IMPLEMENTATION OF RESOLUTIONS AND RECOMMENDATIONS OF PREVIOUS ASEAN FOOD HABITS WORKSHOPS : A MALAYSIA REPORT

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INTRODUCTION

The ASEAN Sub-Committee on Protein took an important step towards our common and primary goal of improving the nutritional status of the communities when it decided, in 1977, to organise a series of Workshops on Food Habits. Through this forum, we have been able to think together and map out strategies and approaches for the modification and improvement of the eating patterns of our rural communities.

The 1st ASEAN Workshop on Food Habits, hosted by the Philippines in 1978, logically started off with a thorough discussion and examination of the existing food habits amongst the member ASEAN countries. Approaches and strategies for effective change and/or improvement in food habits were then studied. The follow-up workshop held in Malaysia in 1979 narrowed down its objectives and examined specifically the role of food technology in community nutrition with special reference to local food consumption patterns. Various problems and strategies in the development of supplementary foods and the role of these foods in the AFNP were looked into. A Major topic for discussion in this second Food Habits Workshop was the interaction of food technologists, nutritionists and social scientists. The need for these scientists to work together has been continuously emphasised, even in the first Workshop. Scientists from these disciplines met again in 1980 in Bangkok for the third Workshop on Food Habits. This meeting paid particular attention to the problem of increasing the role of social science in community nutrition programmes. It provided yet another opportunity for us to examine and discuss our problems and strategies.

In all three Workshops, various understandings were arrived at. Various resolutions were made and strategies recommended for action and implementation. Five years have lapsed since the 1st Workshop in 1978. It is therefore timely that in this 4th meeting here in Yogyakarta, we should review and examine our achievement and progress. The fact that three workshops have been successfullly organised to provide a forum for the meeting and discussion of the various scientists involved is in itself an achievement. Nevertheless, it is desirable that we now examine our actions and activities with

regards to the resolutions and recommendations made in the previous workshops.

The various resolutions and recommendations passed by the three previous workshops may be grouped into 4 broad categories. These are :

1. Surveys on Food Consumption and Habits
2. Documentation of Studies on Food Habits,
3. Research, Development and Formulation of Inexpensive Nutritious Foods, and
4. Intensification of Nutrition Education.

This report attempts to summarise and present the actions taken by the various agencies and institutions of the ASEAN Sub-Committee on Protein in Malaysia in implementing each of the above recommendations. Wherever appropriate, suggestions for further actions will be made. Such a short paper really cannot report on all activities that have been carried out. The few paragraphs describing each project or activity really do not do justice to the months and even years of work that have been put in. Hence, the report will highlight the main activities; details of projects and findings, as well as other studies made would have to be pursued from the institutions or organisation concerned.

SURVEYS ON FOOD CONSUMPTION AND HABITS

The need to conduct studies on food habits of the communities and to update such studies was a major recommendation of the 1st Workshop. It was felt that these surveys would be able to validate some of the traditional beliefs and practices. Attempts should also be made to include the study of major determinants on patterns of eating in such surveys and to classify the food taboos observed as harmful or otherwise.

Recent Studies on Food Habits

It has not been possible to carry out a large scale food consumption survey to present the eating pattern of the country due to various reasons. However, various Institutions, such the Institute for Medical Research (IMR), the Malaysian Agricultural Research and Development Institute (MARDI) and the University of Malaya (UM) have been conducting several localised studies in various parts of the country, in attempts to understand the food consumption and habits of the communities, particularly those in the rural poverty areas. Some of the recent studies are summarised below.

In pursuance with the IMR's overall strategy for applied research over the 4th Malaysia Plan, several nutrition surveys were conducted in various under-served rural communities by the Division of Human Nutrition of the Institute. In line with the call for more information on food consumption and

habits of these communities, the gathering of such data through household visits formed and important part of these nutrition surveys. The economic and environmental conditions of the communities were also studied to provide a better understanding of the ecology of the subjects. In 1979, two villages in the north-eastern coast of Kelantan were studied. One hundred and one households (about 40% of total) were visited (IMR, 1979). The next study in the series was conducted in the district of Mersing in the southern state of Johore. Visits were made to 111 houses (49% of total) in two villages in this district (IMR, 1981). In the following year, a third study was conducted in the north-western state of Kedah, in the district of Baling. Four villages were included in the survey, and 146 households (44% if total) visited (IMR, 1982). A smaller study of 44 households (comprising 46% of total) was conducted in Bengkoka Peninsula, Sabah in East Malaysia in the same year (Kandiah et al, 1982).

The Department of Social and Preventive Medicine, UM and the Office of the Director of Medical Services, Sabah jointly conducted a fairly extensive nutrition survey in the Interior, West Coast and Kudat Divisions of Sabah between 1978 and mid-1980. Aside from other activities, an ecological assessment of 271 households was also carried out. Out of this total, 106 households were sub-sampled for detailed dietary studies (Chen et al., 1981).

The studies of the Agricultural Products Utilisation (APU) Division of MARDI provided further input into our knowledge on the food habits and consumption of the communities. Two studies were carried out in Bali 1981, namely in Segamat, Johore and Pendang, Kedah. A third study was conducted in Dungun, Trengganu earlier this year. A total of 300 households were studied in each of these districts. Preparations are underway for a fourth study to be conducted in Tanjong Malim/Slim River in Perak (Zanariah, 1982).

It is hoped that further studies, in a larger scale, could be conducted in the future. This would necessarily require a greater pool of experienced research personnel. Perhaps inter-institutional cooperation to conduct joint studies could help alleviate the problem. Analysis of research data, particularly those on the quantitation of food consumption, should be carried out with the assistance of computers. It is the experience of the IMR that this eased the tedious task of data analysis tremendously and has greatly expedited the job.

A Malaysian Food Composition Table

Most food consumption studies in the country, based on recall methods, have thus far made use of "international" food tables to quantitate food intake. It was realised that a local food table would greatly benefit researchers in this field, aside from its other obvious uses to nutritionists, dieticians, physicians, food technologists and others. Hence, the IMR, in collaboration

with APU, MARDI and University of Agriculture (UPM), has embarked on a project to compile a Malaysian Food Composition Table. A preliminary table, based on compilation of previously available data, both published as well as unpublished, has recently become available (Tee, 1982). Systematic analyses of food items in the laboratory have commenced so as fill in the missing data, re-examine some previously reported values, and to extend the table to cover analysis of other foods not reported previously. MARDI has also initiated a project to determine the amino acid composition of locally available foods.

DOCUMENTATION OF STUDIES ON FOOD HABITS

During a discussion session in the 1st Workshop in 1978, the need for gathering all available information on studies into the food habits of the communities was brought up. It was felt that this would help strengthen the exchange of research data and information on the subject. The workshop subsequently recommended the proper documentation of studies on food habits and called for an "ASEAN Information Clearing House" on subject.

As Malaysia's contribution to this need, the IMR compiled an annotated bibliography of studies on food habits and distributed this to participants to the 2nd Workshop held in Kuala Lumpur the following year. This collection was in fact part of a larger compilation, encompassing all aspects of nutrition research in the country from 1900 to 1979. This annotated Bibliography of Nutrition Research in Malaysia was published, with total financial assistance by the ASEAN Protein Project in 1980 and distributed to member countries (Tee, 1980). Such a compilation would necessarily be a dynamic document; it is the intention of the IMR to continuously up-date it.

It is of interest to note that participants to the 3rd ASEAN Workshop on Food Habits held in Bangkok in 1980 again emphasised the need to strengthen exchange of information on Food Habits in the region. The establishment of a clearing house for information and research data on nutrition, and specifically on food habits was suggested.

RESEARCH, DEVELOPMENT AND FORMULATION OF INEXPENSIVE, NUTRITIOUS FOODS

The need to develop and formulate nutritious foods has been emphasised, particularly in the 1st Workshop discussion. Such foods should be derived from locally available ingredients or traditionally familiar raw materials so as to be acceptable to the local palate and in conformation with existing food habits. Decentralisation of production centers and the use of appropriate technology and equipment in the community have been given emphasis. Research strategies for the development of nutritious supplementary foods for children and other vulnerable groups have been particular attention in all

the three workshops. The recommendations made included studies into the processing, storage and shelf-life of the products, improved promotion techniques and acceptability, and the role of the private sector in the commercialisation of developed food products. The efforts and activities of various institutions in the country carried out along the lines of the various recommendations are discussed in the following paragraphs. (References for the writing of this chapter are: ASEAN Sub-Committee on Protein, 1978, 1979, 1980, 1981 and 1982).

Processing and Utilisation of Soya Bean and Other Soya Derivatives.

With the ultimate objective of developing nutritious and inexpensive foods for the community, various projects have been initiated by MARDI to study the processing and utilisation of soya bean, full fat soya flour and soya bean meal. The utilisation of soya flour in noodles and studies into the nutritive and biological quality as well as the shelf-life of the developed product have been carried out. Studies have been made into the development of low-cost to intermediate technology for the processing of various bean curd products and soya bean milk. Extensive research has been carried out on the manufacture of soya sauce, with a view to improving the processing of this important item in the local diet. This included surveys of the existing processing procedures for soya sauce, studies into fungal cultures and other microbiological aspects of the fermentation process, substrate utilisation, amino acid changes after fermentation and shelf-life studies. Although not contributing significantly in terms of nutrient intake, soya sauce plays an important role in the diet of our communities and hence has and should continue to deserve serious attention.

Research and Maintenance of Microorganisms of Industrial Importance

It would be appropriate at this juncture to report on the activities related to the research and maintenance of microorganisms of industrial importance. These research activities have enable us to understand the existing fermentation procedures so as to arrive at improved processes. UM and MARDI have worked extensively in this field. Particular attention has been paid to the fermentation processes for soya sauce, tapai, yogurt and tempe. One of the most important activities has been the identification and isolation of the cultures involved in the production of these fermented foods. Starters are then developed from these pure cultures, which are subsequently converted to the more stable lyophilised form. These starters may then be available to the small scale cottage industries for the improvement of their fermentation processes. Starter cultures in powder form have been made available for the production of soya sauce, tapai, pulut, yogurt and tempe. Work is still in progress to develop other pure cultures and to convert those maintained in agar slants or in broths into lyophilised forms.

Transfer of Technology: Training on Soya Processing

Much emphasis has been given towards the need for the transfer of technology developed from research efforts. The Food Technology Division of MARDI had embarked on a series of training programmes for prospective small-scale processors. This forms a logical and important follow-up to the various research activities on the processing and utilisation of soya bean and other soya derivatives described in the preceding paragraphs. In 1980, eight formal short training sessions on soya bean processing were held in MARDI for a total of 112 participants. In the following year, 11 more sessions, involving 168 participants were held. Some of these sessions were even carried out in other MARDI stations outside of Selangor. These extremely useful sessions are continuing to be held this year. Participants of these sessions comprise of private business individuals and groups, members of youth training organisations and government departments and agencies. They are first given lectures, shown slides on the general utilisation of soya bean, followed by practicals on processing of soya bean milk, soya bean curd, "fuchok" or yuba, tempe and soya sauce. Emphasis has been on mechanised but low-cost equipment, good hygiene, correct techniques, and the economics involved. Several of the participants had returned to MARDI for further assistance for the setting up of their own processing facilities. Direct assistance of this nature has also been given to the local Youth Council of Pontian, Johore, in the setting up of a soya bean milk and curd processing plant in 1980. The project has been successful and produced products for sale in the local markets as well as to schools in the area. MARDI continues to provide supervisory and advisory services to the plant.

Establishment of Soya Processing Centers

In further efforts to disseminate the developed technology, MARDI has attempted to assist in the setting up of cottage level processing centers for the production of low-cost high protein foods that can be made available for the consumption of the rural communities. The project has been carried out with the cooperation and collaboration of the Division of Community Development (KEMAS), Ministry of National and Rural Development. Four soya bean curd, soya bean milk and soya biscuit processing centers have been established in various states. MARDI provides the required technology by training Family Development the Supervisors of KEMAS, who will then set up these centers in the villages. Although the project has not been able to progress maximally, it is a viable and an extremely important project and should be further pursued. Besides making available relatively inexpensive food items that are already being acceptable by the community, such small and cottage industries could help improve the economy of the rural communities.

Supplementary Foods for Children and Other Vulnerable Groups

Under the programme for the identification, development and utilisation of low-cost protein-rich foods for children and other vulnerable groups, various food items and formulations have been actively studied by MARDI since 1978. One of the most notable achievements has been the successful development and subsequent production on a semi-commercial scale of a nutritious snack in 1979. Based on a mixture of rice, corn and soya, the snack was distributed bearing the registered trade-mark of "Nutrima". Extensive nation-wide field evaluations have been carried out, mainly through the pre-school centers of KEMAS and the MCH clinics of the Ministry of Health. The snack has been well accepted and proved extremely popular with the children.

Another earlier success was the research and development of soya biscuits by MARDI and subsequent production by four KEMAS centers. The biscuits produced in these centers were then distributed to pre-school centers as supplementary foods. It is to be noted that a great deal of the soya used in the production of these biscuits and other soya products has made use of full fat soya flour from Thailand, in line with the spirit of mutual assistance amongst ASEAN member countries. Two fish-based biscuits, one as a sweet coconut biscuit and the other a savoury biscuit, were also successfully developed. Efforts were also made to develop green gram biscuits and instant fish porridge.

Coconut has also been studied for incorporation into nutritious foods, besides soya bean. Studies have been conducted to make use of coconut meal, a by-product of coconut milk production, for the preparation of extracts and flour rich in protein. Such coconut extracts could be incorporated into various food products to increase their protein content. Work is continuing on the project.

Low-Cost High Protein Foods from Under-Utilised Fresh-Water Fish

Another line of approah has also been taken in arriving at nutritious supplementary foods and food items for general consumption. The faculty of Food Science and Technology of the Agriculture University (UPM) had undertaken to study the development of nutritious and inexpensive foods by making use of a relatively cheap and hitherto underutilised fresh water fish, alone or incombination with other cheap raw materials. Tilapia (Tilapia mossambica), which has a poor market value as a fresh fish, has been selected for the studies. Various products have been developed, including fish balls, sausage, burgers, dehydrted minced fish, fish floss, crackers (keropok) and fermented fish (ikan pekasam). Besides evaluating the nutritive quality of these products, organoleptic evaluation and acceptability studies have also

been carried out. Various packaging methods and storage studies have also been tried to prolong the shelf-life of the products. It is anticipated that the processing procedures developed could be transfered to and adapted for village-scale processing. The project clearly has important long term consequences and implications. The successful commercial utilisation of Tilapia (and other fresh water fish) would promote better use of our fresh water areas. More farmers could be encouraged to carry out inland fish rearing, which could increase protein food availability as well as family income. This is in-line with the ultimate goal of optimising utilisation of available food and resources.

INTENSIFICATION OF NUTRITION EDUCATION

In both the 1st and 2nd Food Habits Workshops, it has been recommended that nutrition education has to be actively pursued at all levels. The 1st Workshop had even identified various areas wherein nutrition education could be intensified. Some of the efforts of the various departements and ministries in the country to promote nutrition education are summarised below.

The school children have been recognised as an effective target for nutrition education. The Ministries of Education and Health have always placed emphasis on health education. Commencing from the primary schools. Nutrition education has now been a definite place in the syllabus for these schools. Commencing from primary one, subjects on food, nutrition and growth have been taught (Ministry of Education, 1980). In-service training courses for teachers involved in health and nutrition education have also been conducted (Ministry of Education, 1981 s). Another indication of a definite trend towards more emphasis on nutrition is the current attempt by these ministries to formulate a guideline for the operation and sale of foods in school canteens. This guide-line will deal with aspects concerning the sanitation of foods and drinks sold in these canteens as well as the quality and appropriateness of these foods and drinks (Oommen, 1982). These guidelines will have more far-reaching implications than merely attempting to control the types of foods and drinks sold in school premises. It will create a greater awareness amongst canteen operators, parents, teahers and pupils on the importance of thinking in terms of quality of foods. The implementation of these guidelines will be an educational process by itself.

It is hoped that the Ministries concerned will continue to place emphasis on nutrition education in schools, alongside health education. Implementation of the syllabus in rural schools perhaps need more attention. The feasibility of implementing the recommendation of the 1st Workshop on producing children's books and primers containing nutrition messages could be seriously studied. When the guidelines for the sale of clean and quality foods

in school canteens are implemented, it would be an opportune time to carry out a campaign on nutrition education. This could include the replacement of all existing posters in the canteens portraying commercial snacks, sweets and drinks with those on health and nutrition messages.

Although aimed primarily at producing a food supplement as an immediate and short-term intervention to improve the health of the school children, the school supplementary feeding programme also has a specific objective of promoting health and nutrition education directly and indirectly. In the guidelines for the implementation of the programme (Ministry of Education, 1981b), teachers, parents and members of voluntary organisations have been suggested to assist and play an active role in the preparation and distribution of the foods (various menus, making use of locally available raw foodstuffs have been recommended). With the programme now extended to all 13 states in the country since 1979, benefiting about 710.000 primary school children in 6454 schools this year (Ministry of Education, 1982), it could be and important channel for nutrition education to all involved parties, including the school children. It is hoped that attention and emphasis continues to be placed on the long term objective of nutrition education in the implementation of the programme.

The Ministry of Health continues to carry out nutrition education through its MCH clinics throughout the country. Sessions are conducted to advise mothers on matters related to infant and young child feeding practices, and food preparation. The health staff have been reminded to emphasise on achieving better health through better food habits and home food production. Follow-up of priority cases through home visits by public health nurses and rural health nurses is being carried out (Ministry of Health, 1981). It is hoped that health and nutrition education activities to mothers through the village mid-wives will continue to be emphasised. During their pre- and post-natal visits to the households, these mid-wives could play an important role in discussing and advising the mothers on matters related to food and nutrition of both the mother and the new-born.

KEMAS has also been stepping up food and nutrition education activities through their programmes. In some of the 2000 pre-school centers (TBK) set up in the country, attention is also paid to talking to the mothers on food choice and food preparation, aside from giving lessons to the pre-school children (Khalijah, 1982). Community development officers during their home visits should continue to include such discussions with the household heads. Mother should be encouraged to play an active role in the preparation and distribution of supplementary foods for the children in these centers.

CONCLUDING REMARKS

This report has attempted to highlight some of the activities and studies

carried out by the ASEAN National Sub-Commitee on Protein, Malaysia, along the lines of the Recommendations and Resolutions of the three previous ASEAN Food Habits Workshops. Harnessing the expertise and skills of various institutions and agencies in the country, we have been able to carry out these activities. Through cooperative and collaborative efforts we are now able to report on these achievements and experiences. It is through such diversified but unified efforts that the ASEAN Protein Project has been able to contribute towards alleviating the problem of malnutrition in the country. We have presented the findings of some of our research and development efforts to this forum with the hope that we will continue to share and learn from other member countries of the Protein Project.

SUMMARY

The various resolutions and recommendations passed by the three previous ASEAN Food Habits Workshops may be grouped into 4 broad categories, viz, (1) Surveys on Food Consumption and Habits, (2) Documentation of Studies on Food Habits, (3) Research, Development and Formulation of Inexpensive Nutritious Foods, and (4) Intensification of Nutrition Education.

This report attempts to summarise the actions taken by the various institutions and agencies in Malaysia in implementing each of the above recommendations.

Various institutions such as IMR, MARDI and UM have been conducting several localized and scattered studies in different parts of the country in attempting to understand the food consumption and habits of the communities, particularly those in the rural poverty areas. A serious effort has been made to document these and all previous studies in the compilation of an Annotated Bibliography of Nutrition Research in Malaysia by the IMR. At the same time, other institutions such as MARDI, UPM and UM have been actively involved in research and development of nutritious foods for the communities. Studies into the processing and utilisation of soya bean and other soya derivatives have resulted in, amongst other achievements, the development of low-cost to intermediate technology for the processing of various soya bean products including soya bean milk and soya suace. Various training programmes have been initiated to transfer these developed technologies to enable the processing of the nutritious food at the community level. Various nutritious supplementary foods, making use of locally available and acceptable raw materials have been developed. The successful development and subsequent commercial production of "Nutrima" snack food for children is noteworthy. As a long term intervention programme, various efforts have been made by the Ministry of Education, Ministry of Health and KEMAS in carrying out nutrition education activities through various

channels, the ASEAN Protein Project has been able to contribute towards improving the nutritional status of the under-served communities in the country.

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