1. INTRODUCTION

1.1 Background of the Applied Nutrition Programme Concept

Food distribution programmes initiated after World War II, failed to improve the nutritional level of populations in developing countries. This led to the development of Applied Nutrition Programmes which were basically educational programmes concerned with the production and consumption of scientifically adequate diets in rural communities with special attention to the needs of vulnerable groups.

Applied Nutrition Programmes, initiated during the past 10 years are operating in 70 countries with varying degrees of success. Some have faced difficulties and have not achieved their planned objectives. Most problems have arisen from weaknesses in planning, evaluation, and the coordination of efforts by governmental agencies - health, education, agriculture, and community development.

1.2 Purpose of the Seminar

The purpose was to provide an atmosphere of discussion between participants from Asian countries concerning planning and evaluation techniques which would lead to the formulation of adaptable criteria for greater achievement in Applied Nutrition Programmes.
1.3 Participants

The seminar was attended by 47 representatives of governments and agencies concerned with improving the nutritional standard of Asian peoples. The composition was as follows:

(a) 26 Participants from 9 Asian countries (Cambodia, Ceylon, India, Japan, Korea, Malaysia, Philippines, and Thailand)
(b) 2 Observers (UNESCO & UNICEF)
(c) 6 Seminar Secretariat members
(d) 2 Consultants (FAO & WHO)
(e) 11 Resource personnel.

II. SUMMARY OF DISCUSSIONS AND CONCLUSIONS

2.1 Baseline Data

Indicators for each phase of Applied Nutrition Programming should be selected to reflect progress evaluation as well as baseline assessment. The major characteristics should be: (1) ease of collection & analysis; (2) objectivity & reliability; and (3) numerical expression.

Data collectors representing pertinent multi-disciplinary teams should be project related and trained in various sampling techniques for use in small areas where progress could be measured after reasonable time spans. Interministerial coordination was considered to be vital to insure the full use of data for: (1) planning & implementing; (2) serving as a baseline for subsequent evaluations; (3) training
of teachers & extension workers; (4) enriching the regular curriculum with reference to food, nutrition, home economics, health etc; (5) demonstrating to local, intermediate & national authorities the nature & remedies of food and nutrition problems; and (6) assessing programme needs in personnel, training, supplies, equipment, funds & better coordination.

The most important areas for developing collection techniques and establishing valid criteria for baseline data relative to improving Applied Nutrition Programmes were considered as follows:

a. **Health** - Indices of nutritional status of school children as well as village communities were discussed relative to simplifying baseline surveys by using valid indicators to determine progress evaluation. These included: (1) **vital & health statistics** (not always dependable); (2) **weight & height for age** (if available, considered most useful); (3) **skinfold thickness** (requires well-trained personnel); (4) **clinical signs** (too subjective and non-specific); (5) **biochemical tests** (secondary importance); and (6) **increments in weight & height** (utmost importance using equal time intervals with control groups).

b. **Food Consumption** - Household consumption surveys, preferably by weightment method, were agreed as most necessary. The important related survey factors to be interpreted in connection with clinical findings were: (1) **target nutrients** (protein, vitamin A, & calories); (2) **food beliefs & practices** (preferences, avoidances, & prestige foods especially of mothers during pregnancy and lactation as well as infants and toddlers); and (3) **related socio-economic factors** (income, expenditures, savings etc.).
c. **Food Production** - Surveys of horticulture, fishery, and small gardens (school, home, & community) with special attention to grains, legumes, poultry, milk, and local products having a feasible nutritional & developmental potential should include the following:

(1) **horticulture** - climate, seasons, common crops, cropping patterns, yields, agricultural practices (use of fertilizers manures, compost, insecticides, fungicides, & herbicides), food storage, food processing, food preservation, school gardens, availability of water & irrigation, sources of seeds & seedlings, size & system of land holdings, availability of land for home & community gardens, marketing system & centres, social organizations of rural communities, agricultural organizations, involvement of agricultural institutes, and the system & operation of agricultural extension services.

(2) **fisheries** - (freshwater & marine) - climate, oceanographic conditions, perennial waters, shore facilities, local fishery practices, species & sources of fish (seed, fry, & fingerlings), periods & rate of stocking, freshwater fish yields, marketing, methods of preservation, acceptances of fish as a regular diet essential, fishery organizations (training, development, & research), system of land and water tenure, nature & size of freshwater area available, consumption figures, and the socio-economic position of fishing communities.

d. **Education** - Applied Nutrition Programmes are educational, and therefore, the formal educational system should serve as the major vehicle for learning transmission. The following data was considered necessary: (1) number & size of schools;
(2) percent attendance figures by age;
(3) number of teachers & extent of
community orientation & leadership;
(4) school feeding practices (composition,
source, costs, cooking facilities, &
personnel); (5) school gardens (size,
equipment, water supply, & personnel);
(6) community interest in school
activities; and (7) health & nutrition
education (curricula, methods, aids,
foods, & personnel).

2.2 Involvement of National Institutions and Local Communities

The ideal agreed upon for cooperation in Applied
Nutrition Programmes would be the establishment of a
well-staffed food & nutrition unit or service in each
participating agency, from the initial planning stage,
to be coordinated by an interministerial food and
nutrition committee. However, some governments have
given the responsibility for Applied Nutrition
Programmes to one ministry which often leads to
difficulties in developing full cooperation with other
ministries.

It was agreed that agencies concerned with Applied
Nutrition Programmes should have, through their own
functioning nutrition units, the following areas of
responsibility:

(a) Ministry of Health - Since the prevention of
malnutrition was recognized as a function of
basic health services, this ministry should:
(1) provide data on health services in specific
areas; (2) provide health services for the
detection & treatment of malnutrition, early
rehabilitation of malnourished children,
education of mothers, & control of infection;
(3) train public health nurses, midwives, &
auxiliary health workers in nutrition
activities at the village level; and
(4) establish nutrition activities in basic
health services as part of the national
health policy.

(b) Ministry of Food and Agriculture - Besides
surveys of food consumption, food habits,
food balance sheets etc., this ministry
should: (1) define the national food &
agriculture situation and policy; (2) improve
food production & agricultural practices;
(3) support agricultural extension &
nutrition education; and (4) conduct practical
research on the local & industrial levels
for food storage, processing, & preservation.

(c) Ministry of Education - This ministry can best
create a nutrition-conscious population by;
(1) providing compulsory health & nutrition
education in the curriculum at all school
levels; (2) training future teachers
specifically as health & nutrition specialists;
and (3) providing in-service training in
health & nutrition including school feeding
& gardening activities.

(d) Ministry of Community Development, Rural
Development - This ministry can play a
coordinating role at national and local
levels by integrating applied nutrition
as part of its whole community development
programme.

(e) National Planners - High-level policy makers
should be made aware of the economic and
manpower significance of Applied Nutrition
Programmes so that budgetary support can be
enlisted. This can be facilitated by:
(1) organising regional meetings through
international agencies and including
national planners; (2) arranging meetings
between visiting U.N. officers & national
planners; and (3) including officials with
budgetary & personnel responsibilities from
the planning stage.
Local Communities - Great importance was attached to the involvement of the people themselves in planning and implementing Applied Nutrition Projects. All participants agreed that project success depends upon:

1. community stability & village leadership;
2. men's & women's attitudes in changing their food habits;
3. role of different village leaders including religious leaders;
4. cooperation of village organizations;
5. use of a social scientist to ascertain the social structure and cultural food patterns of a community.

2.3 Evaluation

Internal and external assessment as a constructive process provides the proper perspective for progress toward the goal of Applied Nutrition Programmes. Problem-orientated evaluation, realistically planned and related to national and local resources, requires detailed information.

Factors which were considered in achieving proper evaluation were:

(a) Criteria, indices & indicators - Baseline data forms the background of good evaluation and should include:
1. health;
2. supplementary feeding;
3. food consumption;
4. food production;
5. nutrition education;
6. training programmes;
7. socio-economic changes; and
8. administration & budgeting.

(b) Orientation of evaluation - Improving Applied Nutrition Programmes by indentifying and removing problems relating to the needs and desires of village people was considered uppermost. It was also considered very essential that summarized evaluation results be reported back to field workers and villagers.
(c) **Evaluation personnel** - An interdisciplinary team, including a statistician, should plan and conduct evaluations. If this is not feasible, then implementing personnel with the assistance of field workers and villagers could provide a measure of objective balance to the subjective data.

(d) **Evaluation methods** - Actual methods and time sequences for evaluations would depend on the local situation and availability of baseline data. Case-study, sampling surveys, and PRENT (Programme Evaluation and Review Technique), can be applied but the same forms must be used for periodic assessments.

(e) **Evaluation cautions** - Specific factors that might easily make an evaluation unreliable were given as: (1) inadequate training & supervision of data collectors; (2) inexperience of evaluators in interview techniques & recognizing socio-cultural/psychological factors; (3) over estimations in food consumption surveys; (4) difficulty in determining age; (5) concealment of actual circumstances; (6) failure to distinguish between those who never adopted a practice and those who did, and later abandoned it; (7) non-utilization of all available data; (8) delayed and/or unsystematic analysis of data; (9) lack of professionals (statisticians, nutritionists, & social scientists); and (10) influence of irrelevant factors.

(f) **Recommendations** - It was agreed that planning, implementation and evaluation workshops should be held at national levels and that reports and forms from different countries should be made available for study. A manual on evaluation should be prepared by FAO and WHO, as a guideline for programme evaluations.

### 2.4 Orientation and Training of Personnel in Planning and Evaluation

Applied Nutrition Programmes require workers at all levels trained to plan, implement and evaluate projects. Training can be complicated and expensive,
ranging from orientation of village workers to the training of specialists. It requires adequate planning & budgeting and should consider:

(a) **Content** - It should be simplified from the top levels downward to accommodate the personnel and the scope of training and whether for planning (data collecting) or for evaluating (evaluation techniques). Orientation & training courses at the planning stage need to include basic nutritional facts such as: (1) functions of foods and food groups; (2) causes and prevalence of local nutritional disorders; (3) needs of vulnerable groups; (4) environmental hygiene; (4) infectious & parasitic diseases; (5) food production & consumption; (6) methods of improving the local nutritional status; (7) improved patterns of family diet & infant feeding; (8) soil preparation & composting; (9) animal production; and (10) nutrition education techniques, procedures, & supplementary feeding.

(b) **Orientation** - This programme should be organized on an interdisciplinary basis to acquaint all personnel with the objectives and methods of Applied Nutrition Programmes. Later stage orientation programmes are required at intermediate & local levels for personnel involved in actual implementation.

(c) **Ad hoc training** - The complex nature of nutrition projects require on-the-spot intensive training dependant on the local needs.

(d) **Basic training** - The curricula of all relevant training institutions should include health and nutrition with its relation to the nation down to the village level. This will insure training in depth for future field workers.

(e) **High-level training** - Nutritional orientation to university and ministry personnel who occupy or will occupy strategic posts in planning or developing projects needed to raise the nutritional status of their country, is very important.
(f) **Adaptation to village level** - Village oriented training for village level workers & supervisors at the village site using the problem method was recommended. This would include practical field work, demonstrations, practice in training, development of recipes, and easily constructed visual aids.

(g) **Follow-up and evaluation** - An assessment, of whether the personnel trained were being used in Applied Nutrition Programmes with their conditions of employment and incentives, was considered vital. Personnel responsible for training should do follow-up studies on their trainees and the training programme. Adjustments of training should be based upon this evaluation.

2.5 **Problems of Coordination and Integration**

The seminar emphasized the need for agencies involved in Applied Nutrition Programmes (health, education, agriculture, community development, social service, local government, and voluntary organizations) to work together in a coordinated and integrated manner while maintaining their organizational identity.

(a) **Need for coordination and integration** - Applied Nutrition Programmes are by nature inter-disciplinary and require common objectives & functions at inter-ministerial levels to develop an effective team approach on the operational level. Coordination is needed both horizontally, between agencies and vertically, within agencies. This should begin at the early stages of training personnel, collecting base-line data, assessing progress, and the providing supplies & equipment. It was recommended that better coordination could be established between international organizations and their experts as well as international and national agencies.
(b) **Bodies for coordination at various levels** - Coordination is essential at the national policy-making level and at the field or operational level. A national coordinating committee should include representatives of the ministries of health, education, agriculture, community development, finance and national planning agencies and national food and nutrition institutes. This national committee should review the progress of programmes and decide upon policy changes. For coordination at the operational level, it was suggested that an intermediate coordinating committee be established in a ministry or department which is involved in the overall development of a country. This might vary from country to country depending upon the existing facilities, funds available, and the assigned responsibilities of a particular ministry.

(c) **Techniques and methods of coordination** - Because Applied Nutrition Programmes are interdisciplinary, the techniques of cooperation must be fostered. Communication was viewed as one of these important techniques. Reports of one ministry should be available to others involved in the programme. Field reports especially, should be relayed up to national-level officers and disseminated from them with the necessary information and instructions required for all levels.

Coordination was also considered a major function of training when interdisciplinary courses, seminars, or discussion groups, are offered for personnel with varying professional and technical backgrounds. Here a great interchange of ideas can take place and the spirit of coordination can be strengthened.
References:


III. COMMENTS (UNESCO OBSERVER)

3.1 General Observations & Comments

(1) Attendance at all meetings was good, although general discussion lacked spontaneous enthusiasm.

(2) One excellent procedure was the rotation of the seminar chairmanship each day to a member delegate from each of the represented Asian countries.

(3) The observers from UNESCO & UNICEF were directed to attend the plenary sessions only.

(4) There exists a wide variation of national coordinating agencies for Applied Nutrition Programmes among the nine Asian countries represented at the seminar. The coordination is as follows:
   4 = Ministry of Health
   3 = Ministry of Agriculture
   1 = Ministry of Education
   1 = Ministry of Education & Ministry of Health

3.2 Educational Observations & Comments

(1) Need - Many delegates recognized the need for health & nutrition education in schools and teacher training institutions to give long term continuity and reality to raising health and nutrition standards. However, no time was allotted to discussions for planning how the formal educational system could be utilized in Applied Nutrition Programmes. Most discussions concerned planning and evaluation of short term orientation and training of village level workers and high level professionals.

(2) School and Training - Very little time was allowed for discussions concerning the way in which the school and the teacher could become the framework for making the objective of Applied Nutrition Programmes a way of life. References were made to it, but nothing specific was included in the planning phases for actualizing the role of the school. Teachers were expected to cooperate, and in fact, carry the major burden of applied nutrition activities without the benefit of special training. The general assumption seems that teachers can very naturally teach health & nutrition, assist in conducting school feeding programmes, and supervise school garden projects.
(3) Curriculum - There was no discussion concerning methods of including health and nutrition in the curriculum for school children and future teachers. The most feasible method, at the initial stages, is to include health and nutrition as part of science courses by designing a practical integrated science syllabus tailored to the individual national situation as opposed to the traditional academic approach.

(4) Meeting of Educators - Mrs. E. Hansell, Reg. Nutrition Officer, (FNCHQ/London) and I hosted a luncheon meeting, with the approval of the seminar director, for nine health and nutrition educators, one from each participating country, to discuss the educational aspects of Applied Nutrition Programmes. Dr. F. Proje-Ronchi, Chief/Nutrition Service (FNCHQ/Koma) and Mr. E.V. Sailey, Reg. Nutrition Advisor (MLCHQ/Makati) also attended. No definitive conclusions became evident, but it did permit each delegate to present the educational problems relating to applied nutrition in his own country under an informal atmosphere.