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Community Involvement in Primary Health
Care Nutrition Program:
Assessing Social Mechanisms in the
Growth Monitoring Process

Thailand Trip Report Charles H. Teller
April 23 - May 4, 1985 Consultant

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COMMUNITY INVOLVEMENT IN PRIMARY HEALTH CARE NUTRITION PROGRAM:
ASSESSING SOCIAL MECHANISMS IN THE GROWTH MONITORING PROCESS

THAILAND TRIP REPORT - APRIL 23 TO MAY 4, 1985

I. Introduction

At the January, 1984 Cairo Conference on Nutrition in Primary Health Care, Thailand's then Director General, Dr. Amorn Nondasuta, presented a major address on implementing nutrition interventions within his country's PHC strategies. The innovative approaches being piloted through community involvement and self-reliance were encouraging examples for all concerned. In preparation for the Cairo Conference and thereafter, the International Nutrition Division has undertaken an ongoing monitoring and evaluation of the progress and obstacles in the implementation of nutrition interventions in PHC. In the case of Thailand, it welcomed the opportunity to review the achievements and constraints, and to be able to utilize the findings for developing models for other less advanced countries (as far as N/PHC is concerned).

The Royal Thai Government has embarked upon a large scale village level nutrition program within the actual Fifth National Economic and Social Development Plan. Of the 25,000 villages to be covered, 1800 are being supported by a USAID loan under the extended rural primary health care expansion project from 1982-85. The project's goal is to improve the nutrition status of preschool children through

village-based interventions of growth monitoring, nutrition education and the provision of locally produced supplementary food to second and third degree underweight children. As a result, a nutritional surveillance system and a nutrition fund were established at the village level as innovative activities of the program.

While AID is planning an evaluation of the project before the end of 1985, the RTG is interested in assessing these innovative approaches as a basis for the formulation of recommendations for the nutrition program to be included in the next five-year development plan (1987-92). From the program design perspective, the Nutrition Division of the Ministry of Public Health (MOPH) feels that growth monitoring and nutritional surveillance activities within the community are the core issues of the program. Thus a proposal was drawn up by the Nutrition Division, with the assistance of the International Nutrition Division of DHHS to assess the activities intended to strengthen the "less-effective mechanisms within the growth monitoring process" and which are needed for improving the efficiency and effectiveness of the Thai National Food and Nutrition Program (see Annex I).

II. Purpose and Scope of Work

The scope of work, as developed jointly by the AID Washington, the Bangkok AID Mission and the Nutrition Division of the MOPH, included as the general purpose, assistance in the design of a study to assess the nutrition monitoring activities in the Rural PHC Expansion Project. Such technical

assistance, provided from a social science perspective, would cover the following:

1. The development of the conceptual framework, basic approaches and methodologies.
2. The preliminary design of the key study instruments.
3. Identification of basic indicators and variables, and initial plans for data analysis.
4. Orientation of the principal investigators, research assistants and field supervisors.
5. Finalization of the study proposal and, its financing and management.

During the 11-day visit, the consultant was efficiently guided throughout by Dr. Chawalit of the Nutrition Division who is responsible for the implementation of the AID-funded nutrition project. An orientation to primary health care in Thailand, the nutrition program, the AID project and the nutritional surveillance system was provided. Field visits to two of the three main project regions (Northeast and North) and to selected Provinces, Districts, Tambons (subdistricts) and villages were carried out. Data generated in the surveillance system were reviewed with the villagers and with personnel of the MOPH at the distinctive operational levels. The consultant gave a seminar on nutrition in primary health care to the Nutrition Division and other interested Ministry personnel. The Nutrition Division was then subdivided into two ad-hoc work groups which developed a revised study proposal. Moreover, interviews were set-up with researchers in both the

nutritional scientists and social scientists working in the PHC field.

III. Results

The revised proposal submitted to the MOPH and USAID Bangkok, and meeting with their concurrence in principle, is presented in Annex 1. The general objectives are:

1. To assess the efficiency and effectiveness of the existing growth monitoring activities and nutritional surveillance system (see Annex 3 for description) and identify the main obstacles in their implementation with PHC strategies, and
2. To provide the basis for the design of improved growth monitoring activities and nutritional surveillance through the PHC approach that is appropriate to the changing situation in Thai villages and can be adapted to different circumstances.

A conceptual framework for the study of growth monitoring and nutritional surveillance at the community and Tambon levels is presented in Figure 1. As can be seen, the inputs to the left of the GM/NSS circles would contribute to nutrition education/behavioral change at the family level and to causal assessment and nutrition planning at the community level. Both sets of activities would increase understanding of and participation in the health and nutrition program activities and organizations involved.

Methodologically, three basic approaches will be employed to assess these activities (see Figure 2): epidemiological, survey and case study. The focus will be on the two main

perceived obstacles to successful implementation: low level of community involvement and inadequate understanding and perceived benefit of such activities. A three-stage sample consists first of surveillance data on the slightly over 1000 villages of the AID-supported nutrition project and 250 control villages of the RTG program in the districts and poverty areas in the North and Northeast Regions. The survey and cohort data will come from a 6% random sample of 60 AID and 15 RTG control villages located in eight provinces in these two regions. For the in-depth community case studies, 12 project and 4 control villages will be randomly selected within the eight surveyed provinces.

In addition to the cross-sectional analysis now provided by the existing NSS (Tables 1-3, and Annex 2), a longitudinal cohort method on individual children in the 75 survey villages will permit the construction of transition matrices. These will look at not only the changes in nutritional status and weight gain criteria, but also the relationship between such changes and participation in community nutrition program activities. The case study will focus on in-depth analysis of three types of key actors in the community: the mother, the health workers and the relevant community organizations (village council, women's group and nutrition fund committee). The mothers' study will analyze her understanding of the growth monitoring concept and perceived benefits from participation (see Figure 3). Attention will be focused on critical periods on her child's growth card (Figure 4) in which growth was faltering, and the mother's

reaction and possible behavior change and increased program participation as a result. A reinterview immediately after the next quarterly weighing will be carried out with mothers whose children changed nutritional status in that period. With the key community groups, participant observation and focus groups analysis will be carried out (see Figure 5). This should permit a comprehensive analysis of the relationship between community involvement and growth monitoring.

The study will be conducted by the Nutrition Division with the collaboration of a medical sociologist on loan from the Sanitation Division. Nutritionists from each of the two regional offices in the study areas will participate in the survey component, and eight research assistants will be hired for six months to live in the villages and carry out the case studies. Periodic technical assistance in the social and nutritional sciences will be available from Mahidol University and the International Nutrition Division (USDHHS/AID) when and if requested.* The scheduling revolves around the crucial timing for the case study field work to be carried out between the end of the planting and beginning of the harvest seasons (late summer, early fall). Thus pretesting should start in July, with the final month's research depending upon the timing on

*This might include, among others, further development of the sociological and anthropological methods as applied to case study and focus group analysis. Detailed plans of analysis and the data processing techniques have as yet to be worked out, but with such a large volume of data to be generated, emphasis must be given by the Central level staff to specification of these quantitative procedures.

the first quarter (FY'86) weighing in the fall of 1985. Preliminary analysis of the information has been requested by the Permanent Secretary to be done by November 1985, with the final results presented in a workshop around March, 1986.

One result of this intensive 11-day project proposal design period has been the formation of an interdisciplinary research and assessment team. This involves the inclusion of a medical sociologist, on the one hand, and an epidemiologist on the other. Both disciplines have been perceived as needed additions to the Nutrition Division. It was the Director General who emphasized the importance in primary health care strategies of not only technical but also social knowhow. He hopes that this study's methodology can be replicated for the MCH/FP and water/sanitation programs.

Example of the cross-sectional data being generated quarterly by the nutritional surveillance system for each level of the health care system are presented in Tables 1, 2 and 3. It was not in the scope of work of the consultant-ship to assess the reliability or analyze the trends represented by these data. There is evidence, however, of a decline in the prevalence of second and third degree malnutrition (Thai standard, Gomez classification) from the baseline years (1979-82)* to the October 83 - January 84 (first quarter, FY'84), from 15.1% to 6.7%, consistently across all

*The consultant was unable to assess the representativeness nor the comparability of this long baseline period (1979-82) with the more specific criteria of the Oct. 83 - Jan. 84 period.

five major regions. When further disaggregated by Province, Tambon and Village, for 1983 and 1984, and by season, the declines still hold up: in 6 of the 7 province of the North-east region; in 7 of 8 villages in one randomly selected Tambon; and in each quarter in that Tambon. Where more cross-sectional ecological analysis would be enlightening concerns the coverage of the higher risk under-fives. There is some initial evidence in Korat Province that, within the same Tambons, higher coverage rates are associated with higher prevalence of malnutrition and that in some weighing quarters (such as during harvest season), there is a low coverage of these highest risk children. Thus analysis by quarter and by village and in the same base population seems advisable when using the data for program evaluation purposes.

Concluding Comments

The Permanent Secretary stated that the results of the study should not only be ready for inclusion in the 6th National Economic and Social Development Plan, but also that other countries can now learn from Thailand's long experience in this area. It has taken nearly thirty years to achieve what you are now observing, he said, and there are still many problems to be resolved. He welcomed such studies as necessary to further the process of critical evaluation and continual improvement.

In light of such thinking, several issues on the implementation of nutrition in PHC have been raised during the course of the visit which, in the consultant's view, require more critical review. These are, briefly:

1. Need for clarification of the operational distinction and programmatic objectives between nutritional surveillance (as a planning and information system) and growth monitoring (as a promotive, diagnostic and educational tool).
2. The curative orientation of growth monitoring for detection and recuperation purposes and a promotive orientation for keeping the healthy well-nourished. More frequent weighing of the under two's and use of weight-gain criteria might serve the latter purposes better.
3. The under-utilized capacity of the village health volunteers and communicators to do growth monitoring, and the related problems with their management of the growth cards (such as age miscalculation).
4. The reduced capacity of the village health committee, women's group and the village and Tambon health workers to utilize nutrition surveillance information in the format and manner in which it is now presented.
5. The inappropriateness and statistical insensitivity of some of the indicators to adequately monitor nutritional change and evaluate program effectiveness. Weight-for-age indicators have their limitations; age, seasonal and village/Tambon variations are often masked by global yearly summaries. Indicators of coverage, frequency and selectivity may be as important in surveillance as nutritional status prevalence.

In sum, the potential for village-based growth monitoring and nutritional surveillance to meet the needs of the community

is probably higher in Thailand than in almost any other country. The main barriers mentioned in the Cairo Conference -- political commitment, PHC infrastructure and resources, and appropriate and effective technology -- have been mainly overcome. The inclusion of the nutrition program as a high priority in the National Social and Economic Development Plans, and a preoccupation for ongoing applied and operational research and evaluation in order to make improvements are clear evidence of such potential.

FIGURE I

CONCEPTUAL FRAMEWORK AT COMMUNITY/TAMBON LEVEL

GROWTH MONITORING/NUTRITIONAL SURVEILLANCE IN PRIMARY HEALTH CARE & DEVELOPMENT PROGRAMS

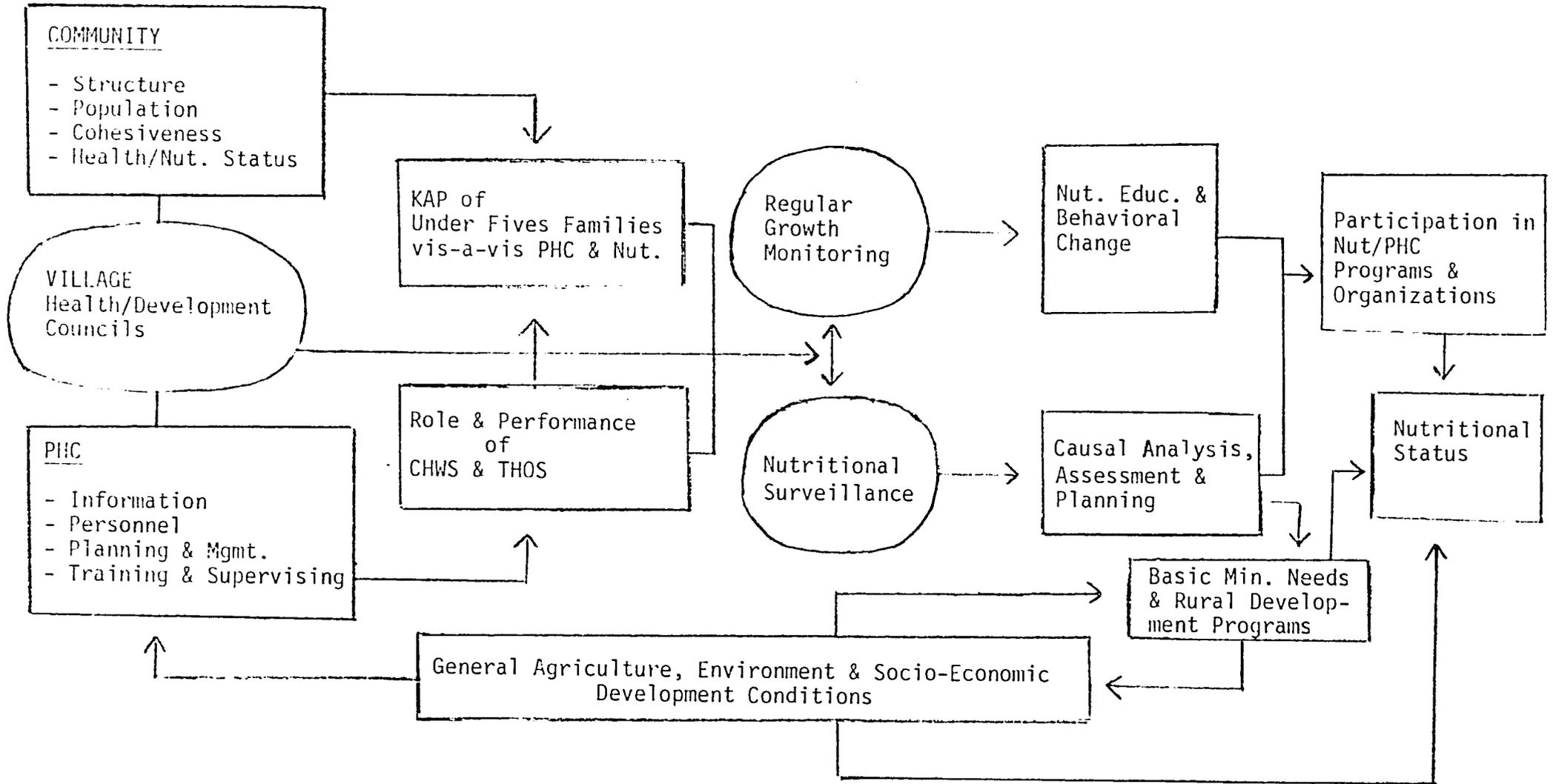
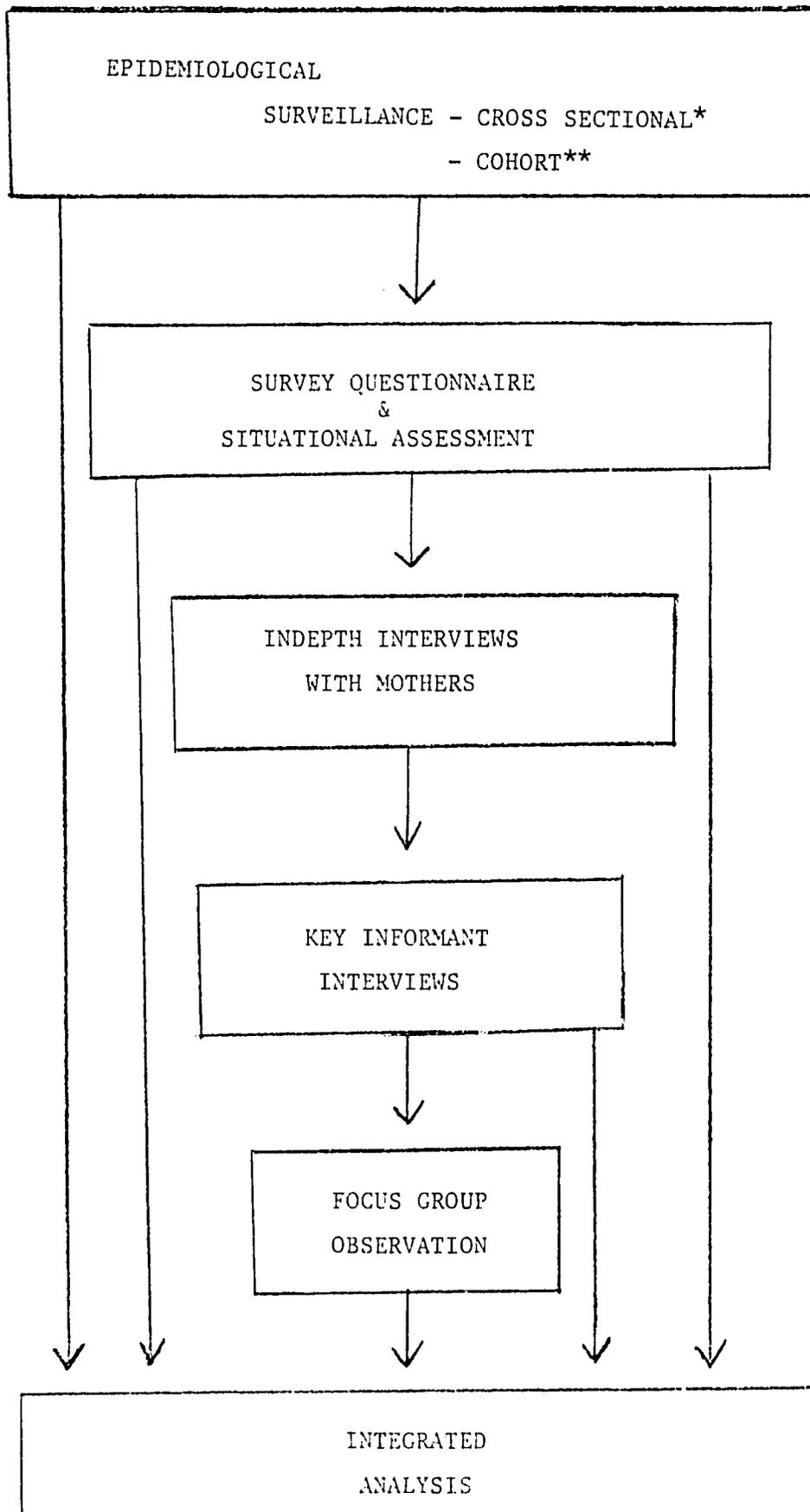


FIGURE 2

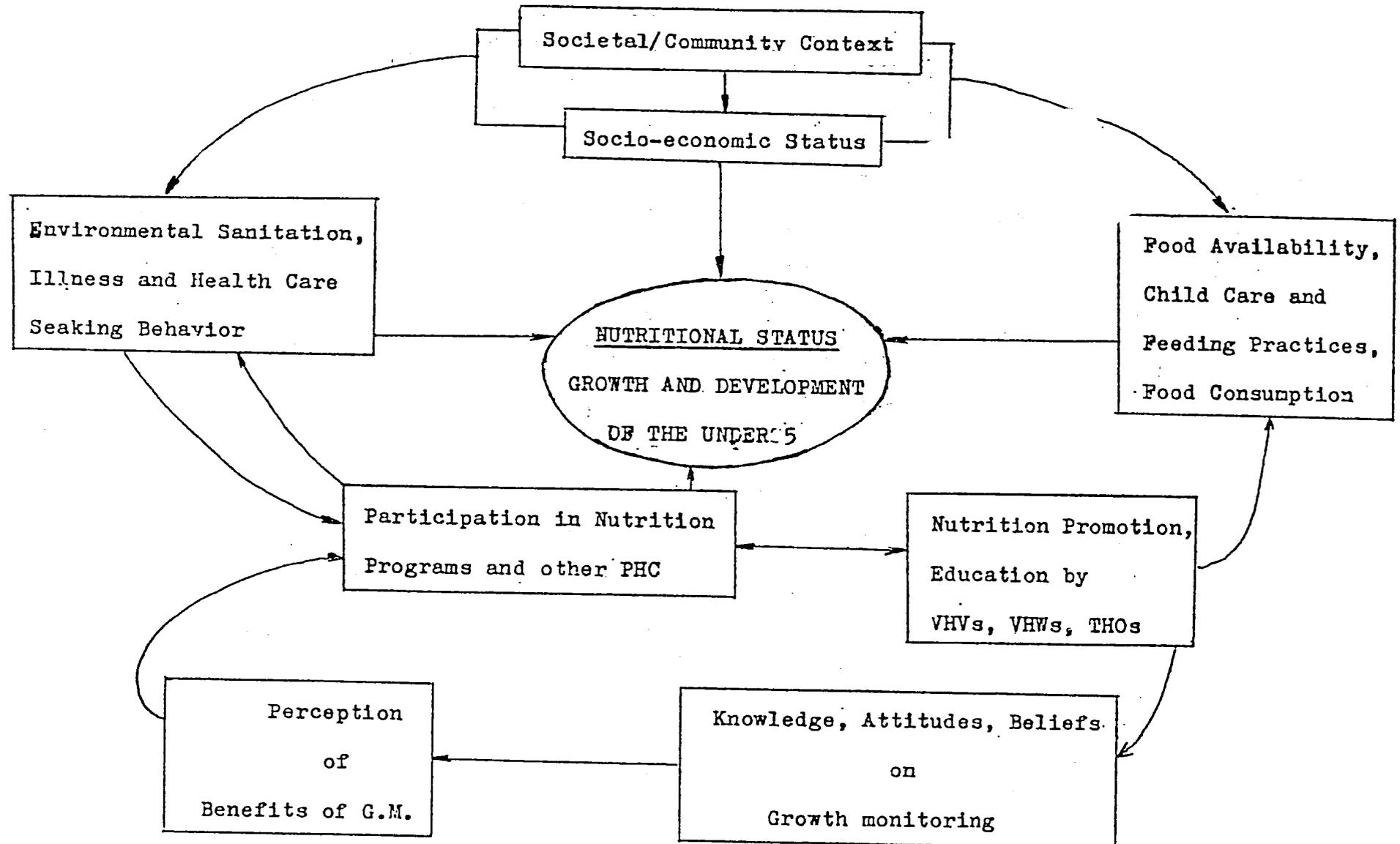
METHODOLOGICAL SEQUENCE



*Tambon Level NSS Form; **Village Level (individual child form)

FIGURE 3

CONCEPTUAL FRAMEWORK FOR IN-DEPTH MOTHER/CHILD/FAMILY INTERVIEW



บันทึกการเจริญเติบโตของเด็ก

ชื่อ _____ วัน เดือน ปีเกิด _____ นานหนักแรกเกิด _____ ก.ก.

ชื่อบิดา _____ ชื่อมารดา _____

บ้านเลขที่ _____ หมู่ที่ _____ ตำบล _____ อำเภอ _____ จังหวัด _____



ลูกจะสมบูรณ์ดีหรือแย่ อยู่ที่พ่อแม่ของเด็ก

FIGURE 5

CONCEPTUAL FRAMEWORK FOR FOCUS GROUP ANALYSIS ON UNDERSTANDING AND UTILIZATION OF GROWTH MONITORING DATA FOR NUTRITIONAL SURVEILLANCE AND PHC PLANNING

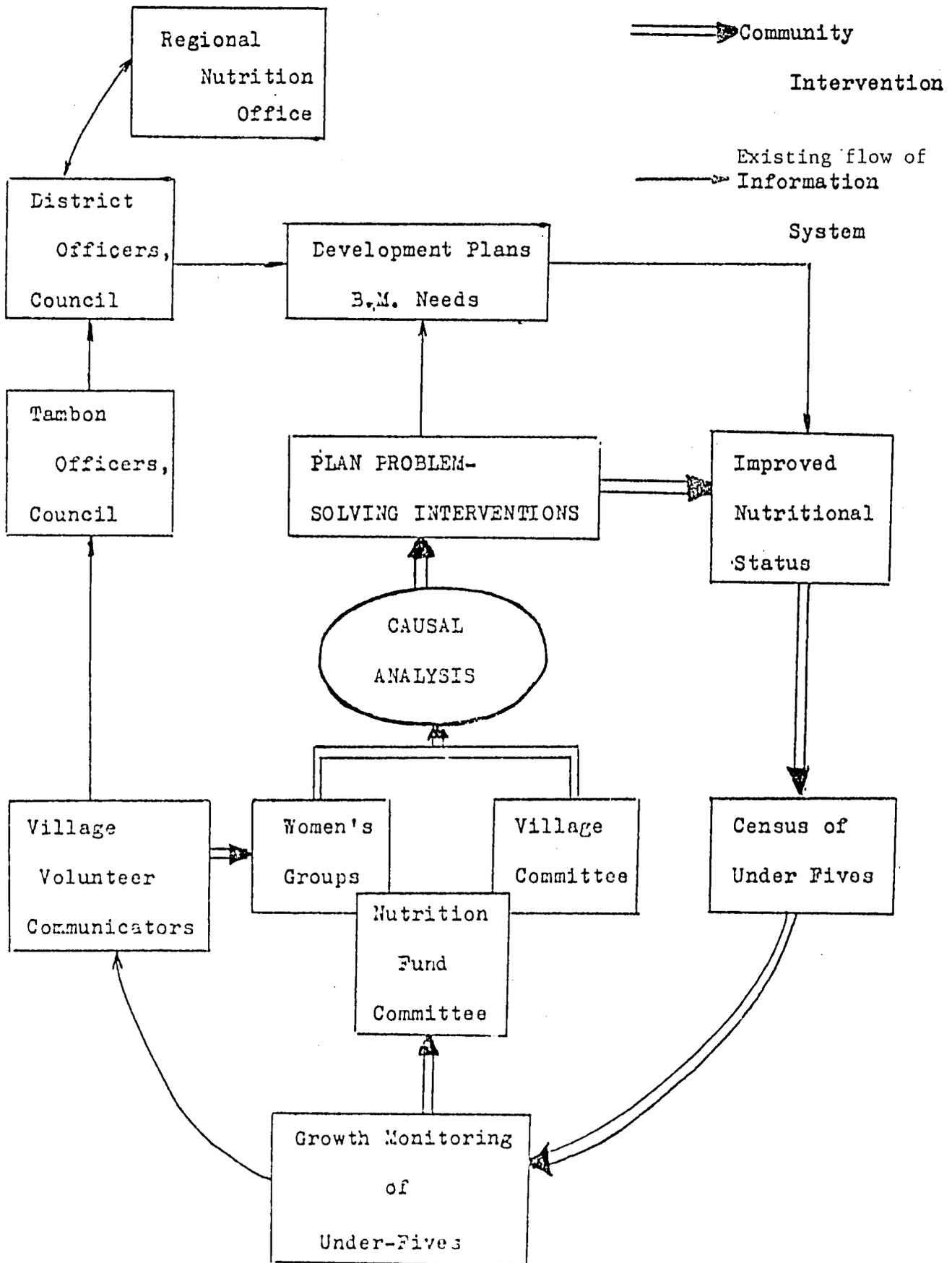


TABLE 1

PREVALENCE OF MALNUTRITION, 1979-1982 BASELINE* AND
 OCTOBER 1983 - JANUARY 1984 QUARTERLY WEIGHING,
 NUTRITIONAL SURVEILLANCE SYSTEM, THAILAND

REGION		% IN GRADE (Gomez Classification, Thai-Standards)				
		N	I	II	III	(N)
A	'79-82	43.3	39.1	15.2	2.4	586,743
	'83-84	56.2	34.4	8.1	1.4	580,352
B	'79-82	49.2	34.8	13.4	2.7	115,159
	'83-84	70.4	24.8	4.5	.4	250,974
C	'79-82	63.3	28.4	7.2	1.0	137,833
	'83-84	77.1	20.6	2.2	.1	189,317
D	'79-82	56.4	31.3	10.5	1.8	105,859
	'83-84	65.4	27.7	6.4	.5	151,064
E	'79-82	63.2	27.1	8.0	1.7	54,406
	'83-84	76.4	20.3	3.1	.3	98,686
Total	'79-82	49.2	35.7	13.0	2.1	1,000,000
	'83-84	64.8	28.5	5.9	.8	1,270,393

Source: Nutrition Division, MOPH, 1984

*Representativeness of baseline data and comparability with NSS data unclear to consultant

TABLE 2

PREVALENCE OF MALNUTRITION, LATE SUMMER QUARTER 1983 AND
LATE WINTER QUARTER, 1985, NORTHEAST REGION, AID-PROJECT VILLAGES

Province	No. Villages		Coverage % 0-4 Weighed		Percent in II-III Degree Malnutrition					
	1983	1985	1983	1985	0-11 mo.		12-60 mo.		Total 0-60 mo.	
					1983	1985	1983	1985	1983	1985
1	12	28	98.2	79.7	10.4	4.3	16.7	8.7	15.5	7.8
2	8	33	89.0	86.1	1.8	4.1	5.6	7.4	5.0	6.8
3	50	50	100.0	97.6	7.3	3.0	7.8	7.2	7.8	6.5
4	32	46	91.1	88.7	4.8	2.6	10.7	8.9	9.7	7.5
5	33	41	80.1	79.9	7.4	4.5	11.9	8.9	10.9	7.8
6	20	25	39.3	58.2	8.5	1.1	9.6	6.1	9.3	5.1
7	16	37	31.8	77.1	7.5	6.2	14.7	9.1	17.8	8.4
Total (N)	171	260	73.9 (7650)	82.6 (11362)	7.0 (1475)	3.7 (2193)	10.4 (6185)	8.2 (9169)	9.8 (7660)	7.3 (11362)

Service: Nutrition Division, Northeast Region, MOPH 1985

TABLE 3

PREVALENCE OF II-III DEGREE MALNUTRITION BY QUARTER AND
VILLAGE, ONE SELECTED TAMBON, 1983 - 1984

		(Gomez Classification, Thai Standards, II-III Degree)				Total	
Village		Quarter I	Quarter II	Quarter III	Quarter IV	%	(No. Malnourished)
1	1983	23.4*	30.0	25.9	—	26.7	(60)
	1984	16.0	23.4	11.6	13.4	15.4	(52)
2	1983	--	18.9	--	11.4	15.2	(27)
	1984	9.2	9.5	8.8	9.0	9.1	(29)
3	1983	5.3*	6.8	3.6	--	5.2	(12)
	1984	4.1	5.3	5.7	11.0	6.5	(19)
4	1983	6.7*	28.6	10.4	--	15.2	(25)
	1984	8.3	8.3	10.0	9.3	9.0	(19)
5	1983	27.8*	19.4	18.8	--	22.2	(72)
	1984	0.0	27.8	12.7	12.7	13.5	(24)
6	1983	--	55.2	41.0	--	47.1	(32)
	1984	16.6	31.4	14.9	9.1	17.3	(29)
7	1983	41.0*	15.0	13.3	--	23.9	(26)
	1984	18.4	41.0	14.3	14.0	21.3	(36)
8	1983	--	6.7	--	16.2	11.9	(8)
	1984	29.8	2.1	13.3	--	7.9	(11)
Total	1983	17.8	21.4	17.6	12.8	15.6	(212)
	1984	10.5	15.8	10.9	11.3	12.1	(219)

Source: Nutrition Division, MOPH

* Pertains to 1982

ANNEX I

Preliminary Draft , do not cite.

3rd. May 1985.

STRENGTHENING GROWTH MONITORING AND NUTRITIONAL
SURVEILLANCE ACTIVITIES IN THE RURAL PRIMARY HEALTH
CARE EXPANSION PROJECT AID LOAN NO. 493-U-021.

A Proposal

Submitted by:

NUTRITION DIVISION , DEPARTMENT OF HEALTH

MINISTRY OF PUBLIC HEALTH

BANGKOK 10200

THAILAND

I INTRODUCTION

The Rural Primary Health Care Programme of the Ministry of Public Health has been remarkably successful, since its inception in 1978. Effective mobilization of local resources, effective community participation and goal orientated community development actions were found in the DRUG FUND activity which was the pilot PHC element aiming at providing of essential treatment and supply of common simple drug to the villagers. The activity could be organized and managed by the villagers after a training course for the village volunteers on the simple treatments and the essential drugs. This prototype activity has been rapidly and extensively cover the large portion of the country and expected to cover the whole rural area by the year 1986.

Immediately after the success of the pilot action in Drug Fund, sanitation and nutrition which were by that period of time a very strong policy support recognized this promising entry route "the primary health care approach" for community participation in the programme.

In 1981, a study on "the impact of age/weight maintained in the home and nutrition education on nutritional status of infants and pre-school children" was conducted under the assistant of USAID/THAILAND. The result of the study indicated the success of growth monitoring of the underfives by the mothers by introducing the appropriate indicator, the weight by age standard for Thai children, to the mothers in the form of Growth Chart. The study also showed the these following important events :

1. Nutritional surveillance and nutrition education can be conducted by the Village Health Volunteers and the Village Health Communicators and simplified to suit their traditional living style.

2. Child weighing programme with the introduction of growth chart for interpretation at the community level can lead to problem recognition and procede to problem solving interventions by the parents.

During 1981-1983, a pilot programme in the name of "INNOVATIVE VILLAGE NUTRITION PROJECT" supported by World Bank had been implemented in 90 villages of 3 provinces in Northeastern Thailand. This was a model development programme utilizing the concept of primary health care approach with the multisectoral food and nutrition support teams at the tambon(subdistrict) level. The programme started with an orientation course for the administrative officials from various food and nutrition related sectors from the provincial level followed with fully support of essential commodities and financial support. The preliminary assessment

of the programme showed rapid improvement of the nutritional status of the underfives within the target villages. Therefore , the Royal Thai Government decided to embark upon a large scale village level nutrition programme covering a total of 25,000 villages in the present fifth National Economic and Social Development Plan (1982-1986). The RTG and the other 3 international agencies shares the support of input to the programme. The 3 agencies are World Health Organization , UNICEF and USAID. 1,800 villages or 7.20 % are supported by USAID Loan under the extended rural primary health care expansion project from 1982-1985 .

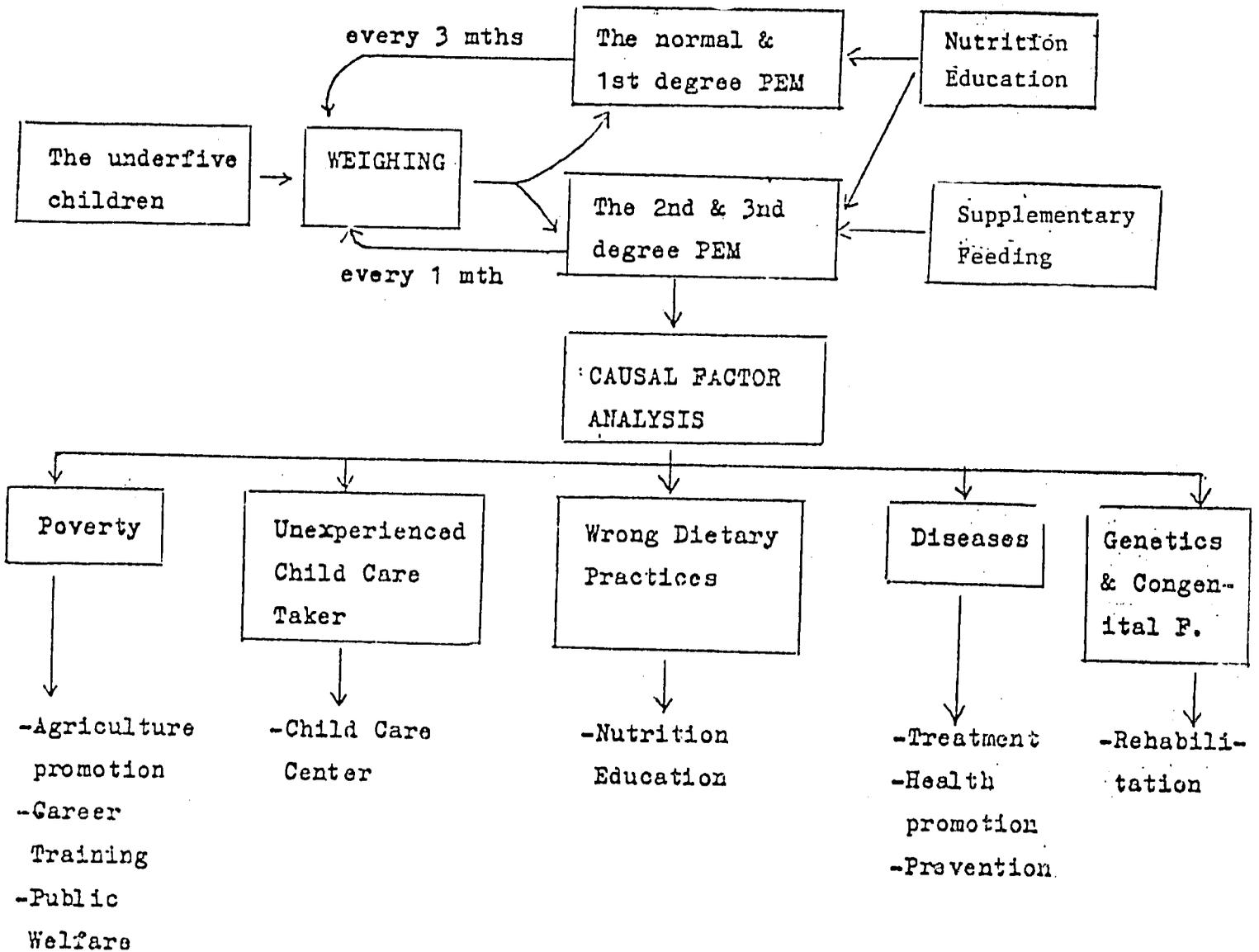
The programme's goal is to improve the nutrition status of the underfives through a village-based intervention in the form of promotive educational activities and through curative treatment of the second and third degree underweight children with the provision of a locally produced supplementary food. Establishing a nutrition fund at the village level is one of the most innovative activities of the programme. Each target village will be given a start up fund of 3,000 Baht (140 US \$) worth of materials and food stuffs to start producing the supplementary food . Community members are given the opportunity to buy shares to add to the starting capital, which then entitles them to the profit generated by the sales of the supplementary food (at 2 Baht per 100 gram package, or 0.08 US \$). Through this scheme the second and third degree underweight children will get the package free

Through the primary health care concept, the main objective is to let the people have the ability to do the following procedures :

1. Problem identification & Follow up
2. Causal factors identification
3. Planning & Implementation & Referring
4. Monitoring & Evaluation

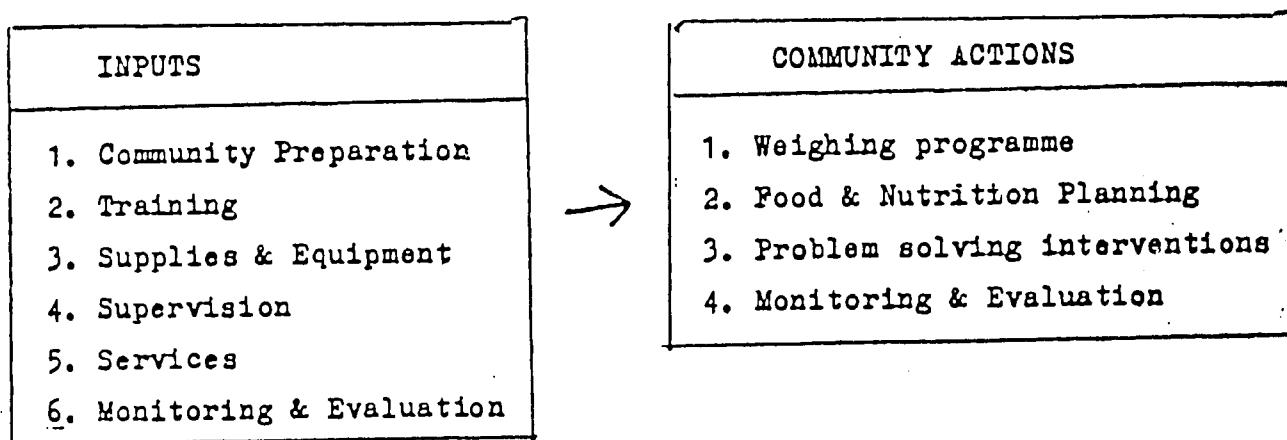
Following these objectives, the growth monitoring actions at the community level has been designed as shown in Diagramme 1.

Diagramme 1 The community growth monitoring actions



To achieve the complete growth monitoring actions in diagramme 1, community orientation, preparation and training with support of those essential commodities are essentially needed. The input from the official side and the community process can be summarized in diagramme 2.

Diagramme 2 The operational diagramme of the Nutrition Programme.



From the programme design, growth monitoring and nutritional surveillance activities within the community is the core issue of the programme. The success of the programme will depend mainly on the level of community involvement and understanding of the concept in the growth monitoring. Therefore, an immediate assessment of the activities with strengthening of the less-effective mechanism within the growth monitoring process is needed for improving the efficiency and effectiveness of the Thai National Food and Nutrition Programme.

II. OBJECTIVES

General

1. To assess the efficiency and effectiveness of the existing growth monitoring activities and nutritional surveillance system and identify the main obstacles in their implementation within primary health care strategies.

2. To formulate the design of improved growth monitoring activities and nutrition surveillance system through the primary health care approach that is appropriate to the changing situation in Thai villages and can be adapted to different circumstances.

Specific

1. To assess the efficiency and effectiveness of growth monitoring activities as promotive and educational interventions at the family, community and Tambon levels.

2. To assess the efficiency of nutrition surveillance system in providing timely and useful information for decision making and planning of problem-solving food and nutrition intervention.

3. To assess the methods and procedures used in gathering, processing and utilizing nutrition surveillance system information to support the planning, monitoring and evaluation of the primary health care activities at each level of the health service delivery system.

4. To recommend for the 6th National Economic and Social Development Plan specific improvements in the planning, design

and implementation of growth monitoring activities and the nutrition surveillance system that will strengthen the more promotive aspects of nutrition activities, the extension of PHC to the highest risk groups, and the timely contribution of the information for causal factor analysis and the selection of relevant and appropriate problem-solving interventions.

III Method

The Universe will consist of slightly over 1,000 villages of USAID supported nutrition project and 250 control villages of the RTG supporting program in the districts and poverty areas in the North and Northeast Regions (Table 1). The survey and Cohort epidemiological data will come from a 6 % random sample of 60 USAID and 15 RTG control villages located in eight provinces of these two highest poverty regions. This should yield over 3,750 children under five in the sample. For the in-depth community case studies, a subsample will be drawn in one of the four surveyed Provinces in each of the North and Northeast Regions. Within each Province, two districts will be purposively selected as well-implemented PHC programs, and within each district two well-implemented Tambons. Within each set of two Tambons, three AID villages and one RTG village will be randomly selected. The criteria for selection of the villages are :

moderate-large size (over 100 families), and not located in a Tambon village with a health center. Thus, there will be included 16 case study villages, 12 AID and 4 RTG. This will yield approximately 800 children under five.

Three basic approaches will be employed in order to assess the implementation of growth monitoring and nutrition surveillance activities (Figure 1). These approaches will focus on the two main obstacles to successful implementation already observed: low level of community involvement and inadequate understanding and perceived benefit of such activities. From these three approaches - list of indicators for monitoring and evaluation will be generated (Table 2).

1. EPIDEMIOLOGICAL

This approach will allow a descriptive presentation of the trends and geographic differentials in both the prevalence of malnutrition and the coverage of the surveillance program in the project and non-project areas in a two-year span (1983-85) (Table 3). Moreover, an innovative cohort method will be used to analyze the changes in nutritional status and the regularity of weighings of each individual child in the 75 sample villages. Transition matrices will be generated to nutritional status change and their relationship with key project nutrition interventions (Table 4).

2. SURVEY

This will assess the efficiency of the growth monitoring and nutrition surveillance activities from available records, personal

interviews and observation in the 75 sample villages. The reliability of the growth monitoring data (age, weight, charting, recording), the accuracy of the weighing instruments and adequacy of the interpretation of the results will be assessed. Moreover, the utilization of the surveillance data at each level for planning; monitoring and evaluation will be reviewed. Opinions concerning the appropriateness of the information and suggestions for more relevant and useful information will be solicited.

3. CASE STUDY

This will focus on in-depth analysis of three key types of actors in the community; the mother, the health workers, and relevant community organizations, village council, women's group and nutrition fund committee. Appropriate methods will be employed for each type:

- 1) A stratified (by nutrition status of the child) 20% sample of mother's in each of the 16 villages will be interviewed with structured guidelines to obtain background information necessary to study her understanding of the growth monitoring activities and perceived benefit for participating in it and related nutrition interventions (Figure 2). Attention will be focussed on critical periods on the child's growth card in which the growth was faltering, and the mother's reaction and possible behavioral change and increased program participation as a result. A reinterview of mothers will be carried out immediately after the next quarterly weighing for those whose children changed nutrition status: fell from normal to malnourished, rose from 2-3

degree to 1st or normal, or stayed or deteriorated within grades 2 and 3. Again, the understanding of the change in status and anticipated behavioral change will be studied (Table 5).

2) In-depth interviews will be carried out with the community health volunteers, village health communicators and Tambon health officers. The purpose is to ascertain their level of understanding of the importance of growth monitoring for both the nutrition program and for primary health care in general. The usefulness of the growth monitoring for health promotion and education as well as for diagnosis of health and nutrition problems, and of surveillance information for causal analysis, and helping them with their planning and problem solving activities with the community will be assessed. Moreover, the degree to which nutrition surveillance is perceived mainly as a top-down information system with little community relevance will be ascertained.

3) Participant observation and focus group analysis will be performed with key community groups. The purpose is to study the actual and potential utilization of the surveillance information for causal analysis, decision-making and problem-solving food and nutrition planning. Weighing sessions, supplementary feeding sessions, meetings of the village health council and of the nutrition fund committee will be attended. The sociologist and research assistants will act as facilitators in guiding discussion around these issues (Figure 3).

IV. PERSONNEL AND WORK PLAN

The research team will consist of the following:

Principle Investigator: The PMO of DOH

Deputy P.I.: Director, Nutrition Division

Investigators: Chief of the Nutritional Deficiencies Control Section and the Nutrition Research Section, four staff members of the Nutrition Division, a sociologist on loan from the Sanitation Division and two nutritionists from each of the two regional offices in the study areas.

To do the case studies, eight research assistants will be hired for a six month period. Periodic technical assistance in social and nutritional sciences will be available nationally and internationally when and if requested.

The work plan is presented in the accompanying Figure 4. The crucial timing is for the case study field work in the villages, between planting and harvest season. This four-month period in which the research assistant pairs will live in the villages in August-November, 1985. In order to be prepared for this period, the case study instrument design should be completed by the beginning of the training of the research assistants, in July. Moreover, the survey should be completed by mid-July in order to permit the selection of sample Districts and Tambons. Strict procedures for training and standardization and subsequent supervision of the eight research assistants will be followed to ensure maximum reliability. The epidemiological analysis will be done by the Nutrition Division. The survey will be carried out by the regional

nutritionists with the support of the Central Nutrition Division. These nutritionist will also serve as technical supervisors to the sociologist field supervisor and her research assistants. The logistics of the sample villages will permit weekly supervision of the research assistants. Data tabulation and analysis and preliminary write-up should be completed by March, 1986 when the final recommendations for the next Development Plan are due.

TABLE 1
ESTIMATES OF SAMPLE SIZE

Areas/Level	Size by Approach		
	Epidemiological (Cross-sectional)	Survey and Cohort	Case Study
Region (North, Northeast)	2	2	2
Provinces	32	8	2
District			
USAID Project	100	25	4
Control	25	6	-
Tarboon:			
USAID Project	300	75	4
Control	75	19	-
Village:			
USAID Project	1000	216	12
Control	250	72	4
Under-Fives			
USAID Project	50,000	10,800	600
Control	12,500	3,600	200

TABLE 2

LIST OF SELECTED INDICATORS FOR POTENTIAL USE
IN PROGRAM MONITORING AND EVALUATION

PREVALENCE OF MALNUTRITION:

Cross-sectional -

1. % 2-3 degree by age, by geographic/administrative division by year quarter by USAID project villages (in poverty areas) and non-USAID villages (in poverty areas).

Cohort (longitudinal) -

2. % who change nutritional status categories (up or down) or remained stable (normal or malnourished) by age and geographic area between 3rd quarter weighings 1983-1984, and 1984-1985.

3. % 2-3's in one quarter who rose a grade in subsequent quarters by age and area.

4. % Grade 1's not gaining weight in subsequent weighing, by age and area.

INCIDENCE OF MALNUTRITION:

Cohort -

5. % new 2-3's identified each quarter.

COVERAGE AND REGULARITY OF WEIGHINGS

Cross-sectional -

6. % of under-fives weighed in each quarter by age; project-non-project village, administration area, and year.

Cohort -

7. % times weighed of all eligible quarters by initial age at first weighing, area, year.

8. % of 2-3's weighed in subsequent quarter by area.

9. % of 2-3's weighed monthly in each quarter between community weighing sessions.

NUTRITIONAL STATUS AND PROGRAM FOLLOWUP

10. % who changed (improved/no improvement) nutritional status in quarter by their subsequent participation (a calculated index) in community nutrition activities, by age and project-non-project village.

11. % who gained weight or not in quarter by their previous participation in community nutrition activities, by age and project-non-project village.

12. % change in nutrition status by frequency and periodicity of participation in weighing sessions, by age and area.

TABLE 4A

NUTRITIONAL STATUS RECUPERATION STATUS AND WEIGHT GAIN CRITERIA

Malnourished Children		WEIGHT GAIN BETWEEN QUARTERLY WEIGHINGS					
by Age at First Status I, II, III Weighing	TOTAL	Raised a Grade	Remained in Same Grade		Lowered a Grade	Not weighed	Graduated
			Gained Wt.	Didn't Gain Wt.			
<u>GRADE I</u>							
	0 - 11 months						
	12 - 23						
	24 - 60						
<u>GRADE II</u>							
	0 - 11 months						
	12 - 23						
	24 - 60						
<u>GRADE III</u>							
	0 - 11 months						
	12 - 23						
	24 - 60						
TOTAL							

TABLE 4B

CHANGE IN NUTRITIONAL STATUS, FY 1984 - FY 1985

BY VILLAGE (OR TANBON)

Nutritional Status in Weighing in Quarter II, FY 1984	TOTAL	Nutritional Status at Weighing in Quarter II, FY 1985				Drop Outs	Graduated
		N	I	II	III		
N							
I							
II							
III							
Not Weighed							
New Borns							
TOTAL							

FIGURE 1
 FRAMEWORK FOR STUDY OF
 COMMUNITY BASED NUTRITION STRATEGIES AND
 MAIN OBSTACLES

<u>STRATEGIES</u>	OBSTACLES		
	Level of Community Involvement	Understanding Perceived Benefits of Growth Monitoring	Training of Volunteers, Communicators
1. WEIGHING/CHARTING/ EDUCATION			
2. IDENTIFICATION OF CAUSAL FACTORS			
3. PLANNING OF PROBLEM-SOLVING INTERVENTIONS			
4. MONITORING/ EVALUATION			

TABLE 5

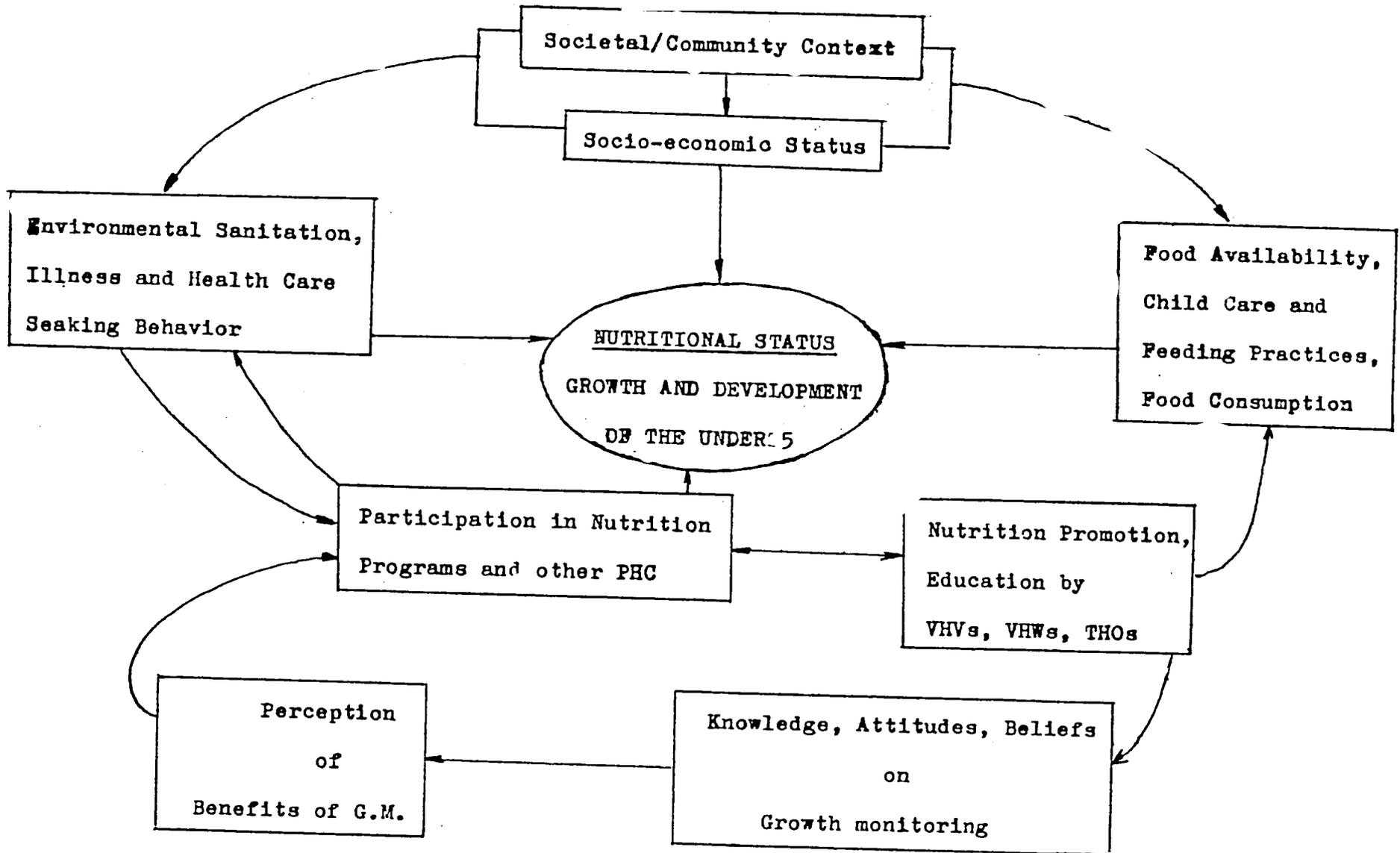
RELATIONSHIP BETWEEN CHANGE IN NUTRITION STATUS AND PARTICIPATION IN
NUTRITION ACTIVITIES, QUARTER II, 1984 TO QUARTER II, 1985

NUTRITION INTERVENTIONS	CHANGE IN NUTRITION STATUS, Q II- Q II, 1984-85							
	Raised a Grade		Remained Grade I-III		Lowered a Grade		Remained Normal	
Participation Index *	0-23 m	24-60 m	0-23 m	24-60 m	0-23 m	24-60 m	0-23 m	24-60 m
HIGH (20+) (G.M. + Suple + N. Ed. + (Feeding Station)								
MEDIUM (5 - 19)								
LOW (1 - 4)								
NO PARTICIPATION (0)								

* Frequency of events

FIGURE 2

CONCEPTUAL FRAMEWORK FOR IN-DEPTH MOTHER/CHILD/FAMILY INTERVIEW



ah

FIGURE 4

Working Schedule

	Time Period											
	1985									1986		
	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
1. Planning	XXX											
2. Design	XXXXXXXX											
3. Method Instrument Development		XXXXXXXX										
4. Training				XXX								
5. Standardization				XXX								
6. Pretesting				XXX								
7. Field work					XXXXXXXXXXXXXXXXXXXX							
8. Cleaning								XXXXXXXX				
9. Tabulation									XXXXXXXX			
10. Analysis										XXXXXXXXXXXXXX		
11. Write-up											XXXXXX	
12. Recommendations												XXX

BUDGET	SOURCES (US\$)		
	THE ROYAL THAI GOVERN- MENT	THE EXTENDED RURAL PRIMARY HEALTH CARE EXPANSION PROJECT	INTERNATIONAL NUTRITION UNIT/ USDHHS
<u>STAFF</u>			
-Permanent employees 18,000 \$ x 12 mths	216,000	-	-
-Temporary employees (Research Assistants) 5 m.x \$296 x 8 pers.	-	-	11,850
-A medical sociologist on loan from Sanitary Division	-	-	
<u>Operating expenses</u>			
Data analysis	100,000	2,000	857
Stationery, postage, telephone	200	200	
Supplies	1,000	1,000	
<u>Transport, Travel</u>			
Petrol, Oil	1,000	1,000	
Vehicle maintenance	1,000	1,000	
Travel	2,000	2,000	
Subsistence	2,000	2,000	393*
<u>Contingencies</u>	-	-	
*Earmarked for medical sociologist			
TOTAL	322,200	9,200	13,000

แบบสรุปลักษณะโภชนาการเด็กอายุ 0-4 ปี (60 เดือน)

สถานีอนามัย/สำนักงานสาธารณสุข ตำบล อำเภอ จังหวัด
 ประจําวันที่ บ่งบประมาณ

หมู่ที่	ชื่อหมู่บ้าน	ประเภทของหมู่บ้าน (ภาคมาศ x ใน ช่องที่ถูกต้อง)		จำนวนเด็ก 0-4 ปี (60 เดือน) ทั้งหมดในหมู่บ้าน		ภาวะโภชนาการ								
						อายุ 0-1 ปี (0-11 เดือน)				อายุ 1-4 ปี (12-60 เดือน)				
						ปกติ(คน)	1°(คน)	2°(คน)	3°(คน)	ปกติ(คน)	1°(คน)	2°(คน)	3°(คน)	
1		ยากจน	ปกติ											
2		ยากจน	ปกติ											
3		ยากจน	ปกติ											
4		ยากจน	ปกติ											
5		ยากจน	ปกติ											
6		ยากจน	ปกติ											
7		ยากจน	ปกติ											
8		ยากจน	ปกติ											
9		ยากจน	ปกติ											
10		ยากจน	ปกติ											
11		ยากจน	ปกติ											
12		ยากจน	ปกติ											
13		ยากจน	ปกติ											
14		ยากจน	ปกติ											
15		ยากจน	ปกติ											

หมายเหตุ

1. ให้หัวหน้าสถานีอนามัยหรือสาธารณสุขประจำสำนักงานสาธารณสุข หรือหัวหน้าฝ่ายส่งเสริมฯ รพค. จัดทำแบบสรุปนี้เป็นวงรอบ ๆ ละ 1 ชุด (ชุดละ 5 หมู่ ๆ ละ 5)
2. ให้จัดพิมพ์สีเหลือง เขียน น้เงิน หมึก ส้ม สาธารณสุขอำเภอ
3. สาธารณสุขอำเภอเก็บฉบับสีชมพูไว้ และรวบรวมฉบับสีเหลือง เขียน น้เงิน ส่งสำนักงานสาธารณสุขจังหวัด
4. สำนักงานสาธารณสุขจังหวัด รวบรวมฉบับสีเหลืองและสีเข้วส่งกองโภชนาการและศูนย์โภชนาการเขตตามลำดับ
5. รายงานงวดที่ 1 (ก.ค.-ธ.ค.) งวดที่ 2 (ม.ค.-มิ.ค.) งวดที่ 3 (เม.ย.-พ.ค.) งวดที่ 4 (มิ.ย.-ก.ย.) ให้ตำบลจัดส่งภายในวันที่ 15 ของเดือนแรกของงวดถัดไป

ANNEX 3

NUTRITION SURVEILLANCE PROGRAMME
FOR THE UNDERFIVES CHILDREN*

Infants and preschool children (0-5 years) are susceptible to malnutrition and infectious diseases more than the children of other age groups. Therefore, nutrition surveillance must be coordinated to prevent children from malnutrition.

Nutrition surveillance is weighing the infants from birth up to 5 years of age (60 months) every 1-3 months, which is a simple and convenient way to follow growth of the children because malnourished children will be under weight, and will not gain weight or loss weight.

Weight Measurement by Beam Balance Scale

Beam balance scale consists of two parts:

Part I: Beam with weight scale consists of:

1. Hanging needles to show the balance of the become.
2. Hanging child holder (pouch).
3. Weight
4. Beam with weight scale ranging from 0-5-10-15-20-25-30 kg.

Each section will be divided into 10 scales for example:

0-5 = 10 scales

1 scale = 0.5 gm.

2 scales = 1.0 kg.

10 scales = 5.0 kg.

*Translation from Thai brochure by Mrs. Punhit Puengtip, Nutrition Division, MOPH

Part II: Child Holder

A child holder looks like pants, made of thick fabric that can be separated from the beam.

How to Measure

1. Hang the scale onto a strong tree branch. Hang child holder to the hanging.
2. See to it that the beam is on balance by moving weight to zero scale. The beam will then be leveled with the ground, and the needle will be in the middle.
3. Strip the child to get actual weight, carry the child and put into child holder as shown in picture above, arrange child on holder straps to make them even.
4. Move the weight along the beam from zero until the beam stays still and the needles point to each other. Read the denomination. If the denomination is not distinct, apply grease or rub with sand paper often.

How to Read the Scale

- Read the denomination on which the weight is, e.g. if the weight is at 5, it means 5 kg.
- If the position where the weight is has no scale, count the scale. Each scale equals 0.5 kg., e.g. 8th scale = 4 kg.

After weight measuring, if you want to know if your child is malnourished, you must do as follows:

1. Acquire child's age.
2. Acquire weight in kg.
3. Learn how to use growth chart.

How to acquire child's age

Subtract date, month and year on which the weight measurement is taken, place with birth date. For example, if the weight measurement of Daing is done on May 3, 1985, we can calculate the age as follows:

	Year	Month	Day
Date of measurement	2526	5	3
Birth date	2523	11	30
Age	2	5	3

Therefore, Daing's age, at the time of measurement, is 2 years, 5 months and 3 days.

Growth Chart

Growth charts consists of:

Curves of four different columns showing degree of malnutrition.

Horizontal and vertical lines.

Horizontal lines, 1 scale equals 1 month of age

Vertical lines, 1 scale equals 1 kg. weight

If you have age and weight of the child:

1. Find scale on horizontal line which corresponds to child's age, and mark it.
 2. Find scale on vertical line which corresponds to child's weight, draw lines from age and weight marks until they cross. The position where the lines cross is in the color curve which shows the degree of malnutrition of the child.
- Love your baby and weigh often.

บัตรบันทึกการเจริญเติบโตสำหรับเด็ก



ตัวอย่าง เช่น เด็กชายแดงอายุ 2 ปี 5 เดือน 3 วัน ชั่งน้ำหนักได้ 10 กก.



บัตรบันทึกการเจริญเติบโตสำหรับเด็กประกอบด้วย

- เส้นโค้งสีต่าง ๆ 4 สี แสดงถึงระดับภาวะโภชนาการของเด็กเมื่อเทียบกับอายุ
- ตารางเส้นแนวนอนและแนวตั้ง
 - เส้นนอน 1 ช่องเท่ากับอายุ 1 เดือน
 - เส้นตั้ง 1 ช่องเท่ากับน้ำหนัก 1 กิโลกรัม

เมื่อได้อายุและน้ำหนักของเด็กแล้ว

- 1) หาช่องที่ตรงกับอายุของเด็กตามเส้นแนอน ทำเครื่องหมายไว้
- 2) หาช่องน้ำหนักจากน้ำหนักของเด็กที่ซึ่งได้ตามเส้นแนวตั้งลากเส้นตรงจากอายุขึ้นมาตัดกับเส้นน้ำหนัก ทั้งสองเส้นตัดกันที่จุดใด และอยู่ในสีใด ก็หมายถึงเด็กอยู่ในระดับภาวะโภชนาการของสีนั้น

รักลูกมาก หมั่นชั่งน้ำหนักลูก

เมื่อทำตามวิธีดังกล่าวแล้ว เครื่องหมายอยู่ในระดับสีเหลือง แสดงว่าเด็กชายแดงเริ่มมีดปกติ หรือภกตสารอาหารระดับที่ 1 เริ่มมีอาการขาดสารอาหาร

การดำเนินการเมื่อทราบภาวะโภชนาการของเด็ก

- ถ้าเด็กอยู่ในเกณฑ์ปกติให้แนะนำ ชั่งน้ำหนักเด็กทุก 3 เดือน
- ถ้าเด็กอยู่ในเกณฑ์เริ่มมีดปกติ (ระดับ 1) ให้แนะนำอาหารเสริมตามวัยที่ถูกต้องแก่ พ่อ แม่เด็ก
- ถ้าเด็กอยู่ในเกณฑ์อันตราย (ระดับ 2) หรือปล่อยไว้ถึงตาย (ระดับ 3) และเด็กที่พบว่าน้ำหนักลดลงหรือไม่เพิ่มจากเดิม ติดต่อกัน 6 สัปดาห์ ให้เพิ่มเติมจากการแนะนำอาหารเสริมตามวัยที่ถูกต้องแก่ พ่อ แม่เด็ก
- ถ้าเด็กอยู่ในเกณฑ์อันตราย (ระดับ 2) หรือปล่อยไว้ถึงตาย (ระดับ 3) และมีอาการป่วย เช่น ไข้ ไอ ท้องร่วง บวมหรือผิวหนังซีดลอกอย่างใดอย่างหนึ่ง ต้องรีบนำเด็กไปพบแพทย์ที่โรงพยาบาลที่ใกล้ที่สุดทันที
- เด็กขาดสารอาหารระดับรุนแรงทำ เภรจัดตามข้อ 1 ของหลักทุกเดือน



กองโภชนาการ กรมอนามัย

ทารกและเด็กวัยก่อนเรียน (เด็กแรกเกิดถึง 5 ปี)

เป็นวัยที่อยู่ในภาวะที่เสี่ยงต่อ ภาวะขาดอาหารและการเจ็บป่วย ด้วยโรคติดเชื้อได้ง่ายกว่าวัยอื่น จึงต้องมีการเฝ้าระวังและติดตามทางโภชนาการเพื่อป้องกันมิให้ภาวะดังกล่าวเกิดขึ้นกับเด็ก

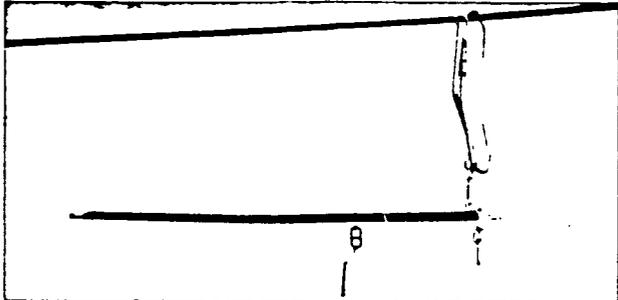
การเฝ้าระวังและติดตามทางโภชนาการ

เพื่อการชี้แนะแนวทางอย่างตั้งแต่แรกเกิด ถึง 5 ปี (60 เดือน) 1, 3, 6 เดือน 1 ปี และ 2 ปี ในการติดตามผลการเติบโตของเด็ก เพราะเด็กที่ขาดสารอาหารนี้ จะมีภาวะผอม ไม่เพิ่มน้ำหนักหรืออาจลดลงจากเดิม

การชั่งน้ำหนักโดยใช้เครื่องชั่งชนิดแขวน

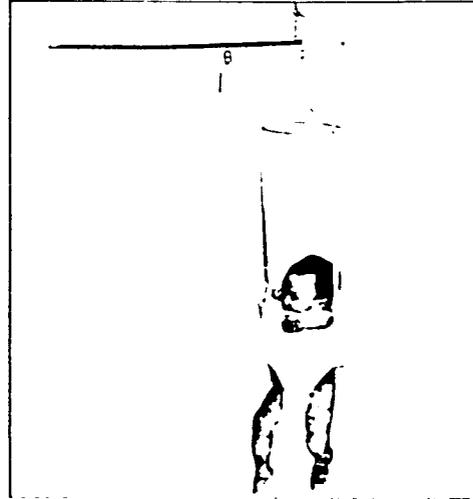
เครื่องชั่งชนิดแขวน มีส่วนประกอบ 2 ส่วนคือ-

ส่วนที่ 1 คานบนอกน้ำหนัก ประกอบด้วย



- คานสำหรับแขวนและเข็มชี้บอกความสมดุลย์ของคาน
- คานสำหรับแขวนตุลใส่เด็ก
- ลูกตุ้มถ่วงน้ำหนัก
- คานบนอกน้ำหนัก มีตัวเลขกำกับตั้งแต่ 0.5 1.0 1.5 2.0 2.5 3.0 กิโลกรัม แต่ละช่วงตัวเลขแบ่งออกเป็น 10 ช่อง เช่น 0-5 = 10 ช่อง
 - ช่องมีค่าเท่ากับ 0.5 กรัม
 - ช่องมีค่าเท่ากับ 1.0 กิโลกรัม
 - ช่องมีค่าเท่ากับ 5.0 กิโลกรัม

ส่วนที่ 2 ตุลสำหรับใส่เด็ก



ตุลสำหรับใส่เด็กมีลักษณะคล้ายกางเกง ที่แขวนผ้าเนื้อหนา ออกแยกออกจากคานรับน้ำหนักได้

วิธีชั่ง

- นำคานไปเทียบกับชื้อหรือกิ่งไม้ที่แข็งแรง เอาตุลสำหรับใส่เด็กไปเกี่ยวเข้ากับคานข้อใดคาน
- ตรวจเครื่องชั่งให้อยู่ในระดับสมดุลย์ โดยเลื่อนลูกตุ้มมาอยู่ที่เลขศูนย์ คานจะเป็นแนวขนานกับพื้นดินและเข็มชี้บอกความสมดุลย์จะอยู่ตรงกลาง
- เอาเสื้อผ้าเด็กออกให้หมดเพื่อให้ได้น้ำหนักที่แท้จริง ุ้มเด็กใส่ตุลแล้วปล่อยตุลให้อยู่ในตุลรูปร่างบนนี้ ปรับสายตุลทั้ง 3 สายให้ได้ระดับกัน
- เลื่อนลูกตุ้มออกจากเลขศูนย์ไปจนกระทั่งคานหยุดนิ่งและ เข็มบอกความเที่ยงตรง หรือวงกลม อ่านตัวเลขที่ชี้ได้ ถ้าตัวเลขอ่านยาก มองไม้ค่อยๆเดินดูใช้นิ้วชี้เบาๆ หรือใช้กระดาษขาวช่วยดูก็ได้

วิธีอ่านน้ำหนักที่ชั่งได้

- เมื่อลูกตุ้มแขวนตรงกับตัวเลขที่อ่านตามตัวเลขนั้น เช่น ตรงกับเลข 5 ก็เท่ากับ 5 กิโลกรัม
- ถ้าลูกตุ้มแขวนไม่ตรงกับตัวเลขใด ให้ใช้วิธีนับช่อง ๆ ละ 0.5 กิโลกรัม เช่น ตรงกับช่องที่ 8 ก็เท่ากับ 4 กิโลกรัม

เมื่อชั่งน้ำหนักแล้ว อยากรู้ว่าเด็กที่ชั่งขาดสารอาหารหรือไม่ ต้องทำดังนี้คือ

- ต้องรู้อายุของเด็กที่ชั่ง
- ต้องรู้น้ำหนักที่ชั่งเป็นกิโลกรัม
- ต้องรู้จักใช้ปรับบันทึกการเจริญเติบโตของเด็ก

การคิดอายุของเด็กที่ชั่ง

นำวัน เดือน ปีที่ทำการศึกษาตั้ง ลบด้วยวันเดือนปีเกิดของเด็ก เช่น เด็กชายแดง มีโชค เกิดเมื่อวันที่ 30 พฤศจิกายน 2523 ทำการศึกษาเมื่อเมื่อวันที่ 3 พฤษภาคม 2526 การคิดอายุเด็กจะทำได้ดังนี้คือ

	ปี	เดือน	วัน
วันเดือนปีที่ทำการชั่ง	2526	5	3
วันเดือนปีเกิดของเด็ก	2523	11	30
อายุของเด็ก	2	5	3

ดังนั้นเด็กชายแดง มีโชค มีอายุในวันที่ชั่งน้ำหนัก 2 ปี 5 เดือน 3 วัน 49

ANNEX 4

THAILAND

PEOPLE CONTACTED

USAID-Washington

Dr. Hal Rice, Nutrition Advisor, H/P/N, Asia Bureau

USAID-Bangkok

Mr. Terry Tiffany, Chief, H/P/N
Mr. Narintr Tima, Health Nutrition Officer

MOPH

Dr. Amorn Nondasuta, Permanent Secretary
Dr. Pirote Ningsanonda, Director General

Nutrition Division

Dr. Puangthong Tantiwongse, Director
Dr. Chawalit Sontikitrungruang, Malnutrition Control Section
Mrs. Punhit Puangtip, Administrator
Ms. Aree, Nutritionist
Ms. Sudit, Nutritionist
Ms. Ratchanee, Nutritionist
Dr. Wosan, Epidemiologist

Sanitation Division

Ms. Kanjana Supajanya, Medical Sociologist

Korat Province - Regional Nutritionists; Provincial, District, Tambon and Village health personnel; village volunteers and health committee members.

Nutrition Sawa Province - Regional Nutritional Provincial, Tambon and Village health personnel, village health volunteers and health committee members.

Mahidol University

Dr. Aree Valyasevi - Director, Institute of Nutrition
Dr. Kraissid Tontisirin, Professor, Institute of Nutrition and Ramathibod Hospital
Dr. Yongyout Kachonpadenkitti - Researcher, Institute of Nutrition
Dr. Thavitong Hongrivatana - Director, Medical Social Sciences, Center for Health Policy Studies