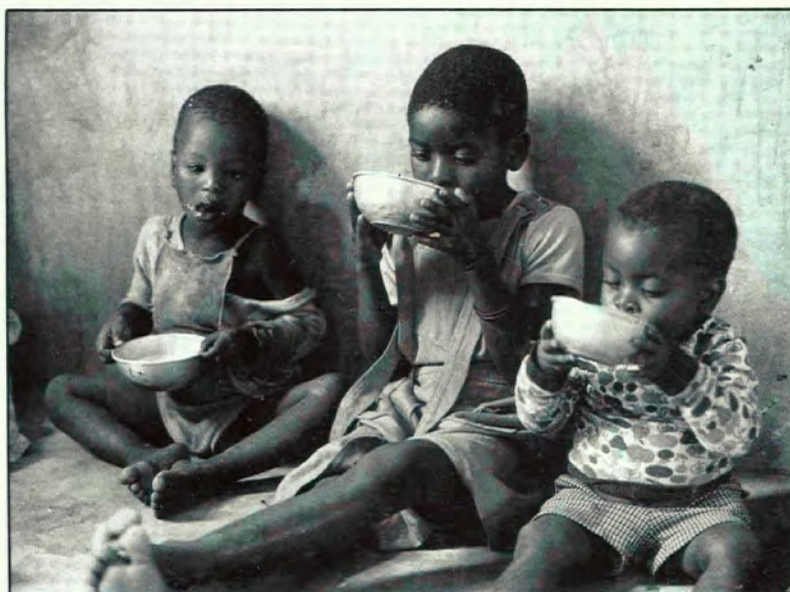


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THOUGHTS FOR FOOD

An Evaluation of the Tanzania Food and Nutrition Centre



by Michael C. Latham, Lillemor Andersson-Brolin, Britta Antonsson-Ogle,
Elisabeth Michanek, Winnie F. K. Mpanju, and Jumanne W. Wagao.



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Stockholm 1992

Tanzania



TABLE OF CONTENTS

	Page
Abbreviations	8
Executive Summary	9
1. The Tanzania Food and Nutrition Centre	21
2. The Evaluation Team	23
3. Terms of Reference	23
4. Methods Used by the Evaluation Team	25
5. TFNC. The National Context	26
6. TFNC in the African and International Context	40
7. TFNC Collaboration with ICH	42
8. TFNC Management and Administration	43
9. Departmental Reorganization	47
10. TFNC Office and Other Space	52
11. TFNC Staff	53
12. TFNC Programmes	56
(1) Surveys, Situation Analysis and Surveillance	56
(2) Protein-Energy Malnutrition	57
(3) Iodine Deficiency Disorders	61
(4) Vitamin A Deficiency	66
(5) Nutritional Anaemias	70
(6) Infant and Young Child Nutrition	72
(7) Household Food Security	74
(8) Nutrition Training	75
(9) Communication and Education of the Public	77
(10) Women's Workload	78
13. Research	80
14. Social Science Aspects of TFNC Work	81

15. Viability/Sustainability of TFNC	83
16. Summary of More Important Recommendations	88
17. Conclusions	92
18. Acknowledgements	92
19. References and Bibliography	94
20. Members of the TFNC Board of Directors	99
21. List of People Attending Panel Discussion at TFNC	100
22. List of Persons Met by Evaluation Team	101

ABBREVIATIONS

CCM	"Chama cha Mapinduzi" (The Ruling Party)
CMR	Child Mortality Rate
CSD	Child Survival and Development
DAC	Development Assistance Committee
DMO	District Medical Officer
EDP	Essential Drugs Programme
EPI	Expanded Programme for Immunization
GOT	Government of Tanzania
HFS	Household Food Security
ICH	International Child Health Unit
IDD	Iodine Deficiency Disorders
IMR	Infant Mortality Rate
JNSP	Joint Nutrition Support Program
KILIMO	Ministry of Agriculture
MALD	Ministry of Agriculture and Livestock Development
MCH	Maternal and Child Health
MMC	Muhimbili Medical Centre
NCGIYCN	National Consultative Group on Infant and Young Child Nutrition
NE	North East
NPFN	National Policy on Food and Nutrition
OECD	Organization for European Co-operation and Development
ORS	Oral Rehydration Solution
PEM	Protein Energy Malnutrition
PHC	Primary Health Care
SCOPO	Standing Committee on Parastatal Organization
SIDA	Swedish International Development Authority
SW	South West
TAHEA	Tanzania Home Economists Association
TFNC	Tanzania Food and Nutrition Centre
UCI	Universal Child Immunization
UNICEF	United Nations Children's Fund
U.S.A.	United States of America
WHO	World Health Organization

EXECUTIVE SUMMARY

INTRODUCTION

THE TANZANIA FOOD AND NUTRITION CENTRE was established by Act of Parliament No. 24 of 1973 and was launched in 1974 as a parastatal organization under the Ministry of Health. It has its headquarters in Dar es Salaam. The Chief Executive of TFNC is the Managing Director, currently Dr. Festo Kavishe. He is answerable to a Board of Directors whose Chairman is Dr. J.V. Temba. Under the Managing Director there are six Directors each heading a department. These six departments are:

- Planning
- Nutrition Education and Training
- Community Health and Nutrition
- Food Science and Technology
- Laboratory Services
- Finance and Administration

The functions of the Centre as stipulated in the establishing act are:

- To plan and initiate food and nutrition programmes for the benefit of the people of the United Republic.
- To undertake reviews and revisions of food and nutrition programmes.
- To provide facilities for training in subjects relating to food and nutrition and prescribe conditions which must be satisfied before any diploma, certificate or other award which may be granted in any such subject upon completion of any such training undertaken by the Centre or other education institution in the United Republic.
- To carry out research in matters relating to food and nutrition.
- To advise the Government, the schools and other public organizations on matters relating to food and nutrition.
- To stimulate and promote amongst the people of the United Republic, awareness of the importance of balanced diets and of the dangers of malnutrition.
- To gain public confidence in the methods suggested by the Centre for the correction or avoidance of malnutrition.
- In collaboration with the Ministry responsible for Development Planning to formulate, for incorporation in the national development plans, plans relating to food and nutrition for the benefit of the people of the United Republic.
- In collaboration with the producers, manufacturers and distributors of

articles of food, to ensure proper nutritional value of the food marketed in the United Republic or exported to foreign countries.

- To make available to the Government and people of the United Republic its findings on any research carried out by it on matters affecting nutrition.
- To participate in international conferences, seminars and discussions on matters relating to food or nutrition.
- To do all such acts and things, and enter into all such contracts and transactions, as are, in the opinion of the Governing Board, expedient or necessary for the discharge of functions of the Centre.

On being established, the Centre adopted the "Food Cycle" model in defining the problem of hunger and malnutrition. In this model, food was followed up in a cycle from farming, planting, weeding, harvesting, storage, processing, distribution, preparation, consumption to utilization by the body.

Malnutrition was then conceptualized as being caused by leakages at different stages in this system.

The food cycle serves as the emblem of TFNC (see cover). The weakness of the "Food Cycle" concept was that the model indicated that the nutrition problem is fundamentally a problem of food supply and underutilization of the food in the body. It was assumed that if these problems were solved then the malnutrition problem would also be solved.

From a realization of the complex nature of the nutritional problem and from experience of using the "food cycle" model in solving the problem, it became evident that a more comprehensive, but explicit, model was required. For this purpose, a model was developed jointly by TFNC and UNICEF. The concept in this model sees malnutrition as a sign of other problems in the society. The causes of these problems can be either immediate, underlying or basic. This new conceptual framework is illustrated in Figure 1 (Page 30). It is associated now with the "Triple A Cycle" consisting of assessment, analysis and action (Figure 2, Page 32).

THE EVALUATION OF TFNC

EVALUATIONS OF TFNC were carried out in 1979 and again in 1986. The current evaluation was conducted in 1991. The evaluation team consisted of six persons. These included a Team Leader with Tanzanian experience, but from a U.S. university; two Tanzanians, one an economist and the second a medical doctor, both from the University of Dar es Salaam; and three Swedes, including an Evaluation Analyst from SIDA, a Sociologist, and a

Nutritionist, all three with considerable African experience.

One of the team members had served on the 1986 Evaluation Team, which had included TFNC staff members. No TFNC staff were included in the 1991 evaluation team. The list of team members appears later in this report.

The Terms of Reference for the team are summarized in Chapter 3. In general the objectives of the evaluation were to review the work of TFNC, especially since the last evaluation in 1986; to judge progress made and the extent to which previous recommendations had been followed; to reach conclusions concerning how well TFNC is now fulfilling its mandate, and its ability to continue with its mission; to assess the relevance of TFNC as an institution in the Tanzanian context, its ability to influence national policy and the appropriateness of its focus in terms of nutritional priorities of the country as judged by a review of its programmes, projects and departmental activities; to assess the viability and sustainability of TFNC, and to produce conclusions and recommendations likely to assist TFNC in the future, and useful to the government of Tanzania as well as current and future donors.

The team also reviewed the role of donors, and how well they functioned in their assistance to TFNC. An attempt was made to judge the role of TFNC in an African and international perspective.

The team members agreed from the beginning, and stressed to TFNC staff and in meetings with others, that they viewed evaluation as a process that was to be constructive, not destructive. The method of the Team's operation is described in the body of the report. In general this was to review the terms of reference, to agree on a plan of work to be fulfilled in a limited time period, to review a large number of documents, to hold discussions with the management, directors and staff members in all six departments, and with the Executive Committee of the TFNC Board, to meet with government officials in relevant ministries, with persons from C.C.M., with staff of donor agencies and the University; and to make short field visits to provide some picture of TFNC activities beyond its headquarters, and the new building housing its laboratories, and two departments.

THE NATIONAL CONTEXT

FROM THE EARLY 1960s the Government consistently increased its involvement in food and nutrition matters. By 1967 the Nutrition Committee had proposed the establishment of the National Food and Nutrition Institute. A SIDA team commissioned in 1971 completed its work in 1972, leading to the creation of TFNC.

The poor state of the national food supply in the early 1970s influenced

TFNC's decision to examine the country's food system. General factors were isolated from specific concerns affecting this system. The focus of TFNC's programmes reflected elements of the Food Cycle approach.

The Food Cycle analysis placed an undue share of the blame on the food aspects of nutrition. In so doing, TFNC was implicitly neglecting non-food concerns. In view of experience gained from its application, TFNC and UNICEF have advanced a new perspective with a more explicit and comprehensive conceptual framework.

In the new approach, malnutrition is defined as a sign and symptom of a deeper problem. This has facilitated an integrated framework to identify the causes of malnutrition by indicating their depth according to immediate, underlying and basic causes. It is only through attacking basic causes that a permanent improvement of the nutrition situation can be achieved. TFNC's new approach could promote a fruitful dialogue amongst various disciplines and sectors responsible for resolving the malnutrition problem. The analysis should also improve discussion, training and mobilization among people, to identify the problem at different levels of implementation.

A "National Policy on Food and Nutrition" has been evolved, aimed at guiding national efforts in the alleviation of malnutrition. The specific goals of the policy proposal reflect the multisectoral dimension of the malnutrition problem as indicated in the new conceptual framework (Fig. 2, Page 29).

TFNC is gradually shifting the focus of its activities to regional and district levels with its staff providing technical support in the areas of food and nutrition analysis. The Centre is also giving supportive technical assistance to the Joint Nutrition Support Programme and to Child Survival and Development activities.

It would seem that most of the activities undertaken by TFNC are a step in the right direction, regardless of their ultimate impact. The advocacy role of the Centre has given nutrition a prominent place on the development map. There is growing official concern and government involvement and commitment in nutritional activities. Planning courses on nutrition organized on a zonal basis for planning officers have strengthened the nutritional component of regional development plans.

Despite the efforts made so far, TFNC faces mounting operational setbacks. The economic crisis and the corrective measures adopted by the government have brought about a changed environment for the Centre, affecting both its scope and effectiveness. TFNC's future outlook and prospects will, to a large extent, be determined by the way it adapts in response to forces operating around it.

TFNC IN ITS AFRICAN AND INTERNATIONAL CONTEXT

TFNC WAS ESTABLISHED in 1973, and has grown and flourished until today when it is regarded as probably the best institute of its kind in sub-Saharan Africa.

Based on the information available to us TFNC occupies a unique place among nutrition institutions in black Africa in terms of its steady growth and progress; the number of well trained professionals; its success in influencing national food and nutrition policy; its attention to the major nutritional problems of the country including PEM, iodine deficiency disorders, vitamin A deficiency, anaemia and inappropriate infant and child feeding programmes; and the calls on its staff to attend international meetings.

SIDA and some other donor agencies have seen their support over the past 17 years as being designed for institution building. The Evaluation Team believes that there should be considerable pride in the fact that TFNC is now a strong institution; it has made in the past, and continues to make, a difference in terms of nutrition in Tanzania, and it has gained national and very wide international recognition. There remains much to be done; some new directions should be taken, some reorganization is desirable and some changes of emphasis require the hiring of trained people in disciplines now not represented, or inadequately represented, among the professional staff. This may not require an increase in the size of the professional personnel.

SIDA should accept the fact that TFNC is now an Institute with considerable strength, one that has a sound management structure at the top, with an efficient Managing Director and good relationships between him and a balanced and well-functioning Board of Directors. This suggests that SIDA and other donors should give TFNC more, not less autonomy in terms of its programmes and activities.

Management and Administration

Against the background of the 1986 evaluation's highly critical remarks on the management and financial administration of TFNC these issues were dealt with extensively by the Evaluation Team. A well respected Chartered Accountant firm in Dar es Salaam, Tanna Somaiya & Company, was engaged by the Team to review the functioning of the Finance and Administration Department, including the accounting and auditing work within TFNC. This review concluded that the organizational structure of the Department is

well defined. The reporting lines are clear and the accounting and control mechanisms are reasonably good. The vacant posts within the Finance and Administration Department should be filled and the accounts manual should be updated on certain issues.

The Team met with representatives of the board of TFNC, including the chairman, Dr. J.V. Temba and came to the conclusion that the co-operation between the management and board of TFNC is constructive and well functioning.

Staffing

The professional and technical capacity of the staff is central to the success of an institution such as TFNC. This has always been well recognized by TFNC management, and a high priority has been given to staff development and training opportunities. Since the last evaluation, when SIDA began to provide funds specifically for staff development, TFNC has been able more selectively to send staff abroad for training in technical areas which they consider of highest priority.

The launching of national programmes in several key areas and the increased focus on support to the regions, places increased demands on highly capable technical staff. While TFNC, in general, is now well qualified to handle this workload there are some areas which require strengthening. We recommend that TFNC strengthens its staff capacity in fields such as epidemiology, statistics, sociology, food economics, consumer economics and computer science.

DEPARTMENTAL REORGANIZATION

THE EVALUATION TEAM RECOMMENDS that there be some reorganization of the current six departments and that the ten programmes now in existence get placed in those reorganized departments. There seems no advantage in having six departments, each with a Director, ten Programmes each with a Leader who is in a department, and several dozen projects each with a "Principal Investigator" who is also in a department and whose project falls under the umbrella of a programme.

As far as departmental reorganization is concerned, the Evaluation Team felt that the Community Nutrition and Health Department, as currently set up, had responsibility, and therefore resources, for too large a share of TFNC activities. This reflects a shift in the project priorities, in funding, and in activities of TFNC since the 1986 evaluation. This department now is overloaded and overworked.

However, the community level work, other than dealing rather directly with nutritional deficiencies might, with benefit, be shifted to the Nutrition Education and Training Department. This would be especially desirable if our recommendation to recruit sociologists, anthropologists (including an ethnographer) and perhaps a consumer economist for TFNC is accepted and operationalized.

It is recommended that the responsibilities of the Planning Department remain as currently structured, but with strong emphasis on trying to see that the "Food and Nutrition Policy" once fully approved by the government, be implemented. It should be much involved in planning within TFNC.

The Food Science and Technology Department as currently functioning appears to have more staff than are needed, more space than they can use, and perhaps for historical reasons, are still concentrating on some activities that might better and more appropriately be performed by other institutions (such as Sokoine University, the Ministry of Agriculture or their Agricultural Experiment Stations, such as those at Tengeru, Ilonga, etc.). As suggested in the 1986 evaluation, this department should give up some space and reduce the numbers of its staff to other departments.

PROGRAMMES

IODINE DEFICIENCY DISORDERS (IDD)

THE RECOGNITION OF endemic goitre and the problem of iodine deficiency in Tanzania, was first clearly described in the scientific literature in three papers published in 1965 and 1966. Now a quarter of a century later serious steps are finally being taken to control the problem.

The present assessment of IDD is stated to show that 107,175 subjects were examined in Tanzania in the years from 1980 to 1990 with an overall goitre rate of 37 percent, and a visible goitre rate of 5.9 percent.

The report based on these studies states that "on the basis of these goitre surveys it is estimated that nearly 40 percent of the Tanzanian population, or over 10 million people live in areas deficient of iodine, and therefore at risk of IDD". Half of these are likely to have goitre, and "160,000 are cretins and probably 450,000 are cretinoids".

The national programme for control of IDD now consists of supplementation of iodine using two delivery systems, namely:

- (a) distribution of iodated oil capsules to be taken by mouth, and

(b) iodation of salt.

These two intervention methods are said to be supported by activities aimed at advocacy, information, communication and training; operational research; monitoring and surveillance; and logistic and management support.

The Evaluation Team is very impressed that Tanzania leads Africa in terms of iodine capsule distribution and is seen by WHO as a model for the continent; it is full of praise for the role of TFNC in getting so close again to iodation of salt for a sizeable proportion of the Tanzanian population; it is pleased that there is international recognition of TFNC's efforts to control IDD; and finally, it is glad to see that research is underway, and more monitoring and evaluation are planned. Clearly, great progress has been made since 1986 and TFNC has played a very important role in this.

The Evaluation Team recommends:

(a) That a clear but flexible and imaginative system be established to provide a level of confidence that a reasonable percentage of capsules are reaching the intended population in most districts.

(b) That an evaluation plan be drawn up with the help of a statistician and epidemiologist.

(c) That TFNC and the National IDD Committee maintain pressure to ensure political support, to obtain further funding for more machinery, to keep watch over the salt manufacturers so that salt iodation moves forward to a point that nearly all at risk districts are covered before capsule distribution can be phased out as planned in 1995.

PROGRAMME FOR THE CONTROL AND PREVENTION OF VITAMIN A DEFICIENCY

IN MANY DEVELOPING countries, including Tanzania, vitamin A deficiency leading to xerophthalmia is a leading cause of childhood blindness.

In Tanzania the vitamin A supplementation programme consists of the supply of vitamin A capsules through the Essential Drugs Programme (EDP) to specific at-risk groups as an immediate short term measure. The long term sustainable measures include the stimulation of demand for foods containing vitamin A, especially the less expensive dark green leafy, as well as yellow vegetables and fruits, leading to increased production and consumption of carotene rich foods; public health measures leading to prolonged breastfeeding; and steps to ensure conservation of consumed vitamin A through controlling diseases which precipitate vitamin A deficiency. Additional activities include promotion of agricultural and horticultural

practices and extension; nutrition education through various media, and curriculum change and advocacy for overall improvement in the quantity and quality of the diet as a component of community based strategies for achieving household food security.

Presently margarine is fortified with vitamin A, but does not adequately reach the at-risk population. Feasibility studies on suitable vehicles for fortification should be vigorously explored.

Protein-energy malnutrition (PEM)

PEM is the most important nutrition problem in Tanzania. It has a complex aetiology, and is more difficult to control than the important micronutrient deficiencies. TFNC appears in recent years to have moved its main focus of attention away from PEM and towards micronutrient deficiencies.

PEM deserves a high priority. In the health field, actions to reduce PEM are the responsibility of the Ministry of Health. TFNC should try to use its influence to ensure the appointment of a Senior Medical Officer responsible for nutrition in the Ministry of Health. The control of infections is an important health measure to reduce PEM and one that TFNC should strongly support.

RESEARCH

TFNC CURRENTLY, and over the past several years, has conducted a good deal of research. Much of this can be described as applied research and addressed to problems and questions relevant to the Tanzanian context. This is appropriate. Some research is underway in some form dealing with the "big four" nutritional deficiencies, namely PEM, nutritional anaemias, vitamin A deficiencies and iodine deficiency disorders. Research relating to infant feeding, weaning foods, nutritional problems of women and many others is also underway or planned.

An overview of research being undertaken suggests that inadequate consideration is given to the relevance of, and then the priority for, each research endeavour in relation to the mission of TFNC, to its financial and staff availability and to the current priority areas.

A Research Committee exists to review the ethical issues and the design of research projects. The Evaluation Team strongly recommends that a separate committee chaired by the Managing Director, and with appropriate representation from each Department be established for the specific purpose of reviewing and making recommendations regarding the relevance and

priority of all future research proposals. An alternative possibility is for the existing committee to be expanded and take on these duties.

Household Food Security

The broader conceptual framework adopted by TFNC and UNICEF in their nutrition work places emphasis on food security at the household level. This is an area of major concern in Tanzania, but also an area where reliable information is scarce and where consensus is lacking as to what data would be practical and relevant to collect and use, and what actions are needed.

Nutrition Training

TFNC's mandate stipulates that it has a major responsibility for food and nutrition training in Tanzania. The Centre has worked very actively with numerous aspects of training, curriculum development, training materials etc. It has been a complicated field for TFNC to work with, as it cuts across all its technical areas and projects, and it has changed character with the launching of new programmes and increased regional focus, and as TFNC always has to work through the field staff of relevant ministries in programme implementation.

TFNC's continued work in nutrition training will require new strategies and considerable strengthening, if TFNC is to become an effective resource centre for the institutions it should support. TFNC is well aware of this and has already started with a needs assessment, and with discussions about more formalized training facilities. TFNC is strongly urged to continue its preparatory investigations and bring together implementing agencies as well as interested donor parties in this.

Social Aspects

Because of the nature of nutrition problems the main target groups of TFNC activities are women and small children. TFNC is unusual in having a theoretical framework suggesting social analyses. The interest in, and request for, socio-economic and socio-cultural perspectives has increased during recent years. Staff members are well aware of the importance of knowledge about the social context of any activity.

A sociological approach can be seen in certain programmes and projects, in some information material and in specific studies. However, there are many activities that have not yet included a social dimension.

In the present situation the actual involvement of social dimensions is ad hoc, and there is still a considerable gap between theory (i.e. the conceptual

framework) and actual activities. To bridge this gap it is necessary to reinforce the competence of TFNC staff in the social sciences.

It is recommended that social aspects of nutrition problems receive more attention than now. Regular contacts with external senior sociologists and anthropologists need to be developed and maintained.

Sustainability

The Evaluation Team has looked into the issue of professional and financial sustainability of TFNC after 18 years of support from SIDA. The professional sustainability can be considered to be high, with TFNC having a cadre of well-trained and qualified staff, specialized within different nutrition subjects. In the areas of sociology, statistics, epidemiology and food economics, external resources for training or technical assistance will still be needed.

TFNC can, however, be regarded as an institution mature enough to gradually take the full responsibility for its direction and programmes, with less steering and guidance in its own priorities by donors. This process will have to go hand-in-hand with the development of a better system for measuring results and effects in relation to costs for its programmes.

Financially, TFNC is not sustainable, which is easily understood in the context of the development of the Tanzanian economy. The Tanzanian Government's contribution has been substantial, in relation to the total health budget, but external support will be necessary for several more years, if TFNC is to be able to continue its important task. A system with overhead-charging mainly for TFNC's international involvement is suggested by the Evaluation Team.

CONCLUSIONS

THERE IS MUCH evidence to show that TFNC is a much stronger, more effective and better managed institution than was the case at the time of the 1986 evaluation. Many of the deficiencies found in the 1986 evaluation have been corrected. TFNC is now an institution with considerable strength, with a properly constituted and well-functioning Board of Directors, and good management at the top. It has gained national and wide international recognition.

TFNC's proportionate share of the budget, when compared with the total budget of the Ministry of Health, has risen considerably in the last financial year. Nevertheless with the present economic climate and severe financial situation in Tanzania, it is not conceivable that TFNC could maintain its

THOUGHTS FOR FOOD

present strength, only using funds provided by the government. Therefore TFNC for the next several years will need to receive more, not less, financial support from external donors, and to take steps suggested in this report to raise revenue on its own.

Our conclusion is that with such financial support TFNC can continue to function as an important well-functioning institution, contributing very significantly to improvement in the nutritional status, the health and the well-being of Tanzanians.

1. THE TANZANIA FOOD AND NUTRITION CENTRE – TFNC

THE TANZANIA FOOD and Nutrition Centre in Dar es Salaam was established by an Act of Parliament No.24 of 1973 and launched in 1974 as a parastatal organisation under the Ministry of Health.

The Centre is a parastatal organization under the Ministry of Health. The chief executive of the Centre is a Managing Director who is answerable to the Board of Directors. Under the Managing Director there is a Legal Secretary, a Principal Internal Auditor and six Directorates.

Functions of the Centre

The functions of the Centre as stipulated in the act are:

- to plan and initiate food and nutrition programmes for the benefit of the people of the United Republic
- to undertake review and revision of food and nutrition programmes
- to provide facilities for training in subjects relating to food and nutrition and prescribe conditions which must be satisfied before any diploma, certificate or other award which may be granted in any such subject upon completion of any such training undertaken by the Centre or other educational institution in the United Republic.
- to carry out research in matters relating to food and nutrition
- to advise the Government, the schools and other public organisations on matters relating to food and nutrition.
- to stimulate and promote, amongst the people of the United Republic, awareness of the importance of a balanced diet and of the dangers of malnutrition.
- to gain public confidence in the methods suggested by the Centre for the correction or avoidance of malnutrition.
- in collaboration with the Ministry responsible for Development Planning, to formulate, for incorporation in the national development plans, plans relating to food and nutrition for the benefit of the people of the United Republic.
- in collaboration with the producers, manufacturers and distributors of articles of food, to ensure proper nutritional value of the food marketed in the United Republic, or exported to foreign countries.
- to make available to the Government and people of the United Republic its findings on any research carried out by it on matters affecting nutrition.

specific programme activities. Two evaluations have been conducted (in 1979 and 1986) of the performance of TFNC, the last one resulting in major changes being introduced.

TFNC was formed by an Act of Parliament to plan and initiate food and nutrition programmes for the benefit of the people of Tanzania. It is semi-autonomous, controlled by its own Board of Directors, with responsibility for the administration of its own budget and the authority to raise funds for its activities. TFNC has the authority to review and revise nutrition programmes and nutrition training taking place in the country, to conduct and report on relevant research, to raise public awareness and knowledge about nutrition, to formulate national plans and to advise the Government of Tanzania on nutrition matters.

Purpose of the evaluation

There are several reasons for conducting a third evaluation of the work of TFNC. Few institutions of this kind have such a long history, with experiences that are relevant even for other countries. Thus lessons should be learned and experiences discussed in a regional/international perspective. The International Conference on Nutrition in Rome at the end of 1992, currently planned by the FAO and WHO, could be a venue for further such discussion on institution building in nutrition.

Furthermore, TFNC and SIDA need to evaluate the progress of their co-operation since the last evaluation in 1986 as a basis for discussions about possible continued co-operation.

Scope of work

The evaluation was to comprise, but not necessarily be limited to, an assessment of the following aspects:

(1) TFNC in the National and International Context

The relevance of TFNC as an institution in the Tanzanian context. TFNC's ability to influence the national food and nutrition policy and to act as a catalyst, empowering other parts of the Government to work with nutrition.

The role of TFNC in the larger African and international context.

(2) Management and Administration

The functioning of Management and Board of Directors.

The functioning of the Finance and Administrative Department, including the accounting and auditing work.

The internal functioning of the accounting system and its relation to external assistance and the Government system.

(3) Staff

The profiles of the staff and its appropriateness for the tasks of TFNC.

(4) TFNC Programmes

A review of programmes including surveys and surveillance; activities to address PEM, micronutrient deficiencies, child nutrition problems and household food security, nutrition training, communication and education of the public; women's workload and social aspects of nutrition.

(5) Research

The appropriateness of the areas covered by research.

(6) Viability/Sustainability

TFNC's dependence on SIDA and other external support.

Methodology

The evaluation was to be a joint Tanzania/Swedish effort with team members from both countries. The work plan was to be approved by TFNC and SIDA before the evaluation of TFNC began in Tanzania.

Reporting

Before leaving Tanzania the evaluation team was to present and discuss a draft evaluation report at a special one-day meeting with the management of TFNC, the SIDA-representatives in Dar es Salaam and other persons concerned.

The draft report was to be reviewed and commented upon by SIDA and the TFNC management. It was proposed that the final report be published and seminars be organised both at SIDA in Sweden and in Tanzania to discuss the results of the evaluation. The evaluators were expected to participate in either Sweden or in Tanzania as part of their contract.

4. METHODS USED BY THE EVALUATION TEAM

THIS EVALUATION WAS carried out on site over a period of three weeks in October 1991. Prior to the evaluation, the Team Leader visited SIDA Stockholm for preparatory discussions, and some interviews were held in

Sweden with people who had been collaborating with TFNC. Three of the team members visited the International Child Health Unit (ICH) at the University of Uppsala and interviewed their staff regarding the TFNC-ICH institutional collaboration.

As part of the evaluation SIDA-Dar es Salaam signed a contract with an external auditor to review specifically the financial management and accounts of TFNC since 1986. The auditors carried out their work during the first week of the evaluation period and reported their findings back to the team during the second week, together with a draft report.

TFNC prepared a preliminary list of documents and publications it considered important for the team to consult. Some of these and additional reports which were reviewed by the team are listed in Chapter 19.

During the evaluation, the Team used both formal and informal interviews as a principal means of getting information. Individual interviews, as well as group interviews were held, sometimes by the whole Evaluation Team, sometimes by smaller sub-groups.

Interviews were held with the TFNC Managing Director, Chairman and members of the Executive Committee of the TFNC-Board; and with TFNC-department heads and staff; the Team also met with representatives of various institutions and organizations collaborating with TFNC. A full list of persons consulted is provided in Chapter 22.

The Team was divided into two groups and made brief visits to Kilimanjaro, Morogoro and Dar es Salaam regions in order to get some impressions of TFNC's involvement in field activities. One group also visited the Sokoine University of Agriculture for discussions with staff of the Department of Food Science and Technology.

The preliminary conclusions and recommendations were presented and discussed at a 3 hour Round Table Meeting with TFNC Management, Department Heads and invited representatives from ministries and collaborating agencies. SIDA and ICH were represented at this meeting. This was intended to obtain feedback with regard to the Team's preliminary conclusions and recommendations. Those attending are listed in Chapter 21.

5. TFNC: THE NATIONAL CONTEXT

Background

FROM THE EARLY 1960s the Government consistently increased its involvement in the field of food and nutrition. The first nutrition plan

covering the period 1965 – 69 was compiled by the Nutrition Unit of the Ministry of Health and the Tanzania Nutrition Committee. The latter was a sub-committee of the then Tanzania National Freedom from Hunger Committee. The plan envisaged the development of nutrition services at regional and district levels.

Both the Arusha Declaration of 1967 and the drive towards decentralization initiated in 1972 helped to strengthen the provision of services in the rural areas. It was here that the majority of the people lived and the problem of malnutrition was most severe. By 1967 the Nutrition Committee had proposed the establishment of the National Food and Nutrition Institute.

Besides the Nutrition Unit in the Ministry of Health, two others were created in the Ministries of Agriculture and Education. By 1969, twenty-seven districts in sixteen regions already had started their own nutrition activities as part of the mobile clinic activities. A feeling was increasingly spreading that a much more field-oriented co-ordinating centre should be established to operate closely with the extension staff, scientists and leaders. SIDA was approached by the Government with a request to work with nutritionists in the country on a proposal for the establishment of a Food and Nutrition Institute.

A SIDA team commissioned in 1971 completed its work in 1972 with a recommendation for establishing a field-oriented co-ordinating centre. It was intended to be a collaborating agency with the staff of the extension services, scientists and leaders at different levels. This was the model that was finally approved, leading to the creation of the Tanzania Food and Nutrition Centre (TFNC).

Objectives of TFNC

TFNC STARTED FORMAL functioning in 1974 with a staff of only fifteen people. While TFNC was to operate as a semi-autonomous body, the Act was less explicit as to the authority under which the Centre would function. Initially, it was under the responsibility of the Ministry of Agriculture. It then shifted to the Prime Minister's Office before being placed under the Ministry of Health where it still is today.

The principal role of TFNC is to plan and initiate food and nutrition programmes for the benefit of the people of Tanzania. The Centre is called upon to provide facilities for training; carry out research; advise the Government; stimulate and promote awareness of the importance of a balanced diet; and ensure proper nutritional values of the foods marketed in

Tanzania. It is also expected to participate in international conferences in matters of interest from the food and nutrition perspective.

TFNC inherited an environment in which the Government Chemist, and the Ministries of Health and Agriculture were the major bodies involved in food and nutrition activities. The Ministry of Health was treating malnutrition and dealing with control as a public health measure, the Government Chemist analysed food mainly from the point of view of quality control, and the Ministry of Agriculture was the overseer of food production. The area of food science and food technology was largely ignored.

At present, TFNC has the coordinative role of acting as a catalyst in addressing the problems of food and nutrition. Its mode of operation consists of appropriate research, training, communication and information as well as related matters in the public service. Aside from being an advisory body to the Government, TFNC is also meant to be the initiator of intervention measures where these are considered to be appropriate. In sum, TFNC was created to play the dual role of a nutrition institute and a national bureau of food science.

Analytical Approaches to Malnutrition

DOMINANT THINKING within TFNC conceives the problem of malnutrition from many angles. There is a feeling that different ways of reflecting on the manifestations of the problem exist; and this is in part because people approach the same problem differently.

In the course of its operations, TFNC has learned that in order to assess and analyse nutritional problems, it is important to make the underlying values and assumptions as explicit as possible. This would guarantee that a maximum number of people understand the causes of, and corrective measures aimed at, nutrition-related problems.

The establishment of TFNC coincided with the evolvement of scholarly debates on the shortcomings of the traditional approach to nutrition problems. The main components of the nutrition programme – namely, biochemistry, clinical nutrition and supplementary feeding – were a subject for critical review. Naturally, TFNC planners could not escape the growing desire to find new methods of tackling the problem of hunger and malnutrition.

The debate centred on whether TFNC's efforts should aim at poverty eradication, general education, disease control or political mobilisation. A decision had to be reached regarding vital concerns where emphasis should be placed. In particular one wondered whether TFNC should act directly in

the provision of food and nutrition services, or just support the services of other institutions which deal with food and nutrition questions.

(1) Food Cycle Approach

Influenced by the poor state of the food supply, owing to the drought and floods of the early 1970s, TFNC decided to examine the country's food system by isolating general factors from specific concerns affecting the food system. Management, planning, training, research, communication and evaluation were issues considered to affect the whole system. Transport, distribution, processing, storage, marketing, food preparation and consumption came to be identified as concerns with special influences on the food system.

Thus TFNC projects were designed and tailored along the two broad categories related to obstacles in the food system. They became the focus of TFNC's programmes, reflecting the food system as a Cycle. Using this approach, the Centre's work was initially based on the understanding that loss and damage occur at every point along the Food Cycle.

With time it was realized that the Food Cycle approach offered a limited scope for dealing with the delicate problem of malnutrition. More specifically, the approach placed an undue share of the blame on the food aspects of nutrition. In so doing, TFNC was implicitly neglecting non-food concerns which were equally, if not more, important. Due to the inadequacy of the Food Cycle approach, and in view of experiences gained from its application, TFNC and UNICEF-Dar es Salaam advanced a new perspective with a more explicit and comprehensive conceptual framework.

(2) Unified Conceptual Approach

For many years, the food and nutrition problems have been understood to be mainly a result of a lack of nutrients to meet the individual body requirements, or problems and losses in the Food Cycle. The malnutrition problem was rarely conceptualized as a symptom of a much larger and complex concern in the society. Consequently, there was no proper analysis of the magnitude and causes of malnutrition.

Efforts have been made to overcome this setback. In recent years TFNC's work has increasingly been oriented towards the adoption of a proper procedure for examining food and nutrition questions. A new conceptual framework has been adopted for estimating the magnitude of the nutrition problem (Figure 1).

In the new approach, malnutrition is defined as a sign and symptom of a

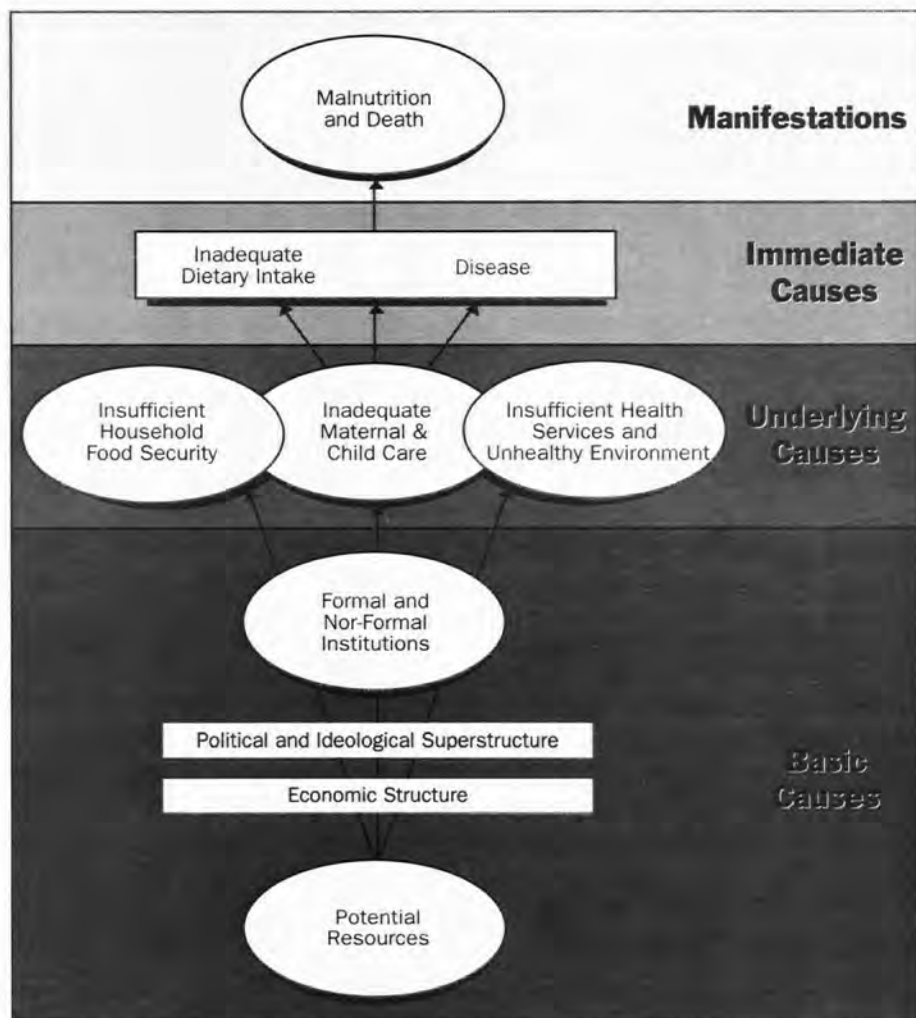


Figure 1. Causes of Malnutrition and Death.

It is important not to interpret this framework as a predictive model. Its deliberate lack of rigid limits or boundaries leaves room for different models to be developed in different contexts. The framework primarily helps in asking relevant questions in the development of such models. The framework emphasizes the potential multisectoral nature of the problem, i.e. it accommodates possible determinants, but also facilitates the reduction to the most important determinants in a given context. It further facilitates dialogue and co-operation among people of different professions. It has proven easy to communicate, which is important in training and social mobilization. The framework helps to identify what should be assessed and how causative relationships should be identified and analysed. It also helps to clarify the objectives of actions selected for implementation. In a given context, the initially formulated conceptual framework will change and become more focussed as reassessment and further analysis take place. Gradually, a more concise "local model" may emerge.

much deeper problem. This has facilitated an integrated framework to identify the causes of malnutrition by indicating their depth according to immediate, underlying and basic causes. In this way, it is hoped, TFNC's work would evolve an analysis of the causes of malnutrition in such a way that they would be understood by a good number of individuals concerned with the problem. It would also provide indications of actions that can be taken – and at what level – to solve the malnutrition problem. This then incorporates the triple A cycle of Assessment, Analysis and Action (Figure 2).

There are indications that TFNC's new approach could promote a fruitful dialogue amongst various disciplines and sectors responsible for resolving the malnutrition problem. The analysis should also improve discussion, training and mobilization among the people to identify the problem at different levels of implementation, i.e. household, village, district and region.

Figure 3 summarizes the causes of malnutrition using this newer conceptual approach at four general levels of analysis. In the first one, there are observable manifestations of the nutrition situation often caused by numerous nutrient deficiencies and diseases. The symptoms can only indicate that a problem exists. The only remedial actions would be rehabilitative in nature but unsustainable because the process responsible for the manifestation will continue.

Then there are more proximal factors which are categorized as the immediate causes of malnutrition. If these are known, malnutrition can often be explained and possibly health and dietary interventions designed to improve the nutritional status. But the factors behind the immediate causes are rarely removed by such interventions whose effectiveness diminishes when actual provision of, say, supplementary feeding and drugs ends.

The more distal factors are grouped into underlying causes which are numerous and quite often inter-related in any given specific context. Most interventions aimed at reducing malnutrition are implemented at this level. Often, the underlying causes reflect an unequal distribution of income, availability of basic services and production opportunities. It is thus a level consisting of a complexity of causes, although in given specific contexts it would be possible to identify which causes and relationships are most pronounced, and ones that could be tackled with available resources.

Finally, an in-depth analysis of the reasons behind the underlying causes is needed. These are the most distal factors revealed in the new conceptual framework. They are grouped as basic causes.

This new conceptualization raises useful analytical questions. The causes at the immediate level focus more on physiological relationships accompanied

with interventions that are more visible. The underlying and basic causes usually tend to be related to the technical/material conditions of production, social conditions of production, economic structure, political and ideological superstructures. All these have notable implications on the nature of production, levels of distribution and consumption, and also on disease states that may influence nutrition.

Yet until the basic causes are considered, no permanent improvement of the nutritional conditions can be upheld. And since informed decision making is essential for effective action it becomes necessary for the critical actors to have timely and correct information. Thus the other useful component of the new conceptual framework emphasises the use of information to assess a situation, analyse its causes and take action to improve the situation. After actions have been taken, their effects are assessed and the new situation analysed so that more effective actions may be taken. This is the rationale for the triple A cycle (Figure 2).

(3) Application within TFNC

The analysis of the problem of malnutrition using the new conceptual framework reveals that it is only through attacking basic causes that a

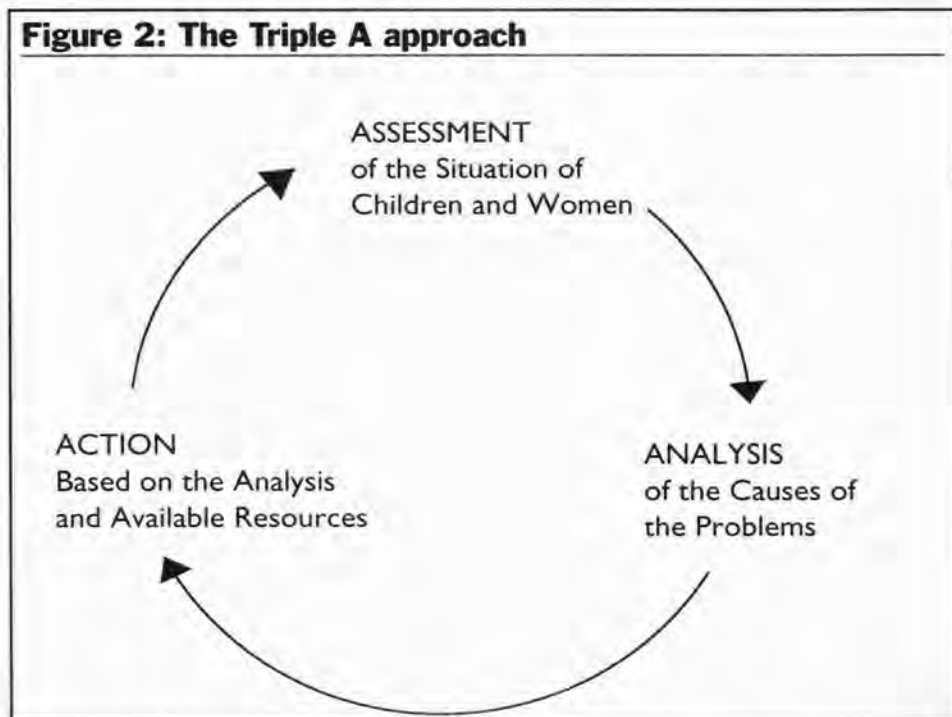


Figure 3: Causes of Malnutrition in Tanzania

Level of cause	Major causes	Specific causes
Immediate	Inadequate food intake	Low feeding frequency; dietary bulk of weaning foods
	Diseases	Diarrhoeaa, malaria, worms, respiratory infections, measles.
Underlying	Household food	Low production; poor storage; food insecurity; poor transport; low household revenue; high consumer prices.
	Inadequate care of vulnerable groups	Heavy women's workload; poor fuel availability; low household technologies.
	Inadequate basic services: health, water, education, shelter	Unequal distribution and poor quality of these services; poor maintenance of established structures; dwindling resource allocation; lack of education for self reliance.
Basic	Cultural taboos and beliefs	Inappropriate food taboos; lack of health culture; belief in witchcraft.
	Poor economic base	Low incomes; low producer prices; high variability of food prices; low availability and high prices of consumer items; poor transport and communication infrastructure; rising inflation; high debt obligations; delays and inadequacy of implementing appropriate policies.

permanent improvement of the nutritional status of a given community can be achieved. But even short-term and medium-term measures with specific actions directed towards the immediate and underlying causes of malnutrition can be undertaken. TFNC's work, therefore, is increasingly being devoted towards formulating activities and its scope of operations to reflect this broader approach in solving malnutrition problems in Tanzania.

TFNC claims that its main concern in recent years has been to promote, guide and operationalize the new conceptual approach. Two notable actions have been undertaken in this direction. These are the development of a new National Food and Nutrition Policy and the new Regional and District focus.

(4) Policy on Food and Nutrition

A National Policy on Food and Nutrition (NPFN) has been produced aimed at guiding national efforts in the alleviation of malnutrition. The

specific goals of the policy proposal reflect the multisectoral dimension of the malnutrition problem as indicated in the new conceptual framework.

Major goals of NPFN include: giving appropriate consideration to the nutritional implications of the policies developed in various sectors; providing guidelines on the best ways of dealing with food and nutrition problems; laying out clear objectives and setting specific targets for the reduction of malnutrition; examining the interactions between various sectoral policies designed to improve the health and nutritional status of the people; and provision of indicators of nutritional status to be used as criteria for the evolution of the social impact of development plans.

The first proposal was formulated in 1976. In 1980 a wide ranging group of participants from various agencies met to discuss TFNC's draft of NPFN for Tanzania. The expectation then was that once NPFN was approved it would have allowed the creation of formal links between TFNC and other relevant ministries and institutions with dealings in food and nutrition matters. This might increase the demand for TFNC's services in the country through its advisory and co-ordinating roles.

Unfortunately, the collaborative work in revising NPFN is long overdue. The recent attempt in the series of revisions was the sixth since the first document was compiled in 1980. This is indicative of the weakness in TFNC's tactics to handle institutions concerned with policy formulation. This is an aspect TFNC should watch closely in its future dealings in food and nutrition matters.

Nevertheless, the initiatives TFNC has taken in drawing up NPFN and the subsequent revisions involving planners and experts within CCM have evolved new thinking on the need to incorporate nutrition considerations in the country's plans and to use nutrition status as one of the indicators for assessing socio-economic development. Hopes are that the NPFN which has been approved by the Cabinet, will also be approved by the National Executive Committee of CCM very soon.

(5) Regional and District Focus

TFNC is gradually shifting the focus of its activities to regional and district levels. Its staff have provided technical support to several regions in the area of food and nutrition analysis. There is also increasing pressure for TFNC to provide more technical support to the Joint Nutrition Support Programmes (JNSP) and Child Survival and Development Programmes (CSD) initiated by donors such as UNICEF.

It would seem that all activities that have been undertaken are a step in the

right direction regardless of their ultimate impact. Yet a perusal of reports shows that improvements brought by TFNC staff tend to disappear once projects are left unsupervised at regional or district levels.

An evaluation of the "regional bias" orientation reveals that TFNC's efforts are best regarded as the building, or upgrading, of nutrition concerns within regional programmes. All activities that have been undertaken assure the fulfilment of that objective. Gradually, TFNC may begin to realize the possible advantages of a more continuous co-operation between the Centre's staff and functional officers at regional and district levels. This arrangement might benefit more from an optimal exploitation of functional structures at regional and district levels. There is no point in TFNC overburdening itself by creating parallel structures.

Impact of TFNC Activities

TFNC HAS GAINED wide recognition for its work among Tanzanian leaders and in professional and public circles. The advocacy role of the Centre has given nutrition a prominent place on the development map. At present, PHC programmes incorporate nutrition elements especially when dealing with the maternal and child health component. The Government consults TFNC regarding minimum dietary requirements for Tanzania. This provides useful information when adjustments in minimum wage are made or when revisions in dietary scales for institutions such as prisons and hospitals are called for. The Centre's inputs to the Ministry of Agriculture in its bid to reorganize the food and nutrition extension system is commendable. However, it was clear that communications between TFNC and the Ministry of Agriculture could be better. Staff have worked to improve training curricula in different disciplines. This has enjoyed only mixed success.

There has been a growing official concern and government involvement and commitment in nutritional activities. Nutritional planning courses organized on a zonal basis for planning officers have strengthened elements of nutrition in a growing number of regional development plans.

Despite the efforts made so far, TFNC has had to cope with mounting operational setbacks. Its future outlook and prospects will to a large extent be determined by adaptability. The Centre has to adjust and condition itself in response to forces operating around it.

Operational Constraints

TO ASSESS TFNC'S OBSTACLES, account has to be taken of the rapidly changing economic, political and social environment in Tanzania. The

economic crisis and the corrective measures adopted by the Government have undoubtedly brought about a changed environment for TFNC, affecting both its scope and effectiveness. Recent changes brought about by the adjustment programmes in a context of the economic crisis will influence TFNC and the country. Three major trends that call for a rethinking of TFNC's financial situation and viability are discussed next.

(1) TFNC's budget

TFNC's budget is still dominated by external donor support. The Government's contribution to TFNC's total budget has decreased from 31% in 1986/87 to 19% in 1991/92. Over the period 1986/87 to 1991/92, the Centre's budget averaged 24% (Government sources), 49% (SIDA), 16% (UNICEF), 8% (other donors), and only 4% (internal revenue).

Government's contribution to TFNC amounted to Shs.7.599 million in 1986/87 out of a total health budget of Shs.1386 million. It increased to Shs.12.897 million in 1987/88 and Shs.36.762 million in 1988/89. The respective total health budget in these two years was Shs.2026.9 million and Shs. 3059 million. This means that TFNC's claims represented 0.5%, 0.6% and 1.2% of the total health budget over the three-year period. Clearly, the realistic position is far from ideal, and it is difficult to forecast when the Centre is likely to be fully funded from local sources. But comparisons of TFNC's share of the health budget do show a doubling of the percentage over a one year period. This illustrates increasing support by the Government at a time of serious financial problems for the government.

(2) Squeeze on Health Budget

The negative impact of the crisis on the health scene in Tanzania is a well documented fact. As a proportion of total health spending, development expenditure allocation in recent years has hardly attained the 14% peak registered in 1977/78, averaging 10% of the total health budget in recent years.

While health centres and dispensaries were relatively more adversely affected, the deterioration has affected the entire health system. The quality of health services being delivered faces a dramatic decline. Basic infrastructural health facilities are in a state of disrepair. Shortage of drugs in areas not covered by the EDP is very acute. Scarcity of transport has rendered the health referral system inoperational. The poor state of the health system is reflected in the unsatisfactory health status of the population at large and

that of particular groups, especially women and children. However, Tanzania in many respects has done better than have many other African countries.

(3) Poverty

The economic problems which have gripped Tanzania in recent years are manifested in a lack of consumer goods and deteriorating social services. Trade and exchange liberalization has improved availability of consumer goods, but households have to cope with prices of goods which have increased tremendously as a result of frequent devaluations of the shilling.

In short, households which are purchasing food are confronted with high food prices. Lower income households which do not produce for themselves cannot afford these prices. In consequence, the survival of those who presently cannot afford to buy enough food to meet minimum nutrient requirements is at stake.

In urban areas a growing proportion of household income is being spent on food. But many of the urbanites are opting for inferior sources of calories, protein and fat. In rural areas, falling real incomes have reduced drastically purchases of non-food consumer goods. This includes the portion of expenditure which is devoted to non-crop foodstuffs.

At any rate, many peasants have designed new ways of survival in response to the crisis. They have opted for a withdrawal from the official market, relying more on subsistence work. It is difficult to judge if some policies related to structural adjustment have had benefits in terms of higher prices paid for certain agricultural and other products. If these are fruits, vegetables and other crops grown by small producers, then improved income could benefit the nutrition and well-being of these families.

The foregoing has not adequately addressed the role of TFNC in terms of nutrition related policies and programmes in the country. The Evaluation Team did not have adequate time to explore these. Only brief discussions were held with regard to the role of TFNC with many institutions and programmes. For example, TFNC has had institutional involvement, sometimes very major involvement in the JNSP, CSD, and food safety and control. TFNC is not the main body responsible for dealing with problems of famine and refugee relief. However TFNC is often consulted and did, for example, play a role in the recent severe flooding in Lindi Region. This is an appropriate role, and TFNC should not take the leadership role in famine or refugee relief. In terms of food safety and control, TFNC should probably confine its activities to the nutritional aspects of these topics.

TFNC has, following a perusal of our draft recommendations, asked the

following questions, and clearly seeks guidance on these. The Evaluation Team on a short visit was not able to reach conclusions about these. Advice may need to be sought elsewhere. The questions were:

- What strategic areas should TFNC concentrate upon to achieve the nutrition goals of the 1990's?
- What general strategies would need to be undertaken to achieve a cascade effect for TFNC activities?
- How should TFNC adjust and condition itself in response to the changing environment, particularly at a time when TFNC itself has supported the policy that nutrition activities should be community based and when TFNC has advocated the empowerment of communities to strengthen the Triple A Cycle?

This report supports strongly both a role for TFNC as an advocate for, and influencing national food and nutrition policies, and in supporting community based nutrition interventions.

TFNC is way ahead of almost all other developing countries in its influence in establishing the formation of national consultative groups to deal with some of the most important nutritional problems. These are a singular achievement, which indicates TFNC leadership, and illustrates the ability of TFNC to collaborate with other sectors when addressing rather specific problems. National Consultative Groups which are functioning well have been established to deal with Iodine Deficiency Disorders (IDD), Vitamin A, Anaemias, and Infant and Young Child Feeding. The Team saw much evidence that these four groups were active and making a difference, and that TFNC was the driving force. There is also a Consultative Group on Nutrition Surveillance. There is now in place five-year programmes in each of these areas. The Evaluation Team believes that these Consultative Groups are highly useful, and should be continued and fully supported. A new Consultative Group on Household Food Security has been established.

Conclusions

(1) The Ministry of Health may not be the most appropriate authority for TFNC's work. Given the multisectoral dimension of its operations the right place of TFNC would be the Planning Commission or the Office of the Prime Minister. The Team is not sure whether the Planning Commission will continue to exist in its present form. Experience shows that the role of planning has often changed depending on circumstances. Under the Prime Minister's Office, TFNC would occupy a minor position

in view of the overloaded functions of the Prime Minister's duties.

(2) The concept of nutrition is widely respected in planning circles. TFNC's role as initially conceived is even more important today than in the 1970s. The objectives of TFNC are still relevant.

(3) The move from the Food Cycle Approach to the unified conceptual framework is appropriate. Also, the evolvement of a policy on food and nutrition as well as a regional bias are encouraging steps in the right direction.

(4) TFNC's achievements are remarkable. But the future is less promising unless it adjusts to conditions and in response to the changing environment.

Recommendations

(1) The Team feels that TFNC should continue to operate under the Ministry of Health. Attempts already made to influence decisions in other ministries should be intensified.

(2) The Team is of the opinion that TFNC should remain a field-oriented co-ordinating centre in food and nutrition. But it is desirable to ensure that its operational fields are much more focused and accommodative of more analytical work. In the present state of pragmatic changes in policy, strengthened analysis will improve TFNC's persuasive image.

(3) Deliberate efforts should be made to intensify in-house training for TFNC staff to fully grasp the new conceptual approach. Also, training should be extended to other sectors in order to familiarise the new approach both at national and grassroot levels. It will be more practical for TFNC clearly to identify critical areas of the chain of the new approach where departments could put special emphasis.

(4) Once the policy document on food and nutrition is endorsed, TFNC programmes ought to influence relevant sectors to facilitate the adoption of critical elements of the policy. TFNC should avoid the creation of parallel structures. TFNC's role of training at the grassroots level calls for full exploitation of structures already in existence.

(5) SIDA's support to TFNC is still needed. It should aim at sustenance of what exists now and could gradually be biased in favour of programmes initiated by TFNC, while at the same time providing general support and foreign exchange.

(6) Part of TFNC's activities should complement the on-going project on the social dimension of the ERP. Indicators of food and nutrition problems need to be reflected in the work on ERP's social dimensions under the co-ordination of the Planning Commission.

6. TFNC IN THE AFRICAN AND INTERNATIONAL CONTEXT

TFNC WAS ESTABLISHED in 1973 and as an Institution has grown and flourished until today when it is regarded as probably the best Institution of its kind in sub-Sahara Africa. The evaluation team was not able to visit other countries where nutrition institutes, centres, commissions or departments exist. However we have some familiarity, with many neighbouring countries in East and Southern Africa, we have followed the literature on nutrition in Africa for the past two decades, and have attended international nutrition meetings, congresses and other gatherings, and have impressions of senior staff from international agencies such as UNICEF, WHO, FAO and others.

Based on the information available, TFNC occupies a unique place among nutrition Institutions in black Africa in terms of its steady growth and progress; the number of well-trained professionals; its success in influencing national food and nutrition policy; its attention to the major nutritional problems of the country including PEM, iodine deficiency disorders, vitamin A deficiency, anaemia and inappropriate infant and child feeding practices; and the calls on its staff to attend international nutrition meetings.

There may be departments and other centres which have conducted more research; some of these particularly in West Africa have been university departments. But TFNC has also in recent years conducted research, much of it applied research related to Tanzanian problems. There are also Institutions in Africa such as the University of Ibadan in Nigeria and Nairobi University in Kenya which have conducted more nutrition training including graduate level training, whereas TFNC training has been at a lower level and less intense. This may change in the future if TFNC plans to establish a Nutrition School are realized.

Recent evidence of the stature of TFNC internationally and particularly in the African context are evident from the following examples:

(1) TFNC has been made a WHO collaborating centre for Nutrition Research and Training.

(2) TFNC was appointed by the third meeting of the Interagency African Regional Task Force on Nutrition Development at its meeting in Rome, Italy in October 1990 to be the Secretariat for the preparation of a Decade proposal. Tanzania served as the site for a drafting committee meeting held in Arusha in March 1991, with participants from 6 African nations and 5 International agencies.

(3) TFNC organized and hosted a UNICEF/WHO/ICCIDD/TFNC Inter-country Training Workshop and the 4th meeting of the ICCIDD Task Force for Africa meeting in Dar es Salaam in March 1990.

(4) Dr. Festo Kavishe, Managing Director of TFNC was the only African invited to present a paper at the recently held (October 1991) WHO/UNICEF International Conference on "Ending Hidden Hunger – a Policy Conference on Micronutrient Malnutrition". This selection was almost certainly made because WHO and UNICEF, plus international experts consulted, recognized that TFNC and Tanzania had the best organized programme in Africa to deal with the three major micronutrient problems.

(5) The JNSP in Iringa Region is recognized almost universally as the most successful of all the WHO/UNICEF/JNSP Projects carried out in more than 20 countries in Asia, Africa and the Americas. TFNC played a key role in the project, and in fostering the nutritional climate which helped its success. This project received the World Hunger Programme Prize awarded in the U.S.A. in 1991.

These are five examples of the recognition and the stature of TFNC internationally and in the African context. Many other examples could be given.

The very extensive international travel of TFNC professionals over the last few years shows the demand being placed on TFNC. It also illustrates that TFNC staff are recognized as leading figures in their various fields of expertise, and are highly regarded. Because the demand is likely to increase the Evaluation Team advises that consideration be given to guidelines which will ensure that TFNC's activities overseas or in organizing and hosting international or African meetings, workshops and conferences does not reach a level where it adversely effects the ability of TFNC to carry out its mandate in Tanzania.

The Team also recommends that TFNC seriously explore ways which will, for some meetings hosted by TFNC and for some TFNC staff activities abroad, result in financial benefits to TFNC, rather than financial obligations from its limited budget.

Ways in which this might be done include:

(1) Charging a reasonable, but sizeable fee for administrative costs and TFNC staff time when hosting certain conferences or workshops; and

(2) Requesting that some percentage (say 25%) above the cost of travel, consulting fees etc. be paid to TFNC for certain overseas assignments undertaken by TFNC professionals.

7. TFNC COLLABORATION WITH ICH, UPPSALA UNIVERSITY

THE SIDA FINANCED technical support to TFNC changed character after the 1986 evaluation. Through an agreement between the International Child Health Unit (ICH), at Uppsala University and TFNC, the ICH nutritionist has made bi-annual short visits to TFNC for consultations and technical discussions. Gradually TFNC staff have begun to take these opportunities to discuss in detail various project proposals, progress or technical constraints which they face in implementing their plans.

TFNC management and staff have found this arrangement useful in many ways. From a technical point it has strengthened their work in several areas, improved planning and preparation of project proposals and also helped TFNC better understand, identify and attract available donor support. For SIDA the arrangement has also had several advantages. They have handed over many administrative tasks to the ICH consultant who has functioned as their liaison and direct discussion partner in preparations of annual reviews and budgetary decisions as well as their technical adviser. From an institution building viewpoint the Team considers the TFNC-ICH collaboration has had advantages compared to conventional long term technical assistance. First of all this arrangement is considerably less costly than long-term assistance. TFNC has also been able to call on ICH technical support in a flexible manner and on issues they consider important. The regular contacts over several years have also been important psychologically.

On the other hand there have also been some shortcomings and constraints. The role of the consultant has been multi-focused and complex as it has had both a technical and administrative character. At times it has not been clear whether the role of ICH was that of a unit of SIDA as a Swedish Government Agency. In the future SIDA should avoid such combinations of responsibilities and more clearly define the role of consultants in such collaborative arrangements.

A limitation has also been that ICH is a very small institution. Because of this only one technical consultant has been available to TFNC. This has placed an undue burden on the one consultant and possibly more could have been achieved in specific areas if ICH had agreed to engage additional professionals when needed. Consequently the collaboration has resulted more in a relationship at the personal level than one between two institutions. But these are minor criticisms because, in general, TFNC has benefited from the current arrangement. To improve the efficiency the Evaluation Team

suggests that TFNC should be able to call on different consultants as needed. The initiative to call on consultants should rest with TFNC, on the advice of ICH and SIDA. It is suggested that in the future SIDA try to use a wider group of Swedish and other qualified professionals to serve as consultants to TFNC. These should be provided at the request of, and with the agreement of, TFNC. This is not a criticism of the current ICH Nutritionist who under his current terms of reference has done a very good job for SIDA and TFNC.

8. TFNC MANAGEMENT AND ADMINISTRATION

TFNC IS A PARASTATAL organization under the Ministry of Health. A parastatal organization in Tanzania refers to a public enterprise or a Government-supported institution, charged to carry out specified activities on behalf of the Government but outside the official Government structure. Parastatals follow the regulations laid down by SCOPO, the Presidential Standing Committee on Parastatal Organizations, which determines and approves organizational structure, salary scales and terms of employment.

The Board

The Board of TFNC is appointed by the Minister of Health and shall according to the Act comprise not less than 8 and not more than 12 members. Members are appointed for a period of three years, mainly in their personal capacity, but in some cases representing a Ministry or an institution. A new Board of Directors was appointed with effect from 1st January 1991, comprising 12 members under the Chairmanship of Dr. J.V. Temba, former Director of Preventive Services in the Ministry of Health. Other Board members come from, for example, the University of Agriculture, the University of Dar es Salaam, the Ministry of Agriculture, the Civil Service Commission, the Ministry of Health, the Treasury, the Ministry of Community Development, Women Affairs and Children, CCM, the Presidential Trust Fund, and the Ministry of Health in Zanzibar.

The Board meets quarterly and there is a high attendance at Board meetings. There are no alternates appointed and very rarely somebody else replaces an absent Board member at a Board meeting.

The strained relationship between the Board and the Management of TFNC, highlighted by the 1986 evaluation, no longer exists. In the evaluation team's discussion with Board members it was evident that the co-operation is smooth with a good atmosphere. The Board discusses and

approves budgets and plans of operations, annual and quarterly reports and audited accounts as well as the management audit report made yearly by the Tanzania Audit Corporation. The latter report is sent to all Members of Parliament.

TFNC Management

TFNC has six departments. The Managing Director and the directors of the six departments form the Management Committee, which meets every second Friday. Before July 1991, when the five-day week was introduced in Tanzania, the Management Committee met every Friday. There is a standing agenda at these meetings with reports from each department. Minutes are always made and reviewed at the following meeting. Feedback to staff is done through departmental meetings where "from Management" is supposed to be a permanent agenda item. General issues are sent as a memorandum to staff by the Managing Director. In addition there is a regular Swahili monthly in-house newsletter called "Shirika la Chakula na Lishe" (this is TFNC) which gives information from Management and all departments. Regular meetings of all staff chaired by the Managing Director are held quarterly. A Workers Council made up of Management, the leaders of the C.C.M. and the Workers Union, and one representative from each department has been operational since 1986. It meets at least twice a year and its Executive Committee has had more than 100 meetings since 1986. The major role of the Worker's Council is to scrutinize and review the centre's plans and budget as prepared by Management before they are sent to the Board. The Council also receives and deliberates on the annual report as well as the audited accounts.

Finance and Administration

The Department of Finance and Administration has got 67 of TFNC's 142 employees under its auspices. It is divided into four sections: Personnel, Administration, Finance and Printing.

The Evaluation Team engaged a well established Tanzanian Chartered Accountants firm (Tanna Somaiya & Company) to review the organization of the Finance and Administration Department within the overall organisation structure of TFNC. Tanna Somaiya also reviewed the organisation manual and the account manual to ascertain the duties and responsibilities of the various staff with respect to their position in the organisation structure. The experience and qualifications of the staff of the Department were reviewed as well as the volume of work in relation to staff strength.

The outcome of this review has shown that the staff structure and reporting lines of the Finance and Administration Department are well defined and structured. The section heads of the Department are suitably qualified and experienced, and there is a clear segregation of duties and responsibilities amongst the staff. The accounting and internal control mechanisms are reasonably good. Some posts within the Department are vacant and should be filled. There are detailed suggestions by Tanna Somaiya on questions regarding accounting and internal control – procedures, purchasing, inventories, fixed assets, cash and bank as well as management information system and budgetary controls. Their report and recommendations were provided to TFNC.

Some of these suggestions need to be taken into account by TFNC such as:

- the accounts manual needs to be updated on current procedures for purchasing and to incorporate current cheque signing limits.
- income and expenditure accounts should be prepared on a monthly basis.

There are other important suggestions in the detailed report by Tanna Somaiya that need to be considered by TFNC and acted upon when appropriate.

Disbursement of SIDA-funds

The present system of disbursing SIDA-funds through the Government system is time-consuming and unnecessarily complicated. The chain goes as follows:

- (a) TFNC presents the plan and quarterly budget to the Ministry of Health
- (b) The Ministry of Health forwards it to the Planning Commission for review
- (c) The Planning Commission requests SIDA to release the funds
- (d) SIDA releases the funds to the Ministry of Finance (copy of release advice to TFNC)
- (e) TFNC requests (after having received the copy of the release advice) the Ministry of Health to release the funds.
- (f) The Ministry of Health forwards the request to the Planning Commission
- (g) When approved the Planning Commission orders the Treasury to release the funds to the Ministry of Health.
- (h) The Ministry of Health releases the funds to TFNC.

Consequently, there are eight different steps to be taken before SIDA-funds can be released to TFNC. It is not possible for TFNC to facilitate this procedure. It must however be looked into in the broader context of

increased efficiency within the Government system.

TFNC has recently been allowed to open an external account with Nordbanken in Stockholm, which is considered to be an important step forward in facilitating financial transactions. It remains to be seen how smoothly this will operate.

Leadership

Management skills and good leadership are prerequisites for building a viable institution. Such skills are among the scarcest of human resources required for development. The evaluation team got the impression that the Managing Director of TFNC was highly respected among his staff. It was often mentioned that he was accessible, when needed, and that he had high respect for his colleagues, resulting in a high degree of delegation of duties. This is necessary in a situation when the Managing Director is also active internationally, leading to travel and time away from TFNC. When the Managing Director is away, one of the Directors takes over as Acting Managing Director.

The flow of information from management to the rest of the staff is very important. Feedback to the Departments on what has taken place at management level is sometimes weak. Management Committee meetings are held regularly, while meetings at departmental level are less regular. The question of feed-back mechanisms from the management to the departments and on supervision by directors of departments should be looked upon together with all staff concerned. It is probable that some Department Directors are better than others at keeping their staff fully informed about discussions and decisions at Management Committee Meetings.

Recommendations

- the vacant posts relating to finances should be filled, the most important being the Principal Internal Auditor
- the accounts manual needs to be updated on current procedures for purchasing
 - income and expenditure accounts should be prepared on a monthly basis
 - a detailed report by Tanna Somaiya & Company on purchasing, inventories, fixed assets, cash and bank and budgetary controls should be looked into by TFNC and acted upon where appropriate
- the time-consuming system of disbursing SIDA-funds to TFNC through the Government system cannot be changed by TFNC. It should, however, be looked into in a broader context

- feedback to staff from Management Committee meetings should be strengthened and this should be the responsibility of the Director of each Department.

9. DEPARTMENTAL REORGANIZATION

THE EVALUATION TEAM recommends that there be some reorganization of the current six Departments and that the ten Programmes now in existence get placed in those reorganized Departments. There seems no advantage in having six Departments, each with a Director, ten Programmes each with a Leader who is in a Department, and several dozen projects each with a "Principal Investigator" who is also in a Department and whose project falls under the umbrella of a Programme. The Programmes seem to play little beneficial role, the members seldom meet as a group, and the Programme Leaders have little, if any, authority to exercise powerful projects in their Programmes. The disappearance of Programmes as such will not have serious adverse consequences to the operation of TFNC as a whole, to the Departments or to the projects. It is expected, rather, to be beneficial. This conclusion reached by the Team was discussed with the Managing Director. He agreed that scrapping the existing "Programmes", and including them in the departmental structure would be acceptable to him, and also beneficial.

Some would argue that having 10 Programmes has allowed good collaboration and co-operation between Departments. But examination of this suggested that the collaboration in fact took place at the project level, and not much at the Programme level. Thus, for example, control of vitamin A and iodine deficiencies has involved more than one Department for each project.

As far as departmental reorganization is concerned, the Evaluation Team felt that the Community Nutrition and Health Department, as currently set up, had responsibility, and therefore resources, for too large a share of TFNC activities. This reflects a shift in the project priorities, in funding, and in activities of TFNC since the 1986 evaluation. This department now is overloaded and overworked.

This Department now has responsibility for macronutrient deficiencies such as PEM and those resulting from low energy intake; for the micronutrient deficiencies three of which (iodine, vitamin A and nutritional anaemias) entail very large efforts; and for nutrition in primary health care and some other activities which clearly should remain in this Department

headed by a medically trained Director, and with health professionals, dieticians and others among its staff. However the community level work, other than dealing rather directly with nutritional deficiencies might, with benefit, be shifted to the Nutrition Education and Training Department. This would be especially desirable if the recommendation to recruit sociologists, anthropologists (including an ethnographer) and perhaps a consumer economist for TFNC is accepted and operationalized.

The names of these reorganized Departments, if these recommendations are accepted, might need to be changed, a decision to be made by the Board on the recommendations of the management. Possible names might be the Department of Public Health Nutrition, and the Department of Education, Training and Community Nutrition.

Clearly the names need to be decided by TFNC not by the Evaluation Team. But we recommend that social service aspects of nutrition be strengthened in the Department of Education and Training. This would be in addition to those now in the Planning Department. They would help make the "community diagnosis"; they would increasingly use social marketing techniques to assess, at the village level, the kinds of messages and audio-visual material to use; they would be involved in assisting TFNC and, its Departments with regard to various community activities and interventions; they would gather information on food habits and preferences; and so on. Many of these kinds of activities are currently being undertaken, but added skills in the social sciences would improve this work. The major role in nutrition education and training would continue. But certain problem areas and projects, for example, concerning women's workload, institutional diets, school feeding, household food security and others might be moved to this Department, which would have the expertise to work with communities.

It is recommended that the responsibilities of the Planning Department remain as currently structured, but with strong emphasis on trying to see that the "Food and Nutrition Policy" once fully approved by the government, be implemented. To do this, and for its regular activities, the Evaluation Team believes that two additional well-trained economists be recruited either to fill existing vacancies, or by creating new positions. The one should be a food economist (or possibly an agricultural economist) but one whose training and interests are in the "demand" or consumption aspects of food and food problems and not on the production side. The Ministry of Agriculture is responsible for increasing agriculture and food production. TFNC should be more interested in, and active about, who consumes that

food, why even in times of good production some people are hungry, and how food gets distributed to influence nutritional status. This may entail even examining the relationship of structural adjustment to nutrition and health in more detail.

It is recommended that the second economist be a consumer economist trained in the food and the social aspects of consumer economics. Such a person could assist well trained nutritionists at TFNC in much of their work, where consumer economics rather than old fashioned home economics is required. This department should provide a greater role in TFNC planning.

The Food Science and Technology Department as currently functioning appears to have more staff than are needed, more space than they can use, and perhaps for historical reasons, are still concentrating on some activities that might better and more appropriately be performed by other institutions (such as Sokoine University, the Ministry of Agriculture or their Agricultural Experiment Stations, such as those at Tengeru, Ilonga, etc.). The Evaluation Team believes that the recommendations of the 1986 evaluation relating to this are still valid. There are also activities being undertaken, or planned, that might not be regarded as a high priority for TFNC. On the other hand, some very important activities that will help Tanzania and TFNC achieve their stated objectives of reducing malnutrition, especially micronutrient deficiencies by the year 2000, are not being adequately dealt with by this Department. One such activity is fortification of foods with vitamin A, iron and possibly other nutrients. The Evaluation Team believes that well written plans to move ahead on fortification would very likely attract substantial donor funding and industrial or corporate financing. Such an activity may need the recruitment of a well-trained staff member and a consultant team. But fortification is an undertaking in the opinion of the Evaluation Team that warrants a high priority, and reorientation and refocusing of existing professionals in this Department.

In contrast, talk of TFNC again going into the business of preparing a manufactured weaning food, such as Lisha (made in the past) is not recommended. Lisha was a very costly failure. Packaged weaning foods provide convenience for overburdened mothers, but the cost is always much higher than say maize and beans bought in the market (per 1,000 calories or per 100 grams of protein). This means that they are not affordable for the poor and become suitable only for middle class, and more affluent families where malnutrition is less common.

Both the 1979 and 1986 TFNC Evaluation Reports raised this issue. Yet,

the Food Science and Technology Department still continues to have a large share of the staff and resources of TFNC, and to do a great deal of work not related to the central mission of TFNC. In some ways this Department acts as a separate institution within TFNC. Professionals trained in food technology (and also to some extent in food science) have different interests, career goals and even a different clientele. Food technologists are best equipped to help the private food industry. It is this fact that has caused friction between this Department and the other Departments in TFNC. The solution is, over time, to reduce the size of this Department, and to make certain that those in it are food scientists able and willing to work on goals central to those of TFNC, and ones that fulfil its social mission. In the future TFNC would be better to have a smaller Food Science Department with food scientists who were able to work on topics such as germination and fermentation at the field level; on household weaning mixtures; on fortification of foods and such related topics. It is recommended that the TFNC Board articulates this view as a policy statement if it agrees with it. The Board and Management should recognize that this is the third Evaluation Team over a 12 year period to articulate this view.

The other two Departments have fairly clear roles to perform. They could be regarded as "service" departments. Thus Finance and Administration clearly services the management and all other Departments of TFNC. As stated elsewhere in this report, the budget and accounting aspects of its work have greatly improved since the 1986 evaluation.

The Laboratory Services Department staff probably would not like to accept a recommendation that they also be mainly a "services" Department. On the other hand, "services" is part of their name. At present they do provide quite advanced laboratory services to other Departments, as well as outside of TFNC. That should be their main role. This does not preclude this Department from initiating some of its own research, providing this is aimed at recognized TFNC goals. It also should not prevent staff members of the Department from participating fully, as they now do, in certain projects, provided the other appropriate Departments are fully involved.

Finally, we strongly recommend that serious consideration be given to this reorganization. This should include allocation of considerable space and several professional staff positions from the Food Science and Technology Department, to other Departments.

This reorganization would allow and facilitate TFNC to address what might be regarded as its main mandates, in three broad areas:

(1) Food and nutrition plans and policies

This includes strategy analysis, food and nutrition planning, monitoring and surveillance. Emphasis would in the next few years be placed on the implementation of the new National Food and Nutrition Policy. There is a role here for co-ordination, for developing indicators for goal achievement, for nutrition information systems as part of nutritional surveillance, but always stressing the need for action based on the data collected.

(2) Training, education, communication and community nutrition

This includes specific training by TFNC, but more often curriculum review and influencing nutrition training of many professionals in health, education, agriculture, community development etc.; education of the public and communication nationally and locally through the press, radio, and other media; maintaining a library of nutrition materials and ability to prepare visual aids, printed materials, etc.; social science nutrition related activities at the community level including public education activities in support of breastfeeding, food security, and consumption of diets with adequate micronutrient content; family food security, questions of gender differences and women's workload, and household weaning foods, etc.

(3) Public health nutrition, control of nutrient deficiencies, and ensuring adequate and nutritionally sound food intakes

This includes the more health and medical related activities related to PEM, IDD, vitamin A deficiency, anaemia etc.; the more medical aspects of infant feeding, control of infections that influence nutrition; medicinal nutrient supplementation; fortification of foods; and regional and national food security.

In all three areas operational and applied research would be included as an integral part of TFNC work. Priorities would be set for which types of research were most appropriate and feasible.

These three areas of activities would be supported by well organized management and financial services, and by laboratory services to support the research and the activities in these priority areas. Food science expertise is needed, but mainly to support the above activities.

Discussions with the universities and the government should be set up with the objective of finding a solution to the fact that there is no Food Technology Institute in the country. There are certain aspects of this that should be the responsibility of the universities, the Government Chemist

and the private sector. Perhaps a national meeting, attended by knowledgeable consultants in both nutrition and food technology, should be organized to recommend appropriate policy. TFNC will need to be careful that if a new Food Technology Institute is established, separate from TFNC, it does not get needed TFNC space.

10. TFNC OFFICE AND OTHER SPACE

AT PRESENT IN THE Ocean Road Headquarters of TFNC there is insufficient space for the professional staff working there. Many relatively senior staff share offices with 2, 3 or more persons. The small amount of space that each person has, the sharing of rooms and the lack of privacy adversely effects performance, morale and job satisfaction.

The Food Science and Technology Department and the Laboratory Department share a large building some 10 kilometres from the TFNC headquarters, at Mikocheni. The Laboratory Department has somewhat cramped space for its work. But the Food Science and Technology Department has many square metres of floor space not now being utilized. Before it is "occupied" and fully "claimed", it is desirable that TFNC perhaps, with some independent advice, plan a fairer and better utilization of space, considering the real needs and the directions TFNC is likely to move in the next 5 to 10 years.

If accepted, certain recommendations here, regarding staffing, departmental reorganization and the "abandonment" of the TFNC division of staff into 10 "Programmes," may influence those decisions regarding space allocation.

The Evaluation Team was not able in the time available to make concrete recommendations regarding space allocation. However, it is felt that senior staff who have at least a Master's degree should, where feasible, have their own separate office. It may have adverse consequences if any one of the four Departments, now in the headquarters building, were to move to the new Mikocheni building, because of lack of easy access to the Managing Director, the other non-laboratory oriented Departments, the library and to some extent ministries based in central Dar es Salaam. However, serious consideration might be given to moving some parts of existing Departments to the new building. One such part might be the printing, graphic arts, publications storage and other more mechanistic portions of that Department. At rather low cost this could produce some improved office space for professionals.

11. TFNC STAFF

THE PROFESSIONAL AND TECHNICAL capacity of the staff, their capability of dealing with changes and dynamics within their fields, as well as their motivation for improving their performance, are central factors for the success and capability of an institution. Over the years TFNC has continued to build up its professional capacity, and also it has been relatively successful in keeping its professional staff. The Centre now employs 142 people of whom 72 are working in a technical capacity with different TFNC-projects.

The staffing situation at the time of the first review of schemes of service in 1980, the situation at the time of the internal review in 1987 and the current staff situation are shown in Figure 4.

The large numbers in Finance and Administration 1991 reflect the fact that most non-professional staff such as drivers are now in that Department.

Figure 4. Staffing

	1980	1987	1991
Managing Directors			
Office	1	1	4
Planning	8	12	12
Nut Ed	4	13	12
Comm Nut (Med Nut)	6	16	17
Food S&Tec	19	16	18
Lab	16	10	13
Fin & Adm	4	11	66
Total	58	79	142

Building up a well qualified staff

In the early years TFNC made use of many different training opportunities to build up its staff capacity. This has been a slow process as is indicated in the summary of current academic qualifications in Figure 5. The 1986 evaluation also noted that post graduate training during the early years had tended to reflect opportunities more than actual needs or priorities, resulting in more highly qualified staff in food science and technology than in areas such as maternal and child nutrition or community nutrition. A scholarship component was therefore built into the SIDA support to TFNC and this allowed more systemic efforts to build up staff capacity to deal with major community nutrition concerns. A summary of qualifications of professional staff is shown in Figure 5.

During the 1986-1991 period 16 senior staff members have been (or are currently) trained at postgraduate level. TFNC has tried to steer this training

Figure 5. Key staff qualifications

Qualification	Number of Staff
Ph.D. Food Science	1
Registered for Ph.D.	4
Registered for D.Sc.	1
MD	3
M.Sc/MA	19
B.Sc/BA	12

towards areas which needed strengthening, e.g. community nutrition assessment, IDD, or Vitamin A. For the 1991-1996 period TFNC has now prepared a new 5 year training programme visualizing postgraduate training of most of its senior technical staff. Whether this will be successful or not will depend on the availability of funding for scholarships for Ph.D. and M.Sc. level training.

Decisions are difficult concerning priorities for training, the relative role in TFNC, SIDA or other donors in deciding which staff should receive outside training, the overseas institution where this should be done, and the timing of this training. The Evaluation Team was only able to suggest that strengthening is needed in certain disciplines such as the social sciences, epidemiology and statistics; and that areas such as food science and technology deserve a much lower priority. It is not easy for TFNC Management independently to make balanced decisions about training based on TFNC priorities and clear technical needs. It would be easy, but wrong, to allocate scholarships either by trying to share them rather equally by departments or to allocate them on the basis of which department or individual puts most pressure on management. It is suggested that a Committee, somewhat similar to that set up for reviewing research for ethical and human subject clearance, be established to review training abroad. Such a Committee might consist of the TFNC Managing Director, a TFNC Board Member, two persons carefully selected from university faculty, and two professionals from donor agencies such as SIDA, UNICEF, World Bank, WHO, etc. This would be an advisory committee, but one which influenced TFNC decisions.

Besides formal training TFNC has also used several other ways of strengthening staff capacity. Through internal training and seminars it has retrained the entire staff to better reflect the conceptual framework and multisectoral focus it wants to pursue, and thus made the staff more efficient as trainers of trainers in the regional programme. TFNC management also views the technical exchange through regular visits by the ICH nutrition consultant, or staff participation in regional and international meetings, as important opportunities for professional staff to update their knowledge within specific fields and become challenged and more analytical in their approach.

Changing scope of work

The major changes in direction and priorities in TFNC's work since the last evaluation has placed new demands on staff qualifications. TFNC has

now developed 5 year plans of action for IDD, Vitamin A deficiencies, nutritional anaemias, child health and nutrition and a programme for nutrition surveillance. Recently it also formulated its strategy for the 1990's in which highest priority is given to support community level activities through policy and strategy development and relevant operational research in key areas. When the initial situation analysis is completed in many regions, systematic support will be needed to provide technical guidance and advice on how to incorporate nutrition aspects in practice into the development plans of different sectors, in training of field staff, production of education and training materials, communication of new and relevant information to different decision makers and field workers and in monitoring and evaluation of the process or impact of these actions.

These ambitious plans will require highly trained staff. The Team believes that, in general, TFNC will be able to handle this workload. TFNC would however benefit from a strengthened analytical capability, and further training or recruitment of staff in epidemiology, statistics, sociology, food economics and computer science is recommended.

The dynamic and catalytic role that TFNC has, not only requires a highly capable staff but also professionals who are highly motivated to learn and to improve. Important preconditions for this is a competitive salary and attractive possibilities for career advancement. The TFNC Management had already begun work improving schemes of service at the time of the 1986 evaluation, and this was given high priority by the new management. The proposal for new schemes of service was adopted in 1989 and has meant considerable upgrading of the salary scales for technical staff, and for the first time also included supportive staff. It has improved the possibilities for career advancement, at least among senior staff, and resulted in greater motivation and job satisfaction. For TFNC Management and staff the adoption of the new schemes of service is also seen as an important recognition of both their role in addressing food and nutrition problems in the country and their capability of doing it.

Management has also used other initiatives to build up staff motivation and confidence. All projects have been subjected to internal reviews, and staff are encouraged to work on projects across departments. This was meant to allow more flexible linkages outside departmental structures and make decision making more decentralised, and responsibilities more shared among the staff. Opportunities to take part in training and field work have been shared to a greater extent.

Management has also tried to engage supportive staff in technical

activities. A "motivation package" has been initiated including the election of "best worker of the year".

12. TFNC PROGRAMMES

(1) SURVEYS, SITUATION ANALYSES AND SURVEILLANCE

TFNC IS INVOLVED in a number of studies of different kinds including situation analyses, studies based on nutritional module questionnaires, pilot surveys, nutrition surveillance in the districts and community nutrition surveys. During the last year the first report on "Tanzania Nutrition Trends" was produced. This was a result of the Nutrition Database. The report was discussed by a steering committee, and it turned out to be difficult to rely on the database as the updating of data is slow.

A Situation Analysis of food and nutrition problems has been published for Kilimanjaro and Dar es Salaam regions, and a preliminary report exists for Coast Region. These analyses are a joint effort between a team in the regions and TFNC. They are considered to be the first step in order to identify the critical factors that need to be addressed in solving the problems of food and nutrition within a context of the overall development of the region. The next step for the region will be to include nutrition considerations in its development programmes to solve identified problems.

Furthermore, efforts to ensure a nutritional module questionnaire have been made, and TFNC and the Bureau of Statistics have agreed upon administering the module jointly with the household budget survey which is just about to take place. Pilot surveys have been carried out.

The data collected in some surveys has raised many questions, particularly as to reliability. When children were reweighed it turned out that the figure for underweight cases was much lower than the first survey had shown. The experiences point to the need for training at the community level. Two workshops for training of trainers have been carried out and TFNC has given technical support also to training at village level.

The Evaluation Team believes that nutritional surveillance using different kinds of data may be useful, but that no surveillance system is really useful unless the data are relatively quickly analyzed and then used for decision making and action. There are too many examples in other countries where large, expensive, time-consuming nutritional surveillance systems have been established, but where the data are never used by decision makers, and no

action is taken based on the data to improve the nutrition and health of the people. Tanzania should not fall into that trap. Any surveillance activity should be tied to an analysis of the findings and then to action. This would follow the Triple A approach which is part of the TFNC conceptual framework. The need for monitoring of the Programmes is often mentioned in TFNC documents, but systematic monitoring of most programmes has not been achieved.

Conclusion

An overall conclusion is that there is a great deal of data collected through surveys as well as in other types of studies but that the data often are not fully elaborated, analysed or utilized for action.

Recommendations

It is recommended that:

(a) the design of each survey be discussed thoroughly in a research group or committee before it is carried out, and always in consultation with statisticians.

(b) more time be devoted to analysis of data in a timely fashion.

(c) knowledge in survey methods be increased through workshops and training.

(d) a plan for evaluation of specific programmes be developed.

(e) surveillance not be undertaken unless it is clearly linked to decision making and action based on the findings.

(2) Protein-Energy Malnutrition (PEM)

PROTEIN-ENERGY MALNUTRITION is without doubt the most important nutritional problem in Tanzania, based on its prevalence, the morbidity it produces, its long-term consequences and its contribution to child mortality. It also has the most complex aetiology and is more difficult to control than the next three most important nutrient deficiency diseases, namely xerophthalmia, iodine deficiency disorders and nutritional anaemias. Although most importantly a problem of young children, PEM can involve older children and adults. Children with PEM are often more likely than other children to have certain micronutrient deficiencies such as iron or vitamin A deficiency. There exists also a synergism between PEM and infections.

TFNC in recent years appears to have moved its main focus of attention away from PEM and towards the micronutrient deficiencies. This is part of a world-wide trend. It is understandable that TFNC wishes to be associated with major projects that are likely to be successful over the short term in

significant reductions in, for example, vitamin A deficiency and iodine deficiency disorders. The temptation should not deflect efforts from addressing the PEM problem. Some measures that reduce PEM will also reduce micronutrient deficiencies. For example, children fed a diet adequate to prevent PEM may often simultaneously provide adequate amounts of vitamin A and many other essential nutrients. TFNC efforts have not adequately addressed the control of infections such as diarrhoea, respiratory infections, intestinal parasites and malaria as a means to reduce PEM.

TFNC/UNICEF Conceptual Framework on PEM and the Role of TFNC

The conceptual framework (Figure 1) has been the basis of TFNC advocacy towards prevention and control of PEM. However, the extent to which it is utilized in TFNC's actual activities is not clear. This may stem from the fact that the mandate of TFNC at each level of the framework is not very clear.

Mortality trends between 1957-1988 indicate that whereas there has been a gradual decline in IMR, the decline in CMR has been much slower. This may reflect that there has been improvement in the health care rather than in child nutritional status. There is a need for a clearly defined role of TFNC as an instrument for stimulating the attack on PEM at various levels of the conceptual framework.

There has to be closer co-operation and co-ordination of TFNC's activities with those of other sectors and institutions that are working towards the same goal, such as those that have a role in planning and initiating food and nutrition programmes in the Ministry of Agriculture, sectors and institutions responsible for training, development planners, community development, other relevant sectors and even the health system.

In an effort to implement a recommendation put forward by the 1986 evaluation team, TFNC has adopted a regional focus in addressing the PEM problem. Efforts in this regard have been initiated in Kilimanjaro, Arusha, Coast, Dar es Salaam and Morogoro Regions. The selection of these regions does not appear to have taken into consideration the regional differentials in PEM and mortality.

The 1978 census showed a general gradient of mortality across the country from NE to SW whereby mortality was lowest in Kilimanjaro, Arusha, Dar es Salaam and Zanzibar, and highest in the Central and SW regions of Iringa, Mbeya, Mtwara and Rukwa. It appears TFNC's regional focus is influenced mainly by demand of the regions which to some extent compromises its mandate in choosing targets.

On the other hand, TFNC's input in regional situational analyses has

facilitated JNSP activities in high priority areas like Iringa where significant reduction of severe PEM among underfive children has been achieved. Experience from this programme has stimulated other regions to initiate Child Survival and Development programmes and TFNC has been instrumental in creating awareness towards childhood PEM in regions like Morogoro, Shinyanga and Rukwa. Some of these regions have incorporated nutritional programmes in their development plans.

However, once the regions have incorporated PEM control measures in their development plans TFNC's mode of follow up of the implementation stage is not clear. For example, after TFNC assisted the Morogoro Region in the situational analysis of food and nutrition problems facing women in the region, the region initiated a CSD programme. The initiatives in the Region included establishment of child feeding posts and household food security measures. In the implementation stage of the programme, some logistical problems emerged that needed further support from TFNC such as improvement of village weaning foods and guidance in compilation and utilization of data from the community based growth monitoring systems. If TFNC had established a clearly defined monitoring and evaluation system for the programme from the outset, it might have been possible to respond better to the region's needs.

TFNC's Efforts and the National PHC Activities

In the 1986 evaluation TFNC was advised to capitalize on the PHC momentum in the country as an entry point for nutrition. At that time, in TFNC there was only one programme medical doctor. Now there are more. Programmes geared towards implementation of PHC in Tanzania include, among others, the following:

(a) The MCH Programme

This addresses mainly the immediate causes and to a lesser extent the underlying causes of PEM. This programme has a very extensive infrastructure in Tanzania. However, there has not been optimum co-ordination of activities between TFNC and this programme.

(b) The EPI Programmes and the UCI Campaign

The UCI campaign started in 1986 and was able to achieve its target of immunizing 80% of all eligible children by 1988. A remarkable achievement. However, TFNC could have capitalized on this programme more strongly as an entry point for nutrition. The lessons learnt from the

success of the programme could be useful to TFNC.

(c) Diarrhoeal Disease Control Programme

This programme emphasizes the use of ORS in the prevention of dehydration and weight loss due to diarrhoea. It is another entry point for nutrition that has not been sufficiently utilized by TFNC.

Conclusion

In general, there is an apparent gap between the Ministry of Health which is the main implementor of these programs and TFNC. Whereas the Ministry of Health recognizes and supports TFNC's mandate, it has no clearly defined mechanism of co-ordination between these programmes which are to some extent vertical and TFNC. For instance, whereas there is a senior medical officer in charge of each of these programmes who is answerable to the Director of Preventive Services, there is no equivalent officer in-charge of Nutrition within the Ministry of Health. Such a person could play an advocacy role for the nutrition component in each of these programmes and serve as a co-ordinator between the Ministry of Health PHC activities and TFNC. He or she could also strengthen communication and facilitate exchange of nutrition information between these programmes and TFNC.

Conclusions (PEM Programme)

(a) There are many loose ends regarding TFNC's role and efforts in addressing the PEM problem in Tanzania. The magnitude of the problem has remained large and elusive. There is evidence of PEM in other age groups besides young children which TFNC might need to address in its mandate of improving nutrition in Tanzania.

(b) The synergism of PEM and infections has not received adequate attention in TFNC's effort to curb the problem of PEM.

(c) TFNC has adopted the recommendation for a regional focus in its PEM control measures. TFNC appears to have no objective criteria for making decisions regarding choice of the region. TFNC's involvement in regional situational analysis has greatly facilitated nutrition activities in those regions in that the regions and donors have used them to initiate JNSP and CSD Programmes. However, TFNC does not appear to have a clearly defined role in the implementation stage of those initiatives, nor does it have an in-built monitoring or evaluation system in its regional activities.

(d) There is no adequately defined link between TFNC and the various programmes that are geared towards PHC in the Ministry of Health. This

results in lack of co-ordination of TFNC and Ministry of Health activities, failure of TFNC to exploit the PHC mechanism fully for nutrition development and some duplication of efforts. The same can be said of TFNC activities and those of related bodies within the Ministry of Agriculture.

Recommendations

It is recommended:

(a) That TFNC should place greater emphasis on PEM as the most important public health nutrition problem in the country, while recognizing the fact that control of micronutrient deficiencies is important in that it serves as an entry point for other nutrition initiatives and probably has a spill-over effect towards PEM control. Much of TFNC's current emphasis on micronutrients should take into consideration the fact that successful control of PEM would reduce the prevalence of these deficiencies as well. TFNC should maintain strong efforts to control PEM even though international funds make it more attractive to concentrate efforts on micronutrients.

(b) TFNC should try to use its influence to ensure the appointment of a senior medical officer responsible for nutrition in the Ministry of Health.

(3) IODINE DEFICIENCY DISORDERS (IDD)

THE RECOGNITION OF endemic goitre and the problem of iodine deficiency in Tanzania, was first clearly described in the scientific literature in three papers published in 1965 and 1966. Now a quarter of a century later serious steps are finally being taken to control the problem. Yet, as early as 1972 the Nyanza Salt Mines completed plans for the iodation of salt in their salt manufacturing plant in Uvinza in Kigoma Region. Funds were secured and machines were identified for purchase, but lack of consultation with the Ministry of Health and political considerations led to suspension of the project. Now almost 20 years later plans for iodation are again at an advanced stage. Meanwhile, a whole generation of children, and adults, have suffered the effects of iodine deficiency. Such political and other hindrances to fortification of salt and other foods are not confined to Tanzania. The Evaluation Team emphasizes the need to learn from history.

The formulation of a national IDD control programme was greatly assisted by the establishment of TFNC in 1973. Under its stimulus an inter-ministerial meeting in March 1978 led to the establishment of a National Expert Committee on goitre and cretinism in Tanzania. One of the outcomes was the goitre survey in 23 districts in 11 regions of Mainland Tanzania where a goitre problem was believed to exist.

Between 1980 and 1986 a small pilot test in Njombe District showed the effectiveness of iodated salt under village conditions and an experiment using subjects in Mbeya and Tabora Regions showed the beneficial effects of iodated oil injections. In 1986 the International Council for the Control of Iodine Deficiency Disorders (ICCID) was formed, which stimulated action to control IDD, and led to Regional IDD meetings and assistance to national efforts. A study in the Sudan illustrated the effectiveness of oral iodinated oil in the correction of IDD. The use of iodine taken in large doses by mouth, rather than by depot injection opened up a new method of iodine supplementation for control of IDD.

The present assessment of IDD is stated in a 1991 report by Dr. Kavishe, based on "an ongoing national survey started in 1980 where a random sample of 10 primary schools per district was surveyed as regards the goitre prevalence". The report shows that 107,175 subjects were examined in Tanzania in the years from 1980 to 1990 with an overall goitre rate of 37 percent and a visible goitre rate of 5.9 percent.

The report states that "on the basis of these goitre surveys it is estimated that nearly 40 percent of the Tanzanian population, or over 10 million people live in areas deficient of iodine, and therefore at risk of IDD". Half of these are likely to have goitre, and "160,000 are cretins and probably 450,000 are cretinoids."

The national programme for the control of IDD now consists of supplementation of iodine using two delivery systems, namely:

- (a) Distribution of iodated oil capsules to be taken by mouth, and
- (b) Iodation of salt.

These two intervention methods are said to be supported by activities aimed at advocacy, information, communication and training; operational research; monitoring and surveillance; and logistic and management support. The Evaluation Team believes that TFNC has a very important role to play in these activities, while leaving the actual distribution of capsules to the Ministry of Health and its DMO's, and allowing the Ministry of Mines and Minerals to ensure that salt manufactured in Tanzania, and that imported, is iodated.

The plan states that the distribution of iodine capsules is to be phased out as iodated salt takes over, so that by 1995 capsule distribution would cease, except in a few areas. It is expected that by the end of 1991, the capsule programme would have covered about five million persons. The dose per person is two capsules to provide the equivalent of 380 mg of iodine to each person every two years. The distribution has been organized by the DMO in

each of twenty districts chosen, and using one of two different systems. The first is to have a campaign where the DMO and his team arrange for a village capsule distribution day, and with the help of school teachers and party leaders (including the Ten Cell Leaders) everyone aged 1-45 present at the distribution site on that day receives two capsules. The second system was for DMO's to distribute capsules to rural health centres and dispensaries, and to disseminate information about them, to encourage all persons aged 1-45 years to come and receive two capsules. The first of these methods resulted in higher coverage than the second method, and is now recommended.

In order to monitor the capsule distribution using either system, the DMO was requested to complete forms providing information on persons receiving iodine capsules. The impact of the capsule supplementation program has been positive in areas studied. For example, in Mahenge District the impact on three primary schools was a drop of total goitre rate from 74.9 percent to 51.9 percent. There was a reduction of visible goitre rates of 71.7 percent.

Specific studies have shown a normalization of urinary iodine excretion, and of thyroid hormone levels in those who have received an iodine capsule in the last 56 days. The cost of one dose of two capsules is 20 U.S. cents per person for distribution and other associated expenditures.

The other major effort to control IDD has been through salt iodation. As indicated earlier, efforts have been made, and seemed extremely close to implementation, some 20 years ago.

There are three major salt production plants. There are two in Bagamoyo in the Coast Region, and the third already mentioned is at Uvinza in Kigoma Region. In 1991 salt iodation machinery imported from India was installed at all three manufacturing plants. Actual production of iodated salt is expected to begin very soon. The capacity of the machinery is "only about 40 percent of the requirements". More machinery will be ordered "during phase two of the project".

The above description of the IDD control programme is described in much more detail than are other TFNC programmes to serve as a case study from which general conclusions may be based, although no two programmes have anywhere near identical sets of activities. It should be noted that IDD is considered to be much easier to control than are vitamin A deficiencies, nutritional anaemias or PEM.

The Team believes that the very long period of two decades from the first very nearly successful plans to iodate salt, until the present, when plans again seem on the verge of being realized, is important to consider when planning the implementation of other programmes. The need for co-

operation between disciplines and ministries, the importance of political commitment, and the availability of adequate funds are all vital components for control, using salt iodation.

In the case of capsule distribution the lesson is that TFNC can itself help create an awareness of the problem, can stimulate donors to pay the costs, but then has to rely on the staff of the Ministry of Health and local leaders in the districts to ensure delivery. But DMO's are very busy, they have other priorities, there is much variation from district to district in coverage, returns on capsule delivery do not come in, and the monitoring system may be much less effective than that planned.

The Evaluation Team is very impressed that Tanzania leads Africa in terms of iodine capsule distribution and is seen by WHO as a model for the continent; it is full of praise for the role of TFNC in getting so close again to iodation of salt for a sizeable proportion of the Tanzanian population; it is pleased that there is international recognition of TFNC's efforts to control IDD; and finally is glad to see that research is underway, and more monitoring and evaluation are planned. Clearly great progress has been made since 1986 and TFNC has played a very important role in this.

The Evaluation Team has some concerns which are probably shared by TFNC. These are:

(a) In many districts it is very uncertain whether the target population is receiving the capsules, or whether there is "leakage" to other districts or countries, and who is or is not getting the capsules.

(b) Evaluation of the effectiveness of the capsule in reducing goitre, cretinism and other aspects of iodine deficiency is still very limited. Although millions of doses have been given, only a few schools are reported to have been resurveyed.

(c) Salt iodation, in some reports, seems imminent. There are maps indicating that Tanzanian iodated salt will benefit other neighbouring countries, yet widespread consumption of iodated salt is not yet a reality in Tanzania, and the machinery once operational will only be sufficient to cover forty percent of the needs, let alone for other countries in Africa.

(d) Inadequate data seem to have been collected by TFNC, or others, regarding which groups of the population purchase salt from the three plants and which from elsewhere including small manufacturers, or from local salt digging, as from salt pans, or from evaporated sea water.

(e) Sound plans for careful monitoring and evaluation of salt iodation and its impact do not seem to be in place. Tanzania might be wise to use a level

of iodation of 50 parts per million which is the level agreed to for use in Zimbabwe.

The Evaluation Team recommends:

(a) That a clear but flexible and imaginative system be established to provide a level of confidence that a reasonable percentage of capsules is reaching the intended population in most districts. This could be achieved by TFNC staff engaged in other assignments in the districts taking an extra day or two to visit 5-10 randomly selected villages to question perhaps 50 villagers in each area regarding whether or not they have consumed the capsules. There should be clear instructions to DMO's and those in charge of dispensaries and Health Centres regarding the completion and return of forms. Recalcitrant districts or areas should not receive further capsules.

(b) That an evaluation plan be drawn up with the help of a statistician and epidemiologist. Such a plan might consist of choosing two previously studied schools and two unstudied schools in each district, and repeating the goitre survey between one and two years after capsule distribution to try to evaluate goitre reduction. It is appreciated that some experts believe that sonography is needed for this type of evaluation. However, surveys could yield useful results, and in limited areas this might be supplemented by doing ultrasonography and also collecting data from a sample of individuals regarding whether they felt better after receiving iodine, whether school performance appears to have improved, etc.. In limited areas with good study design, evaluation using biochemical parameters is also warranted.

(c) That TFNC and the National IDD Committee need to maintain pressure, to ensure political support, to obtain further funding for more machinery, to keep watch over the salt manufacturers so that salt iodation moves forward to a point that nearly all at risk districts are covered before capsule distribution can be phased out as planned in 1995.

(d) That TFNC plans to determine which groups of the population consume salt from the three salt manufacturers who will produce iodized salt. This will require obtaining data from village shops and by consulting local people concerning the origin of the salt consumed in certain areas. Are there areas where little salt is consumed?

(e) That TFNC prepares plans for evaluation of the effectiveness of salt iodation using, firstly, methods similar to (b) above, and secondly, spot checking whether salt labelled as "iodated" is in fact "iodated".

(f) That the distribution of the iodated salt be done as far as possible by manufacturers using the market system. Some government directives may be needed to ensure that iodated salt go to districts in special need, and that

non-iodated salt goes to districts at low risk of IDD. TFNC should have a role in determining this and seeing that a sound plan is followed. It would be costly and unwise to have a separate "delivery system" for iodated salt.

(4) VITAMIN A DEFICIENCY

In many developing countries, including Tanzania, vitamin A deficiency leading to xerophthalmia is a leading cause of childhood blindness. Recent data from Indonesia, Nepal and India suggest that provision of supplemental vitamin A to pre-school age children who have no eye signs of xerophthalmia appeared to result in lowering mortality by 30 to 50 percent. Conflicting data from a second study in India and from a well-controlled as yet unpublished study in the Sudan show no differences in child mortality from vitamin A supplementation. Somewhat strangely the India study showing a major decline in mortality showed no decline in recorded morbidity in those receiving vitamin A supplements. A study in Tanzania (as well as studies in South Africa and elsewhere) showed that fatality rates from measles were significantly reduced in children treated in hospital receiving vitamin A compared with those receiving no supplementary vitamin A.

There is the possibility that the control of vitamin A deficiency may be expected, not only to reduce xerophthalmia and associated blindness, but also mortality. It is also suggested that infections may be reduced and growth improved.

In Tanzania the vitamin A supplementation programme consists of the supply of vitamin A capsules through the Essential Drugs Program (EDP) to specific at risk groups as an immediate short term measure. The long term sustainable measure is the stimulation of demand for foods containing vitamin A, especially the less expensive dark green leafy and yellow vegetables and fruits, leading to increased production and consumption of vitamin A rich foods. Also public health measures leading to immediate and prolonged breastfeeding, and to ensure conservation of consumed vitamin A through controlling diseases which precipitate vitamin A deficiency are being pursued. Additional activities include promotion of agricultural and horticultural practices and extension; nutrition education through various media and curriculum change and advocacy for overall improvement in the quantity and quality of the diet as a component of community based strategies for achieving household food security.

Presently margarine is fortified with vitamin A, but does not adequately reach the at risk population. Feasibility studies on suitable vehicles for fortification should also be explored.

The objective of the vitamin A control programme is to reduce the prevalence and severity of vitamin A deficiency, xerophthalmia and nutritional blindness to a point where they are no longer significant public health problems in Tanzania by the year 2000. The distribution of vitamin A capsules to all children at risk of developing vitamin A deficiency is viewed as a short-term measure. The current capsule distribution programme cannot, as now implemented, contribute much to this objective. It can only serve to treat xerophthalmia diagnosed in health facilities and to reduce case fatality rates for measles and those limited infections diagnosed and treated with vitamin A in health facilities.

The long term objectives are:

(a) To sensitize the public regarding the problem and the control of vitamin A deficiency, associated nutritional blindness and poor nutrition through the mass media.

(b) To promote breastfeeding as one of the essential sources of vitamin A in infants and young children.

(c) To motivate the public about home gardens and good horticulture practices.

(d) To promote the production and consumption by high risk groups of indigenous edible oils, especially red palm oil.

(e) To reinforce efforts aimed at the protection of vitamin A absorption, storage and metabolism by the body through public health measures aimed at the reduction of diseases like PEM, measles, diarrhoea, malaria, respiratory tract infections and intestinal parasites.

"The Second Five Year Programme for the Prevention and Control of Vitamin A Deficiency and Xerophthalmia in Tanzania" (TFNC Report No. 1196) issued in 1989 includes details of the planned projects to improve vitamin A status nation-wide. This Report states that the programme is divided into specific projects, but it should be emphasized that "the projects are not independent of each other, but an integral component of the programme".

The projects that themselves might improve vitamin A nutritional status are:

- i) Vitamin A capsule distribution
- ii) Promotion of the production and consumption of vitamin A rich foods
- iii) Nutrition education and public information

These are three appropriate means of reducing vitamin A deficiency and are commended. The other components of the Programme are supportive of these three, rather than themselves effecting control. These are laboratory

development, research, consultancy and monitoring and evaluation. Not included, certainly not prominently among control measures, are fortification and control of infections that may influence vitamin A nutritional status.

It is clear to the Evaluation Team that the greatest emphasis and the largest achievements are in the area of vitamin A capsule distribution, using capsules containing 50,000 IU of vitamin A. These are "distributed" using the Essential Drugs Programme through health facilities. However, there are major problems and capsules are reaching a very, very small proportion of children at risk of vitamin A deficiency.

Where iodine capsules are provided, with considerable difficulty, once every two years, vitamin A capsules need to be taken every six months (or even four months), so the difficulties, cost, etc. are enhanced. Like salt iodation, a control method for vitamin A deficiency which it is recommended be seriously considered is vitamin A fortification of several suitable foods.

Conclusions and Recommendations

(a) Assessment of the Vitamin A Deficiency Problem

There has been inadequate assessment of the vitamin A deficiency problem both nation-wide and in those districts likely to be most affected by this nutritional problem. A nation-wide survey would be very expensive, and difficult. Possible assessment methods include eye examinations (which require very large sample sizes); food consumption surveys, which are somewhat imprecise, and are time-consuming but can use smaller samples and new well-described methodologies; and bio-medical surveys which can use small, well-selected sample sizes, but where each test is rather costly. Unrepresentative data can be obtained from hospitals and from eye examinations by trained ophthalmologists and other health personnel employed in the regions. TFNC has received advice on these possibilities. The Evaluation Team believes that to serve future assessment needs, and for proper monitoring and evaluation, a plan for proper assessment needs to be made and implemented. Biochemical assessment using an adequate sampling frame in well-selected sentinel houses in randomly selected villages in some districts chosen because they are believed to be at high risk, and perhaps a very few districts believed to be at low risk for comparison should be considered. If considered feasible, this might be supplemented by food consumption data collection, and limited surveys of prevalence of Bitot's spots and night blindness.

The Evaluation Team is reluctant to make specific recommendations but does strongly believe that more and better assessment is needed, and could

help in plans for control, and also would assist monitoring and evaluation of the control programmes now being implemented, and in programmes such as fortification which should be considered for implementation in the future.

(b) The Vitamin A Capsule Delivery Programme

An early decision was made that vitamin A capsules be delivered using the health facilities by inclusion of capsules in the Essential Drugs Program (EDP) kits. The instructions are to provide vitamin A capsules to certain defined groups of "at risk" children. Universal distribution to all children is confined to a few areas where prevalence surveys have been conducted and a problem identified.

It is reported by TFNC that "more than 25 million vitamin A capsules", (this would represent 6.25 million 200,000 IU doses) "have been distributed through the EDP system" in Tanzania since 1987. Many reports indicate a "pile up of capsules". The visit by Team members to two dispensaries in Hai District of Kilimanjaro Region indicated that very few children received capsules (in one dispensary they were given only to cases of measles and only ten such cases were seen in the last ten months). This is a District where training of health workers by TFNC has not been done, but is planned for 1992. The situation in this District may therefore not be typical.

The Evaluation Team concludes that much better monitoring by TFNC needs to be done, and that the "indicators" for provision of capsules should be greatly expanded (to include moderate PEM, faltering on the growth chart and other conditions) with advice from NVACG. As currently operated, the capsule distribution programme is very unlikely to have much impact on xerophthalmia or on childhood deaths associated with vitamin A deficiency. The Evaluation Team is not convinced that Tanzania was wise to decide to use capsules containing 50,000 IU, rather than the 200,000 IU of vitamin A used in most other countries. Future training of those health workers in capsule distribution should reflect these recommendations.

(c) The Promotion of Production and Consumption of Vitamin A Rich Foods

The Evaluation Team believes that this strategy is very important and worthwhile because it is likely to be sustainable, while capsule distribution may not be. It is also a control method where local communities and families learn methods to help themselves solve the vitamin A deficiency problem. But it is also difficult to implement widely, and the beneficial results will take considerable time. The three sub-components, namely that related to breastfeeding and colostrum use; the greater consumption by children at risk of carotene rich foods; and the more limited programme of promoting

production, distribution and consumption of locally produced red palm oil all have merit. The selection of fruits (mango and papaya for their carotene, and guava for its ascorbic acid content for anaemia control) and vegetables (yellow sweet potatoes and pumpkins) is sound.

It is recommended that TFNC greatly increase its public education efforts in regard to control of vitamin A deficiency. This includes greater use of the radio and print media, and the wider distribution of pamphlets, posters and visual material. A great deal more could be done in the areas of nutrition education and public information in relation to vitamin A deficiency.

(d) Laboratory services and studies

The Evaluation Team was impressed with the current laboratory capability in the area of vitamin A, and the confidence expressed that the expertise existed to do modern tests, and that apparatus would be kept functional with proper servicing. It is recommended that careful plans be made to use this expertise wisely. Many determinations are time-consuming and therefore costly. Statistical and other epidemiological advice may be needed so that assessments, surveys, monitoring and evaluation make the best possible use of laboratory services. The same applies to selection of research projects.

(e) Monitoring and evaluation

Much more attention needs to be devoted, than is currently given, to ensure proper monitoring and evaluation.

(f) TFNC national and international collaboration

The role of TFNC in NVACG and international organizations such as IVACG is to be commended. This shows great strides since 1986. Continued efforts to ensure collaboration nationally is recommended.

(g) Fortification

The Evaluation Team noted that no detailed or well thought out plans related to fortification of foods with vitamin A existed. Yet fortification, at least in its potential, offers much more hope for wide coverage and sustainable control than does distribution of capsules through the Essential Drugs Program. It is strongly recommended that the Food Science and Technology Department assign some staff to work seriously on fortification with vitamin A, iron and possibly other nutrients. This could very easily attract donor support and also industrial assistance, possibly from pharmaceutical companies making these nutrients.

(5) NUTRITIONAL ANAEMIAS

There is no doubt that anaemias, both nutritional and others, are very prevalent in Tanzania and are responsible for a great deal of morbidity. Iron

deficiency anaemia is by far the most important form of anaemia seen in the country. There are no reliable national figures on the extent of anaemia. Most of the available data are based on hospital statistics or occasional small surveys or research projects. Although emphasis has been placed on maternal anaemia, the problem exists in children, and in non-pregnant adult females, and also in men. It is only due in part to dietary deficiencies, and undoubtedly malaria, hookworm infections and schistosomiasis contribute importantly to the problem.

In the past, major concern was focused on those with low haemoglobin levels, because anaemic individuals might have signs and symptoms such as tiredness, reduced activity and fatigue, and in pregnancy there are added risks especially if there is extensive blood loss during delivery. Now there is increasing evidence that mild iron deficiency, without low haemoglobin levels, may have adverse effects on mental functioning, on child growth, on appetite, on work output, and on resistance to infections.

In 1991 TFNC took a leading role in organizing a national workshop on anaemia in Tanzania. Participants came from all the Regions of mainland Tanzania and also from Pemba and Zanzibar; from many different Ministries; from several departments in the Muhimbili Medical Centre; from UNICEF and other interested organizations; and others. The main objective of the workshop was to review and analyze the anaemia situation, particularly nutritional anaemias, and to formulate a Five Year Programme for the control of anaemia in Tanzania. Both tasks were successfully completed. What was particularly impressive about this workshop was that the many different underlying causes of anaemia were considered, and that dialogue and communication were established between persons from many different disciplines.

TFNC's main efforts to address the anaemia problem have focused on iron and folate supplementation to pregnant women in the health system. Concern about poor compliance, because it is known that ferrous sulphate may produce side effects, or for other reasons, has led to a TFNC research project at Ilula in Iringa Region. A part of this will be to test the use of slow release medicinal iron, rather than standard doses of ferrous sulphate. TFNC to date has not been much involved in initiating or advocating treatment and control of hookworm infections as a means to improve iron nutritional status. The knowledge that vitamin C consumed with foods containing non-haeme iron improves the absorption of iron has been recognized, and has led TFNC to initiate horticultural activities to try to increase consumption of foods rich in vitamin C by persons at risk of anaemia.

The World Bank seems poised to help Tanzania with finances to begin to address the anaemia problem.

Conclusions

(a) Nutritional anaemia is an important and complex problem, involving physiological and dietary factors, and also parasitic diseases and other conditions. This problem has not been adequately controlled even in industrialized countries. Given the prevalence of anaemia in Tanzania, it is a public health problem that needs to be addressed much more vigorously than in the past.

(b) TFNC's efforts to address the disorder are in the initial stages and it is still exploring the feasibility of control measures such as iron supplementation and improved horticultural practices. The National Workshop is an excellent beginning, and has produced an important plan of action. World Bank funding for this seems likely.

Recommendations

(a) Serious consideration should be given to the possibility of food fortification to help control nutritional anaemia. Fortification might include ascorbic acid as well as iron. Double fortification of salt may be worth serious consideration.

(b) TFNC should attempt to stimulate mass deworming in areas where hookworm infections are prevalent, perhaps first providing regular deworming for school children, but possibly using the schools as the locale for deworming pre-school age children.

(c) If compliance of using iron tablets is proved to be poor, then the cost of slow-release iron should be carefully considered before it is implemented as a policy.

(d) Assessment of the effectiveness of added intakes of Vitamin C in the Singida horticultural project should continue in terms of improvement of iron status.

(e) TFNC should work closely with the Ministry of Health to work out a strategy of strengthening malaria prevention and control, as a means of augmenting the control of anaemia in Tanzania.

(6) INFANT AND YOUNG CHILD NUTRITION (BREASTFEEDING AND WEANING)

TFNC HAS PLAYED a major advocacy role for breastfeeding as the most important food security factor for infant and young child nutrition and also

as a method of child spacing. In the past 4 years, the efforts on Infant and Young Child Nutrition have grown from a co-ordinating mechanism to a fully fledged programme steered by the National Consultative Group (NCGIYC) of multidisciplinary experts from the Ministry of Health, Education, Muhimbili Medical Centre and others.

The efforts in this programme have created an awareness of this issue and an appreciation of protecting, supporting and promoting breastfeeding and proper weaning. Perhaps this endeavour will be enhanced when TFNC adopts a more effective strategy of communication, public education and dissemination of information to various sectors whose input is essential in influencing policies and mobilizing communities. In the international context, Tanzania has been a resource with regard to training on infant feeding issues in the African Region.

The Food Science and Technology Department has research and innovative activities dealing with development of recipes and weaning food mixes. Prior to that, the formulation and marketing of weaning food mixes had been tried by a joint effort between TFNC and the National Milling Corporation, the result of which was marketing of the weaning food "Lisha". Several logistic problems subsequently led to discontinuation of this endeavour. Some of the problems that emerged at that time included production and packaging costs making "Lisha" more expensive than equivalent home-made weaning foods, and problems of distribution especially to the rural areas. Lisha was an expensive failure.

With the present focus of TFNC towards regional nutrition endeavours, there is a growing demand for TFNC's support to the regions in terms of improvement of village-level weaning foods. This could be an area where TFNC could play a role in the implementation stage of the Regional programmes.

Conclusions

- (a) TFNC is moving in the right direction with regard to protection, support and promotion of breastfeeding in Tanzania.
- (b) Issues regarding policy and legislation as well as advocacy for the WHO/UNICEF code on marketing will require a more aggressive communication strategy.
- (c) Efforts have been made to look into the question of village-level weaning foods, but the outlook has been more towards formulation of mixes, rather than complementing household level initiatives in this endeavour.

Recommendations

The Evaluation Team recommends that TFNC:

- (a) Continues to influence strongly the protection, support and promotion of breastfeeding, and promotes exclusive breastfeeding for the first 4-6 months of life.
- (b) Encourages the wide use of colostrum in areas where it is not fed to infants.
- (c) Concentrates on household-level weaning foods such as the use of power flour and more encouragement of appropriate local weaning foods found by current applied research to be beneficial.
- (d) Discourages use of public funds in new attempts to develop a packaged and manufactured weaning food similar to Lisha.
- (e) Develops a more aggressive communication strategy to promote breastfeeding and proper weaning, and to influence policy and legislation relating to adherence to the WHO/UNICEF code on marketing of breastmilk substitutes.

(7) HOUSEHOLD FOOD SECURITY

The broader conceptual framework adopted by both TFNC and UNICEF in their nutrition work places great emphasis on issues of household food security. Food insecurity at the household level is clearly a concern in Tanzania, but it is also an area where there is very little reliable data and even consensus as to what constitutes food insecurity and what kind of data and information would be relevant and practical to collect and use, and what actions are needed.

TFNC is slowly beginning to work with these questions. During the last year they prepared an analysis of household food security and nutrition for the World Bank and FAO; they have introduced a card for monitoring grain adequacy at the household level; and have begun to work on a household food security manual for extension workers. They have also done some ad hoc work on storage and processing of scarce foods and on the role of indigenous fruits in Singida region. Recently TFNC also took the initiative to form a National Co-ordinating Committee for Household Food Security. The last initiative, however, received rather limited interest from KILIMO (the Ministry of Agriculture) which is the major implementing agency on food security issues. UNICEF in its household food security activities also increasingly collaborates directly with the Ministry of Agriculture.

These are indications that TFNC has not yet clearly identified its role as regards household food security activities and that TFNC is not yet seen as

an important resource by implementing agencies. TFNC as a specialist centre at the national level should influence such work in several ways: (a) by assisting in identification of appropriate methods and broader investigations of household food security problems, (b) by developing tools for monitoring interventions in this area, and (c) in the training of fieldworkers through the appropriate ministries.

An analysis of food insecurity at the community level would need to indicate how families could gain access to all types of foods at different times of the year. It would need to include the different procurement methods and identify the key constraints of food insecure households and whether these are mainly economic, labour related, linked to access to inputs, or are production or post-harvest related.

In terms of practical methods for such investigations, relatively little has been done even outside Tanzania. TFNC could try some exploratory methods using multidisciplinary teams and a combination of conventional survey methods and qualitative approaches using rapid appraisal techniques. As the area is presently ill defined they will need to define clearly the proposed indicators.

TFNC needs to explore with KILIMO and UNICEF their interest in joint training and development of practical assessment methods of household food security issues at the community level. If there is a felt need for support in these areas, TFNC could take the initiative and host a joint training workshop, and pilot surveys of different food systems.

As the TFNC staff member who was trained specifically in food security issues has left the Centre, TFNC should also consider further training of one of its staff members in this field. The short courses given at Cornell University or at the Institute of Development Studies in Sussex, UK are strongly recommended.

(8) NUTRITION TRAINING

TFNC's mandate stipulates that it has a major responsibility for food and nutrition training in the country. Over the years the Nutrition Education and Training Department at TFNC has also actively pursued many different activities in this area, including training of field staff from various sectors, reviews of curricula or incorporation of nutrition into relevant curricula, and development of training manuals and materials.

The launching of several major national nutrition programmes in the last few years and the multisectoral approach to nutrition that TFNC has used in its regional work has increased nutrition awareness. Thus the demands for

resource people and field staff with relevant nutrition training has also become greater in the regions. It appears that TFNC has not entirely found its role in nutrition training. The Evaluation Team feels that TFNC has to find new strategies, and needs considerable strengthening in its nutrition training work, if it is to become an effective resource centre for the institutions it is meant to support.

Some of the difficulties arise from the fact that TFNC does not have its own field staff and needs to channel many of its nutrition training activities through different ministries and institutions. It is the Ministry of Agriculture which has a major responsibility for nutrition training at both diploma and degree levels. At the regional level the Ministry employs agriculture and nutrition co-ordinators, most of whom now are Sokoine University graduates with a BSc in Home Economics and Nutrition. The same Ministry also employs about 700 extension workers most of whom have diplomas in agriculture and nutrition. Similarly TFNC has to channel nutrition information in the health sector, education sector or community development sectors through the training of professionals in those areas.

TFNC has developed a number of training modules and resource papers for training programmes at different levels. Yet the Evaluation Team were given the impression that these are not disseminated effectively to the various training institutions where they would be most useful. The people talked to in the Ministry of Agriculture, for example, had not been using TFNC materials and were now receiving UNICEF support to develop their own training materials.

TFNC has begun to consider again, its earlier plans to establish a Nutrition School. TFNC feels that there is a need for a certified course in nutrition and has requested external technical assistance in a broader needs assessment. At this point in time, there is not enough information available for the Evaluation Team to determine whether TFNC should start a Nutrition School, but the Team agrees that nutrition training is an area where TFNC with all its expertise should play a much greater role. Much more preparatory work and detailed plans are required before TFNC should make a decision, one way or other, with regard to a Nutrition School.

Perhaps an appropriate starting point would be through a training workshop to determine the needs of different field staff categories at district level based on their functions.

At present the Department of Nutrition Education and Training has several vacancies, including three of the five posts as communication officer.

(9) COMMUNICATION AND EDUCATION OF THE PUBLIC

THIS ASPECT OF TFNC's role has remained weak, even after the 1986 recommendations to strengthen this. Considering TFNC's role, this is a very crucial area for the Institution to be able to accomplish its goals. Presently, there is inadequate dissemination of nutrition information to the target groups, policy makers, potential collaborators and the public.

Before the 1986 evaluation a SIDA consultant was recruited and worked at TFNC to strengthen its communication and public education capability. This expert worked well, and trained some TFNC staff including one, who was supported by SIDA, for overseas training. However these Tanzanian trained staff have now left TFNC for other jobs. It appears that well-trained staff in Communications are difficult to keep at TFNC. Currently 3 out of 5 posts for communication experts are vacant.

TFNC has been running a twice-weekly 15 minutes radio programme for public education. This programme was evaluated on the basis of estimated listenership and subsequently timing of the programme was changed to improve catchment. Other methods used for public education include booklets, brochures, posters and occasionally videos. However, these are often produced without prior target oriented discussions.

Conclusions

- (a) The methods used by TFNC for information and public education do not appear to be effective.
- (b) Consultant support in this area has been provided, but the benefits resulting from this have been lost because the TFNC staff trained by the expert have left TFNC.
- (c) More than half of the posts in this area are still vacant.
- (d) The 1986 Evaluation Team's recommendation regarding strengthening of the communication component remains valid.

Recommendations

- (a) TFNC should redefine its strategy for dissemination of nutrition information to target groups, policy makers, potential collaborators and the public.
- (b) TFNC should consider strengthening the capability of its technical staff in communication and education methods, if it is unable to attract full-time communication experts and educators. This might be done by bringing

in short-term communication experts to provide on-the-job training in topics such as social marketing, and also to work on specific projects.

(c) There should be target-oriented discussions before publications and other communication materials are produced.

(10) WOMEN'S WORKLOAD

TFNC IS PARTICIPATING in studies related to women's workload. The main objective of this project is to find means to reduce women's daily workload, which would allow them to undertake other activities and devote more time to child care and their own health and welfare.

Tanzanian women work very hard and have many responsibilities and burdens. The assumption underlying the project is that women do not have enough time for proper child care, or to prepare the extra meal that is often badly needed for their children. It is also assumed the women would have that time if they were provided with appropriate tools or other means, to facilitate their work situation.

However, there are indications that the introduction of time-saving equipment does not automatically provide women with more time for their children and themselves. Instead, women often get more tasks, duties and responsibilities than before. Considering such facts, it is very important to include a gender perspective when identifying problems, i.e. to analyse the situation of men as well as of women.

During the last years TFNC has introduced such a perspective and carried out two interesting studies: In 1987 a study on women's activities and time consumption was made. In this, basic concepts like "time" and "work" were analysed.

Another study has been made of how the introduction of oxen influences women's workload and the nutrition situation. Even though there are only preliminary findings, some are worth mentioning. It has for example been observed that there are what could be called men's and women's crops, that the introduction of oxen did not change the distribution of labour between men and women, and that women do most of the work with the help of their children. This study consequently shows the relevance of using a gender perspective.

For the future, a proposal for a five-year programme (1991/92-1995/96) has been outlined. This includes plans to sensitize institutions, to use mass media and to publish pamphlets on women's workload and nutrition. An expert group is to be formed to co-ordinate development efforts and implementation of four sub-projects: a) research, b) promotion of appropriate

technology, c) information, education and communication, and d) monitoring and evaluation.

In the plan, a number of collaborating agencies are suggested, which should ensure the relevance of the forthcoming activities. It is desirable that social scientists using gender perspectives are involved in the design of the studies and evaluations.

Conclusions

A general impression is, consequently, that TFNC is just about beginning on the right track, undergoing a reorientation towards broader social analyses, including a gender perspective. There are many studies going on in Tanzania on women's situation. In a report of the task force on women, published in 1988, it was however noted that more research was needed, particularly into women's participation in decision-making. In the TFNC five-year plan a number of collaborating agencies are suggested. This ensures the relevance of the forthcoming activities, and will help to define research areas specifically linked to nutrition problems. It would probably also ensure that social scientists are involved in the design of studies within the project. The team consequently encourages such collaboration.

Recommendations

It is recommended that:

- (a) the five-year programme be given a high priority.
- (b) studies be conducted to investigate how women limit important activities in times of food shortage.
- (c) action-oriented studies be conducted on women who are in particularly difficult situations, for example women who are the only earner in the household, and women living in areas where the traditional social-support systems fail.
- (d) TFNC project staff be given opportunities to participate in workshops on gender issues, for example those given by the Institute for Development Studies in Sussex, England.
- (e) TFNC work closely with the Ministry of Community Development Women Affairs and Children, and other institutions to ensure that action oriented programmes and interventions are introduced and supported to reduce women's workload.

13. RESEARCH

TFNC CURRENTLY, and over the past several years, has conducted a good deal of research. Much of this can be described as applied research and addressed to problems and questions relevant to the Tanzanian context. This is appropriate. Some research is underway in some form dealing with the "big four" nutritional deficiencies, namely PEM, nutritional anaemias, vitamin A deficiencies and iodine deficiency disorders. Research relating to infant feeding, weaning foods, nutritional problems of women and many others is also underway or planned.

TFNC also has a substantive body of publications, including many that have been produced since 1986. The majority of these are reports, circulated scientific papers, and also many which are for education of the public rather than dealing with research. Most of these publications are used for the purposes for which they are intended. A number of excellent reviews on Tanzanian nutritional problems and TFNC's role in their identification and solution have been written and presented at national and international meetings. An example of this is a paper on Micronutrient Deficiencies presented by Dr. Kavishe at the WHO/UNICEF conference on "Ending Hidden Hunger" held in Montreal in October 1991.

Relatively few publications are in international journals and therefore are unavailable for multinational scientists and others outside of Tanzania to read and use.

An overview of research being undertaken suggests that inadequate consideration is given to the relevance and then the priority for each research endeavour in relation to the mission of TFNC, to its financial and staff availability and to the current priority areas.

A Research Committee exists to review the ethical issues and the design of research projects. The Evaluation Team strongly recommends that a separate committee chaired by the Managing Director, and with appropriate representation from each department be established for the specific purpose of reviewing and then making recommendations regarding the relevance and priority of all future research proposals. An important consideration in making positive recommendations should be that a project addresses a problem or topic which fits clearly into the present goals of TFNC, that it is relevant, that the levels of financing and staff time are appropriate, as well as that the research is well designed and has other qualities of good research. An alternative to formation of a new committee would be for the current Research Committee to expand its membership with representation from 3

or 4 TFNC Departments, and with the purpose of taking on the new duties suggested here for another committee.

All research that breaks new ground should lead to reports by TFNC and publication in national, African or international journals.

14. SOCIAL SCIENCE ASPECTS OF TFNC WORK

The Importance of Socio-economic and Socio-cultural Analyses

THE CONCEPTUAL FRAMEWORK that TFNC has adopted recognizes the complexity of nutrition problems. In the framework three types of causes are mentioned; immediate causes, underlying causes and basic causes. The underlying and basic causes are often of a socio-economic or cultural nature. To be able to find adequate and long-term solutions to nutrition problems within a community, there is a need for popular participation, and for knowledge not only on a community level, but also on a household and individual level. It is necessary to analyse different types of social relationships, variations in gender and age as to resources, decision-making, influence and status both within families and within communities. In short, to find long-term, sustainable solutions to the problems, these have to be defined in their social context, and with the assistance of the people concerned. There is a need for broad analyses and knowledge of local resources, social structures, traditions, and values before planning interventions.

In the 1986 TFNC evaluation it was stated that "the socio-cultural aspect is poorly developed". It was also said that "The regional approach implies an increase in TFNC's capacity to analyse socio-economic determinants and constraints related to food and nutrition problems and to include a sociological input in regional activities of all kinds. Strong capability in social science investigation methods is a precondition but also needs to be integrally involved in all nutrition education and nutrition intervention planning for the regional focus..." This remains relevant today.

Awareness

ARE SOCIO-ECONOMIC and socio-cultural aspects now being taken into consideration more than previously now that TFNC is defining nutritional problems in a different manner?

The present TFNC policy is that a sociological component should be integrally involved in programmes and projects of all kinds. It is difficult to get an overview of all activities and data that are collected, and to find to what extent socio-economic and socio-cultural factors are involved in activities, such as studies, communication and training. An impression is gained that there is an awareness of the importance of social aspects and of the involvement of the community in various programmes. The objective of many activities is to improve the situation of women and children, and to identify problems, which affect them. A number of studies using a sociological or anthropological approach have been carried out, particularly within programmes in the community health department, while social studies are rare in other programmes.

A gender perspective is present in some of the programmes and projects, and this has turned out to be a fruitful approach. There is no doubt that many of the TFNC-programmes could be made more relevant by considering variations between men and women, boys and girls. This is particularly valid in the search for long-term, sustainable solutions to nutrition problems.

At present in TFNC there appears to be no systematic way of investigating the relevance of socio-economic or socio-cultural aspects of activities. Whether social aspects are included, or not, seems to be dependent on the interest of individuals. This rather ad hoc situation is recognized by TFNC management. As a result all programmes have been reviewed from a sociological viewpoint, using Plans of Operation 1989/90. All department directors were asked to comment on the proposals and to contact the sociologists within the Planning Department for further discussions.

From the review it emerged that almost all programmes could be looked upon from a sociological point of view. Yet, many of the programmes still defined the nutrition problems technically, and did not consider socio-economic or socio-cultural factors. The review is an interesting and useful document that could have an impact on the design of many of the programmes in the future.

A manual on social methods is being produced. The outline of the manual was prepared with the assistance of a Swedish senior anthropologist. He worked at TFNC for two years (August 1988 – August 1990), as recommended in the 1986 evaluation. Now a number of Tanzanian social scientists have been invited to write about different types of problems in relation to social mobilization, and sociological and anthropological studies.

A common view of TFNC staff toward social analyses is that they are very

complex and time-consuming, and do not fit into action-oriented studies. Sometimes this attitude is correct. An alternative, in such cases, would be to use rapid assessment techniques, which can complement in-depth studies. This could facilitate the heavy workload of TFNC's only sociologist.

To clarify the difference between traditional anthropological research methods and sociological and epidemiological methods for rapid assessments is an important task when producing the manual. The manual could also serve to improve the quality of studies.

Many of the staff at TFNC have been trained in natural and biological sciences, and do not know how to design and carry out sociological or anthropological studies.

Persons less trained in collecting socio-economic or socio-cultural information need assistance and supervision by experienced social researchers. As early as in the evaluation of 1979 it was recommended that the number of sociologists at TFNC be increased. This recommendation was repeated in 1986. TFNC has now a second position for a sociologist, but apparently has been unable to attract a good candidate.

Recommendations

It is recommended that social aspects of nutrition problems be greatly strengthened so that greater use is made of sociological knowledge by TFNC. Regular contacts with external senior sociologists and anthropologists need to be developed. As stated earlier in this report, it is strongly recommended that a well-trained social scientist be placed in the Nutrition Education and Training Department.

15. VIABILITY/SUSTAINABILITY OF TFNC

THE ISSUE OF SUSTAINABILITY of development co-operation programmes and projects has been of considerable interest to many donor agencies and recipient countries during recent years. It has become evident that activities which have received financial, material and technical assistance for many years often experience serious difficulties when this support is withdrawn. The OECD/DAC Expert Group on Aid Evaluation has defined sustainability in development co-operation as "survival of projects and programmes after an initial period of investment – financial, physical or technological". The sustainable programme is characterized by the developing country having the primary responsibility for the activity, the institutional capacity and

commitment to carry it forward and the ability to mobilize necessary resources to maintain it. This definition, in the context of TFNC, tends to ignore the professional aspects which are vital to sustainability.

SIDA has for eighteen years been the main supporter and co-operating partner of TFNC, even at times of great difficulty. It seems therefore appropriate at this moment in time to consider to what extent TFNC fits into the OECD/DAC definition of sustainability cited above, and also our view that professional aspects are also important. The issue will be discussed from two angles: professional sustainability and financial sustainability.

Professional Sustainability

AS DESCRIBED under the chapter on staff in this report, TFNC has over the years managed to build up a cadre of professionally well-qualified nutrition experts, specialized within different nutrition subjects. TFNC has also, which is often a problem in many developing countries, managed to retain most of these professionals. This can partly be explained by a lack of alternatives on the Tanzanian labour market, but it has probably also something to do with TFNC being an institution where meaningful activities are taking place and where one can make a career professionally. The different fringe benefits at TFNC (discussed earlier), such as sitting allowances, housing allowance and transportation to work, are important in a situation where salaries are sometimes too low to support a family. Staff are also attracted by the opportunity to work in the districts and not be desk bound.

Some aspects of TFNC's work are less developed than others and will need resources from outside for some more years. These resources can be in the form of training for TFNC's personnel, or technical experts from outside assisting TFNC for shorter or longer periods of time. In the areas of sociology, statistics, epidemiology and food economics, TFNC cannot yet be regarded as being professionally sustainable.

It could however be argued that TFNC now has got enough relevant expertise and is at a point in its development as an Institution, where it could make its own professional choices as to programmes and content of work. In the present situation this is done to some extent, but very often the donors, by using their power of the purse, actually direct TFNC in certain avenues by deciding to finance some programmes and not others. The donors thus take over some of the responsibilities that should be given to TFNC, if it is, as assumed above, considered to be mature enough as an Institution to make its own choices.

Financial Sustainability

FINANCIAL SUSTAINABILITY is difficult to achieve in a country with a slow or negative rate of economic growth, and if the Institution is not able to generate its own income. Most often too optimistic calculations are made as to the time required for an Institution to function and become self-sustained under, for example, a period of structural adjustment of the economy. In fact, 20 years is a short period of time for building a solid and mature Institution.

Looking at the period since the last evaluation in 1986 the Government of Tanzania has been the main contributor to the recurrent costs of TFNC, contributing the following percentage of the total budget:

1986/87	31%
1987/88	36%
1988/89	27%
1989/90	14%
1990/91	15%
1991/92	19%

It is realistic to believe that TFNC will be dependent upon financing from outside for several more years. TFNC should, however, also explore possibilities of creating its own income by using its technical resources and know-how on a more commercial basis. This can probably be done only on a limited scale in Tanzania, where resources are scarce and where TFNC has to be seen as a service institution. In the international context, however, TFNC could act like many overseas universities, charging an overhead for its participation in seminars and conferences, writing papers, giving advice, using its laboratory for tests, obtaining research grants etc. Donor agencies should also be charged an overhead of 10-30% of programme costs to cover the running of TFNC (water, electricity, salaries, office equipment etc.) A person with experience of a system with overhead-charging should be assigned for some months to outline, together with TFNC, a system of this kind that would be feasible for TFNC.

Project, Programme or Budget Support

SIDA HAS RECENTLY adopted a new strategy for its co-operation with countries in Africa, outlined in a paper entitled "In the Wake of Crisis - Changes in Development Assistance to the Poorest African Nations," which among other things endorses a policy towards giving more responsibility to institutions in the recipient countries in designing their own strategies and programmes.

There are many different concepts as to what is meant by project support, programme support, budget support and support for institution-building. In this discussion the Evaluation Team has chosen to define these terms in the following way:

(a) Project is support to a specific project, with a defined time-span and budget.

(b) Programme support is support to a specific programme, that might include several projects and where the programme has a defined time-span and budget.

(c) Budget support is general support to the Institution, not choosing special projects or programmes.

(d) Support for institution-building is a broader concept and can be either project or programme support, or budget support.

When SIDA, using its present procedure, actually chooses between a range of projects presented to SIDA by TFNC and directs TFNC to take a certain direction, then that is not fully consistent with SIDA's new strategy. At the same time it is, from SIDA's point of view, important that supported Institutions have a policy and focus that is consistent with Swedish goals for development co-operation.

Clearly, an institution receiving more general support, must be able to measure results and effects in relation to costs for its programmes. As mentioned in other parts of this report, monitoring and proper evaluation of TFNC's programmes and activities are weak.

The direction should be clear. Gradually TFNC should take more responsibility for setting its own priorities, without having to adjust to what different donors consider to be the best policy for TFNC, and gradually SIDA should get less and less involved in detailed discussions and close monitoring of TFNC.

It is recognized that TFNC will increase its own independence by becoming more successful in generating its own funds. It could be argued that SIDA, or other donors, generously providing untied budget support, may be a disincentive to TFNC developing the strength to raise its own funds. We believe that TFNC is reaching that stage of maturity where it will increasingly raise more of its own funds, and at the same time that maturity should be recognized by gradually freeing TFNC to decide more independently on how donated funds are used.

Financial assistance from SIDA will, however, be needed for several more years. The reasons for SIDA to continue its support can be summarized in the following way:

- (a) 18 years is a short period of time for institution-building.
- (b) TFNC has grown into an Institution with considerable strength, and has gained national and international recognition. Much remains to be done, as has been discussed throughout this report, and it is not possible to continue without support from outside.
- (c) Many of TFNC's programmes now have five-year plans, and TFNC should be given the opportunity to implement these plans.
- (d) From an efficiency point of view it is advisable that SIDA, with a long experience of co-operation with TFNC, continues this co-operation. Another donor would have to start from the beginning to gain the same experience.

Recommendations

- (a) TFNC should explore the possibility of creating its own income by using the technical resources and know-how on a more commercial basis. This can probably be done only on a limited scale in Tanzania, where TFNC has to be seen as a service institution. In the international context, however, TFNC could act in the way many universities do, charging an overhead for its services to cover running costs, e.g. water, electricity, salaries and office equipment.
- (b) A person with experience of a system of overhead-charging should be assigned to TFNC for some months to outline a proposal for such a system.
- (c) In line with SIDA's recently adopted strategy for its co-operation with countries in Africa, more responsibility should be handed over to TFNC in choosing projects for SIDA's support. Gradually, the whole responsibility should be left to TFNC, and SIDA's assistance should take the form of budget support. This development will have to go hand-in-hand with a much more effective system for measuring results and effects in relation to the costs of the programmes.
- (d) SIDA's support to TFNC should continue for several reasons. Eighteen years is a short period for institution building and TFNC is not able to continue its important work without external assistance.

16. SUMMARY OF MORE IMPORTANT RECOMMENDATIONS

High Priority Recommendations

(1) Financial Support

SIDA should continue to provide substantial financial support for TFNC, both general support and for specific projects. Over time more autonomy should be granted to TFNC in terms of how donated funds are expended.

(2) Departmental Reorganization

The efficiency of TFNC and its ability to meet its mission would be enhanced if some departmental reorganization was adopted. This would include strengthening the Nutrition Education and Training Department, by giving it responsibility for community level activities, and by strengthening its staff with more persons trained in the social sciences and epidemiology. It is recommended that significant changes be made in the Food Science and Technology Department, including reduction in the staff it has and the space it occupies; reorienting its work towards fortification, home-based weaning foods etc. and away from food technology not central to the mission of TFNC. It is recommended that the current "Programmes" be disbanded, because they do not serve a very useful role that cannot better be managed by the Departments and Projects.

(3) Staff

Recommendations are made to strengthen expertise in social sciences, including social marketing, gender analysis, food economics and consumer economics; in the area of food fortification; and in epidemiology, statistics and computer sciences.

(4) National Food and Nutrition Policy

TFNC should continue actively to work to see that the National Food and Nutrition Policy becomes the instrument used by the government and the various responsible ministries for implementation of policy to improve nutrition. It should use the conceptual framework imaginatively to influence relevant sectors to adopt critical elements of the policy.

(5) Generation of Funds

It is strongly recommended that TFNC move expeditiously to adopt methods to raise funds by charging overheads for certain research and applied projects it undertakes; for charging certain groups, especially non-government organizations or international groups, for tasks it is asked to undertake; that charges be made to reimburse TFNC for costs of certain travel, consulting and overseas assignments of its personnel.

(6) Collaboration with ICH

It is recommended that in future in consultation with TFNC, SIDA uses a wider group of Swedish and other professionals to serve as consultants to TFNC.

(7) Protein-energy Malnutrition (PEM)

It is recommended that TFNC place more emphasis on PEM as the most important nutritional problem of the country; that it influences the Ministry of Health to appoint a Senior Medical Officer responsible for nutrition; and places more emphasis on infant feeding, control of infections, and household food security as means to reduce PEM.

(8) Fortification of Foods

It is recommended that a variety of steps be taken to explore the possibilities of using fortification as a means to control not only iodine deficiency, but also nutritional anaemias and vitamin A deficiency.

(9) Communication and Education of the Public

It is recommended that TFNC takes steps to strengthen its capability in this area, including in social marketing, and target group analysis, and consider short-term visits by communication experts to train existing staff.

(10) Research Priority Committee

It is recommended that a Research Committee be established, separate from the current Research Committee, to review and make recommendations regarding the priority and relevance of all proposed research, or that the existing Committee be reconstituted in terms of its membership and terms of reference.

Second Level Priority Recommendations

(1) Training

In-house training is needed to ensure that TFNC staff fully grasp the new conceptual framework. Steps need to be taken to provide training to selected TFNC staff in modern communication and education methods, including social marketing.

(2) Management and Administration

Vacant senior posts relating to accounting and auditing should be filled, and a way should be found to provide better feedback from Management Committee meetings to the TFNC staff in the departments.

(3) Iodine Deficiency Disorders

A system should be established to provide a level of confidence that most iodine capsules are reaching those who should be receiving them, and to ensure that DMO's provide proper reports. Plans should be drawn up to evaluate the effectiveness of the iodine capsule distribution now, and later on of salt iodation.

(4) Vitamin A Deficiency

TFNC should consider ways to assess the extent and severity of the vitamin A deficiency problem in Tanzania. Consideration should be given to broaden and enlarge the categories of children receiving vitamin A capsules through the Essential Drugs Programme. Greater efforts are needed to improve consumption of carotene rich foods through public education and horticulture projects. As indicated in high priority recommendations, the possibility of fortification should be actively pursued.

(5) Nutritional Anaemias

As mentioned above, fortification and deworming should be high priority actions to contribute to reducing the problem of iron deficiency anaemia.

(6) Infant Feeding

TFNC should be at the forefront of efforts to protect, support and promote breastfeeding; to encourage exclusive breastfeeding for 4-6 months and wider use of colostrum; and to concentrate efforts to assist with household level weaning foods, including the wider use of power flour.

(7) Office Space

It is recommended that efforts be undertaken to provide professional staff with their own offices, by subdivision of large rooms, and by moving certain services out of the main TFNC headquarters building.

17. CONCLUSIONS

THERE IS MUCH evidence to show that TFNC is a much stronger, more effective and better managed Institution than was the case at the time of the 1986 evaluation. Many of the deficiencies found in the 1986 evaluation have been corrected. TFNC is now an Institute with considerable strength, with a properly constituted and well-functioning Board of Directors and good management at the top. It has gained national and wide international recognition.

TFNC's proportionate share of the budget, when compared with the total budget of the Ministry of Health, has risen considerably in the last financial year. Nevertheless with the present economic climate and severe financial situation in Tanzania, it is not conceivable that TFNC could maintain its present strength, using only funds provided by the government. Therefore TFNC for the next several years will need to receive more, not less, financial support from external donors, and to take steps suggested in this report to raise revenue on its own.

Our conclusion is that with such financial support TFNC can continue to function as an important well-functioning Institution, contributing very significantly to improvement in the nutritional status, the health and the well-being of Tanzanians.

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Name, affiliation

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2. Lillemor Andersson-Brolin, University of Stockholm
3. Elisabeth Michanek, SIDA, Evaluation Unit
4. Jumanne H. Wagao, South Centre, Dar es Salaam
5. Britta Antonsson-Ogle, RDC, Swedish University of Agric Sciences
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9. Bie Granbom, SIDA-DCO, Dar es Salaam
10. Bo Westman, SIDA-DCO, Dar es Salaam
11. Gunilla Essner, SIDA Health Division, Stockholm
12. Winnie F.K. Mpanju Member, TFNC Evaluation Team, 1991
13. Festo P. Kavishe, TFNC Managing Director
14. Sophia E. Kaduma, TFNC, Board Member
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16. Pauline Kisanga, TFNC Director Nutrition Education and Training
17. Ratan Nangalia, Representative – Tanna Somaiya & Co.
18. Fatma H. Mrisho, TFNC, Board Member
19. Cosmas S. Lamosai, TFNC, Board Member
20. Raphael N. Mlolwa, President's Office, Planning Commission
21. Saidi S. Mwikongi, TFNC, Programme Officer
22. Mercy Sila, TFNC Director Finance and Administration
23. Wilbald Lorri, TFNC Director Food Science and Technology
24. Benedicta Mduma, TFNC Director Community Health & Nutrition
25. Claver R. Temalilwa, TFNC Director Laboratory Services
26. P.O. Blomqvist, UNICEF, Dar es Salaam
27. Ted Greiner Uppsala, International Child Health Unit
28. Bjorn Ljungqvist, UNICEF, Dar es Salaam

22. LIST OF PERSONS MET BY EVALUATION TEAM

Ministry of Health

Prof. P. Sarungi, Minister of Health
Dr. A. Mzige, Senior Medical Officer (Preventive)
Dr. B.N. Ndossi, ACHO Hospital Services
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Dr. Ted Greiner, ICH, Uppsala
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Ministry of Agriculture and Livestock Development

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Mr. P.A. Mboya, Rural Medical Aid, Bomang'ombe dispensary, Hai
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The Tanzania Food and Nutrition Centre, TFNC, was established in 1973, and has grown and flourished to become what is regarded as probably the best institute of its kind in sub-Sahara Africa. It has received support from Sweden from the start.

Nevertheless TFNC will be unable to maintain its present strength with funds provided only by the government. Therefore TFNC for the next several years will need to receive more, not less, financial support from external donors, and to take steps to raise revenue on its own, as suggested in this report.

With such financial support, TFNC can continue to serve as an important, well-functioning institution, contributing very significantly to improvement in the nutritional status, health, and well-being of Tanzanians.

These are some of the conclusions in this evaluation of TFNC made by Professor Michael C. Latham, Dr. Lillemor Andersson-Brolin, Ms Britta Antonsson Ogle, Ms Elisabeth Michanek, Dr. Winnie F. K. Mpanju, and Dr. Jumanne W. Wagao.

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