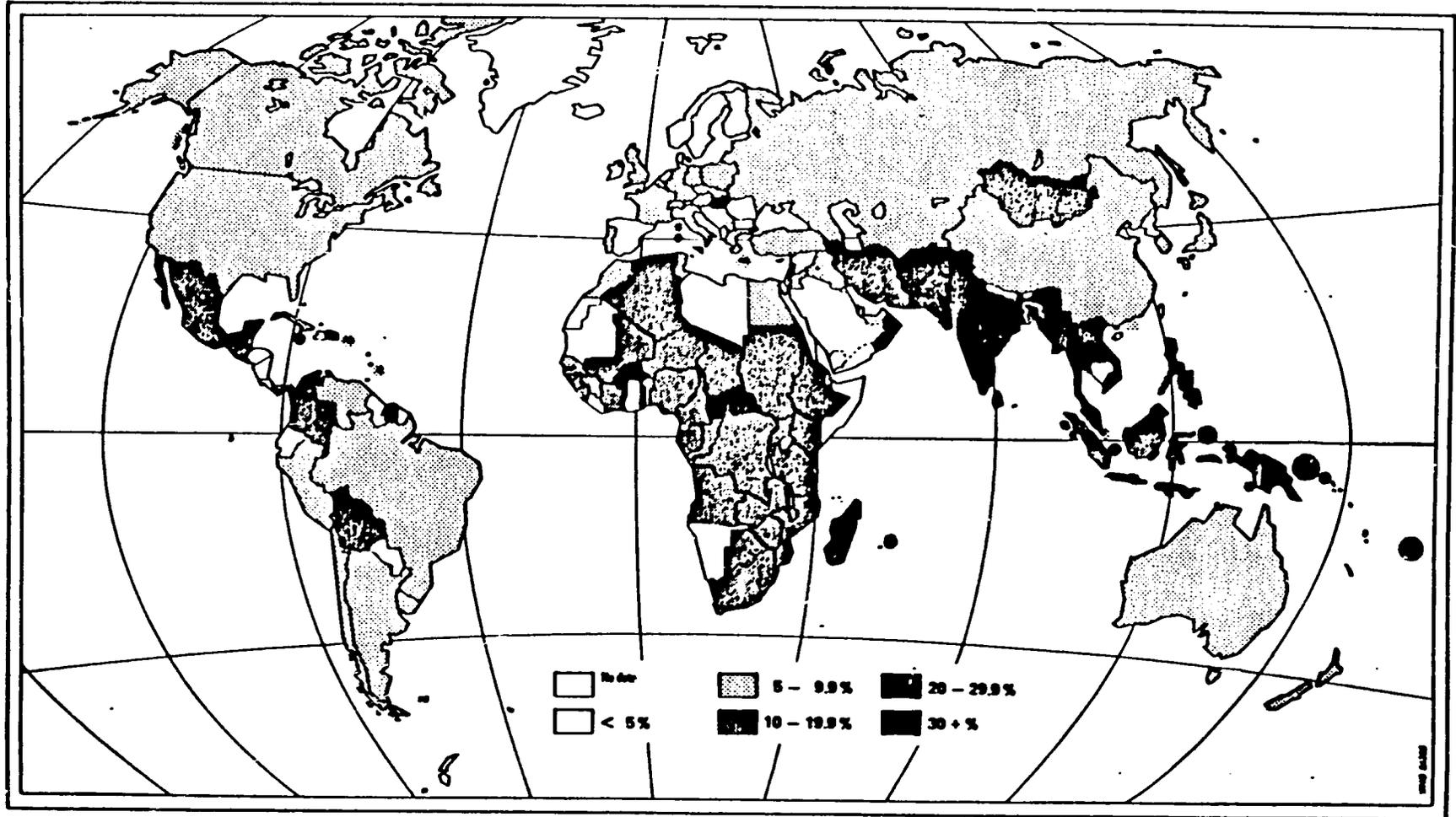
(Source: FAO, 1985)

FIGURE 4.2 Estimated Prevalences of Underweight Children in Subsaharan Africa, (1980). (Based on weight-for-age, WA).

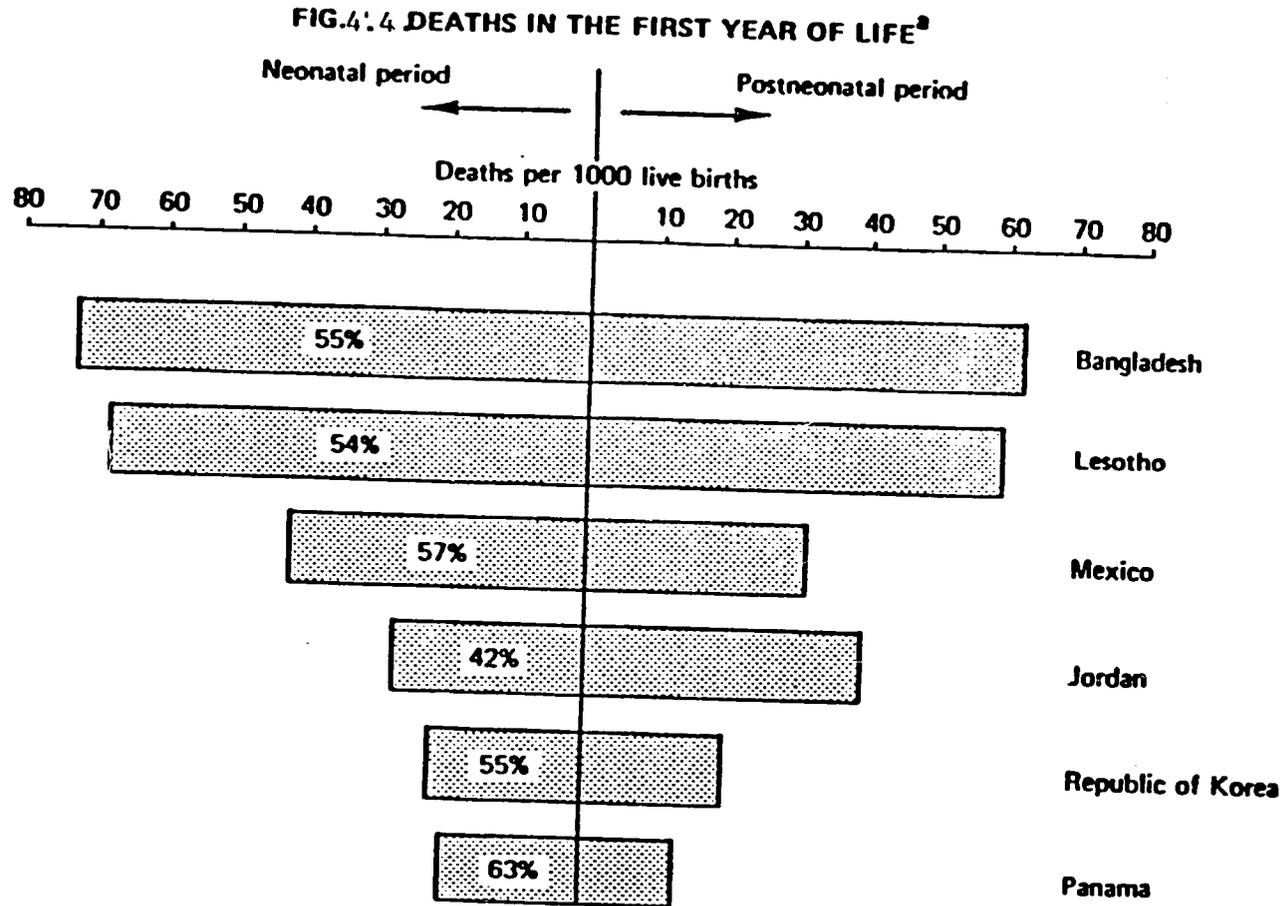


(Source: UNICEF, 1985)

FIGURE 4.3. Incidence of Low Birthweight by Country, 1982



(Source: WHO, 1984)



^a The figures represent the percentage of all infant deaths that occur in the neonatal period, i.e., the first month of life.
 Source : Rutstein, S.O. Infant and child mortality : levels, trends and differentials. Voorburg, International Statistical Institute, 1983 (World Fertility Survey Comparative Studies, No. 24)

APPENDIX 5

TRENDS IN PL 480 TITLE II MCH SUPPLEMENTARY FEEDING PROGRAMS

(Source: A.I.D./FVA)

Table 5.1

BENEFICIARY TRENDS
IN PL 480 SUPPLEMENTARY COMMODITY ALLOCATION
MCH BENEFICIARIES VS. TOTAL FOOD FOR DEVELOPMENT BENEFICIARIES
FOR AFRICA, LATIN AMERICA AND ASIA/NEAR EAST, (Volag. Only), 1976-89

| | <u>BENEFICIARIES</u> (000) | | <u>MCH BENEFICIARIES</u> X 100 |
|---------|-------------------------------|------------|---------------------------------|
| | <u>TOTAL</u> | <u>MCH</u> | <u>TOTAL BENEFICIARIES</u> % |
| 1976 | 25,876 | 8,641 | 33.4 |
| 1977 | 39,334 | 11,398 | 29.0 |
| 1978 | 40,133 | 12,633 | 31.5 |
| 1979 | 38,259 | 11,632 | 30.4 |
| 1980 | 39,242 | 12,312 | 31.4 |
| 1981 | 39,380 | 12,294 | 31.2 |
| 1982 | 37,616 | 11,984 | 31.9 |
| 1983 | 35,264 | 11,626 | 33.0 |
| 1984 | 25,289 | 9,301 | 36.8 |
| 1985 | 27,865 | 10,818 | 38.8 |
| 1986 | 25,996 | 10,629 | 40.9 |
| 1987 | 28,872 | 12,419 | 43.0 |
| 1988 | 24,278 | 10,735 | 44.2 |
| 1989 | 25,729 | 11,632 | 45.2 |
| 1976/78 | 35,108 | 10,891 | 31.0 |
| 1984/86 | 26,383 | 10,249 | 38.8 |
| 1987/89 | 26,293 | 11,595 | 44.1 |
| 1976/86 | 34,021 | 11,206 | 32.9 |
| 1976/89 | 32,365 | 11,290 | 34.9 |

FIGURE 5.1

BENEFICIARY TRENDS
IN PL 480 SUPPLEMENTARY COMMODITY ALLOCATION
MCH BENEFICIARIES VS. TOTAL FOOD FOR DEVELOPMENT BENEFICIARIES
FOR AFRICA, LATIN AMERICA AND ASIA/NEAR EAST, (Volag. Only), 1976-89

BENEFICIARIES
(000)

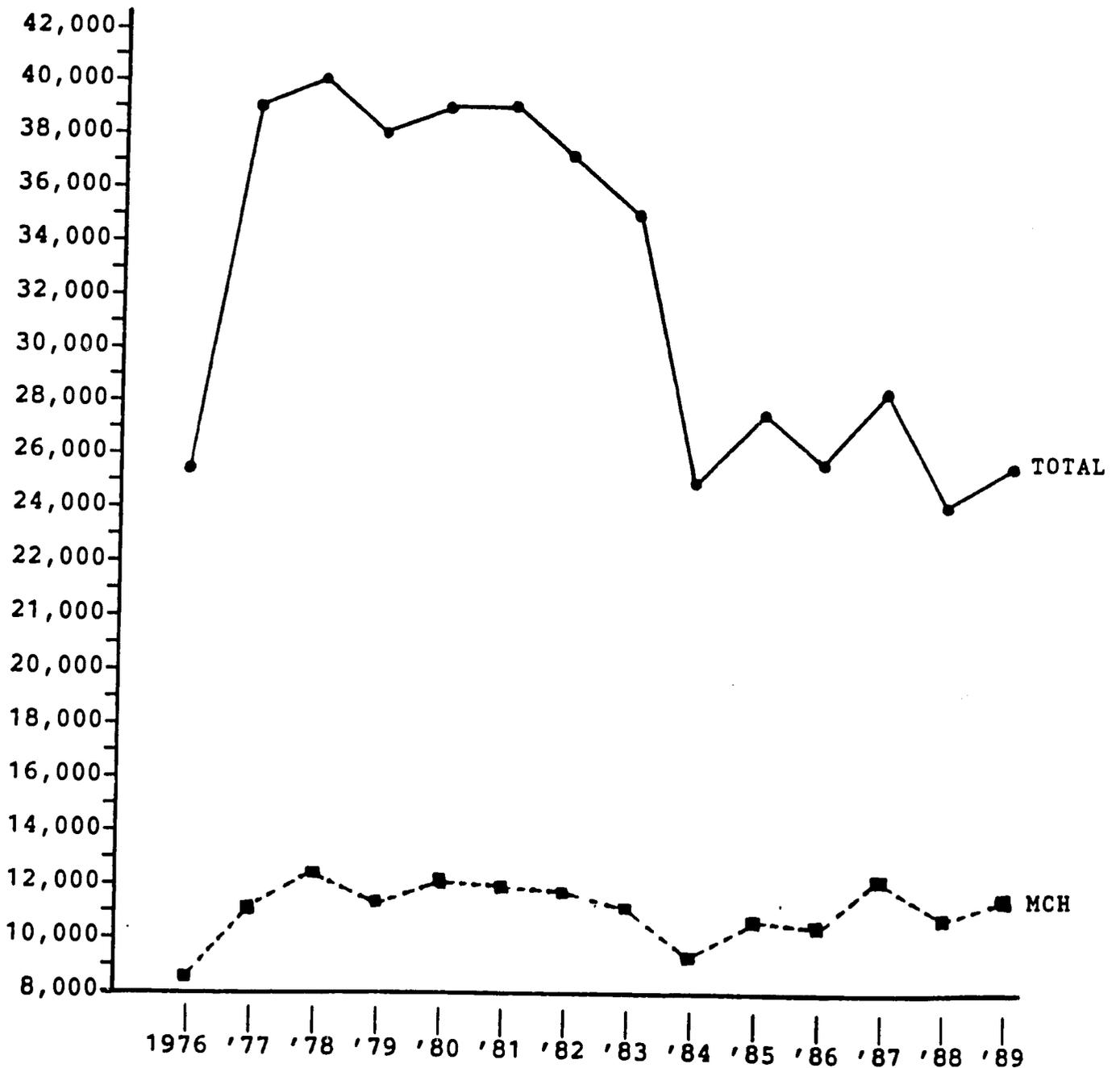


FIGURE 5.2

BENEFICIARY TRENDS
IN PL 480 SUPPLEMENTARY COMMODITY ALLOCATION
PROPORTION OF MCH VS. TOTAL FOOD FOR DEVELOPMENT BENEFICIARIES
FOR AFRICA, LATIN AMERICA AND ASIA/NEAR EAST, (Volag. Only), 1976-89

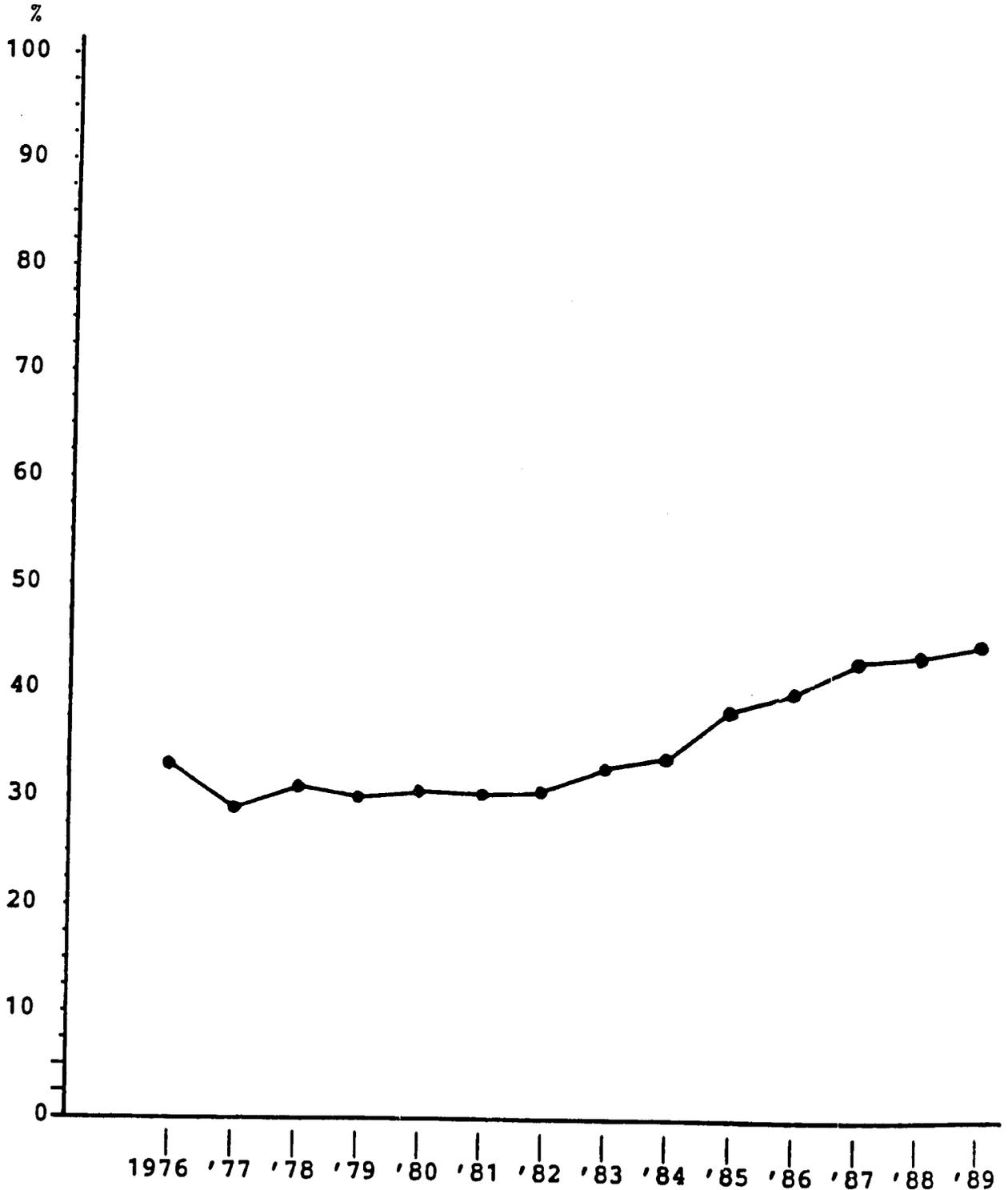


FIGURE 5.3

**BENEFICIARY TRENDS
IN PL 480 SUPPLEMENTARY COMMODITY ALLOCATION
MCH BENEFICIARIES VS. TOTAL BENEFICIARIES
FOR AFRICA, LATIN AMERICA AND ASIA/NEAR EAST, 1983 - 1989**

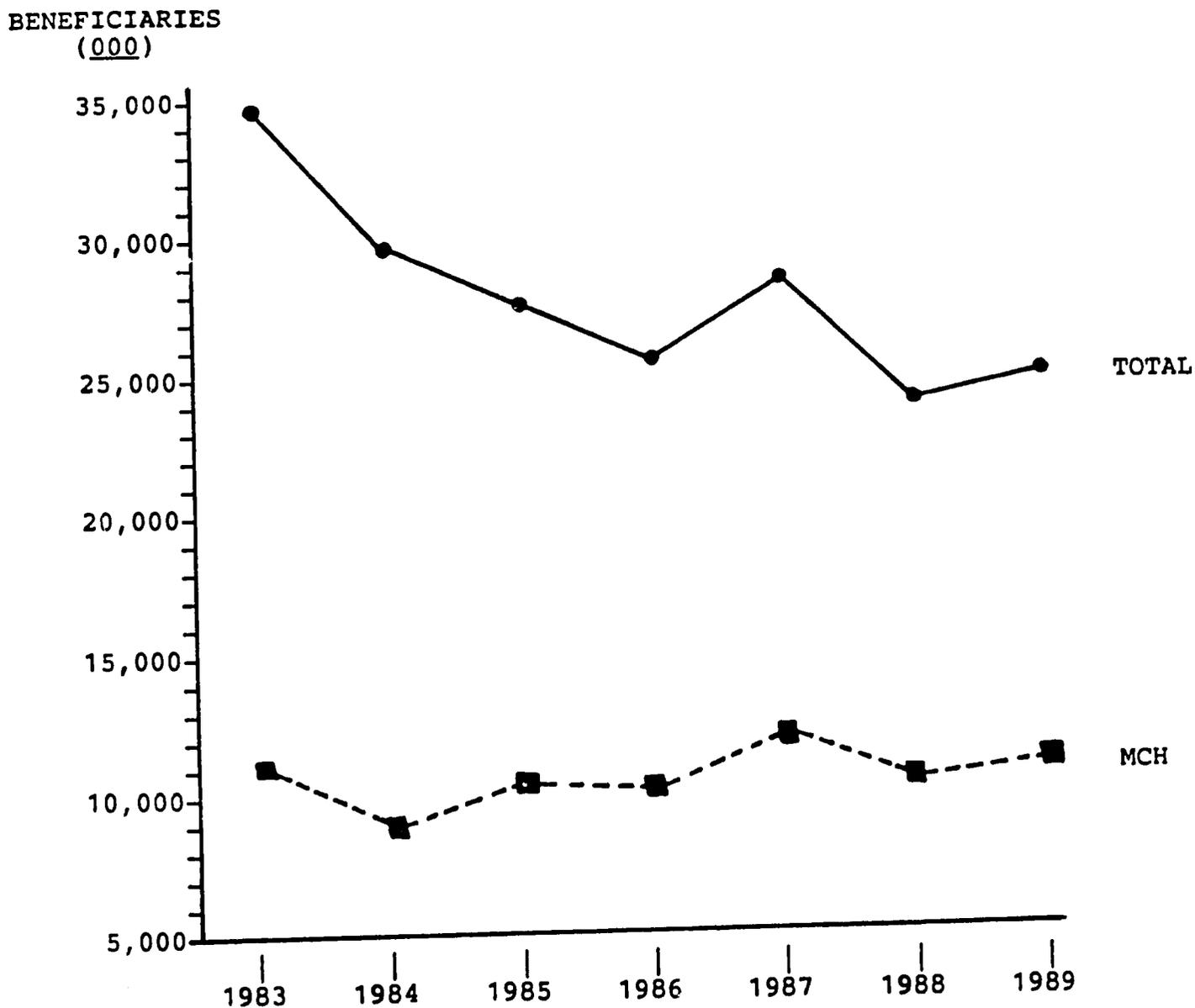


FIGURE 5.4

BENEFICIARY TRENDS
IN PL 480 SUPPLEMENTARY COMMODITY ALLOCATION
PROPORTION OF MCH TO TOTAL BENEFICIARIES
FOR AFRICA, LATIN AMERICA AND ASIA/NEAR EAST, 1983 - 1989

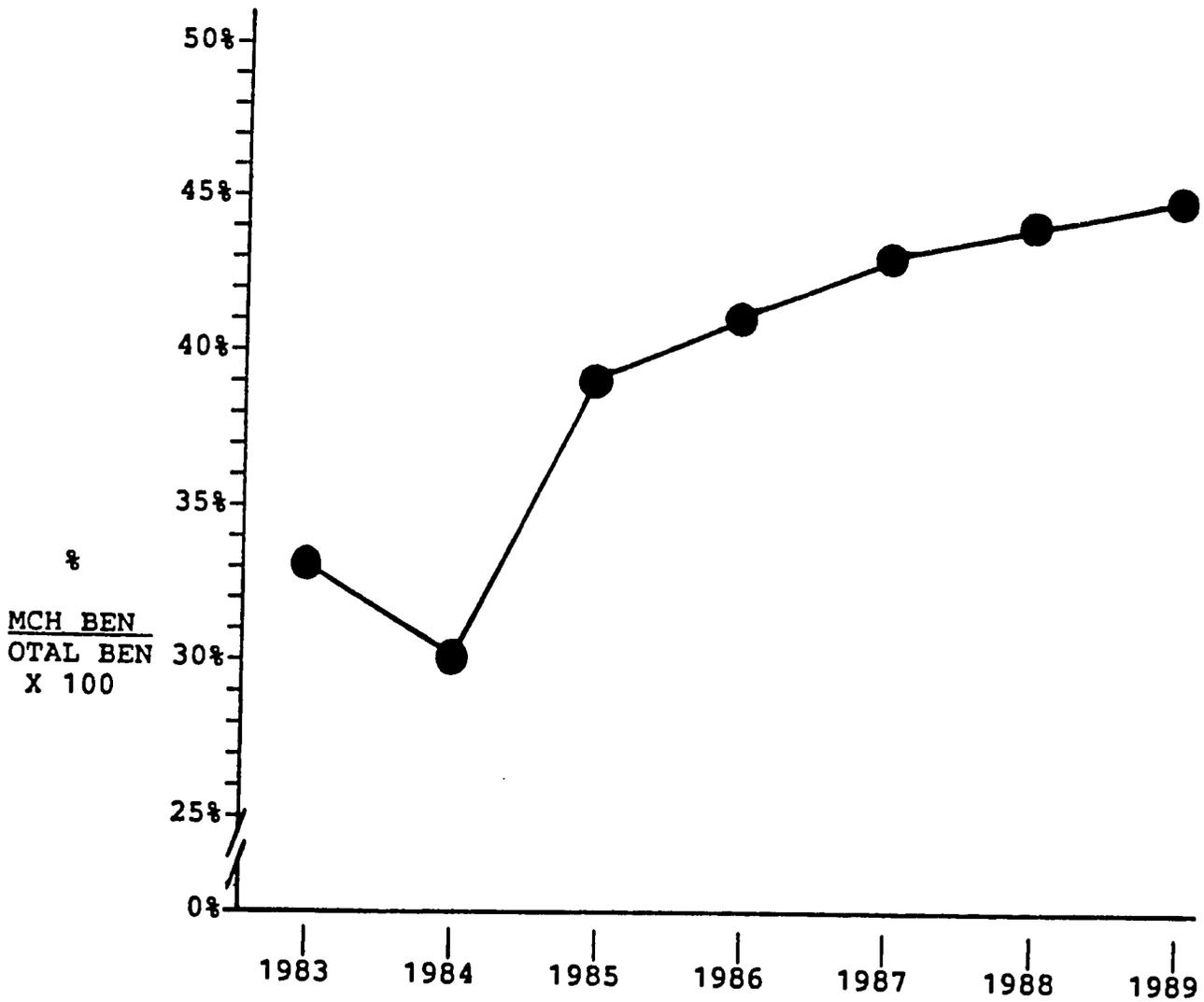


FIGURE 5.5

**BENEFICIARY TRENDS
IN PL 480 SUPPLEMENTARY COMMODITY ALLOCATION
TOTAL BENEFICIARIES VS. MCH BENEFICIARIES
ASIA/NEAR EAST, 1983 - 1989**

BENEFICIARIES
(000)

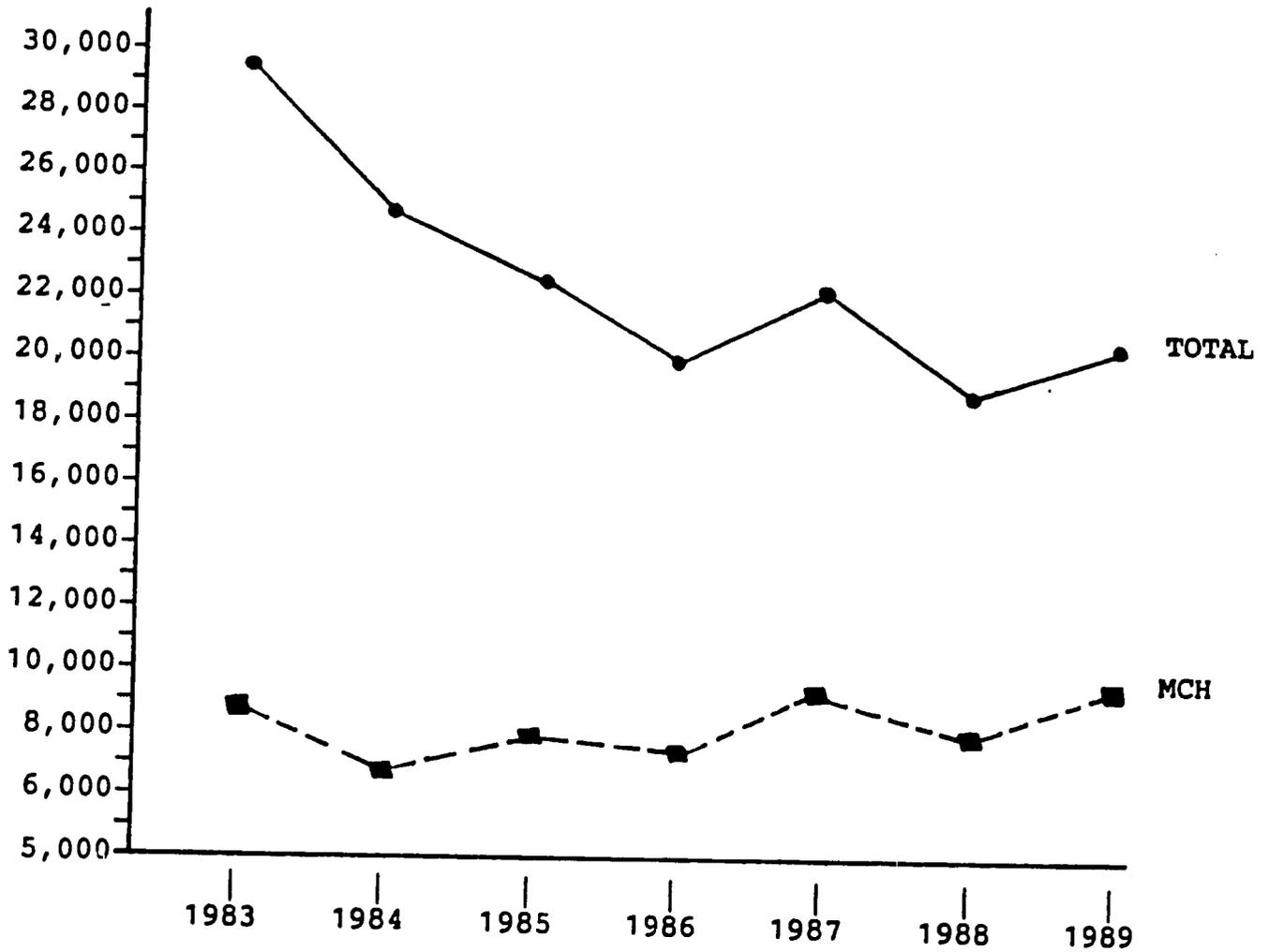


FIGURE 5.6

**BENEFICIARY TRENDS
IN PL 480 SUPPLEMENTARY COMMODITY ALLOCATION
TOTAL BENEFICIARIES VS. MCH BENEFICIARIES
LATIN AMERICA, 1983 - 1989**

BENEFICIARIES
(000)

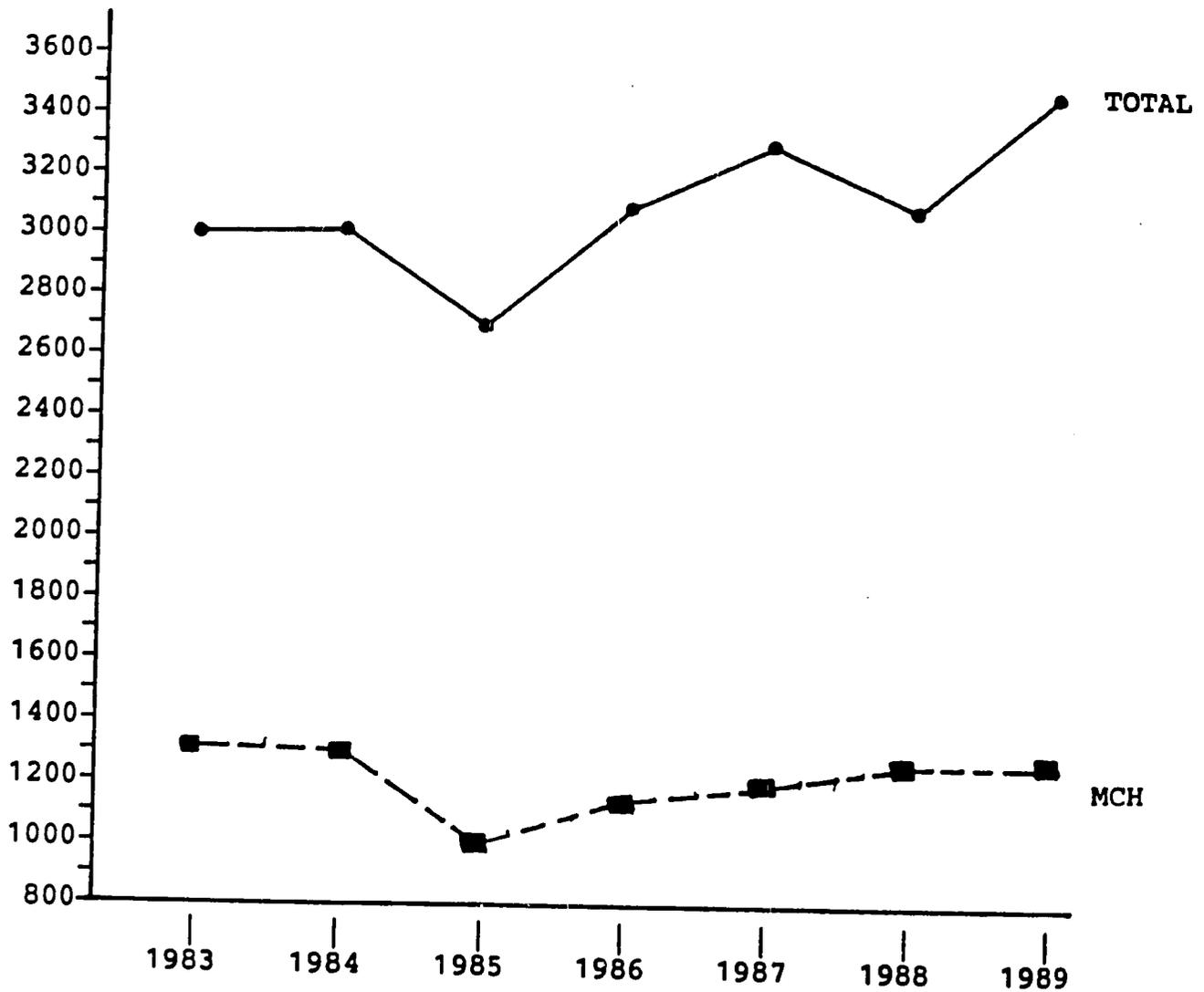


FIGURE 5.7

**BENEFICIARY TRENDS
IN PL 480 SUPPLEMENTARY COMMODITY ALLOCATION
TOTAL BENEFICIARIES VS. MCH BENEFICIARIES
AFRICA, 1983 - 1989**

BENEFICIARIES
(000)

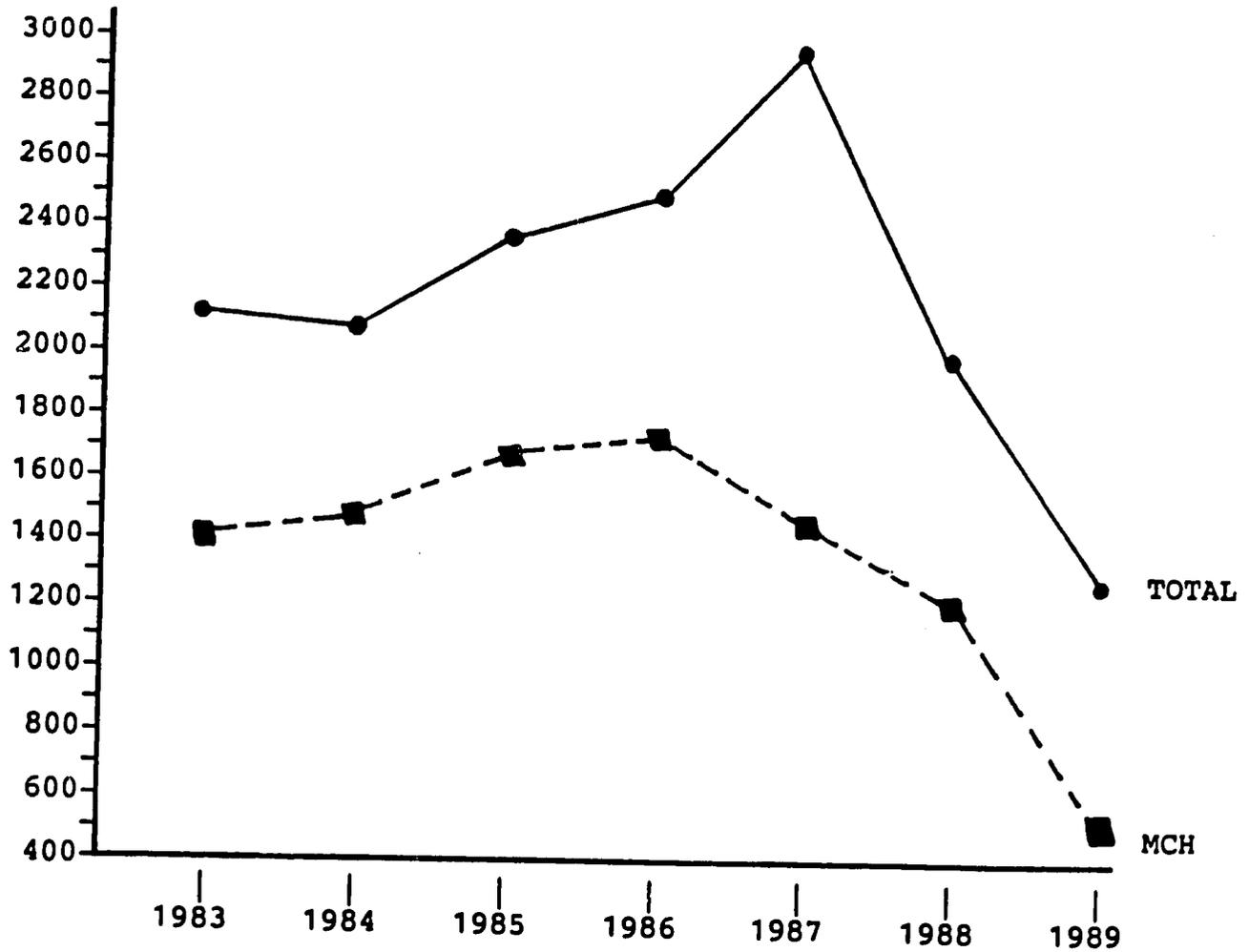
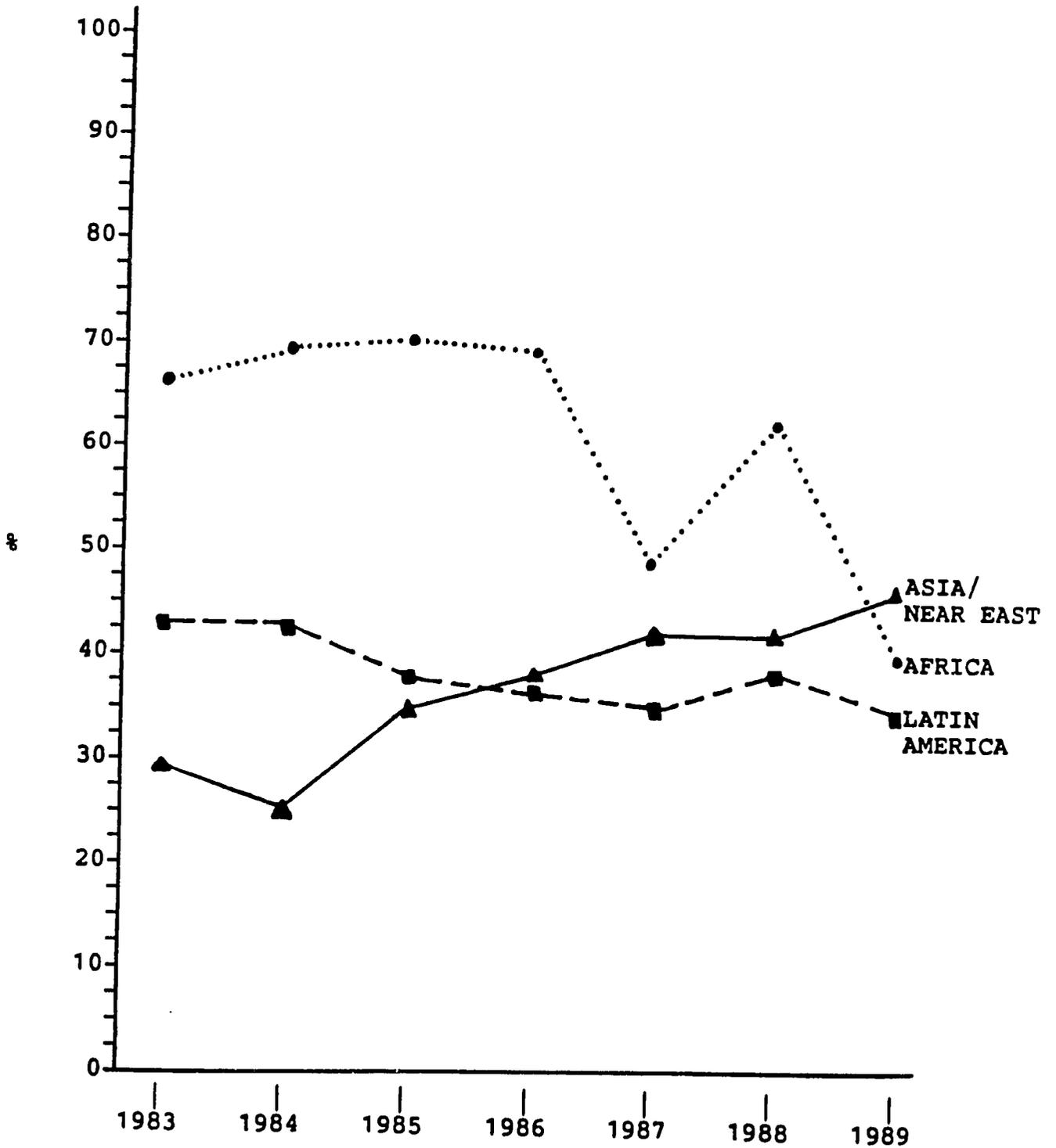


FIGURE 5.8

**BENEFICIARY TRENDS
IN PL 480 SUPPLEMENTARY COMMODITY ALLOCATION
PROPORTION OF MCH BENEFICIARIES TO TOTAL BENEFICIARIES
BY REGION, 1983 - 1989**



APPENDIX 6

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APPENDIX 6

To: Dr. Charles Teller, LTS/INU

From: Virginia Yee, Clearinghouse on Infant Feeding and Maternal Nutrition, APHA

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