

International Nutrition Communication Service
(INCS)

CONSULTANT REPORT

for

THE SOUTH PACIFIC

(May 12 - 15, 1981)

(A description of the First South Pacific Regional Mother and Infant Nutrition Seminar)

BY

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Submitted by
Education Development Center
55 Chapel Street, Newton, MA 02160
To United States Agency for International Development
Washington, DC

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INTRODUCTION

The Foundation for the Peoples of the South Pacific (FSP), with support from the United States Agency for International Development, has undertaken a three-year project designed to improve the nutrition status of low income mothers and infants in nine South Pacific countries. The project was inaugurated with a conference for health professionals in the nine country region, to which INCS provided consultant support. This report identifies the major nutritional problems in the region and proposes country-specific strategies, developed by the member nations themselves, to improve the health of vulnerable group populations.

Ron Israel
Project Director, INCS

June, 1981

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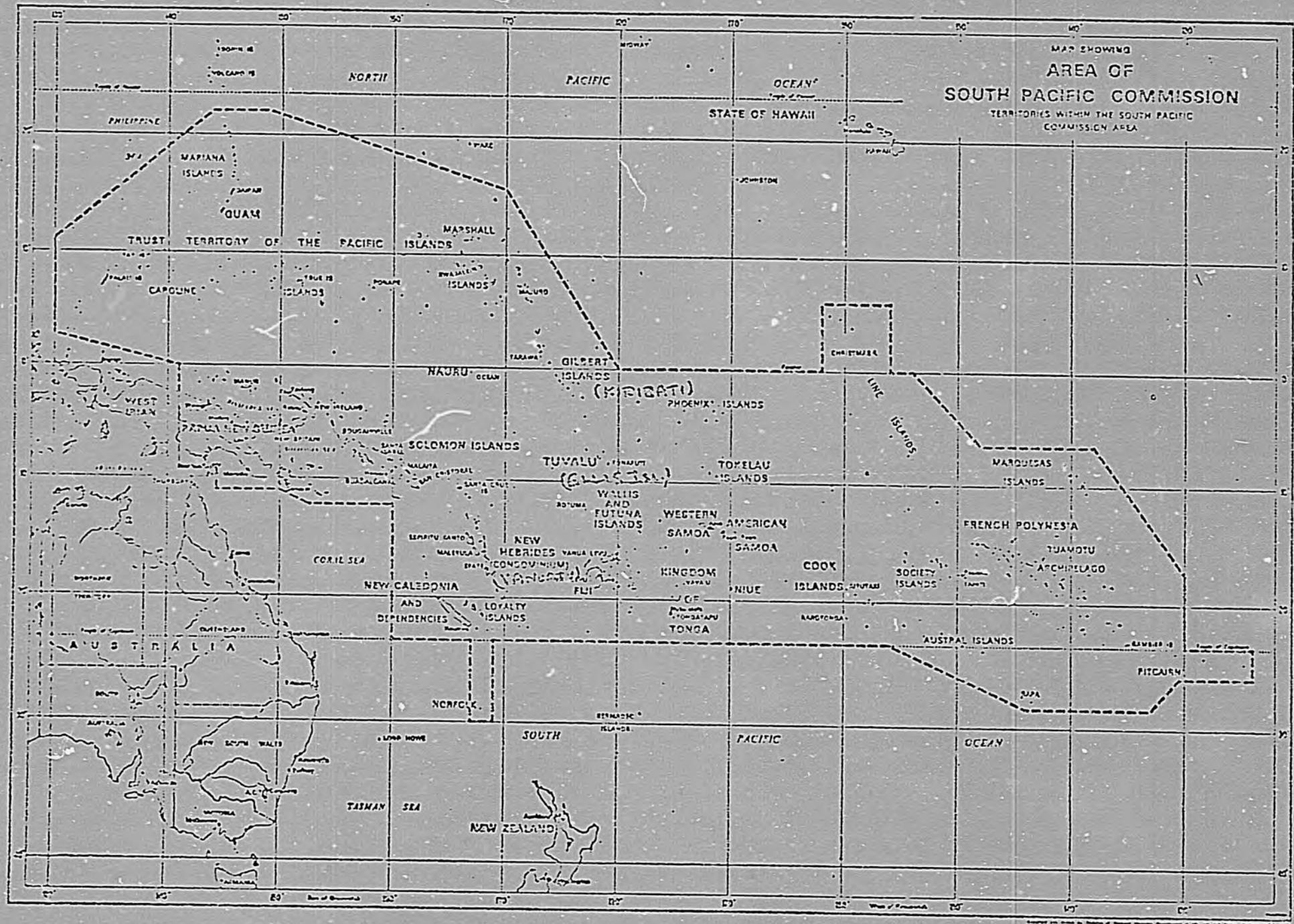
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MAP SHOWING
AREA OF
SOUTH PACIFIC COMMISSION
 TERRITORIES WITHIN THE SOUTH PACIFIC
 COMMISSION AREA

The First South Pacific Regional Maternal and Infant Nutrition Seminar was held in Suva, Fiji from May 11-15 1981, under the auspices of the Foundation for the Peoples of the South Pacific (FSP).

Purpose

The purpose of the conference was:

To promote improved breastfeeding and infant nutrition practices in the South Pacific Forum countries and to establish the basis for regional cooperation in nutritional surveillance and data-gathering.

In addition, it was one of the first activities in the three-year, nine-country South Pacific Maternal and Infant Nutrition Project being undertaken by FSP, with assistance from USAID/Nutrition.

Delegates

Senior government health service officials had been invited from nine South Pacific countries. A strike prevented attendance from Western Samoa, but delegates came from the Cook Islands, Fiji, Kiribati, Papua-New Guinea, Solomon Islands, Tonga, Tuvalu and Vanuatu, as well as a representative from Ponape, Micronesia (Appendix I).

Resource Persons

Four INCS resource personse attended:

Dr. Blubell Standal (University of Hawaii)

Mr. Richard Manoff

Dr. and Mrs. Jelliffe.

In addition, resource persons and observers were available from numerous organizations, including the Foundation for the Peoples of the South Pacific (Mr. Brian Riordan, Ms. Gloria Renda), FAO (Mr. Julian Lambert and Ms. Virginia Yee), South Pacific Commission, Fiji Medical and Nursing Schools, the Fiji Nursing Mothers Association, etc. (see Appendix I).

Program

The Agenda is outlined in Appendix II. A questionnaire sent out previously by FSP was collected, to be analyzed and the results disseminated later. Short country papers were presented (Appendix III) and highlights discussed very briefly. In fact, the organization of the meeting was excellent, with a format which was constructively flexible. Notably, there were several free-discussion plenary sessions, which allowed more inhibited individuals to voice valuable opinions.

Each of the workshops consisted of two resource persons and representatives from two countries, and led to the production of a "Country Action Programs for Improved Maternal and Infant Nutrition". These were typed, discussed at a subsequent plenary session, and re-presented in final form on the last day of the conference (see Appendix IV). They were intended for presentation to governments for consideration on return home (together with audiotapes of the INCS consultants' radio talks).

Additional activities by INCS consultants consisted of (a) interviews for press, Fijian radio and the University of the South Pacific (USP) satellite radio program; (b) lectures for medical and nursing students at USP; and (c) visits to the Community Education Training Center, whose program is outlined in Appendix V. This Center has been established for 18 years, and has trained 378 women from the South Pacific (Appendix V), as well as some from outside the area. The 10-month course is in English and caters for 40 women each year, aged between 18-60 years (average 25 years). It represents an extremely important resource and suggestions concerning curriculum revision or augmentation would be welcome.

Review

A survey of the main features of the Conferences was given (DBJ) on the last day and tape-recorded. It was intended both to summarize the situation and to assist in preparing the conference report, which is to be circulated to all participants and governments.

In general, notable special features for the area were the vast distances by sea (and land in some countries) and consequent difficulties of communication, considerable ethnic diversity (and hence possible variation in anthropometric reference level, e.g., Micronesians, Polynesians, Melanesians, etc), special problems of food availability

for weaning mixtures (especially in isolated atoll communities), and expected differences in incidence of breast feeding in rural and urbanized areas. (The last is most clearly shown by continuing declines in Suva in more urbanized Fiji.) (see Appendix VI.)

The main discussion at the conference can be considered under four headings:

(1) Collection of Data. It was agreed that it was important to collect selected data for base-line information to develop and evaluate practical programs, and for subsequent nutritional surveillance. This should, as far as possible, be uniform, comparable and based, whenever feasible, on existing information already being collected by the health services, etc.

Three main categories of information were suggested as practical priorities: (a) nutritional status; (b) feeding practices; and (c) radio data.

(a) Nutritional Status

Although the coverage and practices varied greatly in different countries, two categories of anthropometric measurements reflecting nutritional status were discussed-- existing data (in many clinics, maternity units, etc.), and experimental procedures.

Existing Data

- Birth weight (for incidence of low birth weight).
- Weight for young children [growth charts were widely used, often using Harvard reference levels, although the types varied. Uniform analysis of such charts could be undertaken to give percentages of children at given age below 80% and 60% of reference levels, possibly using plastic overlay sheets. The need for basic equipment, including weighing machines and growth charts, still exists in outlying areas in some countries (e.g., Solomon Islands)].

Experimental Procedures

- Growth charts for young children: further analysis of slopes of growth curves.
- Pregnancy growth charts: Kusum Shah charts suggested.* (Maternal weights are already taken in some prenatal clinics, mainly to detect early toxemia.)
- Arm circumference tapes: for young children, mothers ("fetus-free measurement"), and possibly newborn.
- Length (height) measurements for young children: especially of interest in light of seeming considerable genetic differences in physique (c.f., Micronesians vs. Polynesians in Micronesia; Indians vs. Melanesians in Fiji).

* Copies to be supplied to ESP by consultants.

Some of these may be tried out experimentally in selected areas to see their local practicability in on-going nutritional surveillance. The selection of anthropometric reference levels for the whole area poses special difficulties, in view of the differing ethnic groups.

Uniform methods of collecting and collating anthropometric data needs clarification when the nine-country project nutritionist (Ms. Gloria Renda) visits countries in the near future. Basically, information will be collected from clinics, with additional data obtained from community home visits, when possible. In some countries, notably Papua-New Guinea, a national survey is contemplated. Aerial (or even satellite) photographs may already be available and helpful in sampling in such scattered populations and difficult terrain. Statistical guidance is also needed for the collection of background data and the on-going information required for the development of a surveillance system.

(b) Feeding Practices

The routine collection of data concerning breast feeding alone, breast and bottle feeding, bottle feeding alone, and the introduction of semi-solids can be included routinely as part of the information given on the existing growth charts, which as mentioned earlier, seem to be used widely.

In some special circumstances, additional information may be collectable. Major items would then include some of the following--nutritionally significant "cultural blocks" limiting the use of more nutritious low cost, locally available foods for children during the weaning period, major causes of success or failure of breast feeding (e.g., hospital practices, women going out of the house for salaried employment, commercial marketing, etc.), current weaning practices and the cost-nutrient value of commoner foods, particularly staples, legumes, and animal products.

(c) Radio Data

In view of the overriding importance of the radio in this vast and isolated area, data is needed concerning the numbers of radios, their distribution, and, if possible, prime listening times for different segments of the population. This information may already be available through various commercial concerns, if, as is unlikely, they are willing to allow the information to be divulged.

(2) Programs

(a) General

Obviously, programs to involve maternal and infant nutrition must be viewed in the context of other activities designed to improve the quality of life in villages and in poorer urban areas, including, for example, improved income, water supplies, sewage disposal, family planning, and education.

Also, it is essential to consider mother-infant nutrition as a continuum including maternal (and fetal) nutrition, breast feeding (or the use of breast milk substitutes), and the weaning (or transitional) diet.

In general, all information/education activities need to be directed at all levels, particularly through the mass media, especially the radio but also the cinema and newspapers, as indicated for the particular country. Information-education activities should be based on modern knowledge and technology, as already used by commercial advertisers. Education should be through schools and through the different professional institutions concerned with the training of health and nutrition professionals, including the important resource at the Community Education Training Center, Suva, Fiji.

A list of these is needed for upgrading of their libraries and inclusion of appropriate existing newsletters and publications, particularly Mothers and Children,

the Journal of Tropical Pediatrics, and the project's own newsletter. Teaching aids need to be made available to them and the usefulness of nursing mothers in such training activities needs emphasis. The curricula of such schools needs review and modernization to include present-day ideas concerning mother-infant nutrition. Such education needs to include basic training, the on-going supply of information and refresher courses.

The availability of appropriate mothers' (or women's) associations needs investigation, and improved maternal and young child nutrition (especially breast feeding) needs inclusion in their activities.

(b) Maternal Nutrition

As is often the case, it would seem that less information is available than concerning the feeding of young children. There is a need for consideration to be given to monitoring of maternal nutrition during pregnancy by means of growth charts and simplified estimation of hemoglobin (such as the UNICEF color card, used in India). In addition, consideration needs to be given to the vexed question of maternal feeding in selected cases and the use of supplements of iron for all pregnant women. In addition, in some areas where malaria is a considerable problem, notably the Solomon Islands, the use of antimalarials during pregnancy deserves consideration as a nutritional bonus in the form of increased birth weights of babies.

The problems of maternal obesity, diabetes and hypertension also require attention.

(c) Breast Feeding

Programs to improve breast feeding were considered under three major headings: (i) the health services; (ii) working women; and (iii) the food industry.

(i) Health Services. There is a need to review the activities in hospitals, especially a re-examination of routines in prenatal clinics and maternity units. Activities which act as deterrents to breast feeding need to be reconsidered and modified or discarded.

As mentioned earlier, the education of health professionals is the key to this type of activity and needs to include not only modern knowledge on the scientific aspects of human milk and breast feeding (e.g., biochemical, anti-infective, child spacing), but also the reflex psychophysiology, practical management and the marketing practices of the infant formula industry.

Another issue raised was concerned with the trend towards the governmental purchase of a limited list of "generic drugs" (following WHO leadership), and hence the need for knowledge of excretion of these drugs into breast milk.

In addition, the influence of ill-advised "food aid" which distributes large quantities of dried skimmed

milk needs to be appreciated as a block to successful lactation. This seems to be the case in some countries with the main supply being from New Zealand.

Family planning activities are wide-spread through the area. The dilemma of finding appropriate economical, culturally acceptable technological methods which will support breast feeding and not disrupt it was discussed several times. In particular, the issue of when to introduce technological contraceptives to breast feeding mothers and the balanced risks and advantages of the use of intramuscular progestogens ("Depo-Provera") are issues which are of concern, perhaps especially in Fiji.

(ii) Working Women. This seems to be a variable problem, but plainly increasing in urban areas. The question of legislation for flexible maternity benefits and the development of creches with nursing breaks was considered.

In addition, the question of improved maternal feeding during pregnancy was mentioned, in relation to restrictive food habits in some communities. However, it may very well be that this is not needed, in some areas at least, as regards calories, as significant problems were an increasing incidence of obesity (especially in women), sometimes associated with diabetes and hypertension.

(iii) Food Industry. It was agreed that a major issue was sensitization of health service and nutritional personnel to the influence of the infant food industry in disrupting the pattern of breast feeding and their own often unperceived contributory role if they become involved in accepting assistance from such companies, including especially samples, posters, booklets, etc. As noted in the main resolution of the seminar (see later), it was agreed that the WHO Code of Marketing of Breast Milk Substitutes should be supported, and that, after this has been passed by the World Health Assembly, national legislation would need to be devised, directed towards monitoring those aspects of the Code held to be particularly harmful in individual countries.

(d) Weaning Food

As breast feeding was the main focus of attention at the seminar, rather little attention was given to the question of weaning food. However, it was agreed that there was a need to have a major emphasis on the local foods and the question of making available lists of these, giving cost-nutrient values, was suggested. It seems that other concepts, such as the need for compact calories, the use of "natural convenience foods", and the question of multi-mixes, based on mixtures of local foods was very little appreciated. The pattern of advice

in some countries was very out-dated. Unfortunately, time did not permit much attention to be given to this important area.

It was felt that "product-tested" weaning foods should be the objective, with mothers themselves involved in the preparation, task analysis and testing of such food mixtures on the spot in village or rural slum kitchens. A special problem was brought out in discussion--that of weaning food mixtures for atoll communities, especially during times of the year when fish poisoning (ciguatera poisoning) was widespread, apparently preventing the consumption of the majority of fish and molluscs at such times.

Brief attention was given to the question of "low-effort nutriculture" especially using three dimensional home-gardens making use of very limited land, and the palma trunk compost heaps on atolls.

(3) Future Coordination

(a) Immediate

(i) General. The seminar seemed to stimulate considerable, genuine interest among participants, increased their awareness and helped to endorse their activities on return to their home countries, with their own plans for action.

(ii) Resolution. The following General Resolution was passed by the Seminar participants:

"It is resolved by all participants attending the South Pacific Regional Maternal and Infant Nutrition Seminar, Suva, Fiji, May, 1981 as health professionals concerned for the well-being of mothers and infants, strongly urge the Governments of all Pacific nations to give their fullest possible support to:

- 1) The promotion and protection of breast feeding practices throughout the region, by appropriate legislation and allocation of national expenditures necessary to achieve such promotion.
- 2) That all South Pacific Forum countries adopt the WHO International Code of Marketing of Breast Milk Substitutes, as the minimum standard for their country in the regulation of formula promotion and its use.

The participants recognized that it is essential to ensure the best use of scarce resources that all governments and international organizations, working in the field of nutrition such as WHO, UNDP, SPC, UNICEF, FSP, FAO, be committed to closer cooperation and coordination in the future, and urge that all organizations work to achieve such regional coordination and cooperation without delay."

(iii) South Pacific Satellite Round-table.

On the afternoon following the Seminar, resource persons and delegates participated in a two-hour round-table at the USP satellite station (via USFNET and PEACESAT) (Appendix VII). Brief statements were given by INCS consultants followed by questions and answers directly from the nine South Pacific countries. The session concluded by Mr. Brian Riordan, FSP, presenting the Resolution (see before).

(b) Near Future (e.g., next three months)

(i) A report of the meeting, comprising introduction, background, general considerations, conference resolution, country papers and tentative action programs, will be published by FSP and circulated.

(ii) A short project newsletter is to be printed and distributed regularly by FSP, mainly to maintain contact and to supply information concerning developments in the South Pacific Maternal and Infant Nutrition Project. (tentative title: SUPAMIN).

(iii) Literature to be supplied to key libraries or individuals, including Human Milk in the Modern World (low cost ELBS versions to be made available to all countries by FSP), Mothers and Children (mailing list to be sent to Ms. Gayle Gibbons), LLLI Material (to be requested from LLLI Headquarters), etc.

(iv) Initiation of training programs for dietitians throughout the area to be given in Fiji, to widen their activities from the hospital to communities, especially concerning the nutrition of mothers and infants.

(v) Visits to all nine countries by Ms. Gloria Renda as follow-up to the Seminar, with special reference to standardization of data collection and establishment of methodology of analysis, etc., and to discuss governmental decisions concerning action programs, including the need for outside assistance, particularly INCS involvement

in the evaluation of a multi-channel nutrition education research program (see later).

(vi) A satellite round-table discussion in about three months (and at intervals thereafter), coordinated by UNSPNEP, USP to discuss progress between country participants and resource people with outlets and access to this satellite program (e.g., University of Hawaii and UCLA via outlet at UC/Santa Cruz).

(c) Long Term

(i) Future involvement of INCS consultants in the on-going, nine-country FSP project is suggested, particularly in relation to mass media (mainly radio), but also concerning content and curriculum design and program evaluation with regard to breast feeding, development of indigenous weaning foods, etc. The provision of the INCS Nutrition Education Catalog would be very helpful.

(ii) Investigation of the nutrition content in the curricula of schools for various cadres of nurses needs particular attention, because of the relatively large numbers of nurses in the area and because of their opportunities to influence the feeding and nutrition of mothers and young children in health services and home. This could be integrated with IUNS (International Union of Nutritional Sciences) activities, including the possibility of a South Pacific meeting on curriculum content and design.

(iii) Initiation and evaluation of multi-channel nutrition education program in a selected country. The Solomon Islands seems most promising, with a target population of 196,000, with an interested and well-informed physician (Dr. E. Teikeru), with training in communications, as Chief Medical Officer, Western Province, in which the main town of Honiara (11,000 population) is situated.

Fiji, with its larger urban population and considerable decline in breast feeding, probably has the greatest need, but the situation is complicated by two distinct ethnic and cultural groups (Melanesians, Indians), by a constant flow of tourists (Australia, New Zealand), and by an existing program to promote breast feeding.

(iv) Support for nutrient analysis of numerous South Pacific foods whose composition is currently unknown, but which could be undertaken at the University of Hawaii.

(v) INCS involvement in a follow-up evaluation workshop in the South Pacific in 18 months or two years time, designed to attract Ministers of Health as well as other senior health service officials.

APPENDIX: I ATTENDANCE LIST

REGIONAL MATERNAL AND INFANT NUTRITION SEMINAR

SUVA, FIJI

MAY 1981

ATTENDANCE LIST

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APPENDIX: II

AGENDA

SOUTH PACIFIC
REGIONAL MATERNAL AND INFANT
NUTRITION SEMINAR

AGENDA

CONDUCTED BY

THE FOUNDATION FOR THE PEOPLES OF THE SOUTH PACIFIC, INC.
WITH ASSISTANCE FROM
THE UNITED STATES AGENCY FOR INTERNATIONAL DEVELOPMENT
OFFICE OF NUTRITION, AND
INTERNATIONAL NUTRITION COMMUNICATION SERVICE

COORDINATOR: BRIAN M. RIORDAN
ASSISTANT: GLORIA A. RENDA

REGIONAL MATERNAL AND INFANT NUTRITION SEMINAR FOR DIRECTORS OF HEALTH

MAY 12 - 15, 1981

GRAND PACIFIC HOTEL

SUVA, FIJI

GOAL: "To promote improved breastfeeding and infant nutrition practices in the South Pacific Forum countries and to establish the basis for regional cooperation in nutritional surveillance and data-gathering."

AGENDA

MONDAY, May 11th

FRANGIPANI ROOM

2:00 pm

Registration

Participants/observers

5:00 pm

Meeting Resource Persons/FSP Staff

TUESDAY, May 12th

8:30 am

Welcome

Mrs. Elizabeth B. Silverstein
President

The Foundation for the Peoples of the South Pacific

8:40 am

Introductions

Brian M. Riordan, Chairman

8:45 am

Country Papers

(ten minutes for each presentation)

Fiji
Cook Islands
Kiribati
Papua New Guinea
Solomon Islands
Kingdom of Tonga

10:00 - 10:30 am

Coffee Break

10:30 am

Country Papers

Tuvalu
Vanuatu
Western Samoa

11:00 - 11:30 am	<u>Questions/Comments</u>
11:30 - 12 noon	<u>"The Present Status of Knowledge on Breastfeeding"</u> Dr. D.B. Jelliffe
12:00 - 1:00 pm	Lunch
1:00 - 1:30 pm	<u>"New Techniques to Promote Breastfeeding Practice"</u> Mrs. E.F. Patrice Jelliffe
1:30 - 2:00 pm	<u>"Supplementary and Weaning Foods"</u> Dr. Bluebell Standal
2:00 - 2:30 pm	<u>"Use of Mass Media in the Promotion of Maternal and Infant Nutrition"</u> Mr. Richard Manoff
2:30 - 2:45 pm	Coffee Break
2:45 - 4:00 pm	Assignment to working groups for "Development of National Policies for Breastfeeding, Maternal and Infant Nutrition, and Development of Practical Programs"
	Resource Persons:
	Dr. John Biddulph
	Dr. Derrick B. Jelliffe
	Mrs. E.F. Patrice Jelliffe
	Mr. Julian Lambert
	Mrs. Verona Lucas
	Mr. Richard Manoff
	Dr. Bluebell Standal
	Ms. Virginia Yee
4:00 - 4:30 pm	<u>Resource/Staff Persons' Meeting</u>
6:00 - 8:00 pm	<u>Reception</u> <u>TAPA ROOM</u> Hosted by Trustees of FSP, Fiji

WEDNESDAY, May 13thFRANGIPANI ROOM

8:30 - 9:00 am Feedback from Working Groups
 9:00 - 10:00 am Working Groups, Continued
 10:00 - 10:30 am Coffee Break
 10:30 - 12:00 noon Working Groups, Continued
 12:00 - 1:00 pm Lunch
 1:00 - 3:00 pm Working Groups, Continued
 3:00 - 3:30 pm Resource/Staff Persons Meeting

THURSDAY, May 14thFRANGIPANI ROOM

8:30 - 9:00 am Feedback from Working Groups
 9:00 - 12:00 noon Working Groups, Continued
 (Coffee Break 10:00 - 10:30)
 12:00 - 1:00 pm Lunch
Mrs. E.F. Patrice Jelliffe, Chairman
 1:00 - 4:00 pm Presentation of Action Plans by
Individual Countries and Discussion
 4:00 - 4:30 pm Resource/Staff Persons Meeting

FRIDAY, May 14thFRANGIPANI ROOM

Dr. Bluebell Standal, Chairman
 8:30 am Evaluation of Seminar
 9:30 - 10:00 am Final Summary and Recommendations
 10:00 - 10:30 am Coffee Break
 11:00 am Closing Remarks
 Dr. Derrick B. Jelliffe

REMAINDER OF DAY AVAILABLE FOR INDIVIDUAL COUNTRY MEETINGS WITH REGIONAL MATERNAL AND INFANT NUTRITION STAFF AND RESOURCE PERSONS AS NECESSARY (to be scheduled during Seminar).

APPENDIX: III

COUNTRY PAPERS

REGIONAL MATERNAL & INFANT NUTRITION SEMINAR

MAY 11-15, 1981

SUVA, FIJI

COUNTRY PAPER

TUVALU

MATERNAL AND INFANT NUTRITION

In Tuvalu there is no national policy regarding maternal and infant nutrition. However, breastfeeding is widely practised throughout the islands.

The following is an account of the usual practice of infant nutrition in Tuvalu. Generally speaking the ability to breastfeed successfully is considered a basic attribute of the woman. By observing her women folks breastfeeding their babies, a girl in the village when having her first baby, will automatically imitate the other women and breastfeed her baby. There may be little or no encouragement needed at all.

When the baby is two weeks old, toddy drink is introduced once a day. This is mainly to make up for fluid loss we expect to be present in a warm environment as we experience in Tuvalu. We find that this practice is quite satisfactory.

We begin to introduce solids when the baby is three months old with one feed per day. At four to five months the baby will have two feeds per day, and three feeds per day when she or he is six months old. The solid foods are in the form of mash green coconut flesh, pumpkin, pawpaw, eggs, fish and custard. There are no "cultural blocks" that may prevent the use of any of the protein foods for the nutritional need of the child.

Breastfeeding is continued until about twelve months when it is gradually stopped. A few mothers, however, continue to breastfeed their babies until 18 to 24 months old or even after 2 years.

The usual reason for stopping breastfeeding is that the mother is working, either in a government department or in a private enterprise. It is extremely rare for breastfeeding to stop because of maternal illness, for example, mental illness or active tuberculosis.

The traditional practice of sending children away to be cared by their grandmother as soon as they have reached a certain age, is very much in existence. This is usually in the case of a working mother. At times the children are taken away by their grandmothers for no apparent reason at all, the grandmother just want their grandchildren to be near them.

The use of bottle feeding is becoming more and more common, not only in the Capital island where many of the young women are working and also where the majority of civil servants live, but also in the outer islands. This is usually due to the fact that breastfeeding is time consuming and tiring. A few believe that bottle feed is looked upon as a sign of wealth in the family, and when you are wealthy you may be recognized and placed in a high social class. Some women say that bottle feeding allows them to return to those interests and occupations for which their education and training have prepared them.

Bottle feeding has caused much concern to the Health Department because the mothers use either too dilute or too concentrated feed thus causing vomiting and diarrhoea among the children. There is

also an increase in the use of aerated beverages and sweetened condensed milk, for the simple reason that they require very little effort to prepare.

There are a few cases of malnutrition, but there is an increase in the number of anaemia in children and pregnant mothers. These are not always due to mere deficiency of the resources to provide the necessary nutrients. They could also be due to misuse of what is available. Traditional dietary patterns do not deprive the children of their right to eat what they want, and the amount and frequency of feed they require.

As regards maternal nutrition, there are no traditional taboos which may prevent mothers from eating certain foods. Generally Tuvaluan mothers tend to eat a lot and do very little work, and as a result, the majority tend to be overweight.

Our nutritional surveillance system consists of the monitoring of birth weights and weights of infants and pre-school children. When a child is found in the Nurse's clinic to be underweight, the Nurse has to advise the mother on the child's diet, or the Nurse refers the child to the Doctor when necessary. We find the system working satisfactorily.

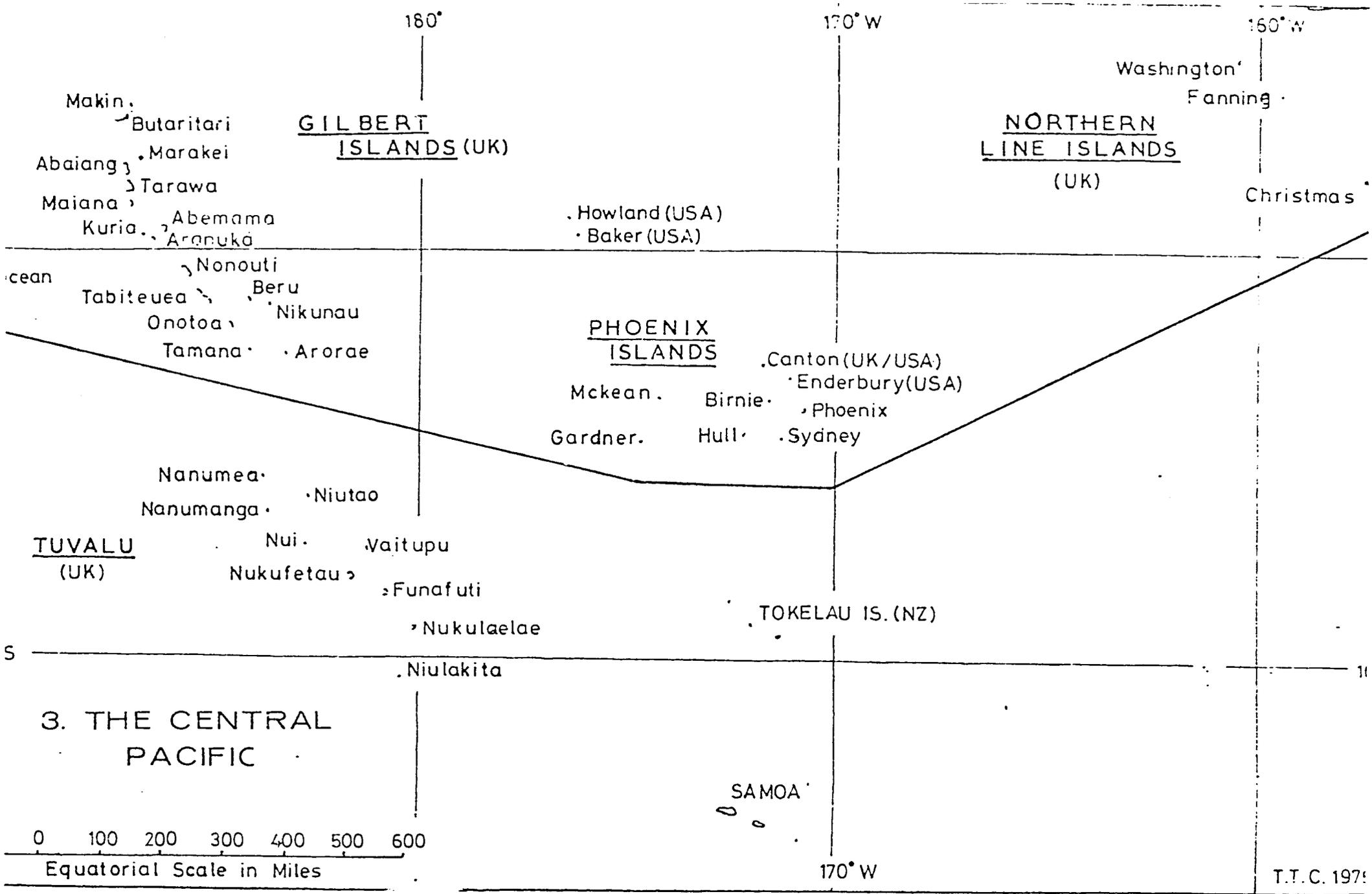
SOUTH PACIFIC

REGIONAL MATERNAL AND INFANT

NUTRITIONAL SEMINAR - MAY 11-15, SUVA

COUNTRY REPORT - REPUBLIC OF KIRIBATI

Participants: Dr. T. Tira, Ms. R. Tito



1. BACKGROUND INFORMATION

1.1 Geography and Communication:

The Republic of Kiribati comprises of 17 islands in the Gilbert Group, 8 islands in the Line Group and 8 islands in the Phoenix Group. These islands are scattered widely over 5 million square kilometres of the Central Pacific Ocean and they can be located around the point where the International Date-Line intersects the Equator.

The islands are typical coral atolls which always offer very limited resources apart from marine resources. Although the total land area of the inhabited islands is approximately 619.18 square kilometres, the islands themselves are so scattered apart that the nearest island from the capital of the Republic (i.e. Tarawa) is about 80 kms away and the farthest is about 4,000 kms away.

Communication is a real problem, however the Shipping Corporation runs a freight and passengers services between the islands and from the commercial headquarter (South Tarawa) to all islands in the group.

On the other hand, Air services are now available between Tarawa and all the islands in the Gilbert Group and also between Tarawa and one island (Christmas Island) in the Line Groups.

Air Nauru, the Norfolk Airlines and Air Tungaru provide air links between Kiribati and the outside world.

1.2 Population:

The people of Kiribati are known as I-Kiribati and they come from the Micronesian ethnic group.

The 1978 census revealed a total population of 57317 which when compared with the previous census figure, give an annual growth rate of 2.24%. By this rate of growth the present population is expected to double by the end of the century.

About 68% of this population live in rural areas where subsistence farming and fishing form the main livelihood of the community, and the remaining 32% live in South Tarawa which is the only urban area and the headquarter of the Republic.

The population is very young in that the under 15 years age group represent 41% of the total population and the under 5 years age group represents 14% of the total population.

2. HEALTH SERVICES

2.1 Existing facilities:

The Ministry of Health and Community Affairs provides free health services throughout the nation. The existing health facilities include the following:

- 1 general (referral) hospital (160 beds) Bikenibeu, South Tarawa
- 1 general hospital (10 beds) at Betio, South Tarawa
- 2 dispensary clinics on South Tarawa
- 28 dispensary clinics on outer islands
- 2 dental clinics on South Tarawa
- 4 health (MCH) clinics on South Tarawa
- 31 health (MCH) clinics on outer islands
- 150 health aide posts in villages

These facilities have been managed by the following categories of health personnels:-

- 10 doctors for South Tarawa
- 84 nurses for South Tarawa
- 5 doctors for outer islands (District Medical Officers)
- 34 nurses for outer islands
- 15 medical assistants for outer islands
- 150 MCH aides (Island Council employees) in villages on outer islands

2.2.1 MCH services:

In 1963 the Government recognised the need for the establishment of the MCH service to reduce the high maternal and infant mortality rates that were observed in certain outer islands and also in the hospital in South Tarawa.

By 1965 the MCH services was headed by one MCH Medical Officer and all islands had residential nurses (MCH nurses) who had been trained on MCH work.

The sheer scatteredness of the villages in most of the islands poses communication problems for the MCH nurses who operate from centrally located health clinics. Most villages are accessible by motorcycles and many others are only accessible by engine powered boats. UNICEF has helped in providing means of transport.

From 1969 another category of auxillary workers (MCH aides) commenced their training and by 1972 about 150 MCH aides have taken up their posts in villages throughout Kiribati.

The main drive of the MCH service was to improve the health of mothers and children and the logistics of the MCH programmes were:

- (a) regular antenatal examination where the following should be recorded:
 - personal history, religious history, family history, post natal history of mother;
 - progress of pregnancies with particular emphasis on weight, B/P, Urinalysis, Hb and general examinations.
- (b) labour and puerperium which should record the outcome of the deliveries and the immediate care following all deliveries for the mothers and the infants;
- (c) post-natal care which should record the general condition of the mother and in particular the establishment of breast milk, the feeding formular and techniques for the infants, Family Planning advice etc.
- (d) Child Health Care which should record the personal particulars of the infant immunisations event, weight progress, feeding techniques and other health records;

2.2.2 Maternal and child health problems:

The pattern of morbidity and mortality cannot be accurately described as our recording and registration systems for morbidity and mortality events are not adequate.

However hospital records and isolated surveys show that malnutrition is still a problem and the prevalence rate has ranged from 10% in one survey and 30% in another survey.

The analysis of the 1978 census figures has revealed that the crude death rate was 14.0 deaths per thousand annually and the infant mortality rate was 87 per thousand livebirths.

In the absence of childhood diseases that could be potential killers of infants one would tend to regard this high infant mortality rate of 87 per thousand livebirths as a consequence of poor social economic conditions, poor nutrition, poor hygiene and uncontrolled number of children in the families.

2.2.3 Possible solutions:

It is the common trend of thinking among the health professions that the nutritional conditions of mothers and infants is not a separate entity but part of the problem of the social and economic condition of the community.

Therefore our lines of attack will broadly cover the following topics:

- (a) The health of women in terms of -
 - improvement of social economic status;
 - improved nutrition of the family;
 - improved sanitation of the home;
 - limitation of family size to manageable number;
 - two to three per family in our present condition.
- (b) The care of pregnant women in terms of regular supervision, augmented nutrition early diagnosis of pregnancies and its complications.
- (c) The care in confinement in terms of the availability of skilled assistance for mother and children in clean surroundings.
- (d) The care of the new born in terms of -
 - availability of skilled assistance;
 - breast feeding;
 - prevention of infection;
 - hygiene of the infant and its environment.
- (e) The post-natal care of the mother in terms of -
 - Family Planning advise for better health of mother, better care for the child.

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5th March, 1981

BREAST FEEDING AND THE LEGISLATION RESTRICTING AVAILABILITY
OF FEEDING BOTTLES IN PAPUA NEW GUINEA

by

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Nutrition.

Papua New Guinea with a population of 3 million, 80-85% of this live in rural areas. Women are responsible for bringing up the children and breast feeding is widely practiced. The infants are breast fed for up to two years or longer in this country.

It is only in recent decades that there has been a dramatic change in infant feeding from breast milk to Cow's Milk. This trend occurred first in the developed countries of the world. Modern technology, improved hygiene, education and affluence combined in these countries to allow babies to be bottle fed with cow's milk without much increase in disease or deaths. The above changes are also associated with changes in social values. Breast feeding became viewed as an old fashioned. The feeding bottle became status symbol projecting the image of modern sophisticated mother.

Convenience was also a factor in the trend away from breast feeding in the developed countries. Women were no longer bound by tradition. Artificial feeding was seen as a means of being freed from the constraints of motherhood.

The tragedy today is that decline in breast feeding has spread from the developed countries to the developing countries of the world where bottle feeding, particularly in urban areas, is assuming the dimensions of an epidemic.

About 20 years ago foreigners were the only people who did not breast feed their babies in Papua New Guinea. Today an increasing number of National mothers are changing from the breast to the bottle.

Bottle feeding was partially responsible for the increased numbers of diarrhoeal diseases in young children in Papua New Guinea.

In 1962 gastroenteritis accounted for 5% of all hospital admissions and 4.9% of all hospital deaths. In 1972, ten years later gastroenteritis accounted for 9.3% of all hospital admissions and 11.3% of all hospital deaths.

Bottle feeding can lead to marasmus in the first few months of life and this can affect the brain development in humans. It is now accepted fact that the critical period of brain development is the last trimester of pregnancy and first few months of post-natal life. Malnutrition

during this early age may lead to permanent damage both physical and mental. Breast feeding is therefore very important in the first six months of life, as this is the period when the brain is developing fast, the breast milk provides sufficient nutrition for the baby during this period.

Breast milk is best food for a baby because it is natural. It is a balanced diet for the young baby because it contained all the Nutrients needed. Other reasons why it is good for the baby are:

- Breast milk is always ready when baby is hungry;
- It is safe;
- The harmful bacteria which can get into the drinking water and feeding bottles, cannot get into the mother's breast milk;
- Breast milk cannot go sour even when a mother is pregnant;
- It is always at a right temperature for the baby;
- It does not cost anything, and does not give a mother extra work, like cleaning feeding bottles or make up feeds and so on.

These, together with its other important effects, on the prevention of infections, on the health and well being of the mother, on child spacing, on family health, on family and national economics and on food production, make it a key aspect of self-reliance. It is therefore, a responsibility of society to safe guard and promote breast feeding. There are groups of Expatriate women, "Susu Mamas" promoting breast feeding in Papua New Guinea, today. This is a great contribution by expatriate women in Papua New Guinea, which is very encouraging.

For those mothers who have the facilities, education and finance to safely bottle feed their babies should consider the bad effect of their influence is likely to have on the vast majority of mothers in their community who do not have the knowledge, money or facilities to safely bottle feed their babies. The women leaders in the community and the nurses should set an example by breast feeding their own babies.

The mother who goes out to work can still breast feed her baby. She can do this before going to work and after returning from work. In places where many women are employed, creches should be set up so that mothers can bring their young babies to work and breast feed them during the day. This should be enforced by law.

The economics of bottle feeding is often ignored. Bottle feeding has important economic consequences both to the individual and to the Nation.

During the first 6 months of life the breast feed baby consumes an average of 156 litres of breast milk which is the caloric equivalent of 183 litres of Cow's Milk. A young mother (15-20 year age group) can produce an average of 400 mls. of breast milk by the 7th Day, while the older mother (30 years or over) produce less than this quantity. Similarly, the fat content of breast milk differ (15-20 year age group) can produce over three grams per 100 ml, while 30 year old mother produce less than this amount.

Breast fed children recover more quickly from illness.

During the 10th International Congress in Nutrition in Japan, August, 1975, several speakers talked about the need for breastfeeding.

One of the most interesting talks was that of Dr. Wako of the Iwate Medical University in Japan. He could showed that children who were breastfed had to be admitted to hospital for an average of 4 days only. Children who were artificially fed required 12 days in the hospitals before they were discharged. When children have to stay in hospital for longer time this also cost much more money.

The table below shows how much time and money has to be spent on breast fed children and those by bottle.

One can see clearly how much money can be saved by breastfeeding.

The money and Days of Treatments needed for Sick bottlefed and breastfed children in Japan.

	Cost \$	Days of Treatment Needed.
Breast Fed	8	4
Bottlefed	24	13

In July, 1977 the Baby Feed Supplies (Control) Act was passed and became law that year. Under this Act the advertising of milks for a bottle feeding is banned. The Act also restrict the sale of feeding bottles, teats and dummies. These items can only be obtained through prescription signed by a registered health worker, a doctor, health extension officer or a nurse.

The prescription can only be given to a mother or a guardian of the baby whose name is written on the prescription. Before a prescription is written for a feeding bottle, the health worker is required to be sure that it is in the baby's interests to be bottle fed. The health worker is also required to instruct the mother or guardian on how to clean the feeding bottle properly and how to mix the milk at its correct strength. The health worker must also tell the mother or guardian to store the milk when made up in a refrigerator if it is not use immediately.

Health workers who do not follow the instructions laid down in the Act render themselves liable to a K200 fine for a first offence and K500 fine for a second offence. Similar fines apply to shopkeepers, chemists and other people who supply feeding bottles without prescriptions.

The aim of the Act is to discourage the use of feeding bottles.

The act also made it responsibility of the health worker who prescribes a feeding bottle to provide the mother or guardian with adequate instruction. The health worker is required to give instruction on how to make milk up in the correct strength and on hygienic measures to make bottle feeding safer.

The Act also made the community aware on the dangers of bottle feeding without adequate safeguards, and has greatly increased awareness of the problem.

How successful has the legislation been?

Before the legislation was introduced, an infant feeding survey was carried out in Port Horesby (December 1975 and January 1976) showed that one-third of the sample of children under two years old were being artificially fed.

It also showed that 69% of the bottle fed children were malnourished (weight for age less than 80% of standard) compared with only 26% of the breastfed children.

The infant feeding survey was repeated in Port Horesby March 1979, 20 months after the Act became law. The survey was done in the same areas as the December 1975/January 1976 Survey and follow the same methodology. The results and comparison with the 1975/76 survey are shown in Table 1 and 2.

Table 1 - Feeding Methods 1975/76 and 1979.

Date	Breast fed	Bottle fed	Total
1975/76	82 (65%)	45 (35%)	127
1979	127 (88%)	17 (12%)	144

Table 2 - Weight for age as percent of standard.

Date	80% or More	79 - 60%	Under 60%	Total
1975/76	75	38	14	127
1979	103	40	6	149*

*Table 2 Total for 1979 has 5 more than Table 1 for 1979, as it includes 5 children who were neither breast nor bottle fed.

The results in Tables 1 and 2 showed there was a statistically highly significant increase in breast feeding between 1975/76 and 1979. It also shows the higher weight-for-age in the 1979 Survey. The 1979 survey showed a reduction in the number of children under two years with marasmus (weight for age less than 60%).

The 1979 survey also showed that only one of 17 mothers artificially feeding their babies had acquired a feeding bottle illegally. Beside a definite increase in breast feeding and down-ward trend in malnutrition there has also been a statistically significant decrease in the number of children under 6 months of age admitted to Port Moresby General Hospital (PMGH) with gastroenteritis since 1977. Table 3 shows the admissions and deaths of gastroenteritis in Port Moresby General Hospital during the past five years. The under 6 months age group has been singled out, as milk is the main diet in this age group. The changes in the gastroenteritis rates in this age group are likely to reflect changes in feeding practices.

Table 3 - Gastroenteritis admissions and Deaths, Port Moresby General Hospital.

Year	Gastroenteritis Admissions		Gastroenteritis Deaths	
	Total	Under 6 months	Total	Under 6 months
1975	831	83 (10%)	10	3 (30%)
1976	742	71 (10%)	9	2 (22%)
1977*	684	31 (5%)	8	1 (13%)
1978	487	29 (6%)	8	-
1979	441	28 (6%)	6	-

* Bottle feeding legislation introduced during this year.

Table 3 shows that since 1977 there has been a marked decrease in the number of infants under 6 months of age admitted to Port Moresby General Hospital with Gastroenteritis. Before, 1977, 10% of gastroenteritis admissions occurred in infants under 6 months of age. During the past three years this age group has accounted for only 6% of the total gastroenteritis admissions.

There has been a similar decline in deaths from gastroenteritis among young infants since 1977. Before the legislation was passed (1975/76) five babies under 6 months of age died from gastroenteritis at Port Moresby General Hospital. All five babies were bottle fed. During the 2 years after the legislation had been passed, 1978-79, no baby under 6 months of age died from gastroenteritis at Port Moresby General Hospital.

The legislation introduced in 1977, which restrict the freely availability of feeding bottles, has had a major impact on promoting breast feeding. It has reduced the artificial feeding rate in Port Moresby. It is also associated with down-ward trend in malnutrition in young children in Port Moresby. It also associated with a reduction of morbidity and mortality of gastroenteritis in babies under 6 months of age.

This results are encouraging, but not unexpected. Papua New Guinea has legislated against the freely availability of feeding bottles, to back up its education campaign to promote breast feeding.

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BREAST FEEDING IN RAROTONGA

(1) INTRODUCTION:

The 15 islands that form the "Cook Islands" lie between 8 degrees and 23 degrees south latitude and 156 degrees and 167 degrees west longitude. The ocean area measures about 751,000 square miles but the land area is only 93 square miles. The population numbers about 20,000 people, mostly of polynesian origin. Rarotonga being the centre of government accommodates about 50% of the total population. Self-governing since 1965 with 22 members in the elected Legislative Assembly and a 7 member Cabinet headed by a Premier governs the islands.

(2) Rarotonga New Borns. There were 254 new borns for Rarotonga alone (January - December 1980) most of the babies were delivered in the hospital. Home deliveries are still being seen but of a very low number.

(3) Migration: The local population can migrate easily to New Zealand with very little restriction a fair number return to their home island within the group.

Table I:

Bottle fed since birth	=	30
Breast fed from birth	=	224

(4) Breast feeding analysed:-

Presented below is a table arranged in months showing approximately the length of time babies were breast fed:-

Table II:

0 - 1 month	=	16
Up to 2 months	=	10
" " 3 "	=	36
" " 4 "	=	28
" " 5 "	=	45
" " 6 "	=	26
" " 7 "	=	21
" " 8 "	=	21
" " 9 "	=	6
" " 10 "	=	4
" " 11 "	=	2
" " 12 "	=	9
		<u>224</u>
TOTAL		

(5) Reasons for discontinuation of breast feeding.

(a) Adopted	=	8
(b) Working mum	=	142
(c) No milk	=	66
(d) Didn't want to continue	=	<u>8</u>

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COUNTRY REPORT

BREAST FEEDING IN FIJI

1. Pre-European Civilisation

The era preceeding European or foreign civilisation in Fiji, all babies in these islands were breast-fed. According to an old Fijian custom a pregnant girl must be taken from her husband to her mother at the last stage of her pregnancy to prepare herself for motherhood and confinement. After her confinement she remains with her mother for an indefinite period to learn how to breast feed and care for her baby. Breast feeding generally continues until the baby is two years old before weaning takes place. Strictly speaking, the girl does not return to her husband until she is ready to have the next baby.

Generally when a woman is breast-feeding her baby, she sleeps separately from her husband to avoid sexual intercourse. Sex was 'tabu' while the mother was breast feeding her baby. It was believed that if a woman has sex while breast feeding her baby, the infant will suffer from 'save' which is a form of malnutrition attributable to early pregnancy.

2. Wet Nursing

Wet Nursing was practised in Fiji as there was no substitute to breast feeding at that time. With introduction of artificial feeding, the practice has unfortunately stopped.

3. Present Trend

Even with the influence of European civilisation and the introduction of bottle feeding, breast feeding continued to be practised widely in Fiji for economic and other reasons. As educational and economic backgrounds of the Fijian community improved, social attitudes and life style of the people changed. The style of their dresses change according to the fashion of the day. Their eating habits also change from traditional foods to more westernised diets based on cheap processed food. Consequently bottle feeding emerged in place of breast feeding for babies. It is difficult to ascertain what percentage of mothers in Fiji are breast feeding their babies as no proper survey on the subject has been carried out. However, it is a fact that breast feeding is more popular among women in the rural areas than in the urban centres.

4. Factors contributing to the decline in breast feeding

a) Social demand.

A modern or educated Fijian mother is rapidly changing her social attitudes towards her family. She values her social identity more than her baby. Therefore, she is inclined to accompany her husband to attend social functions than to remain and care for her baby at home. With diversity of social, cultural, political, religious and sporting interests, a modern mother cannot find ample time to breast feed her baby.

b) Economic reason

As industrial revolution spreads to Fiji, employments become available for women. A working woman is generally kept away from home and her baby. At the end of the day she is tired and needs rest. With additional income to the family, she is able to buy milk for the baby and to pay for a maid to look after her.

c) Effectiveness of commercial advertising and easy availability of supply contribute significantly to the decline in breast feeding in Fiji.

d) Ineffective promotion of breast feeding?

5. Infant Feeding Promotion

All expectant and lactating mothers are advised and encouraged to breast feed their babies at least for the first six months of life. The advice is given by health workers during antenatal clinic, through confinement in hospital and at postnatal clinic. Advice is also given on supplementary feeding and on weaning foods at health facilities and at home during home visit by the Public Health Nurse. Posters on infant feeding are also exhibited in all public health facilities. Additional promotional work on infant feeding are available in pamphlets and leaflets which are distributed to mothers when they visit health facilities and clinics.

REGIONAL MATERNAL AND INFANT NUTRITION SEMINAR

MAY 11 - 15, 1981 (SUVA, FIJI)

COUNTRY REPORT (SOLOMON ISLANDS) DR E. TEKIERU (Chief Medical Officer
(Western Province))
Sr M. Luilamo (Senior Nursing Officer
(HQ))

Introduction:

The Solomon Islands are a chain of volcanic islands lying to the south east of New Guinea and north east of Australia. The boundary was formed by the Santa Cruz group of islands to the east, and Shortlands group to the west - between Lat. 155.5° E & 167.5° E and Longitudes 4° S & 12° S.

The capital is Honiara, situated on Guadalcanal Island. The country was divided into seven (7) Provinces, for convenience of administration. Independence was achieved in 1978.

Each Province has got an headquarter which is basically an administrative and commercial centre.

Population is mainly Melanesians but other major races are also present e.g. Micronesians, Polynesians, Chinese, Europeans and others. About eighty (80%) percent of the population lives in rural areas with only about 20% in urban centres e.g. capital town and provincial substations.

Census in 1976 yielded the following figures on population:

		<u>% of total</u>
Melanesians	183,665	(93.3)
Polynesians	7,821	(3.9)
Micronesians	2,753	(1.3)
Chinese	452	(0.2)
Europeans	1,359	(0.6)

Total Population: 196,823

Children (under		
5 years)	40,015	(20.3)
" (0-3yrs)	33,181	(16.8)
" (under 1 yr)	9,351	(4.7)

Although, there were some ups & downs in the figures during the last 4 years period, for purposes of discussion the above figures are adequate.

% increase in population - 3.5% per year.

Distribution of Health Services in the Country:

- 1) Central or National Hospital ((1) Honiara)
- 2) Provincial Hospitals + Church Hospitals
- 3) Network of Provincial:-
(in each province) (Staffing)
 - Area health Centres (ANO, R/E, F/A)
 - Registered Staff Clinics (R/N's, N/A)
 - Aid posts (N/A)
 - Village Health Aid posts (VHA - Village Selected)
 - Settalite clinics (Not manned)

MCH Work

This is mainly done by AHC & RHC. There are no such Community Health Nurses, as in other countries. The main work involved in MCH is:-

- Vaccination
- Monthly weighing etc of infants
- Post natal services (rarely done)
- ANC
- Health education and advice on any appropriate topics
e.g. Breast feeding, Supplementary feeding etc.
- Family planning
- etc.

Major difficulties encountered

- poor regular attendance of mothers for post natal or child vaccination.
- Distance problems giving rise to transport difficulties
- Unpredictable climate
- Lack of needed equipments, in most RHC's
- Difficulties with transport of vaccines (esp. inter clinics)

Diet in the Solomons:

Eventhough, staple diet would vary from race to race; as far as the majority of the population is concerned - sweet potato, tapioca, cabbage and fish are the main staple diet.

For people living in towns where money is the main "tool for getting food", the traditional pattern automatically deviates to a westernised pattern, but "unbalanced". These are all due to wages & economic difficulties met by those people.

Malnutrition:

Eventhough, cases of malnutrition were reported from clinics, it was regarded as a "minor" problem in most Provinces. (apart from Malaita!) Malnutrition in the form of Kwashiorkor, Marasmus and Kwashiorkor - Marasmus were present, in age groups 1 - 3 yr mainly.

No survey has been done on this yet in urban and rural areas, but one can generalise by saying that, the main reasons for such cases are as follows:

- in rural areas:
- traditional feeding methods (varies from race to race)
 - feeding ignorance
 - Secondary to chronic diseases
 - associated with high parity
 - etc.

As can be seen here, lack of food available for supplement or for proper feeding is not a problem.

- in urban areas:
- associated with low income group.
 - Leaving off breast feeding very early for cosmetic & jobs reasons etc.
 - Associated with grany's, housegirls etc looking after children instead of real parents doing it.
 - as for reasons "in rural areas".

Infant feeding practices:

Again this varies from race to race. Generally, during the first 4 months of life -- breast feeding is the main method of feeding (rural areas) or breast feeding alternating with bottle feeding (town areas). Prolonged breast feeding is usual in rural areas. It is a fact as well that some women would express the "Colostrum" first from the breast, before breast feeding the child.

Introduction of supplement feeding, again varies from race to race, but it would be true to say as well that; the more mothers are near or accessible to health centres, the more they would start supplement feeding early. (3 - 4 months.)

Supplement feeding would vary from race to race but would be in the form as follows:- (given at different age groups).

- fruit juices (NYAL drinks, coconut & pawpaw juices.)
- Green coconut, pawpaw, rice-water, water of boiled fish, meat etc.
- Custards
- Mashed: fish, cabbage, Kumara, tapioca, rice, meat etc.
- Heinz bottled foods (from shops)

Solid food is generally given from 8 - 10 months onwards.

When supplement feeding is introduced, breast feeding usually is continued. (not the case in some!)

A few incidents have been reported in rural areas, where solid foods have been given to 3 - 4 months old babies! This is purely carelessness and a true display of feeding ignorance.

In Melanesians (mainly), it is quite usual as well to put the child on the breast without supplement feeding given until, the child is well over 1 yr.

In Micronesians especially - prolonged breast feeding after one year is embarrassing for the mother!, as it was taken that, it should have been stopped at about 10 months. Associated beliefs were that, prolonged breast feeding would discourage the child from being interested in taking supplement/solid foods!

Bottle feeding is also used, especially in town areas. The message on banning the use of the bottle is well preached in all MCH clinics in the Country.

Maternal Nutrition:

During pregnancy, good nutrition to mothers is a general rule for most, but in some cultures & races e.g. Micronesians - there is a wide restriction to certain types of foods during pregnancy as they would be associated to some superstitions concerning the development of the foetus in utero e.g. Eating Crabs in pregnancy would give rise to a child having 6 toes on either or both feet! etc. Despite this enhancing factor, diet eaten during pregnancy is a reflection of the "normal" diet in any family.

After delivery, most women would be encouraged by their families to eat as much as they can, as "juicy" breasts are associated with eating much! Types of food like: fish, meat, cabbage and other green vegetables are the main food recommended for such mothers.

Another superstition in this area (especially in Micronesian) is that when the weaning child is having fever, then the mother, should refrain from eating meat & fish - as they were believed to make the fever worse!

Maternal and Infant Nutrition Policy:

We have no such policy in the Solomon Islands what happens is that, the nurses are trained in Nursing Schools the basis of MCH and MIN, so that when they go out to work in the periphery, they could cater for the basic needs of such programmes, in cooperation with the medical officers help.

In urban areas such as Honiara, Gizo etc - more specialised nursing teams have been formed to cater for this work. However, it is sad to say that only a small emphasis is paid to this respect.

Conclusion:

Because of the non-existent policy in this regard, we could not provide statistics on it to support any discussion arising.

Mrs. Luilamo and I would be looking forward to bringing back with us any help this Seminar would offer on this MCH and MIN programmes.

REGIONAL MATERNAL AND INFANT NUTRITION SEMINAR
Foundation for the Peoples of the South Pacific

Country

In order to assist the resource staff to address your country's needs during this seminar, we would greatly appreciate your answers to the following questions. Please return at registration Monday, May 11, 1981. Thank you.

1. In my country, babies are born mainly at home _____, hospital_____. Data not available _____.
2. Is it common practice when a mother goes to the hospital for delivery that she is told to bring a baby bottle? Yes_____ No_____
3. Usually after delivery, the baby receives the first feeding after _____ hours, _____ days.
4. Is it common knowledge amongst health workers that colostrum provides babies with extra protection from infection? Yes_____ No_____
5. Is breastfeeding withheld during the first three days due to cultural beliefs? Yes_____ No_____
6. Is it generally accepted in your country that breastfeeding of babies is,
a) good for the mother, b) bad for her, c) does nothing for her. Choose one.
7. Is breastfeeding in public an acceptable practice? Yes_____ No_____
8. How active are the promoters of formula and bovine milk as an equal substitute for mother's milk in your country?
Very active_____ Active_____ Little activity_____ No promotion_____
9. a) What is the average age babies are weaned from the breast?
_____ Years _____ Months
b) If babies are simultaneously breast and formula fed, how long does this occur? _____ Years _____ Months
c) What is the average age of weaning from breast and/or formula?
_____ Years _____ Months

APPENDIX: IV

COUNTRY ACTION PROGRAMS

FOR IMPROVED MATERNAL AND INFANT NUTRITION

COUNTRY - FIJI

PROPOSED ACTION PROGRAM FOR IMPROVED MATERNAL AND INFANT NUTRITION.

PRIORITIES

Formulation of Policies (National)

"Formation of 'Food and Nutrition' policy to control and monitor the production and importation of commercial foods.

Recommendations

BASE LINE SURVEY TO BE CONDUCTED:-

- a) To determine the extent of bottle feeding as against breast feeding in urban and rural areas.
- b) To determine the main underlying causes in the change from breast feeding to bottle feeding.
- c) Radio: The need to gather data on working RADIO identifying what programmes they listen to when and what during the day. Also, how it is presented.

Promotional Program

Immediate Target-

- a) The need to educate and motivate educators and mothers on scientific basis of breast feeding management.
- b) The use of other voluntary agencies in the community for promoting breast feeding.
- c) Promotion of breast feeding from birth in all hospitals in Fiji.
- d) Banning of bottle feeding in all public hospitals.

USE OF MASS MEDIA

- a) RADIO SPOTS :- to support and cover the ongoing promotional programme
Viz:
 - i) The need to educate and motivate educators and mothers on scientific basis of breast feeding.
 - ii) The use of other voluntary agencies in the community for promoting breast feeding.
 - iii) Promotion of breast feeding from birth in all hospitals in Fiji;
 - iv) To discourage bottle feeding.
 - v) To promote "WEANING FOODS" based on locally available resources.

BEST AVAILABLE DOCUMENT

Legislation

- b) i) Introduction of appropriate legislation to control or ban commercial advertising of infant formula.
- ii) To ban the free distribution of commercial free samples.
- iii) To ban the sale of bottles and teats without prescription.
- iv) Appropriate legislation for working mother to be introduced to be released by employers to breast feed their babies without loss of remuneration.
- v) Adoption of International Infant Feeding Code.

WEANING

This is the period when solids should be introduced.

- i) Promotion of appropriate 'RECIPES' on weaning foods based on local FOODS including involvement of mothers and task analysis.
- ii) Discourage the use of commerc WEANING FOODS by training and motivation of health workers at all levels.
- iii) Use of MASS MEDIA to promote WEANING FOODS on locally available resources.

MATERNAL NUTRITION:

a) Ante natal Period

- 1) Educate mothers to practice correct and regular eating habits.
- 2) Educate the mothers on the importance of balanced diet before, during and after confinement.
- 3) Special attention to be given in the education of vegetarian mothers to combat Anaemia in pregnancy.
- 4) Educate vegetarian mothers to eat the various nutritious vegetables and foods e.g. Pulses.
- 5) Educate mothers to avoid over eating which gives rise to OBESITY.
- 6) Educate mothers to drink extra milk and eat nutritious foods during lactation.
- 7) Educate mothers to reduce consumption of LIQUOR, SMOKING, CAFFEINE and Unnecessary DRUGS.
- 8) MASS MEDIA.

Nurse Training Curriculum

- 1) Appropriate measures should be taken to ensure that MATERNAL AND INFANT NUTRITION are introduced into the basic and post basic curriculum;
- 2) Training curriculum of Para Medics and other multi-purpose health workers should also contain MATERNAL AND INFANT NUTRITION.
- 3) Training curriculum at basic and post basic levels should be regularly reviewed to ensure that it includes current practices in maternal and infant nutrition.

COLLECTION OF BASIC DATA

Consolidated reports based on Reports on Breast and Infant Feeding from our Health personnel in the Field.

Proposals

- 1) The National Food and Nutrition Committee to work towards the creation of a STATUTORY BODY which should have Executive Authority in the formulation and implementation of NATIONAL NUTRITION POLICIES AND LEGISLATION.
- 2) That National Food and Nutrition Committee to carry out analysis of all NEW COMMERCIAL FOODS also local ones and advertise consumers of their Nutritional Values.
- 3) The National Food and Nutrition Committee to be responsible for setting out standards for all commercial formulas.
- 4) The Fiji delegates recognise that 'NUTRITIONAL PROBLEMS' in the South Pacific are the MAJOR underlying causes of some common health problems in the region and recommend that CLOSE REGIONAL COLLABORATION ON NUTRITIONAL SERVICES BE ESTABLISHED.

Submitted by: Fiji Participants

FIJI

Dr. V. Mataitoga

Mrs. K.T. Naqasima

Fiji Observers-

Mrs B. Mavea

Mrs S. L. Makutu

Mrs. S. Menon.

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(F)

COUNTRY: KIRIBATI

TENTATIVE ACTION PROGRAMME FOR IMPROVED MATERNAL AND INFANT NUTRITION.

PRIORITIES

1. IMPROVED ENROLMENT (AND) OF PREGNANT MOTHERS

- a) Active involvement of village MCH aides
- b) Recognition and standard recording of TEA's practices.

2. COLLECTION OF BASIC DATA

- (a) Mode of infant feeding
 - i duration of breast feeding (survey)
 - ii Age when supplementary feeding starts (survey)
 - iii Number of working radios.
 - iv which programme they listen to?
 - v when they listen
 - vi who listen
- (b) Birth weight (routine)
- (c) Baby weight chart (routine)
- (d) Maternal nutrition
 - i weight and/or arm circumference chart (to be introduced)

3. MATERNAL NUTRITION

- (a) Nurses training curriculum
- (b) Advice on correct type of food from antenatal care
- (c) Advice on the available method of contraception
- (d) Early recognition of maternal dietary deficiency from chart=

4. INFANT NUTRITION

- (a) Strengthening of current Breast Feeding practices.
- (b) Teaching of mothers the type of suitable supplementary feeds and when to introduce them (immediate PNC)

5. SPECIAL COUNSELLING FOR IDENTIFIED PROBLEM CASES

Home visiting for:

- (a) Preparation of supplementary feeds
- (b) Involving the family (husband) in supporting the nutrition of mothers and infants.

8. IMPROVEMENT OF PERSONAL AND HOME HYGIENE

- (a) General education of mothers on care of breast before breast feeding
- (b) General education of mothers on care of instruments used for the preparation of supplementary feeds.
- (c) Improvement of water supply for the family
- (d) Improvement of sanitary facilities for the family.

INPUTS

PRIORITIES

- No 1.
 - supply of basic equipments for 150 MCH aid post
 - Training of IBAs in filling records, sterile technique of delivery and preparing weaning foods.
 - Promotion of proper ante natal care.
- No 2.
 - Devising of a suitable format for a survey on the mode of infant feeding.
 - Supply of maternal weight/arm circumference charts.
 - Training for the interpretation of above maternal chart.
- No 3.
 - Review of the nurses training curriculum
 - Suitable handouts for mothers nutrition (ANC)
 - suitable handouts for F.P. methods (ANC)
- No 4.
 - Preparation of effective mass media propoganda on superiority of breast feeding.
 - Suitable handout on available formulae for supplementary feeding.
- No 5.
 - Refresher training of Public health nurses and community workers on the identification of problem cases and approaches of home visiting.
- No 6.
 - Suitable mass media education on the relation of diarrhoea and unhygienic food preparation.
 - Promotion of suitable water and sanitation schemes for households (National projects)

(F)

ACTION PLAN FOR MATERNAL AND INFANT NUTRITION IN VANUATU

DR. Donald K. Bowden

1. Continue active and vigorous promotion of Breast feeding and discourage introduction of substitute feeds.
 - health staff at all levels to participate.
 - update and revise nurse training when it is necessary.
 - continue education of mothers by nursing staff at ante-natal clinics, in maternity units and at post natal MCH clinics.
 - Continue education of whole population by health staff, womens' interest groups, church groups, radio, posters, books, Redcross, Family Planning Association, Service Organisations.
2. Improve and promote infant feeding.
use of some staff/methods as 1 above.
3. Improve and promote maternal nutrition.
 - use of some staff/methods as 1 above.
4. Improve data collection nationally.
 - statistic forms to be completed monthly by all health units. These have been revised recently to include data on birth rates, birth weights, breast feeding.
 - this data will be analysed and compiled centrally and in the near future computerised when the data will be available to health planners, research workers.
 - Trainee and trained health staff will need to be taught the correct use of these new forms.
 - national nutrition survey to be conducted at some time during the next 3 years.
5. Obtain the services in September 1981 of an FSP/Aid funded nutrition volunteer to co-ordinate and develop the Vanuatu National Nutritional Program.

(F)
COUNTRY: TUVALU

TENTATIVE ACTION PLAN PROGRAMME FOR IMPROVED AND INFANT NUTRITION.

PRIORITIES

1. BREASTFEEDING

- a) One hundred percent of Tuvaluan mothers breastfeed their babies when leaving hospital. In order for the women to continue this practice, it is recommended that the Health Department make use of radio to teach the women the advantages of breastfeeding and the disadvantages of bottle feeding.
- b) It is also recommended that the government be made aware of and to observe the international code of marketing of breast milk substitutes.

2. WEANING

Our main problem in weaning is the provision of a variety of weaning foods. To solve this problem, it is recommended to motivate and to educate the women on how to grow weaning foods. The govt. through the agricultural department is to ensure that there is an adequate supply of seeds and fertilizers. In order for the home gardens to be maintained the womens' committee is to inspect the garden regularly. These service of a nutritionist is required to advise on the preparation of a variety of diets.

3. MATERNAL NUTRITION

As far as maternal ^{nutrition} is concerned, it is recommended that the health department through radio broadcasts educate the mothers on the quality and types of food to be eaten. The services of a nutritionist is also required to determine the quality of basic foods. Through MCH clinics and ante natal clinics, the women are also advised on the types of food which are good for their health and the health of their children.

4. DATA COLLECTION

Recommendations:- (a) Inservice training for nurses to prepare them to carry out a National Nutritional Survey.
(b) The need to create a senior post in the MCH sector to be posted to headquarters to co-ordinate the data collected from all health stations.

5. MATERNAL AND CHILD ANAEMIA

It is recommended that the Health Department carry out a survey to determine the incidence of intestinal parasites in children.

6. REQUIREMENTS:

In order for the programme on improved maternal and child nutrition to be materialized the following requirements are necessary for its successful implementation.

1. Films on maternal and child nutrition, and water and Sanitation.
2. Motor cycles for the nurses to use in their village clinics.
3. Baby scales
4. Funds for the printing of cards.

(9)

COOK ISLANDS

ACTION PROGRAM FOR IMPROVED MATERNAL AND INFANT NUTRITION.

PRIORITIES

1. Improved Breast Feeding Practices

- i) By promoting and protecting our existing breast feeding habits in the Cook Islands.
- ii) In ante-natal care, at birth, in KCH clinics and home visits.
- iii) Encourage a well balanced diet for the mother and her family.

2. IMPROVED WEANING PRACTICES

- i) Cook Islands *Recipe* Book
- ii) Dietitian and Public Health nurses giving support, encouragement to mothers and families in utilizing our locally available foods
- iii) Discourage the use of commercial "weaning" foods through health talks in clinics other gatherings eg C.W.F. and during home visits.

3. TRAINING

- i) Breastfeeding and weaning foods in nursing Curriculum
- ii) In-service-training of health personnel in breast-feeding and infant nutrition

4. COLLECTING BASIC DATA.

A) Infant

- i) Weight record
- ii) When "weaned"

B) Ante-Natal Record

- i) by adopting a weight chart similar to infant growth chart
- ii) include breastfeeding data in the public health nurses monthly report
- iii) request for resource person from the "Foundation for the Peoples of the South Pacific" to help compile and analyse these existing data

5. MASS MEDIA

- i) Approach sponsors for free advertising in promoting breast feeding and infant nutrition on radio and repeated at intervals
- ii) Logo "Good Nutrition for All" in the local newspaper

6. HEALTH EDUCATION

- i) in promoting breastfeeding, weaning, maternal and child nutrition to the public at large
- ii) Develop nutrition curriculum on breast feeding, and H.C.H. nutrition with Education Department.
- iii) Utilize all channels available to Disseminate information.
- iv) Request informations from:-

L.L.L.
I.N.C.S.
Susu Mama

7. ERASE ALL GLAXO LOGO ON CALENDERS AND POSTERS hanging in our offices NCH clinics and hospitals.

8. MATERNITY BENEFITS:

Push maternity benefits or compromise: eg wrk schedule to suit breastfeeding mothers if living near work

9. RECOMMEND IMPLEMENTATION OF THE "W.H.O CODE" DRAFT INTERNATIONAL CODE OF MARKETING OF BREAST-MILK SUBSTITUTES

RECOMMENDATION

Request the assistance of a resource person from the "Foundation For The Peoples Of The South Pacific, Inc", to assist a national nutrition survey and to co-ordinate and develop a Cook Island National Nutritional Program in 1988

(F)

TCHGA ACTION PLAN

1. Re-enforce present practices of promoting breast feeding in Hospitals Maternity wards, Maternal and Child Health clinics, Mass Media.
2. Identify nutritional problems and nutritional related health problems by survey with ?? FSP Aid.
3. After getting facts and figures from the Survey - convince Top govt. officials of the need to:

Establish a national nutrition committee comprise of Education, Health Agriculture Departments and representative of N.G.O 's

4. EDUCATION

1. Training of a health officer (nutrition)
2. Curriculum of nursing school revise with emphasis on nutrition.
4. In - Service Education of Health Staff.
5. Mass Media.

(7)

SOLOMON ISLANDS

TENTATIVE ACTION PROGRAMME FOR IMPROVED MATERNAL AND INFANT NUTRITION

(Dr. E. Tokiera)
(Sr. M. Luilana)

Program 1 Breast Feeding Practices

- Aim: 1. To promote breast feeding (B/F) to all mothers in both rural and urban areas.
 2. To discourage the use of bottle feeding.

PRELIMINARY WORK TO BE DONE

- Make a survey on
- No of transistor radios in villages
 - Radio reception from all the islands
 - Get approval of Broadcasting Co-operation for time period and free use.
 - Contact peripheral staff about it.
 - Possibility of recruiting special Staff to Co-ordinate and execute the work.

Make introductory broadcasts (repeated ones) on significance and importance of breast milk and B/F

- Adverts on milk formulas on radio.

METHODOLOGY: 2 separate programmes, to be developed for rural and Urban populations, with following methods to be applied.

- | <u>URBAN</u> | <u>RURAL</u> |
|---|--------------|
| 1) TARGET POPULATION: Town and suburbs | Villages |
| 2) POSTERS: Relevant pictures bearing small message in writing (English or Pidgen language), to be posted in shops, Clinics, Markets etc, | Do |
| 3) RADIO: Relevant short statement Drama to be repeated every now and again for the course of 3-4 weeks, before changing to another message | Do |
| 4) TALKS: During MCH & ANC Clinics | Do |
| 5) HELP through the women groups (to be taught first on what to do) | Do |
| 6) CINEMA: Adverts. | -- |

BEST AVAILABLE DOCUMENT

- 7) INTRODUCING it in Senior Primary
Secondary and Technical
Schools.
- 8) AS a component of Nurses curriculum in
Schools.

Do

FEEDBACK AND EVALUATION:

1. Mothers to be told to write to Co-ordinators for problems or clarifications of Posters, messages etc.
2. Public enquiry (at need) on knowledge to the subject.
3. Getting reports from periphery (clinics, social groups, etc. on the practice of B/F. after six, nine, twelve month periods.

ASSOCIATED THOUGHTS:

- a) To legislate the import of breast milk substitutes.
- b) Legislation to allow mothers to have an adequate maternity leave to cater for early nursing and B/F of baby.
- c) Also legislation to allow mothers to have adequate break times from work each day for B/F child.

PROGRAM 2: Promotion of the use of weaning food.(Super Mix)

- Aims: 1) To get mothers to know how to make this SUPER MIX from local food.
- 2) To discourage the use of Heinz feeds etc.
 - 3) To get mothers to give correct types of weaning foods at correct age periods.

PRELIMINARY WORK:

To understand feeding methods, beliefs, food taboos etc of various races, in target population.

Conduct introductory radio or "talking" sessions on - the importance of supplementary feeding. The importance of supplementary feeding in connection with B/F.

- the availability of local food for the preparation of the "SUPER MIX"

- Future radio programmes on the subject.

FEEDBACK AND EVALUATION: As for program 1

PROGRAM 3 Maternal Nutrition

Aim.: To make mothers aware of the importance of nutrition during pregnancy, after delivery and during breast feeding period.

PRELIMINARY WORK

1. To understand food tastes of target population.
2. Feeding habits of racial ~~groups~~ groups.

METHODOLOGY: As for program 1

FEEDBACK AND EVALUATION: As for program 1

PROGRAM 4 Baseline Data on Maternal and Infant Nutrition

AIM: 1) Establish baseline Data on MN.

PRELIMINARY WORK

- a) Check that each centre, has got the necessary facilities for the survey.
- b) Organise staff training on the methodology to be adopted, making sure that they really understand what is required of them.
- c) Introductory messages to the general public about the survey.
- d) Choosing a weight standard chart to be used.
- e) Drawing up a format for the Survey, which should have particulars of infant and maternal indices.
- f) Who to do it? (FSP to deal with it, if so requested)

METHODOLOGY:

1. Training of Staff (clinic staff) together at one place or individuals during tours, on methodology, especially filling up the format.
2. Filled formats to be sent back to the Co-ordinator for recording and processing.
3. The survey should be done on a small scale first, involving chosen urban and rural foci in the country and then gradually expanding to other areas.

ASSISTANCE

We may need the help/service of an outsider for this survey. Of course, this has to be funded by FSP or others.
(See under "Recommendations")

ULTIMATE AIMS:

- a) To prevent statistical figures on maln problems to govt. so that nutritional problems will be recognised and dealt with appropriately on a national scale.
- b) To possess recent base line data for planning etc.

OVERALL COMMENTS:

RECOMMENDATIONS:

1. TRAINING
 1. OVERSEAS NUTRITIONIST: There is a need to train local Nutritionists for Public Service Posts.
 2. PROGRAMMES ON NUTRITION/DIETITIAN to be run locally.
 3. UP TO DATE BASIC HEALTH PROGRAMMES in this particular area to be integrated into all local training programmes.
 2. HEALTH EDUCATION SERVICES - to act as the resource centre. Utilize effectively methods of mass Media available.
- up to date information to be channelled through this section or MCH section.
 3. LEGISLATION Formulation of necessary legislation to control the import and sale of bottles, teats, dummies, and milk formulators.
 4. ASSISTANCE Would be needed in the form of 1) Technical Guidance, Support and evaluation.
 2. funds (es. recurrent)
 3. Basic equipment - Scales for infants, Bathroom Scales and Adult scales.
 4. Canvas/OLA for rural work
 5. Radios (transistor) Radio Cassettes
 6. Transport - Toyota Land Cruisers
 7. Cine and Slide projectors.
-

PROPOSED ACTION PROGRAM FOR IMPROVED MATERNAL AND INFANT NUTRITION PRIORITIES IN PAPUA NEW GUINEA.

1. MATERNAL NUTRITION

- more data is required from various parts of PNG, reasons for poor maternal nutrition.

(a) Household Level - head of household employed/not employed

- source of income
- number of people living in the house including own children.
- types of food eaten in the household
- budgeting
- food taboos, during pregnancy and lactation etc
- purchasing of foods Vs non-food items.

(b) Community Level

- food prices at - local markets
- local stores

(c) National Level

- food prices control
- Agricultural policies on subsistence food crops
- Policy on food imports.

This information has been collected in the 1980 National Census it is just a matter of extracting the data from the computer print outs.

(d) Find ways to improve the MCH coverages throughout the country. At present the MCH coverage varies, from 4% to 75% between provinces.

(e) Improve the nutrition surveillance system within the MCH reporting system.

2. REQUIRE MORE ACCURATE NUTRITION DATA

- a) A National Nutrition survey is planned for 1982.
- b) To involve the statisticians to draw up the sample at different altitudinal zones.
- c) Propose to cover about 10% of the under five year old population (about 60,000 children)
- d) Data to be collected on weight for age, age for height and height for age.
- e) Each province is to be divided into a number of zones and it is intended to include 5 zones in each province to which the sample will be drawn from.
- f) to involve agricultural extension officers, school teachers nutrition workers and perhaps some MCH staff and students of the high schools.

g) It is hoped that this survey will give us proper picture of problem areas requiring intervention programs, strengthening or starting new programs.

3. IMPROVE BREAST FEEDING PRACTICES

- a) Mass media (radio stations) must be utilised more fully, especially the air time allocated for health programs.
- b) slot in short one minute breast feeding messages between other programs at least four times daily for two weeks running.
- c) Look at our present legislation on bottle feeding, to include some sub-sections to include baby foods and milk formulae advertising and so on.
- d) Continue our health education campaign to promote breast feeding through the MCH clinics, women groups, church women groups, village groups or one to one basis.

4. TRAINING OF NUTRITION WORKERS.

- a) more local people to be trained in Nutrition work, perhaps double the intake each year to the college of Allied Health Sciences Nutrition course in Port Moresby.
- b) Send two Dietetic students to train in Fiji each year until the country needs are met.
- c) Nutrition Component to be included in the Nursing schools, teachers colleges, agricultural colleges, medical students and the home economic courses.
Promotion of breast feeding should be included in their curriculum.

5. USE OF NUTRITION REHABILITATION UNITS (NRU)

- a) training place for nurses, medical students, medical assistants mothers/guardians of sick children in Nutrition.
- b) for cooking demonstrations
- c) for mothers/guardians of sick children to prepare food for their own children, in hygienic manner and feed them. The local foods should be used so that mothers will follow what they learn at the NRU when discharged from the unit.
- d) How effective are the NRU's as one of the means of Nutrition Intervention program?
- e) Is the NRU necessary? Need to be evaluated.

BACKYARD GARDENING

A) should continue to encourage this if the land is available in their backyard. The food grown in the backyard gardens must be eaten by the family, not to sell it in the market for cash- because the money may be used for something else other than food. School gardens and gardens at NRU for demonstrations.

7. ASSISTANCE IS REQUIRED IN THESE TWO AREAS

- a) to purchase a 4 wheel Drive Toyota vehicle for the Nutrition Rehabilitation unit (NRO) at Port Moresby General Hospital for the NRO staff to follow malnourished children and their mothers discharged from the children ward and the NRO living around Port Moresby area, where accessible by roads.
- b) To purchase 6 scales for use at the paediatric clinics and perhaps one for NRO at Port Moresby General Hospital

(Details and address for the scales will be provided if approved)

APPENDIX: V

HOME ECONOMICS COURSE,

SPC COMMUNITY EDUCATION TRAINING CENTRE,

SUVA, FIJI

SOUTH PACIFIC COMMISSION
COMMUNITY EDUCATION TRAINING CENTRE

OBJECTIVES OF HOME ECONOMICS COURSE

MAIN OBJECTIVE: To train people in methods of Community Education so that by working together they may be able to achieve better living conditions for themselves, their families and their communities.

SPECIFIC OBJECTIVES:

1. How to improve nutrition and health through meal planning based on local foods, family size, and available income.
2. How to improve nutrition and health by the construction of more home gardens and by better use of the foods they produce.
3. How to control disease and enhance family and community health by improving sanitation methods and by recognizing the relationship between better sanitation and better health.
4. How to make activities in the home safer and more convenient by the use of low cost home improvements in kitchens and sleeping and living areas.
5. How to prevent disease by proper food handling and personal cleanliness.
6. How to make the home and the community a safer place by use of safety precautions and proper first aid techniques.
7. How to improve family clothing supplied by a knowledge of sewing and an understanding of the relationship of family clothing needs to resources of money, equipment and time.
8. How to improve use of family resources by realistic planning of meals, clothing, housing, health and education based on the needs of the family, the costs of the goods or services, and the money and skills available within the family.
9. How to increase family income by using local designs to make saleable handicrafts.
10. How to spread improvements in family and community living by teaching practical subject matter geared to specific audience.

CONTENT OF THE HOME ECONOMICS COURSE

- A. Community Development
- (1) Understanding the community and developing the skills to assess the needs of homes and families as a basis for community work through surveys, case studies, questionnaires, etc.
 - (2) Developing of proficiency in programme planning and implementation to meet expressed needs and interest.
 - (3) Acquisition of skills in working with groups, such as creation of awareness, communication, motivation, decision making, leadership development and others.

- (4) Provisions of opportunities to practice and improve skills, approaches, techniques in presentation before groups.
- (5) Understanding the role of women in national development.

B. Family Food and Nutrition

- (1) Helping students understand the importance of balanced family meals and their relationship to health and body development.
- (2) Understanding the contribution of vegetables, fruits and animal raising to family nutrition.
- (3) Providing knowledge of the importance of sanitation in food handling.
- (4) Feeding the young child with more emphasis on breast-feeding.
- (5) Consumer's viewpoint in food marketing including economic and nutritional values of imported and locally produced foods.
- (6) Ensuring the safety of food through proper storage.
- (7) Encouraging the identification and promoting greater use of local vegetables and fruits.
- (8) Encouraging traditional methods of food preservation.
- (9) Preparation and cooking methodology to retain the maximum food value.
- (10) Understanding the need for food preservation in time of surplus and stress and developing appropriate methods of preservation.

C. Housing and Household Equipment

- (1) Understanding the use and maintenance of available house equipment. Equipment suitable for village/rural homes is emphasized but more advanced equipment is also included.
- (2) Developing and understanding of simple house and kitchen plans in relation to function, cost, family size, sanitation and health.

D. Home Management

- (1) Identification of family resources income, skills, time assets, etc.
- (2) Management of time, energy and money through proper planning and allocation of resources in meeting family and individual needs.
- (3) Simple accounting procedures which would help in planning money and time allocation.
- (4) Finding and developing possible ways of utilizing available resources and 'throw-aways' for income generating purposes (crafts and cottage industries) and money saving (food production and preservation, soap production, cleaning agents, use of material scraps, conversion of old garments).

F. Family Relationships and Family Planning

- (1) Understanding the effects of social, political and economic changes in the region and their impact on family life.
- (2) Recognizing the implication of family size on housing, food, money and health.
- (3) Recognizing and appreciating the value of culture and traditions affecting family life in a society.
- (4) Understanding educational needs of family members at various stages of development.

F. Maternal and Child Care

- (1) Special nutritional and health needs of women during puberty, pregnancy and lactation.
- (2) Prepare home for baby.
- (3) What children need for healthy growth:
 - How a baby grows;
 - Nutritional needs in various stages of growth;
 - Protection from infection;
 - Accident prevention;
 - Sleeping and resting.
- (4) Parent/Child Relationship.

G. Clothing and Textiles

- (1) Recognition of clothing needs at various stages in family development and wardrobe planning.
- (2) Pattern drafting and alterations.
- (3) Study of textiles and selection of fabrics.
- (4) Development of clothing construction skills as a means of providing adequate clothing for family members at low cost.
- (5) Care and maintenance of clothing (patching, etc.).
- (6) Laundry (both personal and family).
- (7) Care and maintenance of sewing machines.

H. Family Sanitation and Health Care

- (1) The effects of the environment and the living conditions on the health of the family.
- (2) Considerations in providing for Home and Community Sanitation.
 - Housing (size, ventilation, light, site, ceiling, etc.);
 - Kitchen (construction, size, lighting, drainage, floor, shelves, fire place);
 - Excreta disposal;
Diseases transmitted by flies;
Reasons for adequate disposal;

Refuse disposal.

Methods : burning
burying
underwater
composting
land fill

- Water Supplies.

- .. Piped
- .. Well
- .. Rain Catchment
- .. Rivers
- .. Pests and Rodent Control

- (3) The most common diseases of the Pacific regions and methods of prevention.
- (4) Health Education techniques.
- (5) Dental Health.
- (6) First Aid.
- (7) Home Nursing.

I. Skills in local Handicrafts

- (1) Understanding the importance of good quality handicrafts and an exchange of ideas between students.
- (2) Developing skills in textile printing with particular emphasis on local design.

J. Education Techniques

- (1) Making and using visual aids.
- (2) Display and exhibits.
- (3) Exploring the use of radio, tape recorders, newspapers, newsletters and publications as a means of serving families.
- (4) Use of demonstrations techniques.
- (5) Result demonstration.
- (6) Practical in public speaking.
- (7) Pilot village scheme.
- (8) Field study visit.

K. Consumers Education

- (1) Assistance in understanding the rights of the consumer.
- (2) Understanding the commercial tactics in advertising and promoting sales.

- (3) Rational decision making on consumer items.
- (4) Comparative buying, credit, budget accounts, lay-bys, hire-purchase.
- (5) Understanding banking facilities, insurance schemes, loans interest rates, mortgages.
- (6) Assisting the consumer in identifying and making use of available services in the community.
- (7) Creating the consumers awareness of their responsibilities with respect to their environment.

Air/Water Soil pollution/Noise pollution.

L. Income Generating Activities

- (1) Understanding the importance of keeping records.
 - (2) Understanding the principles in business procedures.
 - (3) Training in standards and marketing processes.
 - (4) Assisting in identifying income generating activities.
-

APPENDIX: VI DECLINING BREAST FEEDING IN
SUVA, FIJI (FIJI FOOD AND
NUTRITION NEWSLETTER)

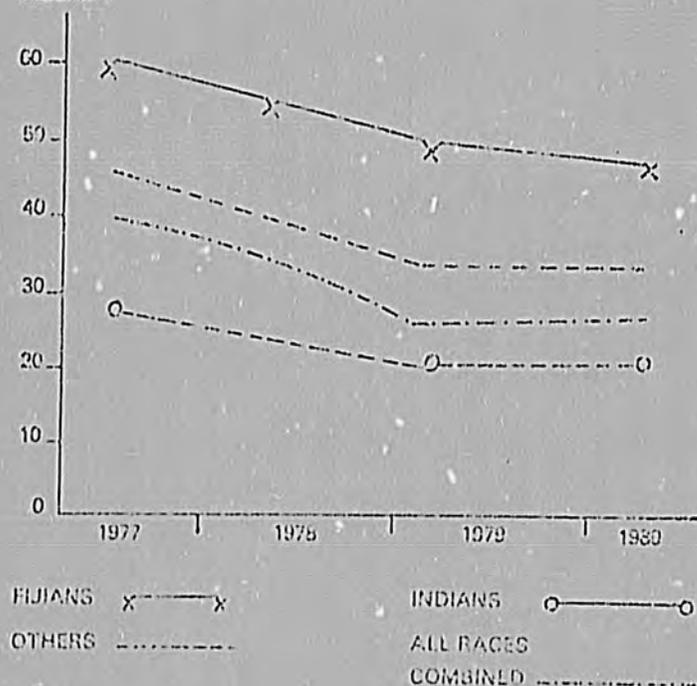


BREAST FEEDING DECLINES IN SUVA

Since 1977 the Ministry of Health's central clinic in Suva has been keeping records on how mothers feed their babies. These figures have been analysed and discussed by Julian Lambert and Virginia Yee of the National Food & Nutrition Development Programme in a recent article in the Fiji Medical Journal. The graph shows that between 1977 and 1980 the percentage of wholly breast fed infant (aged 0 - 13 months) fell from 44% to 31%. This reduction was seen in all races.

THE PERCENTAGE OF WHOLLY BREAST FED INFANTS BY RACE, FROM 1977 TO 1980

FIGURE 1



Fijian mothers remained the best breast feeders with 69% of Fijian infants up to 3 months of age being wholly breast fed in 1980. However, only 64% of Indian infants in the same age group were wholly breast fed.

Why is the Ministry of Health and the National Food and Nutrition Committee worried about this fall in breast feeding? Breast feeding is best for babies as human milk is quite different in composition from cows' milk. Bottle fed babies get diarrhoea much more often than breast fed babies. This is due to infection from water that has not been boiled, or bottles which have not been cleaned properly. Breast milk, as well as being absolutely clean, contains substances called antibodies which protect babies against disease. These antibodies are not found in infant formula.

Breast milk is also always the right strength, while it is easy to make a mistake when making up formula. If infant formula is over diluted then the baby will not get enough milk and if this happens for several weeks the baby may become malnourished. This overdilution can happen because a mother does not understand the instructions on the tin, or because she cannot afford to buy enough formula to feed her child properly. If all children in Fiji under 1 year of age were bottle fed then Fiji would have to import more than \$2 million of formula each year.

Breast feeding each child for 2 or 3 years (as was done by most Fijian and Indian mothers only twenty years ago) is one of nature's ways of ensuring a reasonable gap between the birth of each child, for lactation reduces the chances of becoming pregnant. This is very important in urban areas where health workers often see families with several children born only a short time apart. A breakdown in this tradition of well spaced families is one of the factors that contributes to poverty, overcrowding and increased stress.

The NFNC and the Ministry of Health are planning to step up their campaign to encourage breast feeding to try to reverse this decline in breast feeding. Papua New Guinea has shown that it can be done, since by the introduction of a law restricting the use of feeding bottles and teats and a programme to encourage breast feeding, the percentage of bottle fed babies in Port Moresby was reduced by two thirds. At the same time the number of cases of babies with diarrhoea treated at Port Moresby General Hospital fell by a similar amount.

BEST AVAILABLE DOCUMENT

Training for Cooks

Tourism, the second largest industry in Fiji has until recently relied heavily on expatriate skills for management and catering. Since the establishment of the School of Hotel and Catering Services in 1971 an increasing number of local people are being employed in these jobs. The school offers diploma and certificate courses to train students in the hotel and catering business.

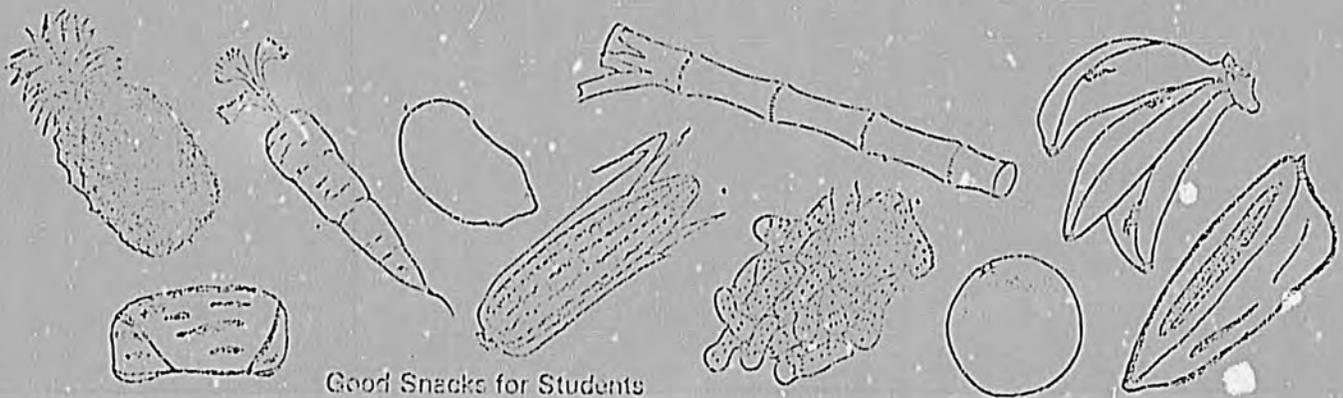
The school is also interested not only in providing training for cooks in hotels, but also to improve the cooking and catering skills of food service workers in the many institutions throughout Fiji. Presently the school is training eleven cooks in the 12 week Trade Commercial Cookery course. The students are from the Navy, Army and one from a large boarding school.

The NFNC strongly supports training of cooks for institutional food services. Proper training in catering will be important to make sure sanitation and food handling regulations are met in the future. (Regulations presently exist for public eating places and are still needed for institutions where students and patients are being fed.)

Student cooks preparing meals for the Tiri Restaurant.

The school has a training restaurant, "The Tiri Restaurant" located at the Government Training Centre, Nasese. The restaurant is set up to provide practical experience for the students. It is open to the public for lunch on Monday, Tuesday, Thursday and Friday. It is open for dinner every Wednesday. The costs of a meal is very reasonable. Bookings should be made in advance by telephone (311 933).

SCHOOL LUNCH AND SNACKS SURVEY IN SUVA



Good Snacks for Students

Following a number of surveys carried out on boarding school meals by the National Food and Nutrition Committee, a survey of school lunches was carried out in the Greater Suva area in September 1970, in order to find out more about the eating habits of day students. A postal questionnaire was sent out to each school in the area, and returns were received from 37 (out of 71) Primary Schools, and 9 (out of 25) Secondary Schools. In addition 2130 students from 6 schools in Suva were interviewed personally by dietetics students from the Fiji School of Medicine.

The results of the survey showed that the great majority of children had breakfast (97%) and lunch (96%) on the day that they were interviewed. While most children had food from both the energy and body building groups, the consumption of fresh fruits and vegetables was low. Most children bought one or more snack foods at school. By far the most popular snack foods, hot peas and peanuts, are both nutritious and good value for money.

The most important source of school lunch was from the children's own homes. However more children bought their lunch from vendors than from school. Both the vendors and the school lunch programmes appeared to be providing nutritious lunches at reasonable cost. There were only a very few cases of children not having enough money to buy lunch and happily the number of children who bought expensive low nutrition snacks was very small.

By comparison with the survey of boarding school meals carried out by the Committee in 1977, it appears that day school children get good lunches. This underlines the need to improve boarding school meals. The most significant improvement that could be made to school lunches is the provision of fresh fruit and fruit juice in season to school children.

A list of recommendations to assist schools in providing adequate school lunches and snacks is printed in the 1981 first term *Education Gazette*.

The first article in this three part series looked at Fiji's growing dependence on food imports. Over the last 6 years Fiji has been importing more and more food. This article will focus on recent trends in local food production. Information for some commodities is not available for 1974 so only the 5 year period 1975 to 1979 will be considered.

A five year period is rather a short time span to show any trend but it should give an idea of whether increased need for food is being met by increased domestic food production or by increased imports. The quantities of selected foods produced locally during the period 1975 to 1979 are shown in Table 1.

TABLE 1: QUANTITIES OF SELECTED DOMESTIC PRODUCTS IN FIJI
1975 - 1979
(TONNES)

COMMODITY	1975	1976	1977	1978	1979
Eggs	883	804	942	1,531	1,549
Pork*	282	325	336	483	640
Goat Meat	244	244	250	303	330
Poultry Meat	NA	1,070	2,266	2,904	3,208
Beef*	2,437	2,154	2,524	2,764	3,616
Fish (Subsistence)	NA	NA	NA	4,095	13,826
Fish (Commercial)	975	1,048	1,238	1,377	1,630
Fish (Industrial)	2,705	4,370	7,267	10,893	7,071
Aquatic Non Fish Products	NA	522	1,491	1,012	837
Milk**	12,022	12,033	12,442	12,800	12,493
Rice (Paddy)	22,961	20,533	17,966	16,015	13,717
Cassava (Tapioca)	32,500	36,475	33,200	193,112	NA
Dalo (Taro)	24,300	24,300	18,340	34,687	NA
Yam (Uvi)	4,250	3,625	5,575	9,036	NA
Potato Sweet (Kumala)	5,900	4,030	2,500	7,075	NA
Passionfruit	681	332	225	323	490
Pineapple	NA	2,200	3,033	5,050	NA
Watermelon	NA	2,750	3,000	4,829	NA
Sugar (1000 Tonnes)	272	256	362	347	473

* Figures are for slaughter houses only, e.g. internal killings for pigs is estimated to be about 40% of the slaughter house figures.

** Subsistence milk production excluded.

CHANGES:

The following changes have taken place:

- There has been a definite increase in the production of eggs, pork and poultry meat. Egg production increased by 75% and pork by 228% in five years while poultry meat production increased by 92% in four years.
- Goat meat production has increased slightly while milk and beef production has remained fairly constant in 1979 although beef production was 45% higher than in 1975 this is not much higher than what was produced in 1974, when production was high.
- Rice production has fallen - in 1979 it was 13.5% below that of 1975.
- The estimates of cassava and dalo show that production remained fairly constant between 1975 to 1977. There was, however, dramatic increase in the estimates for 1978 when a census of agriculture was carried out. (The author is of the opinion that there was an insignificant increase in 1978 over the previous years, but rather that the previous years production were badly underestimated). It is therefore difficult to assess the changes that have taken place in root crop production.

- There was a definite increase in the quantities of fish caught commercially and industrially. Subsistence fishing was poorly estimated in the past, but in 1979 a sample survey was done and this has provided a better estimate of the quantities of fish caught. This may be the reason for the three-fold increase shown in 1979.
- Sugar production has shown a marked increase. However general level of sugar output has not had any significant effect on domestic supply. Since the export earnings from sugar could have a major impact on Fiji's ability to import food, sugar production will be considered in the final article.

In conclusion, it is fair to say that progress has been made in food production in some sectors. There is a great need, however, to increase the range of data collected on domestic food crops and to improve the reliability of the data for others. Only then will it be possible to make a proper assessment of production trends. In 1982 an agricultural census was carried out and the data from this census, when compared with that of 1978, shows that there is a marked decline in the acreage of many of the important food crops. This should clearly be a cause for concern.

FOOD FOR BABIES

The National Nutrition Survey conducted in October, 1980 showed that 15% of children under 5 years old in Fiji are at risk of developing malnutrition. In the past months the National Food and Nutrition Development Programme staff have been working in several areas in Fiji and many people have asked questions about the kinds of foods that are best for babies. Many requests have also been received for information on infant feeding. To help all mothers who are not sure about the best food for their babies our nutritionists have written the following guide.

Mother's milk is Best:

A baby's health and growth depends on the way he is fed. In the first year of life, babies grow very fast. The best food for babies is MOTHER'S MILK. For the first 4 months, babies need mother's milk only. From 4 months other foods should be given because babies need the extra food to help them grow, but mothers should continue to give babies breast milk for as long as possible.

Other foods:

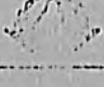
Babies need time to get used to the new foods and tastes, so foods should be given in small amounts in the beginning. These foods should also be very soft. A baby is just learning to swallow and the taste and feel of the food will be very different from milk. Therefore foods should be introduced in small amounts, ½ teaspoon in the beginning and increased as the baby gets used to swallowing and eating the food. It is best to introduce new foods one at a

time. If your baby does not like the new food at the first try, do not give up. Keep trying until your baby learns to like the food. If your baby gets sick or develops a rash after eating a certain food then it is best to leave out this food. Generally, however, most babies can eat all kinds of foods without developing any kind of reaction.

Many foods that families eat can be easily made to be suitable for babies by simply mashing the food well with a fork. Some liquid like soup, gravy or milk should be added to make the food moist. **THERE IS NO NEED TO BUY BOTTLED OR TINNED BABY FOODS.** These foods are very expensive as can be seen in the graphs on the next page. Fresh local foods are much cheaper and have better food value as well. These can be easily prepared for babies — some suggestions can be found on the next page. It is not necessary to add salt to babies' food, in fact too much salt is bad for your baby.

When babies have teeth, they can begin to eat more solid foods. Generally, babies get their first tooth when they are 6 months old. However some babies get teeth earlier, some later. Cut up the food into small pieces and encourage babies to feed themselves. Give him a banana, a piece of corn or roti to chew on. As babies should still be breast fed at this stage, it is best to give food in between feeds. When you decide that it is time to stop breast feeding your baby, do it slowly. That is, cut down the number of feeds your baby has each day, over a period of several weeks.

INFANT AND CHILD FEEDING CALENDAR

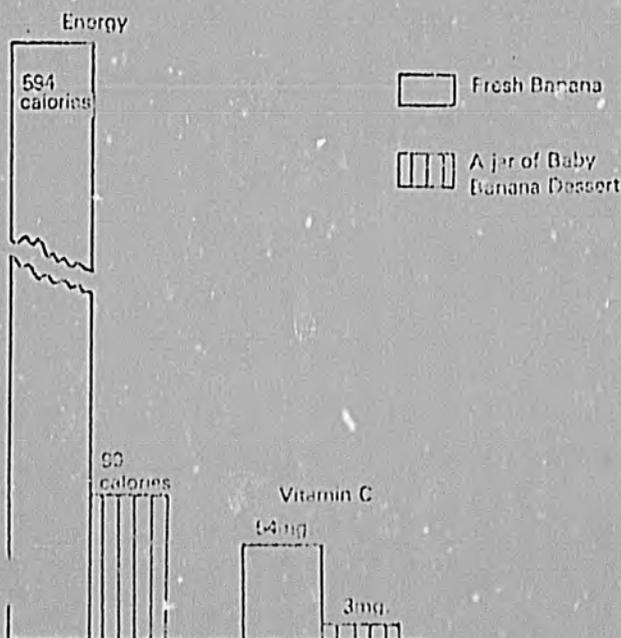
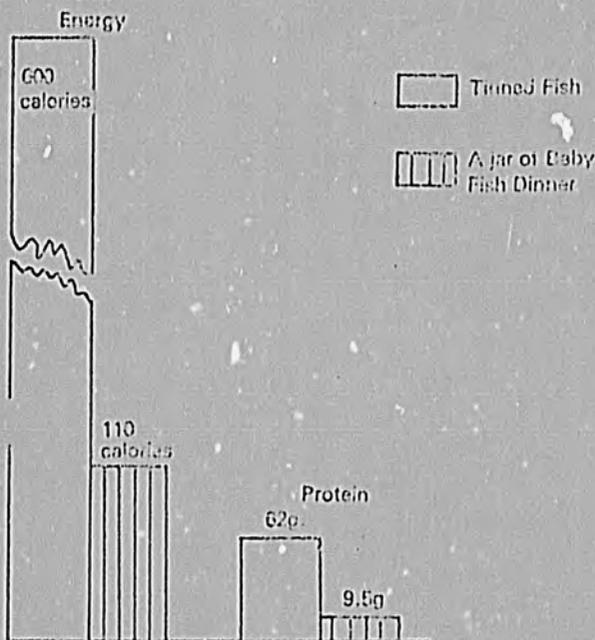
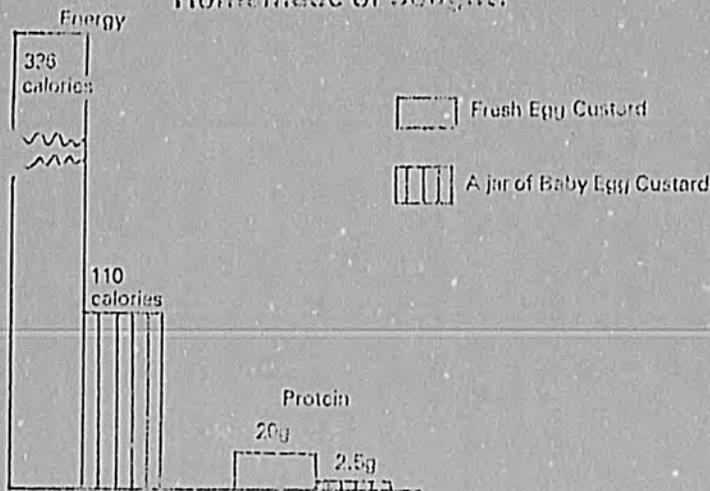
Age of Child	Feeding necessary	Summary		
0 to 3 months	Breast feed			
4 months	Breast feed Start to give soft foods, between milk feeds. (1 tsp to 4 Tbsp daily)			
5 to 9 months	Breast Feed Continue to give soft foods. Increase amounts. (½ to 1 cup daily)			
10 to 12 months	Breast feed Continue to give soft food. Start to give foods from the family meals at 10 months			
1 to 2 years	Breast feed. Feed as rest of family but give extra food in between meals.			
2 to 3 years	Give same food as rest of family and extra food in between meals.			
3 to 5 years	Child can eat as rest of family does.			

COMMUNITY EDUCATION TRAINING CENTRE

SOUTH PACIFIC COMMISSION

	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978
AMERICAN SAMOA	1		1					1					2		
SOLOMON ISLANDS	1	1	2	2	2	1	2	3	3	4	2	1	3	2	
COOK ISLANDS	1	1					1				2	1	2	5	2
FJI	3	5	3	5	4	3	2	13	10	9	6	6	3	5	10
GILBERT & ELLICE IS.	2	1	1	1	1	3	3	2	2	3	3		4		
GILBERT ISLANDS															
SRI LANKA											1			5	2
SAUPEU	1														
NEW CALEDONIA		2			1	1	2	2			1				
NEW ZEALAND	1	1	1	2	2	2	1	2	2	1	2	2	4	4	4
NIUE	1					1		1						1	
PAPUA NEW GUINEA	3	4	4	2	4	3	5	3	3	6	7	6	4	3	3
TONGA	1	2	2		1		2	2	3	5	5	5	4	2	1
TUVALU	2	1	2	5	2		1	2	4	3	6	6	6	5	6
WESTERN SAMOA		1		1	1		1	1	1	5	1	2	6	3	5
AUSTRALIA NT						1							2		
SARAWAK						1									
TERRITORIES															
SEYCHELLES					2	2	2	2	2						
TOKELAU													2		
TUVALU													1	1	1
WALLIS & FUTUNA IS.														1	1
	17	19	19	15	16	19	20	34	30	35	41	38	36	39	40

Baby Food Homemade or Bought?



The average cost of a jar of baby food is 30c. If you spend this money on fresh food and prepare it at home, you get much more of food with better nutritional value. These diagrams compare the nutritional value of 30 cents worth of banana, tinned fish, egg custard with that of 2

Supplementary Food for Infants:

Fruits:

Very soft fruits like ripe pawpaw, ripe banana, very soft jelly like coconut flesh and orange juice are good foods to start with. Mash these very well with a clean fork and give a teaspoon in the beginning and slowly increase it to two tablespoons.

Porridge:

Make a porridge with milk and rice, or grated dalo, cassava, or potato. The porridge should be thick enough to drop from the spoon. Banana, pawpaw or pumpkin can be added for flavour. Again start with a small amount and increase the amount as baby eats more.

Soup:

Make a dhal soup by boiling dhal in water until it is very soft. Pumpkin, carrots, tender beets or churuya leaves can be added to it. Mash the foods well with a fork and add a teaspoon of butter or lolo to the soup. The soup should be thick, not watery.

Stews:

Make a stew with minced meat, liver or fish. Add carrots, pumpkin, potatoes very tender beets, rourou or spinach. Cook until the foods are soft, mash well with a fork. A little flour can be added to thicken the gravy. This can be given with some mashed dalo or cassava or very soft rice.

Eggs:

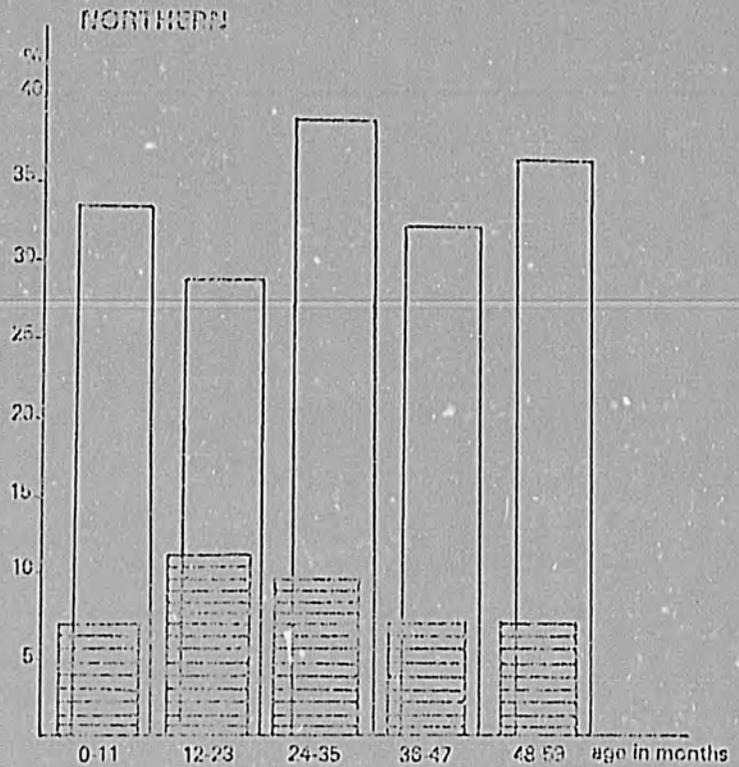
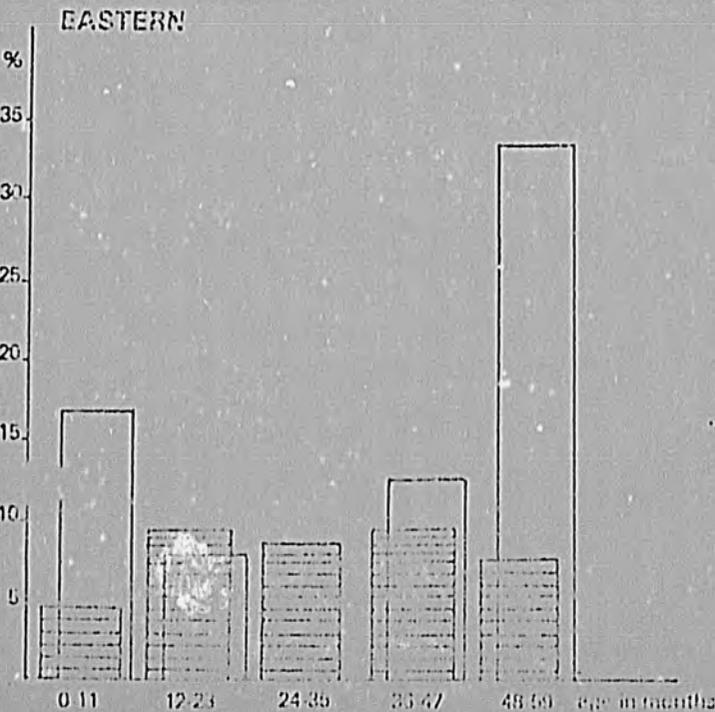
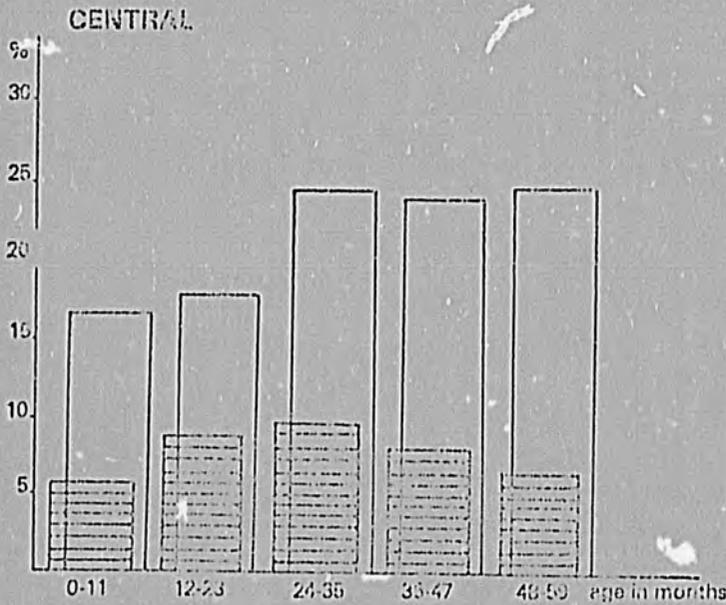
Eggs can be used in several ways. Soft boiled egg yolk, scrambled egg and custards are the best ways of cooking eggs for babies. Make a custard by mixing together one beaten egg, 1 cup of milk and 2 teaspoon sugar. This can be steamed or cooked slowly in a saucepan to make a thick sauce. When cooked this way, it is best to place the saucepan in another pan of water and stir the mixture constantly while cooking. Soft fruits like bananas and

Children Need Better Food

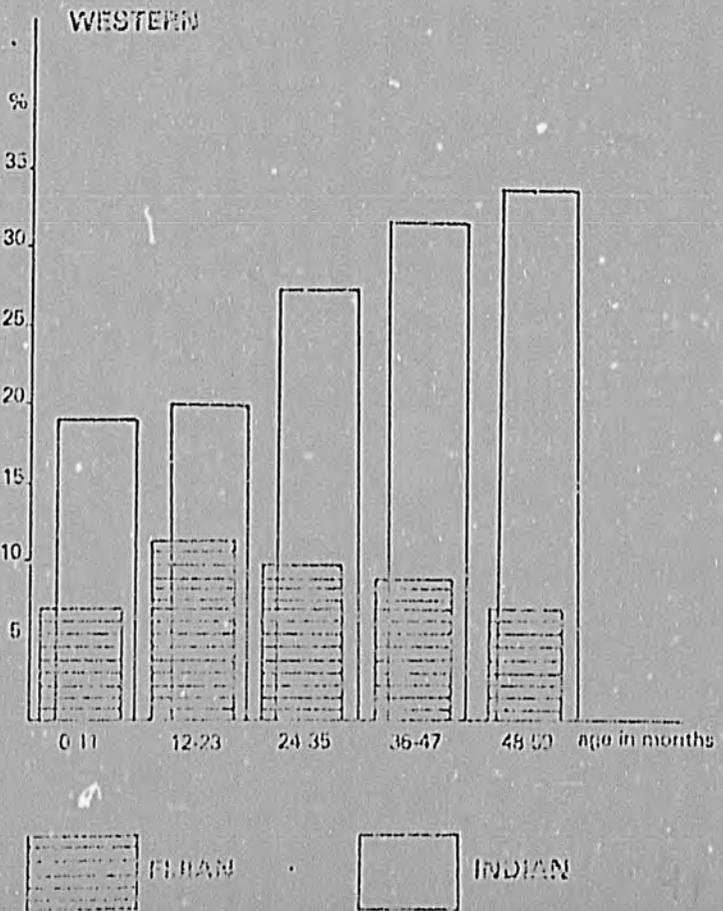
In October 1980 Fiji's first National Nutrition Survey was carried out by the Ministry of Health and the National Food and Nutrition Development Programme. This nationwide survey was aimed at finding out more about Fiji's nutritional problems. By collecting information on the weights and ages of Indian and Fijian children under 5 years it was possible to calculate how many children in Fiji suffer from the effects of malnutrition, and which parts of the country are most seriously affected.

Altogether 41,170 children were seen, over fifty two percent of the total under five population of Indians and Fijians. Eighty-eight percent of infants under 1 year were covered by the survey. The results indicate that altogether fifteen percent of the children were at risk, nutritionally, that is their weight was less than 80% of the normal weight for their age. Eight percent of Fijian children and twenty-four percent of Indian children fell into this category. A summary of the results is shown in the histograms below.

% of Children at Risk



Among Fijian children there was little difference between Divisions. However among Indian children the percentage of at risk children in the Northern Division was nearly twice as high as in Central Division. There were a large number of low birth weight infants in the Northern Division which in part explains the large number of at risk children.



Children at risk

The majority of these children at risk are underweight rather than suffering the extreme effects of clinical malnutrition. These underweight children while not sick enough to require immediate hospital attention, are more likely to get sick, and stay sick longer than children of normal weight. They also get tired easily and this affects their learning ability. Children who are underweight at school suffer from frequent absences due to sickness and a reduced ability to concentrate.

The findings of this survey have confirmed the government's concern that malnutrition is a significant problem in Fiji. The causes of malnutrition are many and complex. The National Food and Nutrition Development Programme staff have carried out surveys in Waiyana Bay, Cicia, Sigatoka Valley, Nasau, Ra and will soon be doing Suva to find out more information so that the causes of malnutrition can be identified and understood. The solution to the problem will require inputs from several sections of government and the community itself.

The departments of Health, Education, Agriculture, Information and Rural Development will have major roles to play. In drawing up a food and nutrition policy for Fiji, the National Food and Nutrition Development Programme will look into how each can contribute towards the improvement of the nutritional status of children in Fiji.

Improving the situation

Meanwhile a start to solving the problem can be made. Recommendations have been made to the Ministry of Health to make special efforts to help mothers improve the nutritional status of children by feeding them properly. A guide on child feeding is included in this issue to further this goal. In view of the greater number of low birth weight Indian babies, it has been recommended that more attention be given to the improvement of the nutrition of Indian women, so that birth weights can be increased. For Fijian infants the greatest need is to improve the diet when solid foods are started.

Other recommendations include the promotion of breast feeding, particularly among Indian women. Breast milk is one of the most valuable resources we have in Fiji and it plays a vital role in preventing malnutrition among infants. New Health Record Books being introduced by the Ministry of Health contain a weight chart. This chart helps mothers and health workers to follow a child's growth, but at present it is not widely used.

The prevention of malnutrition and the solution of Fiji's nutritional problems are the responsibility of all of us. Nurses, health workers and other government officers can offer advice and other forms of assistance but the community itself has an important role to play as well.



FIJI FOODNOTE

Last year a group of world statesmen including Willie Brandt, former Chancellor of West Germany; Edward Heath, former British Prime Minister; and Shridath Ramphal, Commonwealth Secretariat, published a report on World Development. The following quotation is taken from the Food Aid Section of the Report.

"The (Brandt) Committee sees no more important task before the World community than the elimination of hunger and malnutrition in all countries."

Brandt Report

"North-South: A Programme for Survival"

Do you have any questions, comments, or suggestions for articles in the Newsletter? Please write to:

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P.O. Box 2351
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or call in at:
National Food and Nutrition Committee Office
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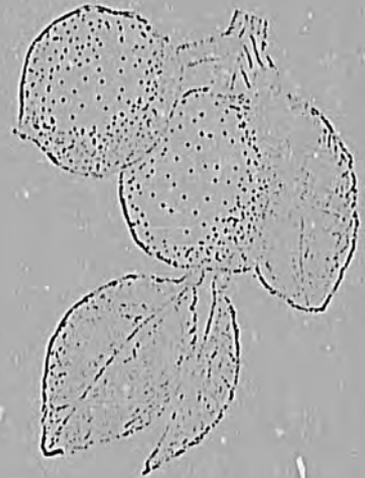
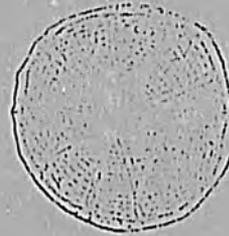
The Food and Agriculture Organization has designated October 16 this year as World Food Day to mark its 38th Anniversary and has invited all countries to join in a campaign to encourage increased food production. The NFNC has been appointed by Cabinet to co-ordinate Fiji's WFD activities. Fiji is planning to begin the activities on Monday October 12 to coincide with Independence celebrations. The week beginning October 12 will be World Food Week. Activities will be planned to culminate on Friday October 16, which will be celebrated internationally as World Food Day.

This will give Fiji an opportunity to promote local food production and publicise the development of the Food and Nutrition Programme. A World Food Day Committee has been formed to plan activities and publicity campaigns for Fiji. "District Agriculture Shows", School Essay Competitions, "Best farmer of the Year" award and a food and nutrition seminar are a few of the activities to be arranged. The above logo will be used to publicise the events. More information on WFD will be available through other channels soon.

CITRUS PLANTS AVAILABLE

Following "Citrus" as "Fiji Food of the Week" gardeners have expressed interest in growing their own citrus trees. The Committee has had many enquiries about where to obtain planting material. The Ministry of Agriculture has informed us that it is their policy to encourage private enterprise and therefore they have reduced raising potted plants. However, a limited number of potted citrus plants will be available from the Sigatoka Agriculture Station in May - June, 1981. The potted citrus plants cost \$4.00 and bare root plants cost \$2.00.

In addition potted seedlings of various fruit trees such as pawpaws, passion fruit, will continue to be grown and made available for sale by the Ministry. There are also a number of private nurseries supplying grafted or budded citrus or budded citrus plants and fruit trees. Meanwhile the Ministry of Agriculture will continue to assess supply and prices of grafted and budded citrus and other fruit trees.



Bio-Fertiliser For Rice

There has been a great deal of research on improving yields of rice in the last 30 years. A number of new, high yielding varieties have been introduced. For good results however it is necessary to use large amounts of nitrogenous fertilizer which is very expensive, particularly for small farmers.

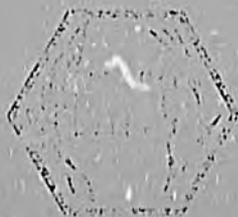
To overcome this problem research has been done to find out new ways to put nitrogen back into the soil. It is well known that leguminous plants such as peas and beans have certain bacteria (*Rhizobium* spp) that live in their roots and can fix nitrogen from the air in a form available to plants. It is less well known that bacteria belonging to the blue green algae are also capable of "fixing nitrogen". Several laboratories in tropical countries are working on the use of these bacteria to reduce costs and increase production of rice. One of the best known is the International Rice Research Institute at Los Banos in the Philippines where this bacteria has been studied.

The bacteria called *Anabaena* living together with a fern which grows in river and streams called *azolla* have been found to be very efficient nitrogen fixers. The bacteria, *Anabaena* lives in the leaves of the fern. The fern is raised in nursery beds and then seeded on to the rice paddies to supply nitrogen to the soil. The use of *Anabaena* - *Azolla* complex is known as a bio-fertiliser.

The use of this bio fertilizer is now well past the field trial stage and it's introduction as a way to increase nitrogen in the soil for rice should be considered for Fiji.

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TAMAVUA.



The Fiji Food and Nutrition Newsletter is a quarterly publication of the National Food and Nutrition Committee. Copies of the Newsletter are made available to civil servants and persons involved in food and nutrition related activities. The Newsletter is presently funded by the Food and Nutrition Development Programme.



APPENDIX: VI

SATELLITE COMMUNICATION

SYSTEMS IN THE SOUTH PACIFIC

PACIFIC OUTREACH

An outline of The University of the South Pacific's
Satellite Communication Project - Action for development

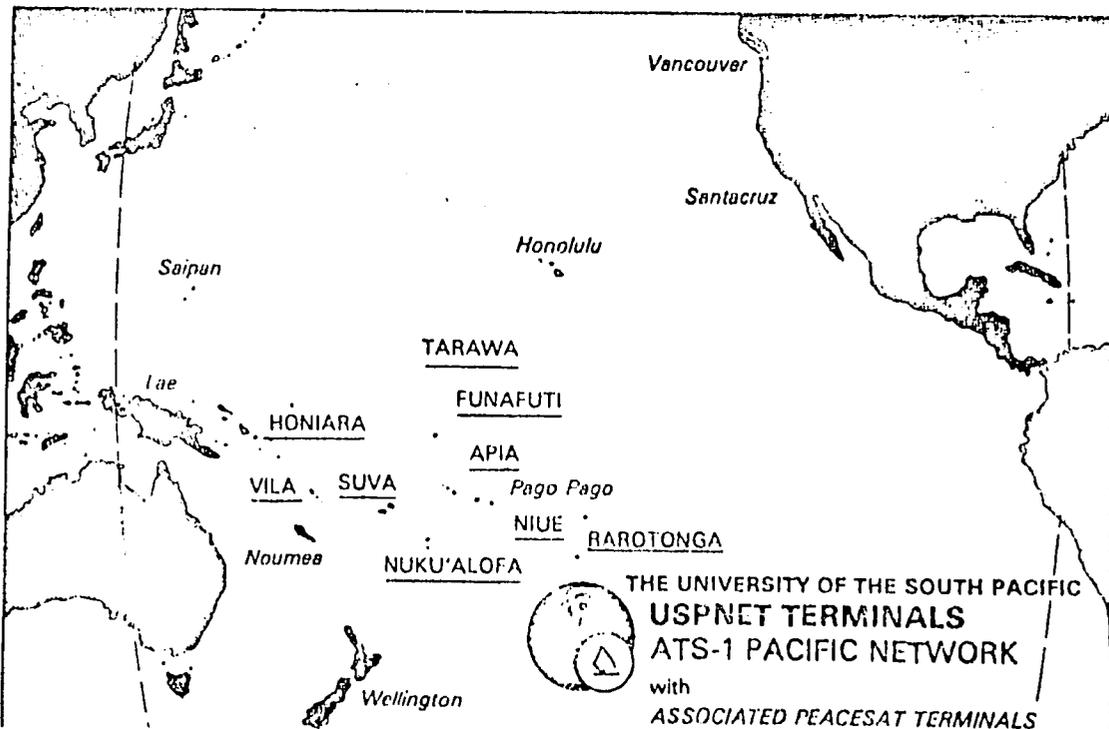
October 1980

Maurice Apted Dip.Ed. Satellite Programme Officer

The University of the South Pacific operates a two-way radio facility linking 9 separate locations within the University region. This network of satellite terminals is called USPNET. Terminals are located in the following places:

Extension Services	- Laucala Campus	Fiji
School of Agriculture	- Alafua Campus	Western Samoa
USP Centre	- Nuku'alofa	Tonga
USP Centre	- Alofi	Niue
USP Centre	- Apia	Western Samoa
USP Centre	- Tarawa	Kiribati
USP Centre	- Honiara	Solomon Islands
USP Centre	- Rarotonga	Cook Islands
USP Centre	- Vila	Vanuatu
USP Centre	- Funafuti	Tuvalu

New University Extension Centres recently opened in Tuvalu and Vanuatu. These Centres also have upgraded communication facilities. It is also hoped that Nauru will be able to link with USPNET using their own commercially operated satellite station. At the end of this development stage, it is anticipated that there will be a total of 11 satellite terminals in USPNET.



PEACESAT

The Pan-Pacific Education and Communication Experiment by Satellite was initiated in 1971 by Professor John W. Bystrom of the University of Hawaii, who is Director of the experiment.

The Wellington Polytechnic PEACESAT terminal was set up by Mr Anthony Hanley in 1971, while he was a Senior Tutor in Physics. Mr Hanley was Associate Director of PEACESAT until October, 1978.

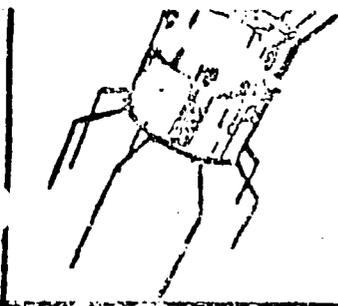
The Polytechnic terminal is located in Room 3D20 of the School of Physics, Electronics, Telecommunications and Electrical Engineering.

PEACESAT is a demonstration project. Its objective is to study the benefits arising from direct conference communications between groups with common interests in widely separated countries of the Pacific. Co-operating institutions are linked by low-cost self-contained radio terminals and a communication satellite relay. Each station is able to communicate simply and easily with others and send and receive voice and facsimile signals. Teletype and slow scan television experiments are also planned. This experimental network is available for use by persons and institutions engaged in research, education, health and other community services.

The network is particularly suitable for informal conference-type discussions between small panels of speakers at two or more terminals. Observing audiences can also be accommodated. Suggestions for exchange topics are circulated via the system, and local participants are invited to each terminal. Groups remote from Wellington may be linked by telephone to the terminal. Exchanges are held most days. An informal atmosphere develops in these discussions. At all levels a direct exchange of views with live discussion proves to be a broadening and stimulating experience, drawing together those taking part.

A communication system should grow out of the operating habits, purposes, and needs, of potential users. The mass media and the one-way delivery system – broadcasting, video-tapes and audio cassettes – have given industrial societies and urban centres enormous power for influencing the behaviour of the peoples of the world. However, the requirements of the social services and the world's trained manpower are not served by these communication methods alone. The need is for two-way communication which can be easily integrated into world processes. We hope that the PEACESAT Projects will stimulate the interest necessary to the development of a world-wide system that will meet this need.

JOHN W. BYSTROM, 1976.



satellite

BRIEF HISTORY OF USP NET AND PEACESAT PROJECT

Since 1972 the USP has been involved in a series of experimental communications projects using the ATS-1 satellite, launched by the United States National Aeronautics and Space Administration (NASA). These experiments are among the first in the world aimed at determining what educational, social and medical benefits can be derived from satellite technology. Positioned 37,000 kilometers above the equator over Christmas Island, ATS-1's transmissions cover the Pacific, enabling the University to be involved in experimental activities with countries spanning one third of the world's area, though of this 3,000,000 square miles, over 99.9% is open sea.

In 1974, at NASA's invitation, USP established its own experimental satellite network and devised a series of projects to test the effectiveness of satellite educational activities for the regional university. The 13 hours per week of University broadcast time currently allocated by NASA are divided between credit courses, tutoring sessions, adult education courses, conferences and administrative sessions. The satellite system has been an immense help in connecting the widely scattered University Centres of the region, and it is difficult now to imagine the extension programme without the satellite. University satellite terminals are operating in the Solomons, the Gilberts, Tonga, the Cooks, Niue, Western Samoa, the New Hebrides and Fiji.

The USP Network terminals also participate in additional activities through the PEACESAT Network. Co-ordinated by the University of Hawaii in 1971, PEACESAT (Pan Pacific Educational and Communication Experiments by Satellite) offers a wide range of educational, medical and social seminars and conferences throughout the Pacific. Through the joining of the USP Network with the PEACESAT Network terminals, the 16 participating stations extend from Papua New Guinea and Saipan to California and as far south as New Zealand.

Although these two networks operate independently, they often collaborate on programmes relevant to all the Pacific nations. Because only one voice channel is used, all stations can receive all transmissions. Thus, a station on the USP Network can listen to and participate in a programme being held on the PEACESAT Network and vice versa. Such participation is welcomed and encouraged.

The advantages of this system to the University are plain. No other means of communication provides the immediacy inherent in satellite communication. Students can discuss problems with their tutors in Suva, hold class sessions with instructors at another terminal, and participate in group discussions involving all the Regional Centres.