SUGGESTED OUTLINE FOR NUTRITION RESEARCH SUPPORT

The problems of malnutrition are perhaps as complex, widespread and intractable as poverty itself. The multidimensional nature of malnutrition has been variously diagrammed by E.T. Kennedy, P. Pinstrup-Andersen, Arnold Pacey and Philip Payne as illustrated on the attached charts. The vicious circle of poverty, diet, infection and work output is also illustrated. Clearly no single discipline or Centre Division can alone address adequately or provide a solution for the various ways in which malnutrition is manifest in developing countries. Few if any existing institutions can assemble and manage the wide range of technical, social, cultural, economic and policy components which must necessarily comprise an effective nutrition program.

In order to generate an internal perspective on nutrition issues within the Centre, and particularly in response to the comments of the Board Review Panel of AFNS, an interdivisional working group on nutrition issues was established under the direction of the Vice-President Research Programs. What follows is a compendium of priorities, views and suggested guidelines emanating from the experience of the Divisions represented on the working group.

This document is simply a first draft of the points of view expressed by different Divisions to serve as a point of departure for further discussions and the eventual planning of a cogent coherent strategy.
FOCUS

1. While in most developing countries varying kinds of malnutrition have been reported, it was generally agreed that the Sahelian and Sub-Sahelian countries of Africa, with declining per capita food productivity exacerbated by recent droughts, should receive the highest priority. Specific countries in Asia and Latin America will also be considered.

2. The emphasis should be on the problems of those most vulnerable in poor societies: children up to age five, and pregnant and lactating mothers. Specifically, the proposed program will focus upon mother and child.

3. Both rural and peri-urban populations should be the object of Centre concerns. The rural poor form the majority of the developing world; but the peri-urban poor also find themselves at serious risk.

APPROACH

1. Given the complexity of nutrition problems, an integrated approach is clearly required. Within the Centre this might take the form of support for joint, interdivisional research activities or support for complementary projects in selected countries and institutions.

2. A continuous Centre-wide process of strategic planning will be developed, within which individual projects, workshops or other activities may be programmed, selected, and integrated.

3. An important objective will be the development of capacity for multidisciplinary research in the area of nutrition, as Third World researchers are frequently isolated not only geographically, but also according to discipline. Capacity building is particularly relevant in Africa where the institutional and research base is very weak.
4. Institutional strengthening and research capacity building requires a continuous and prolonged effort over a minimum of a 10 year period.

5. Since not every nutrition related institution can be strengthened, selections must be made according to nutritional needs of the areas, estimated potential of the organization, and geographical and cultural mix of institutions. Again the question arises whether to assist institutions in areas with the weakest infrastructure, or those showing more promise of yielding results.

Countries in which candidate institutions are likely to be found are as follows:

Anglophone Africa: Ethiopia, Ghana, Kenya, Nigeria, Zimbabwe

Francophone Africa: Cameroon, Ivory Coast, Mali, Senegal

Lusiphone Africa: unknown

6. Training of many people in various skills will be essential. Wherever possible, training for Africans should be provided within Africa. Institutions selected for strengthening through training will need strong local support.

7. Consideration will be given to current efforts to establish chairs of food and nutrition in African universities. The possibility of Centre contributions to this process will be examined in view of our philosophy, operating style and availability of funds.

8. Most important: the initiatives and ultimate responsibility must rest with Africans. IDRC can only provide financial, material and intellectual assistance and encouragement.
9. Research project support alone is not an adequate response to the problem of malnutrition. Collaboration with other agencies is necessary to assure complementary inputs to development programs.

10. Where possible, research institutes should be encouraged to take account of the nutritional activities of both governmental and non-governmental organizations in order to increase the practical relevance and dissemination of the research thrusts and their results.

11. Centre supported, nutrition-related activities should include reliable market and situational analyses as a basis for precisely focused research and for clear targeting and delivery of nutrition interventions. Such interventions should link or integrate with government schemes and other NGO programs with particular emphasis on identifying, defining and finding solutions for weaknesses and difficulties in these programs. Of particular importance is the need to differentiate between programs that are to be self-sustaining and those which are instruments of social welfare requiring significant subsidization.

12. A great deal of improperly coded and hence underutilized data already exists throughout the developing world. More is being generated every day. The identification, storing and processing of this raw data is necessary if it is going to be made available to researchers generally. The Information Sciences Division is prepared to respond to nutrition information needs in support of research activities financed by the other program Divisions.

13. Nutrition education and media communications should be developed and promoted as integral parts of a nutrition improvement strategy. The content of messages and training, however, must be based on realistic technologies and interventions. For example, teaching mothers about balanced diets and preparing weaning foods from mixtures of ingredients has not had a great success because of inherent impracticalities in the advice given. For the overworked rural mother who spends eight hours working in the field and then must fetch water from a distant source to prepare food for her weanling child, it is all but impossible to feed the child frequently with freshly prepared food as recommended. More practical solutions are possible and could be promoted through national advertising, use of radio and other media.
14. The Communications Division is prepared to provide the program Divisions with a wide range of communications support, including project support for traditional audio-visual and printed materials as well as less traditional forms such as street theatre and puppet shows, where these are deemed more appropriate.

15. It is suggested that COMM and IS collaborate closely in project formulation to bring to bear respective strengths in information dissemination activities to address nutrition information needs at the "grass roots" level.

RESEARCH ISSUES

1. The first priority at this point is the need for a critical assessment of the capacity of Sub-Saharan institutions to carry out all aspects of nutrition-related research. Recognizing the need to prepare for the next African drought, the review should assess the multidisciplinary capacity of existing institutions and the strengths of the delivery infrastructure within which they operate.

2. Critical nutritional problems:
   a. decline in subsistence food production and availability, resulting in inadequate diets of the very poor;
   b. increasing food demand in urban areas due to increased rural-urban migration, declines in quality of life and high food prices;
   c. seasonal variations in nutritional status, manifested by seasonal PCM and nutritional anemia;
   d. high infant and child morbidity and mortality related to changing social behaviour including declines in breastfeeding and inappropriate weaning foods;
   e. long-term effects of malnutrition in terms of productivity, education and general human welfare;
   f. inaccessibility of the poor to knowledge about basic health and nutrition.
3. Mechanisms to address these problems:

a. i) research on food production, food purchasing and consumption patterns in poor rural and urban areas, focusing on nutritional composition of diets. Such research should consider distributional aspects within households according to age, sex and status. Where possible, the research would be longitudinal and/or comparative in nature, in order to reveal change over time or inter-group differentials;

ii) improving existing farming systems and ecologically appropriate food crops;

iii) research on land availability, use and productivity;

iv) studies of food production incentives, and food pricing and marketing policies;

v) increased rural income generating opportunities, particularly through research aimed at the development of local food handling, processing and distributing enterprises;

b. i) research on street foods in urban areas, sanitary aspects of its preparation and distribution, nutritional content, affordability, etc.

ii) research on rural-urban marketing linkages and pricing policies;

c. longitudinal studies of seasonal fluctuations in food supply, consumption and marketing over the agricultural year, complemented by intensive monitoring of health and nutritional status, particularly as related to energy needs, dietary balance and specific dietary deficiencies;

d. micro-studies of the beliefs and practices of mothers, grandmothers and other care-givers with respect to breastfeeding, weaning foods and infant and child care, preferably retrospective in nature, to illustrate changing behaviour in these areas (e.g. shifts from breast milk and traditional weaning foods to less nutritious sources);
e. i) comparative studies of food and nutrition problems of particular groups;

ii) studies of potential toxicities of local food products;

f. i) studies of the effectiveness of existing nutrition interventions, including education and health programs, and of the unintended consequences of other development interventions on nutritional status;

ii) research on potential hazards and benefits of traditional versus modern foods;

iii) promotion of proper nutritional and sanitary habits via production and testing of culturally appropriate educational materials.

4. The impact of new technologies on women's time and energy, opportunities for women's income generation, and any subsequent nutritional impact, bears special consideration for research.

5. The identification, storing, and processing of nutrition-related research data, and the transmission of the data to the researchers in the field is a special concern of the IS Division. Several measures are proposed:

a) adapt/enhance low-cost, microcomputer-based software used in nutritional surveillance and monitoring activities;

b) where appropriate and feasible, introduce computer conferencing and electronic mail to facilitate the exchange of information and experiences between "like-minded" groups;

c) maintain contact with and strengthen links between the emergent national interagency committees, especially in the Eastern and Southern African region, who are contributing to early-warning systems and are the focal points for collecting nutrition-related data;
d) special case studies focused on nutrition, undertaken in the context of planned ISD rural sector projects, aimed at reviewing information flow/use patterns and the interrelated issue of "community dynamics and decision-making";

e) encourage agriculture and health information systems to put extra emphasis on the identification and collection of nutrition-related literature;

f) explore possibilities for collaboration with African regional organizations such as ORANA and SADCC.

6. Program methodology and formulation in the Communications Division should take place in collaboration with the program divisions and should comprise audience surveys to determine medium or media, production training, pre-testing of products, utilization and management of products within dissemination/extension schemes and the evaluation of communication tools/campaigns.

7. All of the above must be set in the context of local policies which may abet or negatively affect potential for impact. Policies covering a wide range of factors such as production resource ownership and control, income generation and transfer, foreign aid and trade effects on food availability to the poor, food production, food pricing and subsidy, food distribution, home production and consumption, nutrition education content and communication, food supplements and formulated foods, fortification, public health and nutrition programs, water and sanitation and disease prevention must be considered.

8. For purposes of focused IDRC action, a specific type of problem and approach should be selected and followed through by activities from all Divisions in an integrated fashion. Only by focusing on a specific problem will it be possible to get the applied results which should be the objective of any Centre nutrition activity.

11 March, 1987
Figure 4.1--A schematic overview

Issues Influencing Principal Factors

- Food production
- Food distribution (place, time)
- International trade and aid
- Processing and nonfood demands
- Money income
- Prices
- Income in kind
- Own production
- Intrahousehold income distribution
- Outside influences
- Perceived food needs
- Perceived nutrition needs
- Past consumption, traditions, and social, cultural, and religious factors
- Intrahousehold food distribution
- Child care
- Intrahousehold food processing
- Food characteristics and composition
- Time constraints
- Water/sanitation
- Prior nutritional status
- Diarrhea
- Infectious diseases
- Parasites
- Maternal nutritional status

Principal Factors Determining Nutritional Status

- Food availability (national, regional, and local)
- Ability to obtain available food (household)
- Desire to obtain available food (household)
- Utilization of obtained food to meet nutritional needs (household and individual)
- Health of the individual
- Nutritional status (individual)

Programs and Policies Influencing the Principal Factors

- Research and technological changes in food and nonfood production
- Rural development schemes
- Input and output price policies
- Resource-ownership policies
- Changes in rural institutions
- Foreign trade and aid policies
- Other policies affecting area utilization and yields
- Income-generating policies
- Income-transfer programs and policies
- Food-transfer programs and policies
- Food price policies with or without explicit subsidies
- Food supply and demand policies with price effects
- Programs and policies affecting production for home consumption
- Policies and programs affecting the cost of nonfoods that compete for the household budget
- Policies and programs affecting intrahousehold distribution of control over incomes and spending
- Promotion and advertising
- Policies and programs affecting the range of spending opportunities perceived by the household
- Nutrition education
- Programs to supply micronutrients
- Childcare and breast-feeding programs
- Food fortification
- Programs and policies regulating formulated foods
- Public health programs
- Integrated nutrition and health programs
- Water improvement and sanitary programs
- Disease prevention and cure

Multiple causes in malnutrition

- Cooking fuel shortage
- Time spent collecting fuel and water
- Family's productive labour needs
- Domestic work and responsibility
- Poor living conditions: crowding
- Respiratory infections e.g. measles

- Cash available
- Food available
- Energy dense food
- Mother's experience and knowledge

- Poor sanitation and water supply

- Demands on mother's time

- Baby food cooked in advance and stored
- Frequency and duration of baby's feeds
- Contamination of food
- Appetite vs. anorexia

- Food preparation

- Food intake
- Malabsorption

- Digestion and absorption
- Infection from contaminated food

- Child's health

Figure 5.1 Summary of factors affecting the nutrition of small children

Inadequate family income → Inadequate work output → Inadequate energy intake → Inadequate diet

Inadequate food demand to offset infection → Increased food demand by pregnant and nursing mothers and weanlings

Inadequate resistance to infection → Increased infant mortality

Increased birth rate to offset mortality → Inadequate learning ability

The Vicious Circle