PA-ABX-087

ISN 90283

A Strategic Framework for Setting Priorities for Research, Analysis, and Information Dissemination to Improve Child Nutrition in Africa

Prepared for the

Bureau for Africa

Office of Sustainable Development

by the

Health and Human Resources Analysis in Africa (HHRAA) Project

with technical assistance through the

Support for Analysis and Research in Africa (SARA) contract

August 1995

Table of Contents

Executive Summary v
Acronyms ix
Background 1
Purpose of the Strategic Framework 2
Nutrition Objective Tree 3
Methods Used 4
Information Obtained and Issues Identified 7
- Child Nutrition Problems 7
- Characteristics of Successful Nutrition Programs 7
- Household Food Security 9
- Nutrition Education and Promotion 10
- Processed Weaning Foods 16
- Nutrition Policy Development and Advocacy 17
- Donor Support and Collaboration 17
- Expansion of Existing Programs 18
- Training and Supervision Considerations 18

Knowledge Gaps and Information Needs 23
- Knowledge Gaps 23
- Information Needs 24

Ranking of Activities 25
- Linkages and Regional Significance 25
- Complementarity with Other Donors 25
- USAID and the Africa Bureau's Comparative Advantage 26

Recommended Activities 26
Annex 1. Persons Contacted/Participating 29
Annex 2. African Nutrition Experts' External Funding Priorities Questionnaire 33
References 41

Executive Summary

In 1990, approximately 28 million—or 30 percent—of sub-Saharan African preschool children were estimated to be underweight. Nearly 38 million children—or 40 percent—had stunted skeletal growth due to chronic undernutrition and infection. In addition, it is estimated that 18 million Africans are at risk of vitamin A deficiency, 150 million are at risk of iodine deficiency, and 206 million are affected by iron-deficiency or anemia.

Although the prevalence of undernutrition has declined in all other regions of the world over the last twenty years, most African countries have experienced either no change or an increase in the *prevalence* of childhood undernutrition. Because of rapid population growth in the region, the *number* of undernourished African children has increased, however, by more than 150 percent during this time period.

A number of factors constrain successful implementation of interventions to improve child nutrition in Africa. These include limited access to existing nutrition programs because of limited infrastructure (e.g., roads) and transportation, inefficient use of existing resources, inadequate training of nutrition professionals and poor or non-existent coordination among institutions and governmental and non-governmental sectors with policies and activities that affect nutrition. Cultural diversity and intra-community variation in feeding practices have also been cited as major impediments to the development and implementation of large-scale nutrition-improvement programs.

The strategic framework for infant and young child nutrition synthesizes existing information, while pointing out gaps in our understanding of effective means for improving infant and young child nutrition in Africa. It proposes a list of priority activities that merit future A.I.D. support, especially under the HHRAA Project. Recommendations are based on:

- semi-structured group discussions with more than 50 African policy makers and program implementors held at international meetings;
- structured questionnaires administered anonymously to 20 African nutrition specialists attending international meetings and US training courses;

- personal interviews with experts and two mailings to other experts for comments on the framework draft; and

- the consultative meeting held in June 1994 and attended by representatives of USAID, UNICEF, The World Bank, Cornell University, Emory University, Tulane University, Johns Hopkins University, and major cooperating agencies working in Africa on child survival (e.g., Wellstart, OMNI, MotherCare, WINS, BASICS, DHS/MACRO, and the Manoff Group).

The issues-identification and ranking process resulted in the identification of four priority areas that include multiple recommendations for research, analysis and information dissemination. These include:

Behavioral and operational research to improve the efficiency and effectiveness of programs to improve feeding practices at the household and community levels, with active dissemination of all research findings.

Priority activities identified during the strategic framework preparation process include:

- preparation and testing of revised guidelines for formative research on the motivations and constraints to exclusive breastfeeding and improving complementary feeding practices;

- behavioral research and analysis to improve providers' nutrition counselling skills in different contexts;

- research to identify additional inputs (other than improved counseling skills) that are required to increase the effectiveness of nutrition education and to make sustainable improvements in child feeding practices; and

- dissemination of findings from research on operational and technical obstacles encountered in the implementation of programs to improve breastfeeding and young child feeding practices.

Operations research and analysis to enhance the integration of nutrition services and activities into child survival, health, and family planning programs, with active dissemination of all research findings.

Priority activities identified during the strategic framework preparation process include:

- research on the feasibility, potential benefits of, and constraints to providing nutrition services and education to mothers of children visiting health facilities because of acute illness (i.e., as part of the integrated case management of the sick child);

- research on the feasibility, potential benefits of, and constraints to providing nutrition services (including counselling and micronutrient supplementation) through family planning programs; and

- research on the potential benefits of nutrition education during pregnancy-related care and its impact on breastfeeding and complementary feeding practices.

Advocacy directed at policy makers and donors (including A.I.D. mission and regional staff) to increase awareness and support for nutrition improvement activities and programs;

Priority activities identified during the strategic framework preparation process include:

- preparation of a synthesis of the arguments in favor of investing in nutrition combined with experiences from African countries;

- in concert with other donors and members of the nutrition community, developing a consensus on the most promising approaches to improving nutrition, and developing a menu of options for nutrition activities and interventions that can be shared with different audiences;

- training members of appropriate African focal institutions in nutrition advocacy; and

- using advocacy tools and materials to motivate U.S.A.I.D. missions to include nutrition improvement goals and activities in child survival, population, and reproductive health programs.

Improved, program-oriented nutrition training for para-professional and professional workers, coupled with concerted efforts to strengthen African institutions'

capacities to conduct behavioral and operations research and analysis, and to exchange and disseminate information on their experiences.

Priority activities identified during the strategic framework preparation process include:

- develop and test simplified tools and modules for training health and other providers to appropriately and effectively interact with households and communities (in assessing problems and potential solutions), and to be effective nutrition counselors;

- strengthen existing research centers in Africa, particularly with respect to their capacities to a) participate in community-level, program-oriented research, b) work in or coordinate multi-sectoral activities, c) serve as clearinghouses or disseminators of information, and d) receive funding from international donor agencies; and

- support regional centers of excellence for training in applied nutrition, in short courses and degree programs.

Acronyms

ACC/SCN	Administrative Committee on Coordination/Sub-Committee on Nutrition of the United Nations
AED	Academy for Educational Development
AFR/SD	Africa Bureau Office of Sustainable Development
AID	Agency for International Development
AIDS	acquired immunodeficiency syndrome
DFA	Development Fund for Africa
DHS	demographic and health surveys
HHRAA	Health and Human Resources for Africa Project
ICN	International Congress on Nutrition
IUGR	intrauterine growth retardation
NAS	National Academy of Sciences
R,A,& D	research, analysis, and information dissemination
SARA	Support for Analysis and Research in Africa Project
UNICEF	United Nations Children's Fund
WHO	World Health Organization

Background

In 1990 approximately 28 million or 30 percent of sub-Saharan African preschool children were estimated to be underweight (ACC/SCN 1992). Nearly 38 million children, or 40 percent, had stunted skeletal growth due to chronic undernutrition and infection. In addition, it is estimated that approximately 18 million Africans are at risk of vitamin A deficiency, 150 million are at risk of iodine deficiency disorders, and 206 million are affected by iron-deficiency or anemia (World Bank 1993a).

Although undernutrition has declined in all other regions of the world over the last twenty years, most countries in Africa have experienced either no change or an increase in the prevalence of childhood undernutrition (ACC/SCN 1992). Because of rapid population growth in the region, the number of undernourished African children has increased, however, by more than 150 percent during this time period.

Less than twenty years from now the undernourished children of today will be parenting children of their own. These offspring will be more likely to have low birth weights; die in infancy and early childhood; suffer increased morbidity; and fail to overcome the health, nutrition, and economic disadvantages facing their parents (Fishman and Hansch 1995). Although political stability, poverty reduction, and economic development are long-term goals for every country on the continent, action must be taken now to reduce undernutrition among Africa's children so that future development is not undermined.

The specific causes of malnutrition in Africa are varied. Drought, civil wars, economic recession, and structural adjustment have affected the quality of life and access to food, care, and other social services for millions of African adults and children. On some parts of the continent seasonal changes in food availability are endemic. In other areas household food security is adequate year-round but available foods and resources are not used efficiently to meet the nutritional needs of young children. The interventions required to improve child nutrition vary among populations facing emergency situations, seasonal food shortages, and those that are food secure but not meeting the needs of their children.

A number of factors constrain successful implementation of interventions to improve child nutrition in Africa. In addition to the political and eco-

nomic considerations cited above, other constraints include limited access to existing nutrition programs because of limited infrastructure (e.g., roads) and transportation, inefficient use of existing resources, inadequate training of nutrition professionals, and poor or nonexistent coordination among institutions and governmental and non-governmental sectors with policies and activities that affect nutrition (Levinson 1991). Cultural diversity and intracommunity variation in feeding practices also have been cited as major impediments to development and implementation of large-scale nutrition improvement programs (Herman 1993).

Successfully implemented programs on the continent have focused on enhancing the capacity of existing institutions, promoting intersectoral coordination, involving beneficiaries in problem identification and intervention design, and being flexible in responding to beneficiaries' felt needs and changing household economic and nutrition conditions (Kennedy 1991a). They also have organizational and administrative structures that are consistent with their community oriented strategies (e.g., Pyle et al. 1993). Well-targeted and administered nutrition programs have had a beneficial impact on child nutrition in Africa and other countries worldwide (Levinson 1991; Pyle et al. 1993; Fishman and Golaz 1995).

Purpose of the Strategic Framework

The purpose of this strategic framework is to synthesize existing information and gaps in our understanding of effective means for improving child nutrition in Africa, and to propose a list of priority activities that merit future A.I.D. support. The document will guide the Office of Sustainable Development of the Africa Bureau (AFR/SD) in its decision making by identifying gaps in research, analysis, and information dissemination (R,A&D) related to improved infant and young child nutrition in Africa that can be addressed by the Health and Human Resources Analysis for Africa (HHRAA) and Support for Analysis and Research for Africa (SARA) projects.

The goals of the AFR/SD Office and the HHRAA/SARA projects are to support regional R,A&D activities that will lead to improved policies, strategies, and programs. AFR/SD and HHRAA/SARA provide timely information and technical advice to A.I.D. offices, African governments, and other donors that will assist them in setting priorities and allocating resources.

Infant and young child nutrition, the analytic area described in this document, is an appropriate area for AFR/SD's and HHRAA/SARA's attention because of the large number of African children who are undernourished, the expanded information base describing the mix of interventions for reducing undernutrition in its various forms, and the increasing political commitment by African leaders to addressing this problem. Leaders from more than 40 African nations committed themselves to the goals declared at the 1990 World Summit for Children and the 1992 International Conference on Nutrition to eliminate famine, famine-related deaths, starvation, and nutritional deficiency diseases, and to reduce chronic hunger, undernutrition and micronutrient deficiencies (especially among women and children), and the social impediments to optimal breastfeeding, by the end of this century (ICN 1992). Conference participants are preparing national action plans to reach these goals, and AFR/SD and HHRAA/SARA need to outline their role in guiding and executing these efforts.

In addition to supporting the existing political environment and commitment by African policy makers to addressing child nutrition problems, implementation of the activities outlined in this strategy document is consistent with A.I.D. strategic objectives and the goals of the Development Fund for Africa (DFA). One of DFA's major strategies is to invest in the future of African people through the support of child survival and health initiatives (USAID 1993). Implementation of activities outlined in this strategy will improve household practices and the quality and efficiency of existing child survival programs. These activities complement R,A,&D activities to improve the integrated case management of the sick child and to promote sustained behavior change, which are addressed in separate strategic frameworks.

Nutrition Objective Tree

The nutrition objective tree developed by AFR/SD is shown in Figure 1. The overall strategic objective is to improve maternal and child nutritional status. The latter condition is the main focus of this framework.

As shown in the causal model in Figure 2, child nutritional status (defined by growth indicators) is affected by feeding practices, food quality, and dietary intake; health status and access to health resources; and the quality of care and attention a young child receives to meet his or her nutrition and health-related needs. Access to food, health, and care are influenced to

varying degrees by maternal and child characteristics, and by household, community, and national resources.

This strategic framework does not describe comprehensively all of the issues and conditions related to child nutrition shown in the causal model (Figure 2). Instead, it describes the priorities and gaps identified by the experts interviewed during the framework preparation process, supplemented with information and examples obtained from project reports and published papers.

Methods Used

The knowledge gaps and information needs with respect to young child feeding and nutrition in Africa were identified by reviewing documents already prepared by AFR/SD-funded projects on infant and child nutrition in Africa (Fishman and Hausch 1995; Piwoz 1994). In addition, during the last four years several comprehensive papers were written on the impact of nutrition interventions and key elements to stress in the design of projects and programs to improve child nutrition in Africa (e.g., Ngo Som 1994; World Bank 1993b; Herman 1993; Pyle et al. 1993; Kennedy 1994a, 1994b; Levinson 1994). These papers, taken together, provide a comprehensive assessment of available child nutrition data for the continent that is probably unparalleled in any other region of the world.

Data from existing papers were complemented with information obtained through:

1. unstructured interviews of nutrition professionals with expertise in Africa who are working for major international donors (UNICEF, The World Bank, A.I.D.), A.I.D. contractors, universities, and private, nongovernmental organizations;
2. semi-structured group discussions among African policy makers and program implementors held at international meetings;
3. structured questionnaires administered anonymously to African policy makers, program implementors, and researchers attending international meetings and U.S. training programs;
4. mailings of the draft framework to AFR/SD and other A.I.D. staff and U.S.-based experts for comments; and

Figure 1. AFR SD Nutrition Objective Tree

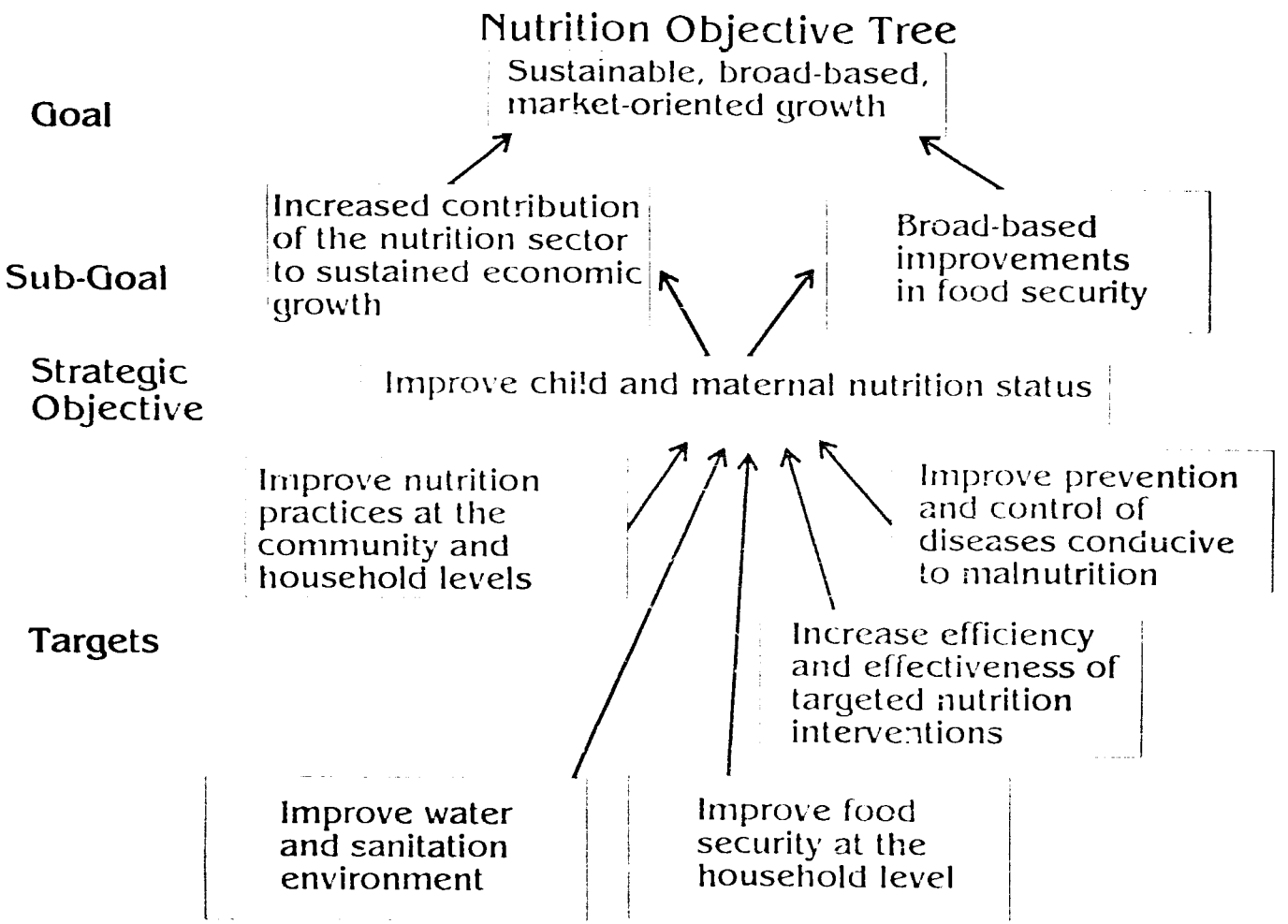
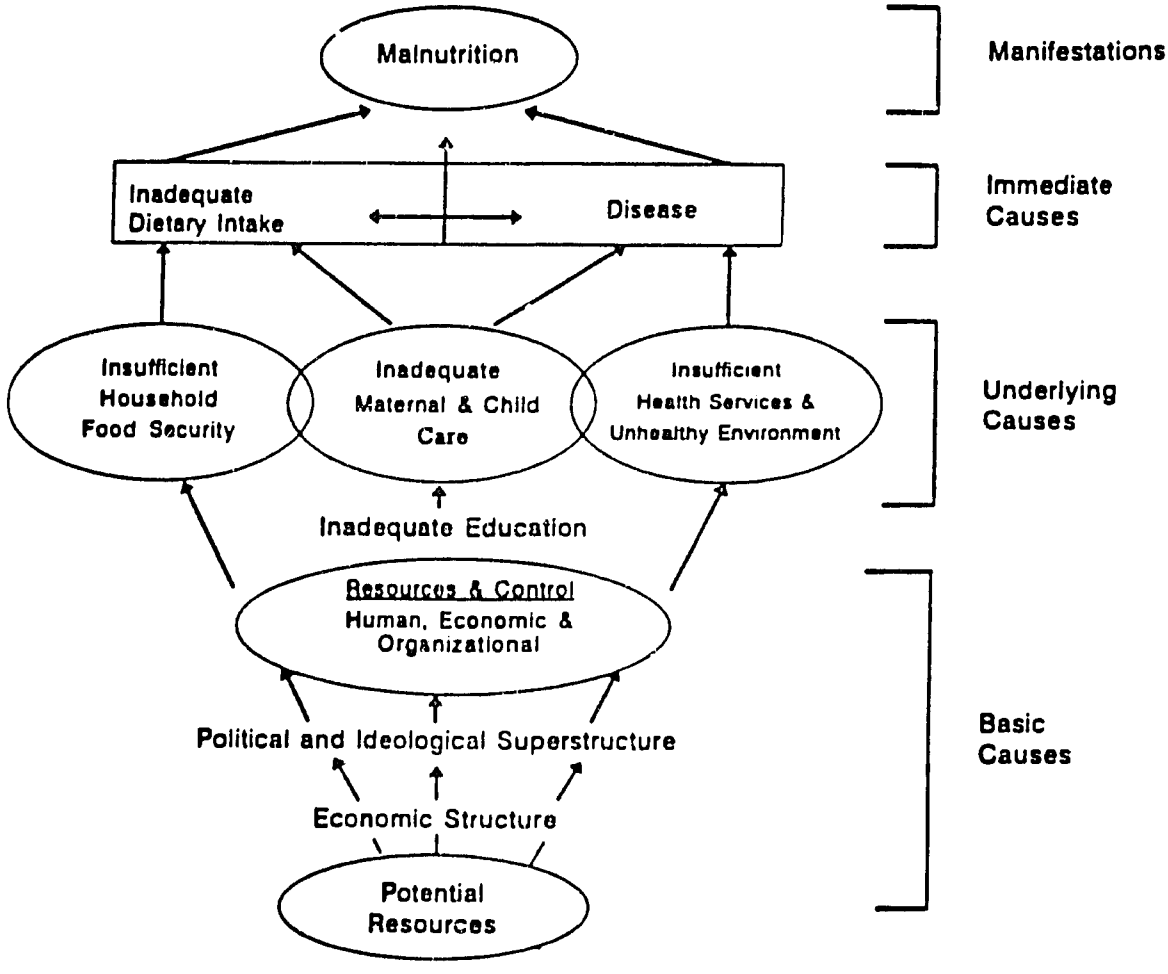


Figure 2. Conceptual Framework on the Causes of Malnutrition



Source: UNICEF 1990

5. a consultative group meeting held in the U.S. to discuss and comment on the document.

The list of persons participating in this process is found in Annex 1. The structured questionnaire is shown in Annex 2.

Information Obtained and Issues Identified

The issues and problems that emerged during the literature review and data-gathering process are summarized below. Many of the issues discussed are specific to Africa; however, several of the concerns related to nutrition programs and problems are relevant worldwide.

Child Nutrition Problems

The experts interviewed generally agreed that the four most important causes of child undernutrition in Africa are related to improper child feeding practices: 1) weaning diets lack adequate energy density and protein and micronutrient quality; 2) exclusive breastfeeding is not practiced by mothers; 3) solid foods are introduced too early (usually) or too late (less frequently); and 4) improper hygiene, preparation, and storage results in food contamination and diarrheal disease.

Improper child feeding practices occur in the context of three underlying household, food-related conditions: 1) where households have access to adequate quantities of food year-round but food preparation, use, and feeding and caring practices do not meet the nutritional needs of young children; 2) where households experience seasonal food shortages due to agricultural practices (production), marketing weaknesses (distribution), or underemployment (acquisition); and 3) where households experience food shortages year-round due to natural and man-made disasters, including civil wars, political upheaval, and the AIDS epidemic, which has disrupted family life and food acquisition support networks.

Characteristics of Successful Nutrition Programs

There has been a general perception that nutrition interventions are not worthwhile investments of scarce budgetary resources because the conditions influencing nutritional status are diverse and difficult to modify. More recent reviews of the costs and benefits of nutrition interventions suggest that investing in nutrition is justifiable on humanitarian as well as

economic grounds (McGuire 1990; Levinson 1991; del Rosso 1992; Behrman 1992).

The challenge is for programs to reach high-risk populations with services that are appropriate to their needs. Reaching high-risk populations is extremely difficult in parts of Africa where transportation and roads are limited and subject to seasonal passage, and where women work long hours in agricultural labor, gathering fuel and water, and caring for family members. Developing interventions that meet the needs of their recipients, on the other hand, requires active community participation in identifying those needs and responding to them. How a nutrition program is implemented is believed to be as important, and at times more important, to its success as the type of intervention used.

A recent review of more than 100 nutrition programs identified seven essential elements of the successful implementation of nutrition programs in Africa (Kennedy 1991a). These are 1) community participation, 2) program flexibility, 3) implementation through existing institutions, 4) recurrent cost recovery, 5) multifaceted program activities, 6) emphasis on training and staff qualifications, and 7) pre-existing infrastructure. A review of the Tanzania Child Survival and Development project also underscored the importance of having the structure of a program mirroring its strategy (Pyle et al. 1993). If a program seeks community participation and responsibility, decision-making (about activities, spending, etc.) must be allowed to occur at the community level. The "triple A" approach of assessment, analysis, and action has been promoted and supported by UNICEF as a useful model for community level decision-making (UNICEF 1990).

In short, the programs that were considered to be most successful by Africans were those that engaged community members and addressed their perceived and changing needs; were operated by community institutions and paid for themselves; used a variety of approaches to improve nutrition; and employed well trained regularly supervised workers. These programs usually were implemented in areas where infrastructural development was not a limiting factor, and they were linked to non-governmental organizations with commitments to grass roots development. Charismatic managers usually were involved.

Although these elements of successful implementation are easy to elaborate, limited data are available on how to achieve some of these elements

and, more important, on how to convert unsuccessful or ineffective programs into successful ones. Furthermore, it is uncertain on what terms success should be measured. Relatively few projects in Africa, or elsewhere, have been evaluated formally to determine their impact on child nutritional status (i.e., growth and dietary intake) and their sustainability (particularly as needs and funding fluctuate). These data, presented concisely and convincingly, would be extremely useful for persuading donors and national policy makers to support these activities.

Household Food Security

Food security is defined as access by all people, at all times, to sufficient food for an active, healthy life (World Bank 1986). Food-insecure households are defined as those consuming less than 80 percent of their caloric requirements (Kennedy 1991b). Approximately 140 million Africans are estimated to live in food-insecure households (Mellor 1990).

In the past it has proven difficult to link households that are defined as food-insecure to children who are at-risk of undernutrition because household food security is defined in terms of food quantity (energy) not quality. The number of persons at-risk of iodine and iron deficiencies is much higher than those at-risk of not having access to adequate energy. The quality of available foods is extremely important, especially for preschool children, whose rapid growth and nutrient losses due to frequent infections create higher requirements for protein and most micronutrients as well as energy. An additional problem in linking nutritionally vulnerable households and children is that estimates of household food security are often based on assessment procedures that fail to take into account daily (e.g., with 24-hour recall) or seasonal (e.g., with one-round surveys) fluctuations in consumption patterns. Furthermore, household caloric availability often is used as a proxy for energy consumption.

Household energy availability is not a good indicator of consumption by children because it does not reflect how food is allocated in the home. Allocation patterns vary with food availability and depend on household structure and composition, and women's income-control and decision-making power. Studies in Kenya and Malawi found that certain types of female-headed households in Kenya, and households in both countries with very low caloric availability (below 80 percent of estimated requirements), allo-

14

cated relatively more of their available calories to preschool children than did food-secure and male-headed households (Kennedy 1991b).

Increasing food availability at the household level alone is not enough to ensure that young children consume adequate diets. Cultural, economic, and behavioral factors shown in Figure 2 influence how children are cared for and fed, and the adequacy of their diets. Targeted interventions to reduce food insecurity at the household level and its nutritional affects on children include food supplementation and other transfer programs, credit programs, and home gardening projects, coupled with nutrition education and efforts to maximize time and other resources for improved child care. Information needs with respect to some of these types of programs are discussed in this framework.

Nutrition Education and Promotion

Opportunities for providing nutrition education to improve infant and young child feeding include 1) growth-monitoring sessions for preventive care; 2) health facilities for family planning; prenatal care, delivery, and sick-child care; 3) credit and poverty lending programs; and 4) home gardening and agricultural extension activities.

Growth Monitoring and Promotion

Growth monitoring with nutrition education has been promoted throughout Africa and worldwide as an effective means for detecting growth faltering and preventing undernutrition in infants and young children. Studies of the effectiveness of growth monitoring have shown mixed results and many question whether these programs are a wise use of scarce health resources. Recent reviews, however, have suggested that community-based growth promotion—which emphasizes and reinforces what families can do for themselves to improve infant and young child growth—is an important element of successful community participation in nutrition improvement activities.

Previous operational studies in Africa also have highlighted how existing growth-monitoring programs can improve the quality and efficiency of their activities. Examples include reorganizing the session schedules so that early arrivals do not have to wait to have their children weighed and late mothers do not miss the educational activities (e.g., Stinson and Sayer

1991). Other programs have used local mothers as peer counselors to carry out home visits and reinforce nutritional messages (PRICOR 1991; Diene 1995).

Continued research to improve the efficiency and effectiveness of growth-monitoring programs is desirable. Simplified methods of tracking the growth of children should be explored through operational research in areas where regular weighings are not feasible. Behavioral research is required to define appropriate nutrition messages and materials for growth promotion. Innovative methods for training and supervising workers must be identified.

Health Facility-based Services and Education

In theory, opportunities to provide nutrition services and education occur when women attend health facilities for family planning, prenatal care, at the time of delivery, and after delivery, when a mother has her child weighed and/or immunized or she visits a health facility because of illness. In reality, few opportunities have been used effectively to provide nutrition services because services are not sought and contact is not made, nutrition algorithms are not available, or health providers are not sensitive to nutrition issues and are not trained to provide nutrition counseling.

Operational research is required, therefore, to determine how to integrate nutrition activities into other health-related programs (e.g., family planning, reproductive health, etc.). It is important to assess whether and how multiple program objectives can be met by providers working in these settings because it is often assumed that additional services will burden providers rather than improve their quality of care. Issues related to integration of nutrition objectives and activities into health facility-based care are discussed below.

Sick-child Care

Improving the nutritional counseling skills of health providers is a component of the Integrated Case Management of the Sick Child protocol drafted jointly by WHO and UNICEF (WHO/UNICEF 1993). The objective of this protocol is to equip health providers with the skills and abilities to treat children with various, possibly simultaneous, conditions presenting

16

at primary care facilities. Health providers are also encouraged to use these contacts as opportunities to counsel on preventive action.

In Africa improving the nutrition knowledge and counseling skills of health providers in these settings is critical for several reasons. First, in any program messages regarding appropriate feeding practices must be consistent at all levels of care: hospital, clinic, and community-based education. It is counterproductive to initiate hospital and community nutrition programs, for example, if providers working at primary- and secondary-level health facilities do not reinforce this nutritional advice when appropriate.

Second, studies conducted throughout the continent have found that providers often do not agree with international recommendations to continue feeding solids and fluids during diarrhea (e.g., Konde-Lule et al. 1992). When in a position to give feeding advice to mothers with sick children, many providers fail to offer specific advice (because they are not trained to do so), or to verify that advice offered is understood (e.g., Coulibaly 1989; Roisin et al. 1990; Stinson and Saver 1991; Gamatie 1992). On the other hand, many ethnographic studies suggest that mothers are willing to prepare special foods and play an active role in correct feeding when their children are ill (Piwoz 1994).

Unfortunately, in many areas mothers' attendance at health facilities is likely to be limited to sick-child care. Thus, appropriate feeding messages and improved nutrition counseling must be included in the integrated case management protocols. Research will be required, however, to determine the feasibility of integrating nutrition education into sick-child protocols, the conditions for providing specific feeding messages, message content, and appropriate methods for developing counseling skills. Counseling performance in nutrition and in all other areas must be supervised and evaluated.

Family Planning and Maternal Care

In addition to sick-child care, it is important to take advantage of the many unexplored opportunities for reaching women in their reproductive years during family planning visits and prenatal and delivery visits to encourage child spacing, provide micronutrient and/or other supplementation, and inform women about appropriate feeding practices, specifically the benefits of exclusive breastfeeding in early infancy.

With respect to child spacing, multivariate analyses of data from surveys conducted in Africa and worldwide have highlighted the increased risk of childhood undernutrition with increasing birth order, with short preceding birth intervals, and when there is more than one sibling or child under the age of five living in the home (e.g., Sommerfelt et al. 1989; Sahn 1990). Clearly, improving family planning and child-spacing services is one mechanism for reducing undernutrition among African children.

Improving women's micronutrient status is critical to the future health of their unborn children. Among anemic women, for example, studies have shown a positive correlation between maternal iron status and the iron status of their newborns. Infants born with reduced iron stores may be predisposed to develop iron deficiency, growth retardation, and delayed mental and behavioral development (Stoltzfus 1993).

Other micronutrient deficiencies, notably of vitamin A, vitamin B_{12}, folate, iodine, and zinc, have been associated with adverse birth outcomes or impaired infant growth and development (NAS 1990). Iodine deficiency disorders are estimated to be responsible for approximately five million stillbirths per generation in Africa and to cause goiter, cretinism, and related mental deficiencies in millions of African children each year (Fishman and Hansch 1995). Recent research in Malawi has found that maternal vitamin A deficiency is an important risk factor for mother-to-child transmission of HIV (Semba et al. 1994), and preliminary results from another study in Kenya found that maternal vitamin A deficiency is associated with HIV concentrations in breast milk (Nduati 1995). Supplementing pregnant women with high doses of vitamin A and iodine can have a teratogenic effect on the developing fetus. Therefore, improvements in women's micronutrient status may be achieved best prior to their first pregnancy and during nonpregnant periods. Strategies and guidelines for improving the micronutrient status of all reproductive-age women should be integrated into family planning, HIV/AIDS, and related programs. Women and children will benefit from these efforts.

Finally, improving women's diets and energy balance during pregnancy also may benefit the nutritional well-being of their children. Studies have found that African women consume less than 60 percent of their recommended energy intake during pregnancy (Fishman and Hansch 1995). Women often do not increase their food consumption during pregnancy,

and many do not have the luxury of reducing their work and energy expenditure.

Lower net weight gains during pregnancy are associated with increased risk of intrauterine growth retardation (IUGR), perinatal mortality, and, possibly, preterm delivery (NAS 1990). Infants who suffer from chronic IUGR tend to grow more slowly after birth than children with normal intrauterine growth rates (Villar et al. 1984). Therefore, efforts to improve women's diets and energy expenditure may help to reduce childhood undernutrition. Research is needed on the effectiveness of such programs for these ends.

In addition to these important biological relationships, prenatal and delivery contacts should be viewed as opportunities to advise women about optimal breastfeeding practices. As noted previously, behavioral research is needed to determine strategies and the appropriate mix of interventions to motivate mothers to breastfeed exclusively. Research is also required to determine whether such information is reaching mothers at an appropriate stage in their decision-making process, and whether this information is having an effect on their breastfeeding practices.

Credit and Poverty Lending Programs

Credit and poverty lending programs are being implemented in several African countries including Burkina Faso, Ghana, and Mali with support from private organizations such as the Freedom from Hunger Foundation, Save the Children, and others. In these programs local banks make small loans to mothers who organize borrower groups. Loans are used to support microenterprises proposed by mothers, such as food processing and vending, raising small animals, or buying and selling clothing. Loans are guaranteed by mothers in the borrower groups. Group members meet regularly to make payments and to discuss the status of loans.

In the Freedom from Hunger projects, a trained facilitator (usually from the area) attends weekly meetings and holds discussions on issues critical to members. In Mali, Burkina Faso, and Ghana appropriate child feeding practices are discussed at these gatherings. The impact of these programs on nutrition practices has been limited to date, largely because nutrition education activities have not been a major focus and methods for evaluating impact have relied on mothers' reports alone (Lassen and Mknelly

1992). The program in Ghana is intensifying its nutrition education component and will be evaluated carefully (Dunford 1993).

The theoretical advantages of combining nutrition education with poverty lending are that these lending programs target poor women with preschool children, they increase women's access to income and income control, and the borrower groups that form to access and guarantee loans meet on a weekly basis. Whereas traditional growth monitoring programs have been criticized for not reaching the most vulnerable children on a regular basis, not providing tangible benefits, and not meeting perceived needs of laboring mothers, credit with education programs potentially address and overcome all of these shortcomings. By providing income generating opportunities for mothers, these programs have the added benefit of improving household food security and access to food during seasonal shortages.

Poverty lending programs generally do not screen children to detect faltering growth, and they are not expected to replace growth monitoring throughout Africa. They are an alternate, and in some areas possibly an interim, vehicle for reaching mothers of young, nutritionally vulnerable children. Research is needed to determine whether poverty lending programs are successful at increasing household food security, delivering nutrition education, and improving feeding practices and the nutritional status of participants' children.

Home Gardening and Agricultural Extension

The African experts interviewed stressed the importance of addressing nutrition problems multisectorally and including ministries of agriculture in the nutrition program planning process, particularly in areas where seasonal food shortages are common. Agricultural extension agents are widely dispersed in rural parts of Africa, and in some areas they are the only community development workers who provide any type of services and advice.

Many home gardening and some agricultural production enhancement programs have as primary or secondary objectives improvements in child nutrition and feeding practices. Unfortunately, most resources are directed at the food production components of these projects and limited attention is given to the nutrition education and food consumption aspects. It is often assumed that agricultural extension agents or community

health workers, if they are present, will provide the appropriate education, and little consideration is given to how this advice is delivered (messages and media) or to training agents to be effective nutrition educators. In evaluations of these programs, child nutrition outcomes are secondary to food production outcomes or are not measured at all.

Information is needed on ways to facilitate coordination among ministries or institutions engaged in agricultural production and nutrition promotion activities. Greater attention must be paid, within food production programs, to enhancing activities that directly foster improved feeding practices by young children. Programs using agricultural extension agents as nutrition educators should be evaluated. Criteria for evaluating these programs should include their effectiveness at reaching nutritionally vulnerable families, the quality and appropriateness of the nutrition advice presented, the effect of the advice on feeding knowledge, and the impact on diet and growth.

Processed Weaning Foods

Numerous programs throughout Africa have developed and promoted the use of home-mixed or processed weaning foods (e.g., CERIVAP in Zaire, JOYVITA in Nigeria, *Lukuni Phala* in Malawi). Other programs have tried to capitalize on traditional fermentation and malting practices to develop weaning recipes and products that are less likely to become pathogenically contaminated or are less viscous and more energy-dense than traditional porridges (e.g., *Eko Ilera* in Nigeria, "Power Flour" in Tanzania).

Although most nutrition experts interviewed felt that the best strategy for improving child feeding was to work with ingredients readily available in mothers' homes, there seems to be a niche for preprocessed foods and products because mothers frequently purchase processed foods and drinks for their young children. In addition, preparation time and thick consistency of weaning foods are frequently cited constraints to adopting new feeding practices (Keith 1991; Guptill et al. 1993; Herman 1993). Some fermented products are also believed to restore appetite and have healthful effects on sick children (Ssemunjogi and Tomkins 1990; Ashworth and Draper 1992).

Research is needed to identify the contexts in which premixed and processed weaning foods should and can be promoted. Some data suggest

that processed foods must cost less than 115 percent of the total costs of the ingredients to be affordable by poor families, yet this goal is rarely achieved (Jonsson 1994). Experts frequently debate the relative importance of improving weaning foods compared with practices in nutrition programs. Future research, conducted in areas where processed weaning foods are available and promoted, should outline whether and how promotion of improved foods and practices complement each other.

Nutrition Policy Development and Advocacy

According to the expert interviews, major obstacles to garnering political support for child nutrition activities include the facts that local research is not program- or policy-oriented, and that professionals are not trained to analyze, interpret, or present research findings in ways that are appealing to policy makers. Thus, existing data on child nutrition problems and programs must be analyzed, summarized, and presented to policy makers in a precise and persuasive (advocacy) fashion.

Demographic and Health Survey (DHS) data, including nutritional status and feeding practices of young children, are available for at least 18 African countries. These data have been analyzed by U.S. and African investigators, and promotional materials detailing their findings have been developed. It is important to take this work an additional step forward by training local program managers/researchers in how to use the results of the DHS surveys to advocate specific actions. Regional workshops have been proposed as a means for training professionals in how to analyze and present DHS data to government policy makers.

Donor Support and Collaboration

Sensitizing donors, particularly A.I.D. personnel, to the extent and importance of addressing child nutrition problems was also cited as an important priority by the experts interviewed. Many A.I.D. missions in Africa do not have health officers (let alone nutrition experts) and several missions have been closed recently. Support for and commitment to undertaking child nutrition improvement activities are difficult to obtain under these conditions. Careful consideration must be given to the impact of Mission cutbacks and closures on A.I.D.'s ability to increase support for activities to improve child feeding and nutrition. Specific mechanisms for overcoming

these limitations must be identified. Strategies for generating regional and Mission interest and support must be developed.

UNICEF is a major supporter of nutrition programs and policy development in Africa. Mechanisms for increasing collaboration with UNICEF must be identified so that AFR/SD projects, activities, and research and analysis products are relevant and useful to UNICEF field offices and UNICEF supported nutrition activities.

Expansion of Existing Programs

Many of the experts interviewed, particularly those working for donor agencies, expressed the need for guidelines outlining the breadth of activities required to implement national programs to improve young child feeding practices, or instructions on how to expand successful pilot projects in this area. All of the donors contacted (including USAID, The World Bank, UNICEF) have supported feeding practices improvement programs for nearly two decades, yet the experiences of these programs have not been distilled in a comprehensive way.

Experience in various USAID funded projects has produced a wealth of information on the components necessary to improve awareness, training, and communication about nutrition problems and how they should be addressed. Guidelines produced by Griffiths (1992) outline the various approaches that must be taken within national programs to improve child feeding practices. In addition to a strategy framework outlining a range of activities for a comprehensive program (shown in Table 1), the guidelines include specific recommendations on how to implement coordinated, intersectoral programs, and age specific behavior change recommendations that were common across these very diverse populations. The framework provided in this report would make a useful starting point for regional discussions to develop models for implementing or expanding programs.

Training and Supervision Considerations

Inadequate training and supervision of personnel providing nutrition services nearly guarantees the failure of these programs to improve child nutrition. The abilities of countries and programs to provide field personnel with adequate training and supervision goes beyond developing instruc-

Table 1. Sample Strategy Framework for Young Child Feeding Programs

Legislation/Norms:	Code of marketing of breastmilk substitutes.
	Monitoring of marketing of infant foods.
	Norms concerning infant and young child feeding.
Communication:	Change image of child feeding (advocacy).
	Promote assistance of "influencers".
	Communicate specific behavior changes for individual situations.
	Promote project and project products.
Training:	Curriculum changes for pre-service education of health care professionals.
	In-service training in concepts of child feeding and how to counsel mothers.
	Orientation for community leaders and traditional health care providers.
Products:	Improved homemade foods or pre-packaged foods.
	Food ingredients (e.g., malt) or child feeding bowl.
	Clothes for breastfeeding in public.
Other:	Hygiene, child care.

Source: Griffiths 1992.

Table 2. Linkages of R, A, & D Activities to the Nutrition Objective Tree

Strategic Objective:	To improve child nutritional status (dietary intake, micronutrient status, growth)
Direct Targets:	To improve nutrition practices at the community and household levels.
	To increase the efficiency and effectiveness of targeted nutrition interventions.
	To improve food security at the household level.
Targeted Interventions:	Nutrition education and promotion.
	Improve training and supervision of health and nutrition providers.
	Increase households' access to and use of other resources that may be used to improve child caring practices and nutrition.
Knowledge Gaps:	Information on African nutrition problems and program experiences.
	Models for monitoring and expanding programs and for successfully integrating nutrition services into existing programs.
	Undocumented nutrition problems.
	Methods for training health providers to be effective counsellors and behavior change agents, and for supervising them in these tasks.
Information Needs:	Behavioral research to facilitate improvements in nutrition messages, counseling, and promotion.
	Operational and evaluation research to increase the coverage and effectiveness of existing nutrition pro-

grams, to integrate nutrition objectives into health facility-based care, and to assess the impact of policies and programs on nutrition.

Prevalence research to document nutritional deficiencies.

Analyze existing data and conduct advocacy to sensitize leaders and policymakers.

Disseminate information on African program experiences, and on behavioral research, training, and supervision methods.

Priority Areas: To increase the efficiency and effectiveness of programs to improve infant and young child feeding practices.

To integrate nutrition objectives and services into child survival, reproductive health, HIV/AIDS, and family planning programs.

tional manuals and supervision protocols. It depends on the respect and institutional support given to nutrition in the country.

Nutrition Career Structure and Training

Many experts interviewed cited inadequate training and lack of a career structure for nutritionists as major obstacles to quality nutrition research and programs in Africa. Lack of a career structure, in part, reflects the low esteem that nutrition is held in by governments and policy makers. This lack of esteem, in turn, results in the failure of the discipline to attract the highest-quality students and providers. Elevating the stature of nutrition in governments, by providing a career structure and high-quality graduate and postgraduate training opportunities for nutrition professionals, is a necessary catalyst to improving nutrition research and programs in Africa.

In Africa many nutrition specialists feel they are working in relative isolation without the benefit of learning from colleagues' experiences because of poor communications networks and channels. To remedy this problem several experts identified the urgent need to bring African researchers and professionals in nutrition and related areas together on a regular basis to share experiences, information, and research activities and results.

It was also felt that program-relevant research is conducted infrequently on the continent because applied research methods are not taught well within existing training programs. Therefore, hands-on training in operations research and analysis through ongoing research projects, in addition to short courses that may be offered, also was felt to be a high priority to develop institutional capacity for improved nutrition programming.

Community-level Workers

As noted earlier, improvements in training and supervision methods are required to increase efficiency and effectiveness of nutrition programs. Reviews of programs to improve child feeding in Africa stressed the importance of training educators not just to be knowledgeable about proper feeding practices and nutrition, but also to be good listeners and effective negotiators. Information is needed on how this can be done successfully.

At the community level all health or extension workers are expected to be educators, and nutrition is usually one of the topics they are expected to discuss with mothers and families. Because many community workers come

27

from the areas where they are working, it is unreasonable to assume that they believe or have practiced all of the behaviors frequently promoted in educational programs. Therefore, it is imperative that programs assess the knowledge and practices of their community workers and convince them that the behavior being advocated within their programs is feasible to implement and nutritionally beneficial. Methods for doing this should be reviewed and success stories identified.

Creative methods for supervising community educators are also required to improve program efficiency and effectiveness. Enhancing the status of nutrition by elevating training and providing specific nutrition messages and support materials should improve program performance, but culturally appropriate ways for providing constructive criticism to educators are required. Alternative mechanisms for reaching rural educators (e.g., through media and newsletters) should be explored regularly so that these people receive recognition for their work and feel less isolated.

Knowledge Gaps and Information Needs

The remainder of this framework identifies knowledge gaps and information needs with respect to targeted interventions to improve child nutrition within the context of child survival and health initiatives. The experts interviewed believed that greatest attention should be given to improving the effectiveness and efficiency of programs to improve feeding practices at the household and community levels. On the basis of this review, a second area requiring attention is improving the integration of nutrition services and activities into health and family planning programs, particularly with respect to improving women's reproductive health and micronutrient status.

Knowledge Gaps

During the framework development and review process, the following needs were identified as priorities that require future attention:

1. Document and disseminate information within Africa on African nutrition problems and program experiences (so that the information is accessible to program managers and policy makers).

2. Define models for monitoring and expanding (scaling up) programs to improve infant and young child feeding practices based on the lessons learned from African program experiences.

3. Identify the extent and nature of nutritional problems in populations where such data do not exist (especially with respect to micronutrient deficiencies and the relationships among maternal undernutrition, birth outcomes, and young child feeding practices).

4. Identify ways to improve training and supervision of all personnel who provide nutrition counseling (including mothers, professional and paraprofessional health workers, extension agents, etc.) so that they can become effective behavior-change agents.

Information Needs

The information required to fill these needs and address the issues identified earlier can be obtained through five interrelated types of activities:

1. *Behavioral research* to identify cultural, economic, and child-directed constraints to achieving optimal breastfeeding practices, and to providing weaning-age children with diets that have adequate energy, protein, and micronutrients.

2. *Operational and evaluation research* to improve training and supervision, increase the coverage and effectiveness of existing nutrition programs' resources, and determine the inputs necessary to promote and sustain improved child feeding practices and nutrition.

3. *Prevalence research* to document nutritional deficiencies in populations where this information does not exist.

4. *Analyze existing data and conduct nutrition advocacy* to sensitize leaders and policy makers about nutrition problems and solutions (i.e., the costs, benefits, and effectiveness of interventions to improve child nutrition).

5. *Disseminate information* on African nutrition programs (process, impact, and lessons learned), state-of-the-art research and training methods, and other relevant nutrition information through regional information clearinghouses, and conduct regional workshops to further the activities listed above.

Ranking of Activities

The following criteria were used to establish the priorities for AFR/SD and HHRAA/SARA for research, analysis, and information dissemination activities to improve child nutrition:

- linkages to the AFR/SD nutrition objective tree;
- potential implementation, impact on decision making, and regional significance;
- complementarity to the activities of other donors and institution; and
- USAID and the Africa Bureau's comparative advantage.

The objectives, targets, knowledge gaps, and information needs discussed in the text are summarized in Table 2. As noted earlier, the priority areas for AFR/SD attention are 1) improving the effectiveness and efficiency of programs to improve infant and young child feeding practices, and 2) improving the integration of nutrition services and activities into health and family planning programs, particularly with respect to improving women's reproductive health and micronutrient status.

Linkages and Regional Significance

Both of these priority areas are directly linked to improving the nutritional status of mothers and children. Maternal micronutrient deficiencies are caused by inadequate dietary intake and nutrient losses due to infection and the nutritional stresses of repeated pregnancies. They also affect birth weight, neonatal mortality risk and subsequent child growth and development. Suboptimal breastfeeding practices and weaning diets further increase young children's risk of infection and mortality, undernutrition, and impaired growth and development. These conditions—suboptimal breastfeeding and weaning practices and maternal micronutrient deficiencies—are widespread throughout the continent.

Complementarity with Other Donors

The priorities and activities outlined in this framework are consistent with the strategic objectives and activities of all major donors supporting child

survival technologies and efforts to integrate and improve the quality of health care in Africa.

USAID and the Africa Bureau's Comparative Advantage

USAID and the Africa Bureau have strong comparative advantages to support activities to improve child feeding practices, and to integrate nutrition activities and services into health and family planning programs. These advantages stem from the Agency's long-term support of organizations and institutions engaged in nutrition improvement programs, and their promotion of appropriate child survival technologies, including the encouragement of exclusive breastfeeding, vitamin A supplementation, and appropriate feeding practices.

USAID funds several field support projects that address the concerns raised in this report. These include BASICS, the Expanded Promotion of Breastfeeding Project, the IMPACT Project, MotherCare, the Nutrition Communication Project, OMNI, and the Women and Infant Nutrition Support Project. USAID can call on a wide range of experts from cooperating agencies and universities engaged in these projects for short- and long-term technical assistance in research, analysis, and information dissemination, as well as for training and other institutional support.

Recommended Activities

This strategic framework was discussed during a day-long meeting held on June 30, 1994. The purpose of the meeting was to rank the activities identified in the framework according to the criteria outlined earlier and in light of each participant's professional experience and judgement. The following activities were recommended as being of highest priority:

1. Behavioral and operational research to improve the efficiency and effectiveness of programs to improve feeding practices at the household and community levels, with active dissemination of all research findings:

   - preparation and testing of revised guidelines for formative research on the motivations and constraints to exclusive breastfeeding and improving complementary feeding practices;

31

- behavioral research and analysis to improve providers' nutrition counseling skills in different contexts;

- research to identify additional inputs (other than improved counseling skills) that are required to increase the effectiveness of nutrition education and to make sustainable improvements in child feeding practices; and

- dissemination of findings from research on operational and technical obstacles encountered in implementation of programs to improve breastfeeding and young child feeding practices.

2. Operational research and analysis to enhance the integration of nutrition services and activities into child survival, reproductive health, and family planning programs, with active dissemination of all research findings:

   - research on the feasibility, potential benefits of, and constraints to providing nutrition services and education to mothers of children visiting health facilities because of acute illness (i.e., as part of the integrated case management of the sick child);

   - research on the feasibility, potential benefits of, and constraints to providing nutrition services (including counseling and micronutrient supplementation) through reproductive health and family planning programs; and

   - research on the potential benefits of nutrition education during pregnancy-related care and its impact on breastfeeding and complementary feeding practices.

3. Advocacy directed at policy makers and donors (including USAID mission and regional staff) to increase awareness and support for nutrition improvement activities and programs:

   - preparation of a synthesis of the arguments in favor of investing in nutrition combined with experiences from African countries;

   - in concert with other donors and members of the nutrition community, develop a consensus on the most promising approaches to improving nutrition, and develop a options for nutrition activi-

22

ties and interventions that can be shared with different audiences;

- train members of appropriate African focal institutions in nutrition advocacy; and

- use advocacy tools and materials to motivate USAID missions to include nutrition improvement goals and activities in child survival, population, and reproductive health programs.

4. Improved, program-oriented nutrition training for para-professional and professional workers, coupled with concerted efforts to strengthen African institutions' capacities to conduct behavioral and operations research and analysis, and to exchange and disseminate information on their experience:

- develop and test simplified tools and modules for training health and other providers to interact appropriately and effectively with households and communities (in assessing problems and potential solutions), and to be effective nutrition counselors;

- strengthen existing research centers in Africa, particularly with respect to their capacities to participate in community-level, program-oriented research; work in or coordinate multi-sectoral activities; serve as clearinghouses or disseminators of information; and maintain accounting procedures that will allow them to receive funding from international donor agencies; and

- support regional centers of excellence for training in applied nutrition in short courses and degree programs.

Annex I. Persons Contacted/Participating

19 anonymous African nutrition experts from Cameroon, Ghana, Kenya, Senegal, Malawi, Nigeria, South Africa, Sudan, Tanzania, Uganda, and Zambia who completed the questionnaire

Susan Anthony	USAID Office of Health and Nutrition
Jayshree Balachander	The World Bank
Carol Baum	Wellstart International
Peggy Bentley	Johns Hopkins University
Dwight Cochran	Wellstart International
Colleen Conroy	JSI/MotherCare
Joanne Csete	UNICEF new York
Kate Dickin	The Manoff Group
Serigne Diene	Cornell University BASICS
Christopher Dunsford	Freedom from Hunger Foundation
Bibi Essama	EDC WINS Project
Claudia Fishman	Emory University
Rae Galloway	MotherCare/JSI
Marcia Griffiths	The Manoff Group
Steven Hansch	Refugee Policy Group
Elizabeth Herman	Consultant
Martha Holley-Newsome	Wellstart International
Sandra Huffman	NURTURE
Cate Johnson	USAID/Office of Health and Nutrition

Urban Jonnson	UNICEF/New York
Eileen Kennedy	International Food Policy Research Institute
Chessa Lutter	Wellstart International
Tonia Marek	The World Bank
Saba Mebrahtu	Academy for Educational Development Consultant
Judith McGuire	The World Bank
Ellen Messer	Brown University
Nancy Mock	Tulane University
Penny Nestel	Johns Hopkins University/OMNI Project
Margaret Parlato	Academy for Educational Development
David Pelletier	Cornell University
Ellen Piwoz	AED/SARA Project
Suzanne Pryor-Jones	AED/SARA Project
David Pyle	JSI/OMNI Project
Judi Ricci	EDC/WINS Project
Catherine Siandwazi	Commonwealth Regional Health Community Secretariat for East, Central, and Southern Africa
Adwoa Steel	NUTURE
Rebecca Stoltzfus	Johns Hopkins University
Andrew Swiderski	USAID/Office of Health and Nutrition
Julia Tagwireyi	Ministry of Health/Zimbabwe
Charles Teller	PRAGMA

Benedict Tisa	The Manoff Group/OMNI Project
Ellen vor der Bruegge	Freedom from Hunger Foundation
Atsede Wondimagegnehu	USAID/Humphrey Fellow at Office of Health and Nutrition
Marion Zeitlin	Tufts University

Annex 2. African Nutrition Experts' External Funding Priorities

Questionnaire

African Nutrition Experts External Funding Priorities

Introduction

The purpose of this questionnaire is to solicit input from nutrition experts working throughout Africa on what resources are available and what is additionally needed in order to move forward with national or regional programs to improve child nutrition. Your individual answers will be kept confidential and compiled in the form of a collective report, which will be made available to you through FCSA. The Academy for Educational Development, a non profit organization collaborating with FCSA, will compile your answers and print the report. The intended audience is first the United States Agency for International Development (USAID), which has requested this input to inform their future program planning in nutrition in Africa, concentrating on the areas of research, analysis and information dissemination. The report will also be shared with other international donors, upon your recommendation. You may request additional copies of the final report through FCSA.

Thank you for your time and consideration.

Background

Name:

Job Title/Position:

Address, Phone, Fax:

Number of Years in this or related position:

Suggested donors or organizations that you think should receive this report:

May we contact you for further information: Yes No

37

1. *National Nutrition Policy and Priorities*

1.1 Does your country have a national nutrition policy?

_____ Yes
_____ No
_____ Not aware of policy

1.2 In the past 10 years, has your country implemented a national nutrition survey, either as a stand-alone effort or in conjunction with other national census/health surveys? (Examples: Demographic and Health Survey, Living Standards Measurement Survey, Household Census)

_____ No Yes. Please indicate type and years, if known:

Survey Year
Survey Year

1.3 In your *opinion*, do you feel that child nutrition receives priority support from your political leaders and high level program decision makers? If possible, please provide some evidence for this opinion (e.g., President's statement following release of 1992 child health statistics.)

Please select the statement that best reflects your opinion:

_____ Child nutrition is clear national priority
_____ Child nutrition is clear priority for significant portion of national government, or regional government
_____ Child nutrition normally takes back seat to other health and population issues considered more urgent, but is still supported
_____ Child nutrition is very low priority issue
_____ Not able to comment
_____ Other opinion

"Evidence": _____

1.4 Is any one national figure considered primarily "accountable" for the health and nutritional status of the children in your country?

_____ No one is accountable
_____ Many people are accountable;
_____ One person really has to demonstrate improvements;

1.5 Child Nutrition Problem Definition

Please score each of the following problems in terms of its contribution to child malnutrition in your country. Please use: 1 = serious problem affecting **majority** of malnourished children, 2 = serious problem affecting large proportion of malnourished children, 3 = problem significant, but limited to pockets or regions only, 4 = problem virtually under control, 5 = no longer relevant to my country, NA = can not estimate

1.5.1 _____ Maternal Diets low in calories

1.5.2 _____ Maternal Diets low in micronutrients

1.5.3 _____ Low Birth Weight

1.5.4 _____ Exclusive breastfeeding not practiced

1.5.5 _____ Breastfeeding ceases before 24 months

1.5.6 _____ Complementary foods introduced too early

1.5.7 _____ Complementary foods introduced too late

1.5.8 _____ Weaning diets lack adequate energy density and/or protein quality

1.5.9 _____ Weaning diets lack adequate micronutrient quality

1.5.10 —— Families have insufficient food year-round

1.5.11 —— Families suffer periodic food shortages

1.5.12 —— Mothers/families lack time to prepare food and feed children

1.5.13 —— Hygiene, food storage conditions result in food contamination

1.5.14 —— Mothers unable to coax children to eat following illness

1.5.15 —— Other reason: _____

1.6 Of the 15 problems listed above, in your opinion, which are the three most important causes of child undernutrition in your country?

1. _____
2. _____
3. _____

2. Research

2.1 Current Research Efforts

Please list the institutions in your country (government, university, private) that are currently conducting *research* in child nutrition. If possible, please briefly describe the **topics, whether external support is being used and the funding agency** (if known).

E.g.

Institution	Topic	Ex Funding?	Source
XX University	Determinants of stunting	no	G.O.XX
	Breastfeeding duration, rural/urban differences	yes	IBFAN/Kenya

Institution	Topic	Ex Funding?	Source

2.2 Research Administration Issues

Please score each of the following operational issues in terms of its current contribution to performing quality research in your country. Please use the following scale: 1 = makes vital contribution to research in this country, 2 = makes important contribution, 3 = makes small contribution, 4 = not adequate, 5 = irrelevant, NA = not able to assess.

2.2.1 —— (Nutrition/Health) Research Institution exists

2.2.2 —— Currently Adequate number of trained researchers

2.2.3 —— Easy Access to nutrition data bases (computer)

2.2.4 —— Easy Access to nutrition data as needed (paper)

2.2.5 —— Adequate number of laboratories, study units

2.2.6 —— Research proposal/grant mechanism exists in country

2.2.7 —— Government commissions research regularly, provides adequate funds

2.2.8 —— Regional/International donors provide grants easily, provide adequate funds

2.2.9 —— Research findings published and disseminated in country

2.2.10 —— Research findings published and disseminated in international journals regularly

2.2.11 —— Key research journals available in country

2.2.12 —— Good collaboration among institutions

2.2.13 —— Research given institutional or political support

2.2.14 —— Other_____

2.3 What do you perceive to be the three most important obstacles to conducting research on child nutrition in your country?

1._____

2._____

3._____

2.4 In your opinion, what are the two most important child nutrition related research questions that require either additional research or analysis in your country. Please explain your answers. Note: these questions may be operational, behavioral or biological.

1._____

Reason:_____

_____

_____

2._____

Reason:_____

_____

_____

22

3. Programs

3.1 Program Administration Issues

Please score each of the following operational issues in terms of its current contribution to performing quality nutrition programs in your country. Please use the following scale: 1 = makes vital contribution to programs in this country, 2 = makes important contribution, 3 = makes small contribution, 4 = not adequate, 5 = irrelevant, NA = not able to assess.

3.1.1 ----- (Nutrition/Health) Research Institution exists

3.1.2 ----- Currently Adequate number of trained personnel

3.1.3 ----- Nutrition data bases (computer) linked to programs

3.1.4 ----- Programs have access to nutrition data as needed (paper)

3.1.5 ----- Adequate number of treatment/counseling facilities

3.1.6 ----- Local program managers have decision making ability and resources

3.1.7 ----- Government trains staff regularly, provides adequate funds

3.1.8 ----- Regional/International donors co-sponsor programs, provide adequate funds

3.1.9 ----- Good sharing of program results in country through workshops or newsletters

3.1.10 ----- Good collaboration among institutions

3.1.11 ---- Have access to information on program experiences in other countries, regions

3.1.12 ---- Programs enjoy popular support and participation

3.1.13 ----- Other_____

3.2 What do you perceive to be the three most important obstacles to implementing programs in child nutrition in your country?

1. _____

2. _____

3. _____

4. *External Support*

In your *opinion*, what would be the most appropriate ways that an external funding agency or donor could support child nutrition research, analysis, dissemination or programs in your country?

_____

_____

_____

5. If you have any other comments about child-nutrition research, analysis and information dissemination, please note them here:

References

ACC/SCN. Second report on the world nutrition situation. Volume I: Global and regional results. ACC/SCN: Geneva, 1992.

Ashworth A, Draper A. The potential of traditional technologies for increasing the energy density of weaning foods: A critical review of existing knowledge with particular reference to malting and fermentation. Geneva: World Health Organization, 1992.

Behrman JR. The economic rationale for investing in nutrition in developing countries. Washington, D.C.: USAID, 1992.

Coulibaly M. Programme national de lutte contre les maladies diarrheiques de la Mauritanie etude de la prise en charge de cas de diarrhee dans les structures de sante. PRITECH trip report, May, 1989.

Del Rosso J. Investing in nutrition with World Bank assistance. Washington, D.C.: World Bank, 1992.

Diene S. Doctoral dissertation. Cornell University, Ithaca, NY. 1995.

Dunford C. Impact of credit with education on mothers and their young children's nutrition. Proposal to the Thrasher Research Fund, 1993.

Duran-Bordier A. Pre-training needs assessment report: Burkina Faso. Nutrition Communications Project trip report, March-April, 1992.

Fishman C and Hansch S. Beyond child survival: An assessment of infant and child nutrition in Africa. Washington D.C.: U.S. Agency for International Development, 1995.

Fishman C, Golaz A. Impact assessment of the Nutrition Communications Project as implemented by the Ministry of Health, Solidarity, and the Elderly, Africare, Save the Children and World Vision in Dioro, Kolondieba and Koutiala. Washington D.C.: Academy for Educational Development, 1995.

Gamatie Y. Etude de la prise en charge des cas de diarrhee dans les structures de sante au Niger. Ministry of Health, Republic of Niger, May, 1992.

Griffiths M. Improving young child feeding practices: The Weaning Project Final Report. Washington D.C.: The Manoff Group, Inc., 1992.

Guptill KS, Estey SA, Oni GA, Brown KH. Evaluation of a face-to-face weaning food intervention in Kwara State, Nigeria: Knowledge, trial, and adoption of a home-prepared weaning food. *Soc Sci Med* 1993; 36(5):665-72.

Herman E. Issues in improving child feeding during diarrhea: Experiences in four African countries. Paper prepared for the BASICS Project, 1993.

International Conference on Nutrition (ICN). World declaration and plan of action for nutrition. Rome: FAO and WHO, 1992.

Jonsson U. Personal Communication, 1994.

Keith N. *Young child feeding, weaning, and diarrhea illness: Practice in a Hausa village and educational implications. Part I: The ethnographic study.* Virginia: PRITECH, 1991a.

Kennedy E. Successful nutrition programs in Africa: What makes them work? Washington D.C.: The World Bank, 1991a.

Kennedy E. Agricultural, nutrition linkages. Final report to the US Agency for International Development, Office of Nutrition. September, 1991b.

Konde-Lule JK, Elasu S, Musonge DL. Knowledge, attitudes, and practices and their policy implications in childhood diarrhoea in Uganda. *J Diarrhoeal Dis Res* 1992; 10(1):25-30.

Lassen CA, Mknelly B. Freedom from Hunger's new credit-led approach to alleviating hunger: Is it working? An evaluation of a partnership grant from the US Agency for International Development. Davis, CA, 1992.

Levinson FJ. Addressing malnutrition in Africa: Low-cost program possibilities for government agencies and donors. Washington D.C.: The World Bank, 1991.

McGuire JS. The payoff from improving nutrition. Draft prepared for the World Bank, 1990.

Mellor J. Ending hunger: An implementable program for self-reliant growth. In: *The world food crisis: Food security in comparative perspective.* Edited by J. Hans Bakker. Toronto: Canadian Scholar's Press, Inc., 1990.

National Academy of Sciences (NAS). Nutrition during pregnancy: Weight gain, nutrient supplements. National Academy Press: Washington DC, 1990.

Nduati R. Personal Communication, 1995.

Ngo Som J. Overview of the nutrition situation in West and Central Africa. Report prepared by EDC WINS for the US Agency for International Development, 1994.

Piwoz EG. Improving feeding practices during childhood illness and convalescence: Lessons learned in Africa. Washington, D.C.: Academy for Educational Development, 1994.

PRICOR. Supervisors improve growth monitoring sessions through operations research. PRICOR Child Survival Report, Togo. May, 1991.

Pyle D, Mbalinyi M, Kiwara A, Lindsteadt J. We will never go back: Social mobilization in the child survival and development program in Tanzania. NY: UNICEF, 1993.

Roisin A, Zerbo PJ, Corbin C. Etude de la prise en charge des cas diarrhee dans deux groupes de quatres provinces du Burkina Faso. PRITECH trip report, November-December, 1990.

Sahn DE. Malnutrition in Cote d'Ivoire: Prevalence and determinants. Washington DC: The World Bank, 1990.

Semba R et al. Maternal vitamin A deficiency and mother-to-child transmission of HIV-1. *The Lancet* 343: 1593-1597, 1994.

Sommerfelt AE, Rutstein SO, Pearson R, Way AA, Steinhoff MC. The effect of the length of the birth interval on the nutritional status of preschool children. Paper presented at the 1989 annual meeting of the Population Association of America, 1989.

Sserunjogi L, Tomkins A. The use of fermented and germinated cereals and tubers for improved feeding of infants and children in Uganda. *Trans Roy Soc Trop Med and Hyg* 1990; 84:443-6.

Stinson W, Saver P. Growth monitoring and promotion: A review of experience in seven countries. Bethesda: PRICOR, 1991.

Stoltzfus EJ. Iron deficiency and strategies for its control. A report prepared for the Office of Nutrition, Agency for International Development. Washington, DC, 1993.

UNICEF. Strategy for improved nutrition of children and women in developing countries. New York: UNICEF, 1990.

USAID. Africa: Growth renewed, hope rekindled. A report on the performance of the Development Fund for Africa 1988-1992. Washington D.C., 1993.

Villar J, Smeriglio V, Martorell R, Brown CH, Klein RE. Heterogeneous growth and mental development of intrauterine growth retarded infants during the first three years of life. *Pediatrics* 1984; 74:783-791.

World Bank. World development report, 1986. Oxford: Oxford University Press, 1986.

World Bank. World development report, 1993: Investing in health. Oxford: Oxford University Press, 1993a.

World Bank. Comment ameliorer [illegible] ion du secteur de la sante dans la lutte contre la malnut[illegible] 'revue d'evaluations de projets en Afrique. Edited by Tonia Ni[illegible] Washington D.C.: World Bank, 1993b.

WHO/UNICEF. Integrated management of the sick child: A new WHO/UNICEF effort to improve child survival. Geneva, 1993.