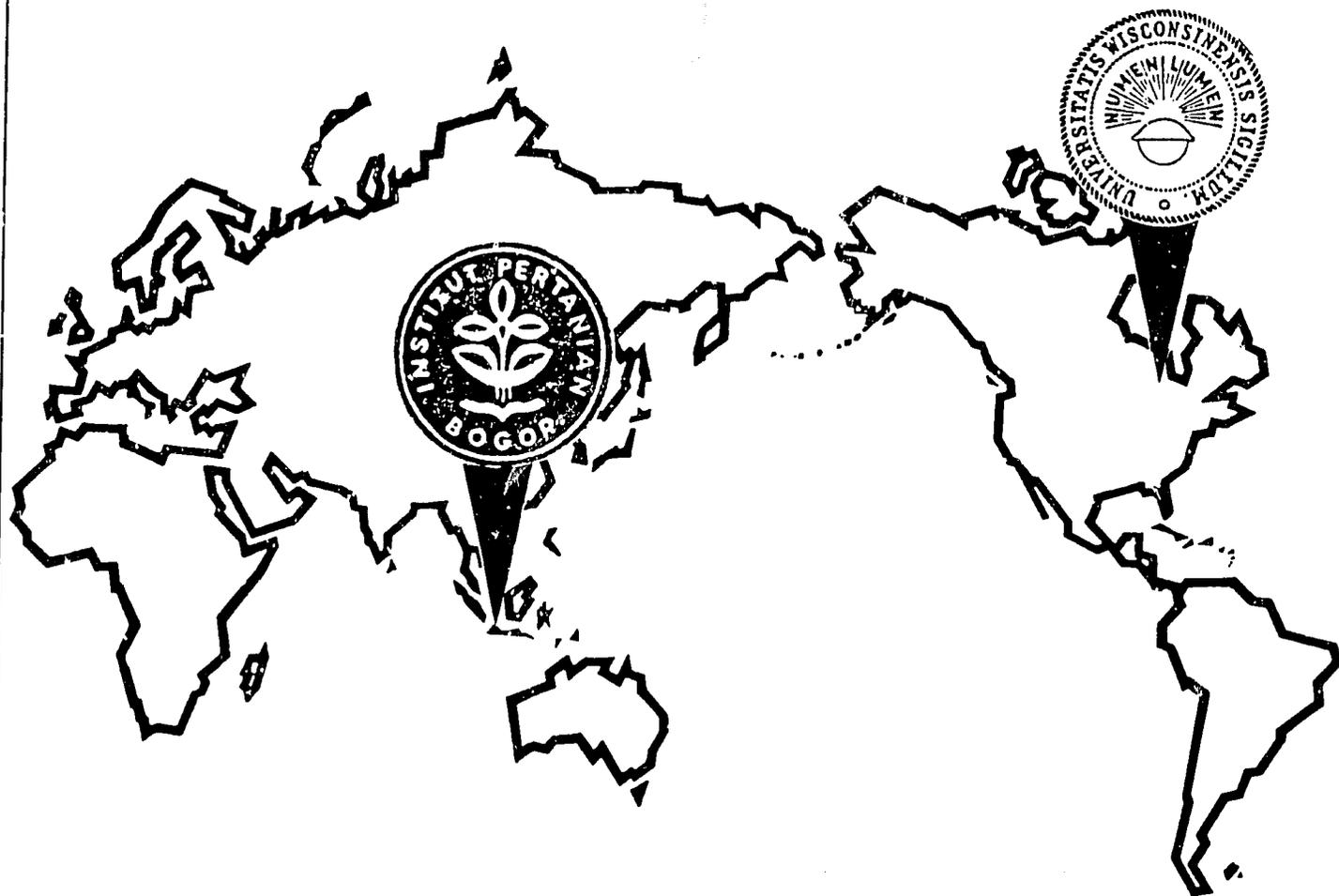


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Institut Pertanian Bogor \* University of Wisconsin

# GRADUATE EDUCATION PROJECT



**Aid Project 497-0290**

Report No. 19

BARRETT

REPORT OF PROJECT ASSOCIATE  
ON  
COMMUNITY NUTRITION AND FAMILY RESOURCES  
TO  
INSTITUT PERTANIAN BOGOR (IPB)  
BOGOR, INDONESIA

by

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## TABLE OF CONTENTS

	Page
I. DURATION OF CONSULTANCY.....	1
II. SCOPE OF THIS REPORT.....	1
III. OBJECTIVES OF THE CONSULTANCY.....	1
IV. PROJECT ASSOCIATE'S ACTIVITIES.....	2
A. S <sub>1</sub> Program.....	2
1. Information Search.....	2
2. Instruction.....	2
3. Staff Development.....	2
4. Analysis of S <sub>1</sub> Program.....	3
5. Research.....	5
6. FAO/WHO Guidelines.....	9
B. S <sub>2</sub> Program.....	9
1. Information Search.....	9
2. Improvements in the Proposed S <sub>2</sub> Curriculum.....	9
3. Proposal for S <sub>2</sub> Program.....	12
4. S <sub>2</sub> Course Outlines.....	13
5. Computer Program to Analyze Nutritional Survey Data.....	14
V. ACHIEVEMENT OF OBJECTIVES.....	14
VI. RECOMMENDATIONS.....	15
A. Departemen GMSK.....	15
1. Staff.....	15
2. Facilities.....	15
3. Research.....	16
B. S <sub>1</sub> Program.....	16
1. Overall Program Emphasis.....	16
2. Course Syllabi.....	17
3. Student Orientation.....	17

TABLE OF CONTENTS  
(continued)

C.	S <sub>2</sub> Program.....	17
1.	Staff.....	17
2.	Electives.....	17

APPENDICES

A.	Staff Members of Department GMSK.....	18
B.	S <sub>1</sub> Courses.....	19
C.	"What and How"--Department Handout.....	20
D.	Research Framework, Indonesian.....	27
E.	Research Framework, English.....	28
F.	References for Topic 1, Family Health and the Environment.....	29
G.	S <sub>2</sub> Program Brochure, Indonesian.....	32
H.	S <sub>2</sub> Program Brochure, English.....	34
I.	S <sub>2</sub> Course Descriptions.....	39
J.	Community Nutrition--Short Outline.....	43
K.	Community Nutrition--Long Outline.....	45
L.	Food and Nutrition Planning--Short Outline.....	56
M.	Food and Nutrition Planning--Long Outline.....	58
N.	Food and Nutrition Systems--Short Outline.....	66
O.	Food and Nutrition Systems--Long Outline.....	67
P.	Nutrition Research Methodology--Short Outline.....	71
Q.	Nutrition Research Methodology--Long Outline.....	72
R.	Family Health and the Environment--Short Outline.....	77
S.	Family Health and the Environment--Long Outline.....	79
T.	Computer Printout--% RDA Calculations.....	95

LIST OF TABLES/FIGURES

1.	Figure 1	Two Possible Alternative S <sub>1</sub> Programs, GMSK.....	6
2.	Table 1	Courses for Two Possible Alternative S <sub>1</sub> Programs.....	7
3.	Table 2	S <sub>2</sub> Program Curricula.....	10

11

## I. DURATION OF CONSULTANCY

The Project Associate left the United States on March 12, 1982 and arrived in Bogor, Indonesia, on March 14, 1982. The length of the consultancy was originally six months, until September 12, 1982; however, the consultancy was extended to one full year, or March 12, 1983.

## II. SCOPE OF THIS REPORT

After the original six-month consultancy, a report which covered background information on the Department of Community Nutrition and Family Resources and the Project Associate's activities was submitted. Rather than repeat this information, the reader is asked to refer to the original report for background information and the Project Associate's activities in the first six months. The present report will pertain to the second six-month period, that is, September 12, 1982 through March 12, 1983. In addition, it is recommended that the reader refer to the reports of Ms. Mary Roach and Ms. Jeralyn Pigott, two Project Associates who also worked in the Department of Community Nutrition and Family Resources from September 1982 to February 1983.

## III. OBJECTIVES OF THE CONSULTANCY

The objectives of the consultancy, as designated by the Department of Community Nutrition and Family Resources (Gizi Masyarakat dan Sumberdaya Keluarga or GMSK) were as follows:

- A. Improvement of the proposal for the two-year  $S_2$  (Sarjana 2 or M.S.) curriculum and preparation for submittance to the Board of Higher Education, R.I., in January 1983.
- B. Completion of outlines for all new  $S_2$  level courses.
- C. Staff development in the area of curriculum design and critical analysis of the  $S_1$  (B.S.) program.
- D. Analysis of current laboratory situation and recommendations concerning future laboratories.
- E. Completion of a computer program to analyze nutritional survey data.
- F. Preparation of an informational pamphlet concerning the  $S_2$  program, following verification from the Board of Higher Education.
- G. Instruction, at the  $S_1$  (B.S.) level, in the courses on Food Experimentation and Food Quality Control.

#### IV. PROJECT ASSOCIATE'S ACTIVITIES

##### A. S<sub>1</sub> Program

##### 1. Information Search

Books, journals, films, and other forms of information were continuously sought in order to upgrade the GMSK library and to serve as resources for various S<sub>1</sub> level courses. The Department is grateful to the Jakarta USAID library for their generous contribution of over 50 books and journals which were being deleted from their library.

##### 2. Instruction

During the period of August to December 1982, courses were taught in Food Experimentation and Food Quality Control. The Project Associate assisted in restructuring the course on Food Experimentation and also gave the first lecture concerning the steps involved in experimentation. In addition, the Project Associate consulted with students outside of lecture time, during the course of the Food Experimentation class.

The Project Associate also served as a consultant for the course on Food Quality Control and gave one two-hour lecture, in bahasa Indonesia, on methods of objective evaluation of foods. A ten-page summary of the lecture was written and distributed to students following the lecture.

##### 3. Staff Development

In addition to advising Ibu Amini Nasoetion on the Food Experimentation course and Ibu Endang Tjiptanigrum on the Food Quality Control course, the Project Associate spent considerable time advising the staff in the area of curriculum design.

The Project Associate gave a seminar on curriculum design in September (see first six month's report) and continued working with Pak Suhardjo, the department head, and Ibu Emmy Karsins, the department's head of curriculum, on curriculum development during the period of the consultancy. An intensive two-day workshop on curriculum development, offered at IPB, was attended with Pak Suhardjo and Ibu Emmy and the principles discussed were later applied to

the GMSK S<sub>1</sub> program. In addition, meetings took place with Ibu Emmy and Dr. Elizabeth Kean, a University of Wisconsin Consultant on curriculum development, during which the principles of curriculum development were reinforced and the S<sub>1</sub> program was analyzed.

4. Analysis of S<sub>1</sub> Program

Department GMSK is composed of 16 full-time staff members and nine part-time staff members. A list of the full-time staff members appears in Appendix A. The first year at IPB consists of the "Tingkat Persiapkam Bersama," in which all IPB students take the same preparatory courses. After the first year, students enter their respective departments and follow a fixed curriculum.

A list of the courses given in Department GMSK for semesters 3-8 appears in Appendix B. As discussed in the Project Associate's first six-month report, the breakdown of percentages by course content is as follows:

<u>Course Content</u>	<u>Number of Courses</u>	<u>% Total Curriculum</u>
Nutrition	7	39
Family Life	4	22
Food Science	6	33
Public Health	<u>1</u>	<u>6</u>
	18	100%

The staff felt a need to re-assess the S<sub>1</sub> curriculum and to determine whether the departmental goals were being reached or not. This process was begun in September 1982, with the Project Associate's seminar on Curriculum Development, and was continued in the form of staff meetings and intensive discussions with Pak Suhardjo and Ibu Emmy. The Project Associate was instrumental in these discussions and in the methodological analysis of department goals, existing courses, and areas of deficiency.

The results of the intensive analysis of the S<sub>1</sub> program were as follows:

a. It was decided that Department GMSK will offer only one major, in Community Nutrition. It is hoped that in the future, after staff strengthening, a major in Family Resources will also be offered.

b. It was decided that the present curriculum contains too great an emphasis on laboratory work. In the past, the department has offered a relatively fixed curriculum with either a laboratory or fieldwork option. However, Community Nutritionists should be concerned primarily with the field or community. In addition, IPB has a Food Science Department which offers many of the same laboratory courses currently offered by GMSK. Therefore, it was decided to eliminate the laboratory option and to offer the food science related courses primarily as electives.

c. Following discussions with Dr. Dedi Fardiaz, Chairman of the Food Science Department, it was decided that GMSK students will be required to take the Food Analysis course offered in the Food Science Department, rather than duplicate this course in GMSK. In addition, courses in Food Quality Control and Organoleptic Evaluation, which are given in the Food Science Department, will be offered as electives to GMSK students.

d. IPB hopes to initiate a "full-credit system" which would allow for more elective courses and hence a more flexible and individualized curricula. The analysis of the S<sub>1</sub> program, with this new system in mind, resulted in two possible alternatives for the S<sub>1</sub> curriculum: one for a four-year, eight-semester program and another for a four and a half-year, nine-semester program.

A proposal, which included the alternative S<sub>1</sub> programs, was designed by the staff, in particular by Ibu Emmy, with the Project Associate's recommendations. According to IPB guidelines, the breakdown of the S<sub>1</sub> program should be:

- 25% General core courses
- 35% Courses from student's field (in this case, food and agriculture)
- 40% Courses from student's area of specialization (i.e., nutrition, food science, etc.)

The four-year program would include a total of 144 credits, while the four and a half-year program would include 155 credits. An outline of the alternative breakdowns and a list of courses to be included appear in Figure 1 and Table 1.

The outline delineates the number of credits in each of the three categories: basic courses, field courses, and finally area of specialization courses. Within the student's field, some pertinent courses will be taken from his/her own faculty (for example, agriculture) whereas others will be taken from other faculties (for example, fisheries, agricultural technology, etc.). Within the area of specialization courses, a certain percentage of the credits are required and a certain percentage are electives, to be chosen by the student. All of the courses listed in Table 1 are currently offered at IPB.

It is hoped that the new  $S_1$  program may be implemented in 1984. The proposed program would allow for greater flexibility and would give students a greater feeling of participation in their own educational program.

During the course of the  $S_1$  program analysis, the need for a pamphlet or handout describing the department was felt. The Project Associate assisted in preparation of this handout, which was called "Apa dan Bagaimana--GMSK", and translated the Indonesian version into an English version, "What and How--GMSK", which appears in Appendix C of this report.

##### 5. Research

The Project Associate occasionally consulted with  $S_1$  students concerning their scientific papers, research projects that are carried out in the fourth year. Consultation generally concerned research methodology and statistical analysis.

The Project Associate also participated in the development of an overall framework for departmental research. This framework went through numerous revisions and emerged as a theoretical model with which to orient the diverse interests of the GMSK staff. The common goal of the department is to improve the quality of life of rural families. The research framework outlines factors which affect the quality of life, and delineates measureable outcomes with which to determine quality of life. A copy of the research framework, in bahasa Indonesia, appears in Appendix D, with the English translation in Appendix E.

FIGURE 1.

Two Possible Alternatives for the S<sub>1</sub> Program in  
Community Nutrition and Family Resources

Alternative I

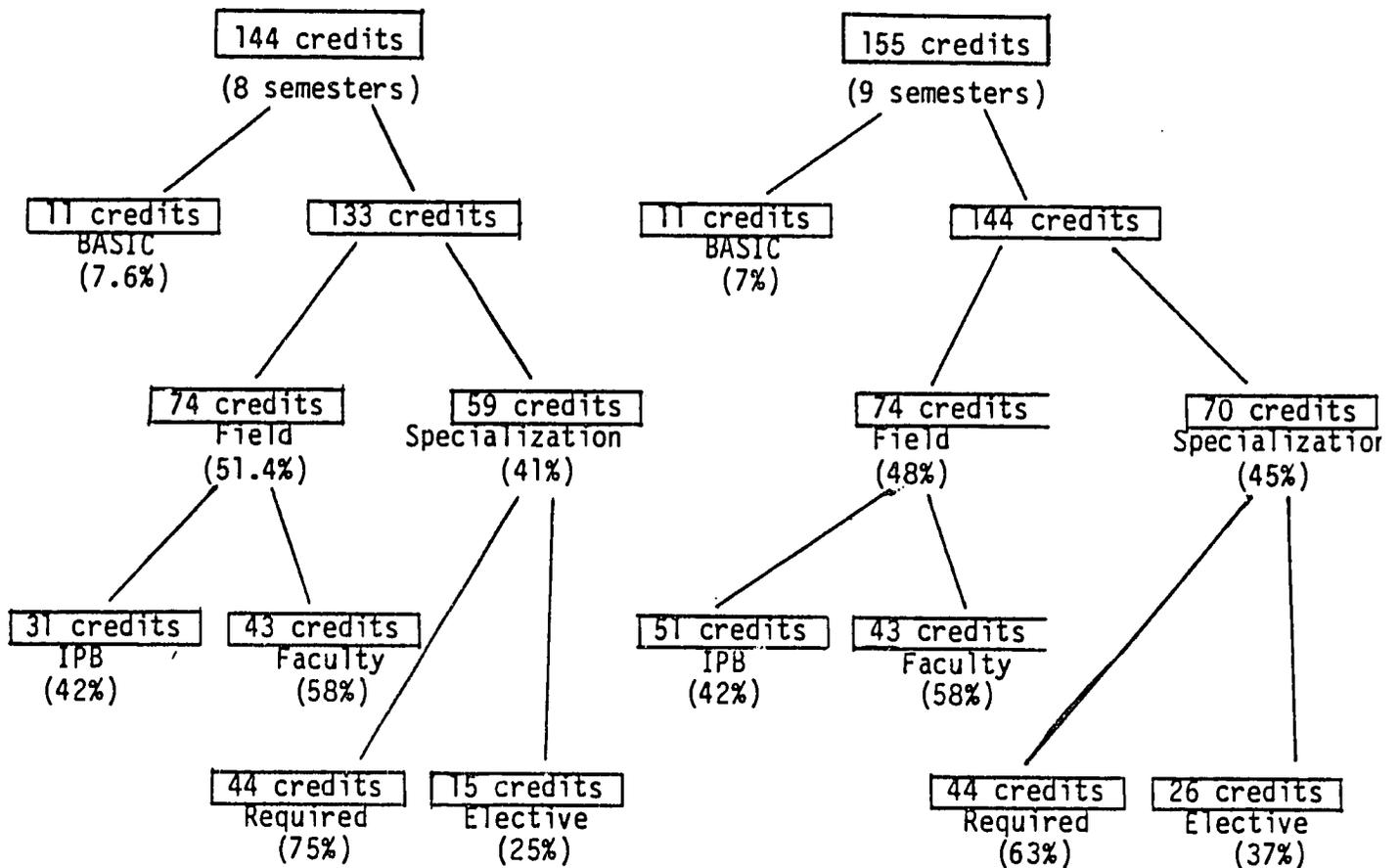
Alternative II

Length of study: 4 years  
8 semesters

Length of study: 4 1/2 years  
9 semesters

Credit Allocation:

Credit Allocation:



Notes:

Basic = Basic core courses

Field = Courses from student's general field

Specialization = Courses concerning the student's specialization

TABLE 1

COURSES FOR TWO POSSIBLE ALTERNATIVES FOR THE  
S<sub>1</sub> PROGRAM, GMSK

COURSE TITLE	BASIC	GENERAL FIELD		AREA OF SPEICALIZATION	
		IPB	FACULTY	REQUIRED	ELECTIVE
1. English	2				
2. Indonesian	3				
3. Religion	2				
4. Pancasila	2				
5. Military Science	2				
6. Basic Physics		3			
7. Mathematics I		3			
8. Basic Chemistry I		3			
9. Introduction to Agriculture		1			
10. Mathematics II		3			
11. Biology		3			
12. Basic Chemistry II		3			
13. Economics		3			
14. Rural Sociology		3			
15. Demography			3		
16. Micro Economics or Production Economics			3		
17. Basic Management			3		
18. Basic Agronomy			4		
19. Basic Microbiology			3		
20. Basic Climatology			3		
21. Soil Science			3		
22. Annual Crops			2		
23. Horticulture			3		
24. Statistics I			3		
25. Food & Nutrition Problems			3		
26. KKN		6			
27. Scientific Papers I			3		
28. Plant Protection			4		
29. Scientific Papers II			3		
Total Credits	11	31	43		

COURSE TITLE	AREA OF SPECIALIZATION			
	ALTERNATIVE I		ALTERNATIVE II	
	REQUIRED	ELECTIVE	REQUIRED	ELECTIVE
1. Basic Nutrition	3		3	
2. Advanced Nutrition	3		3	
3. Family Life	3		3	
4. Family Resources Management	3		3	
5. Food Science	3		3	
6. Food Analysis	4		4	
7. Food Processing	3		3	
8. Experimental Foods	3		3	
9. Public Health	3		3	
10. Statistics II	3		3	
11. Nutrition Survey Methodology	4		4	
12. Nutrition Planning	3		3	
13. Nutrition Education	3		3	
14. Nutrition Economics	3		3	
15. Food Laws and Regulations		2		2
16. Consumer Education		3		3
17. Family Ecology		3		3
18. Methodology of Social Research		3		3
19. Experimental Design		3		3
20. Farming		3		3
21. Animal Science		3		3
22. Fisheries		3		3
23. Extension Communications		3		3
24. Food Quality Control				
25. Organoleptic Evaluation				
26. Cooperatives				
27. Home Gardening				
28. Nutritional Assessment				
TOTAL CREDITS	44	26	44	26
		(Choose 15)		(Choose 26)

6. FAO/USAID Guidelines

The Project Associate continued activity, which began in August 1982, as a liaison between Department GMSK and the FAO/USAID consultant, Dr. Laura Jane Harper, in conjunction with testing of the FAO/USAID, "Guidelines for Curriculum Content for Agricultural Training in Southeast Asia," in the department. This activity included briefing Dr. Harper on the GMSK curriculum, assisting the department in implementation of the Guidelines, and acting as a liaison and outside observer when problems arose.

B. S<sub>2</sub> PROGRAM

1. Information Search

The search for resources for the S<sub>2</sub> program was much more extensive than that for the S<sub>1</sub> program and included writing to international organizations and research centers in order to obtain up-to-date material. In order to facilitate the use of materials obtained, the Project Associate prepared lists of references, including page number references for each new S<sub>2</sub> course outline written. This will simplify the actual course development for each lecturer. The Project Associate wrote outlines for five new S<sub>2</sub> courses during this consultancy (see Section IV.B.4. of this report) and prepared reference lists, in detail, for each course. An example of the reference list for the first topic in the "Family Health and the Environment" outline appears in Appendix F.

2. Improvements in the Proposed S<sub>2</sub> Curriculum

The proposed S<sub>2</sub> curriculum, which was in its fifth draft stage at the beginning of the extended consultancy in Spetember 1982, went through additional revisions until it reached its final form in December 1982. The final proposed S<sub>2</sub> curriculum appears in Table 2. Various changes, and the reasons behind them are as follows:

a. S<sub>2</sub> Program Prerequisite

It was decided that students lacking a nutrition background should be required to take a non-credit course in "Principles of Nutrition" during the transitional semester from June to August. This course will be team taught and will cover the principles taught in the two S<sub>1</sub> level nutrition courses.

TABLE 2

S<sub>2</sub> CURRICULUM FOR COMMUNITY NUTRITION AND FAMILY RESOURCES

	<u>CREDITS</u>	<u>INSTRUCTORS(s)</u>
<u>Transitional Semester</u>		
Principles of Nutrition	non-credit	GMSK staff
<u>First Semester</u>		
GMS 511 - Sociocultural and Economic Influences on Family Food Behavior	3 (3-0)	Suhardjo
GMS 514 - Community Nutrition	4 (3-3)	Sudjana Sibarani Darwin Karyadi Muhamad Khumaidi
STK 511 - Statistics	4 (3-2)	Barizi M. A. Aziz
<u>Second Semester</u>		
GMS 513 - Food and Nutrition Planning	3 (2-3)	Suhardjo
SPD 590 - Methodology of Social Research	3 (3-0)	Sajogyo
PTK 603 - Physiology and Biochemistry of Nutrition	3 (3-0)	A. W. Piliang
Elective:		
GMS 512 - Nutrition and Child Development or	3 (3-0)	Hartanti Santoso Husaini
SPD 562 - Demography	3 (3-0)	S. Rusli
<u>Third Semester</u>		
GMS 512 - Food and Nutrition Systems	3 (3-0)	Muhamad Khumaidi
GMS 515 - Nutrition Research Methodology	2 (2-0)	Suhardjo Hidayat Syarief
GMS 522 - Family Economics	3 (3-0)	Suprihatin Guhardja Safri Mangkupraw
Elective:		
GMS 521 - Family Health and the Environment or	3 (3-0)	Mariyati Sukarno Budiharsana
PWD 651 - Basic Principles and Planning of Rural Development	3 (3-0)	A. Anwar R. Sinaga
<u>Fourth Semester</u>		
GMS 699 - Research and Thesis	6	GMSK staff
GMS 690 - Seminar	1	GMSK staff

b. Family Sociology

On a more in-depth analysis of the S<sub>2</sub> program, it was found that the Family Sociology course, which is taught by the Department of Rural Sociology, has a prerequisite of another course. It was decided that, instead of taking two courses outside of GMSK, the relevant topics in this course would be incorporated into the courses on "Socio-Economic and Cultural Influences on Family Food Behavior" and "Family Economics." Family Sociology may, however, be considered as an elective at a later date.

c. Information Transfer Technology

The "Information Transfer Technology" course was deleted from the final S<sub>2</sub> curriculum for various reasons. The topics to be included in this course included methods of data analysis, instruments (calculator and computer) used in data analysis, presentation of data to the public, and information transfer organizations in Indonesia. It was determined that most of the topics in this course would be covered in the statistics course. In addition, such a course will hopefully be taught in the future through the proposed Information Resources Center (Darmaga Campus). Finally, the principles of data presentation and reaching the public would fit better in the Community Nutrition course. For these reasons, the Information Transfer Technology course was deleted and the pertinent topics were included in Community Nutrition.

d. Food and Nutrition Planning

Due to the importance of the subject of program planning, implementation, and evaluation, this section was extracted from the Community Nutrition course outline originally proposed and developed into a new course. Most of the S<sub>2</sub> program graduates will go on to administrative positions, where a knowledge of food and nutrition planning is vital. In addition, the Community Nutrition course, which will be offered in the first semester, should serve a more introductory function and not delve into the mechanism of planning.

e. Community Nutrition

The credit value in the Community Nutrition course was increased from three to four to allow for work in the field, which is essential to this course.

f. Nutrition Research Methodology

The department felt a need for a course on Nutrition Research Methodology for three reasons:

1. Students should be able to critically analyze current nutritional research in both Indonesia and other countries.
2. Students should have an opportunity to critically analyze their own research proposals, developed one semester prior to this course.
3. There should be a continuation of research work from the 2nd semester, when proposals are written during the "Methodology of Social Research" class, to the 4th semester, when students do their data collection. Nutrition Research Methodology, which will be offered in the 3rd semester, will serve this purpose.

For the above reasons, a course on Nutrition Research Methodology was added to the curriculum. It is hoped that this course will build on the principles taught in the Methodology of Social Research and better apply them to Department GMSK.

g. Sequencing Changes

Several improvements in the sequencing of the curriculum were made. These changes were made because of course rescheduling, instructor work load, and general flow of learning.

h. Electives

During the second and third semesters, the student may choose between two elective courses. The introduction of electives into the program will provide for greater flexibility and a better-suited program for each individual student. It is hoped that more opportunities for electives will be given in the future as the S<sub>2</sub> program develops.

4. Proposal for S<sub>2</sub> Curriculum

The Project Associate assisted in preparation of the formal proposal for the S<sub>2</sub> program and in the writing of an informational brochure to be distributed in interested government offices, universities, and research organizations. The Project Associate translated the original Indonesian version into English. The original brochure appears as Appendix G and the translated form as Appendix H.

The official proposal for the S<sub>2</sub> program was submitted to the Board of Higher Education in January 1983. The Project Associate assisted in its preparation. Included in this proposal was a short description of each S<sub>2</sub> level course, with the exception of the newly developed Nutrition Research Methodology. Translations of these course descriptions appear in Appendix I.

#### 4. S<sub>2</sub> Course Outlines

One of the Project Associate's primary goals was to write outlines for five new S<sub>2</sub> courses lacking them. During the Project Associate's first six-month consultancy outlines were written for:

- a. Socio-Economic and Cultural Influences on Family Food Behavior
- b. Community Nutrition
- c. Nutrition and Child Development

The Socio-Economic and Cultural Influences on Family Food Behavior outline was upgraded by Ms. Jeralyn Pigott, and the Nutrition and Child Development outline was upgraded by Ms. Mary Roach; however, the following courses still required outlines:

- a. Food and Nutrition Planning
- b. Food and Nutrition Systems
- c. Nutrition Research Methodology
- d. Family Economics
- e. Family Health and the Environment

In addition, the Community Nutrition course required remodeling due to the removal of the Food and Nutrition Planning section.

The Project Associate worked closely with the instructor(s) of each of the above courses in order to develop outlines for their respective courses. In the case of the Family Economics course, it was decided that an outline would be delayed due to the fact that the instructor, Ibu Suprihatin Guhardja, will be spending one month in the USA in March 1982, with the specific intention of developing the Family Economics course.

Short and long (detailed) outlines for the remainder of the S<sub>2</sub> courses, including Community Nutrition, appear in Appendices J-S. Outlines were given

to the respective instructor, together with a detailed list of references (all available in the GMSK library) for each topic in the outline. It is hoped that these outlines will serve as a basis from which courses can be developed and improved.

5. Computer Program to Analyze Nutritional Survey Data

As discussed in the Project Associate's first six-month report, analysis of food consumption data obtained in field surveys is a long and tedious task. A series of computer programs to analyze such data was therefore very well received.

The functions of the programs are to:

- a. Input demographic and food consumption data for an unlimited number of families and days of survey.
- b. Calculate RDA values for each family member.
- c. Calculate the average consumption/person/day for each family.
- d. Calculate the average percent RDA for each family and also on a cumulative basis for all the families surveyed.

The programs were written in bahasa Indonesia and Pak Hardinsyah, a GMSK staff member with experience in computer science, was trained in the use of the programs. The Project Associate is deeply grateful to Mr. Darrell Skinner, a UW Project Associate currently working in the Physics department, who was instrumental in the program design, execution, and output. Without Darrell's constant assistance and unselfish gift of his time, the computer programs would not be possible. A sample copy of the output from these programs appears in Appendix T.

V. ACHIEVEMENT OF OBJECTIVES

During the six-month consultancy, the Project Associate was able to achieve the following objectives (as proposed in Section III):

- A. Improvement of the two-year  $S_2$  curricula and preparation for submittance to the Board of Higher Education.
- B. Completion of outlines for all  $S_2$  courses. (For all but Family Economics.)

- C. Staff development in curriculum design and critical analysis of the  $S_1$  program. (This was accomplished, but should be an ongoing process.)
- D. Analysis of current laboratory situation. (See Section VI.A.2.--Recommendations on facilities.)
- E. Completion of computer program to analyze nutritional survey data.
- F. Preparation of an informational pamphlet about the  $S_2$  program.
- G. Instruction, at the  $S_1$  level, in Food Experimentation and Food Quality Control.

## VI. RECOMMENDATIONS

### A. Departemen Gizi Masyarakat dan Sumberdaya Keluarga

#### 1. Staff

It is recommended that the staff be expanded to include lecturers trained in Community Nutrition and, even more importantly, Family Resources. Staff members are oftentimes overworked and lack training in areas of vital importance to the department. However, it will be difficult for any of the present staff to undergo training for higher degrees, either in Indonesia or elsewhere, due to family responsibilities and other influential factors. Therefore, it is essential to expand the number of staff members.

The staff should be encouraged to seek additional training, whether it be on an independent reading basis or enrollment in courses now and then. Several of the staff members are enrolled in courses and are working towards higher degrees, and should be supported in their efforts.

#### 2. Facilities

As discussed in the first six-month report, the department lacks adequate space for practical, family-oriented laboratory work. It is recommended that the department not expand the food analysis laboratory for student coursework as originally planned, but rather upgrade the existing lab to be used for departmental (staff) research only. It has been decided that students will follow the Food Analysis course offered by the Food Science department, therefore there is no need for a large laboratory.

If the department does, in fact, acquire more space, it is recommended that this area be used for food processing laboratories (household-oriented), food evaluation laboratories, and discussion rooms, in addition to staff offices.

It is recommended that the library be expanded to allow more student desk space and more shelves for books and journals. Library materials should be continuously sought and added to the library.

### 3. Research

It is difficult to stimulate staff research in a situation where funding is low or nonexistent and facilities are inadequate. However, the desire to do research should be kept alive in the department and staff members should be encouraged to submit proposals to the Department of Education and Culture and other organizations. Contact should be maintained with Ms. Julie Klement, the Nutrition Adviser at USAID, Jakarta, in the hope of possible cooperation. Staff members who have not had a recent course in research methodology should be encouraged to take the course on Methodology of Social Research offered by the Department of Rural Sociology.

The research framework recently developed should be used to orient staff research toward a common goal. Research outside of the frame of GMSK should be avoided and an effort made to establish a unique identity as a department specializing in the improvement of the quality of rural life.

#### B. S<sub>1</sub> Program

##### 1. Overall Program Emphasis

It is recommended that the proposed changes (see Section IV.A.4.) be implemented as soon as possible. In addition, cooperation with outside organizations such as the University of Indonesia should be sought in order to expand on the subject matter included in the current program. Lectures should be sought for potential S<sub>1</sub> courses in:

- a. Family Planning
- b. Social Psychology
- c. Anthropology
- d. Clinical Nutrition

and others.

2. Course Syllabi

Syllabuses should be written for each  $S_1$  course and distributed to students on beginning the course. These syllabi should include the course objectives, references, and a lecture schedule.

3. Student Orientation

On entry into GMSK, students should be given information concerning typical course requirements, in terms of time and labor expenditure. Oftentimes student failure results from ignorance of what is expected of him/her.

C.  $S_2$  Program

1. Staff

Only six of the GMSK staff members have  $S_2$  or M.S. degrees and can, therefore, teach in the  $S_2$  program. These lecturers also have responsibilities in the  $S_0$  and  $S_1$  IPB program. If the  $S_2$  program is to develop and grow, GMSK must acquire more staff members with  $S_2$  equivalent degrees.

Training in the Family Resources area is desperately needed in order to implement this option.

2. Electives

As the  $S_2$  program grows, more electives should be added to enrich the program. Outside lecturers should be accessed and the IPB departments searched for pertinent courses. Some courses currently offered at IPB, which might be valuable, include:

- SPD 517 Social Organization and Structure
- SPD 521 Social Changes
- SPD 612 Family Sociology
- STK 514 Sampling Techniques
- PWD 521 Rural Development Planning Systems
- PWD 524 Community Dynamics and Rural Development

APPENDIX A

STAFF MEMBERS OF DEPARTMENT OF COMMUNITY NUTRITION AND  
FAMILY RESOURCES, IPB  
1982

NAME	COURSES TAUGHT	POSITION
1. Amini Nasoetion	Basic Nutrition Experimental Foods	Lecturer
2. Chuteh Admanto	Bioenergetics	Junior Lecturer
3. Djiteng Roedjito	Food and Nutrition Surveys	Lecturer
4. Emmy Karsin	Family Ecology Experimental Foods	Lecturer
5. Endang Tjiptanigrum	Food Technology	Lecturer
6. Hartanti Santoso	Home Economics	Senior Lecturer
7. Hardinsyah	Food and Nutrition Surveys	Junior Lecturer
8. Mariyati Sukarni	Food Science Public Health	Senior Lecturer
9. Muhamad Khumaidi	Family Ecology Food and Nutrition Problems	Senior Lecturer
10. Ratna Megauwangi	Food Analysis	Junior Lecturer
11. Siti Madanjiah	Nutrition Education	Lecturer
12. Sudjana Sibarani	Food Analysis	Lecturer
13. Suhardjo	Nutrition Economics Nutrition Planning	Senior Lecturer
14. Suprihatin Guhardja	Nutrition Education Home Economics	Lecturer
15. Sri Rihati Kusno	Consumer Education	Lecturer
16. Faisal Anwar	Food Analysis	Assistant

APPENDIX B

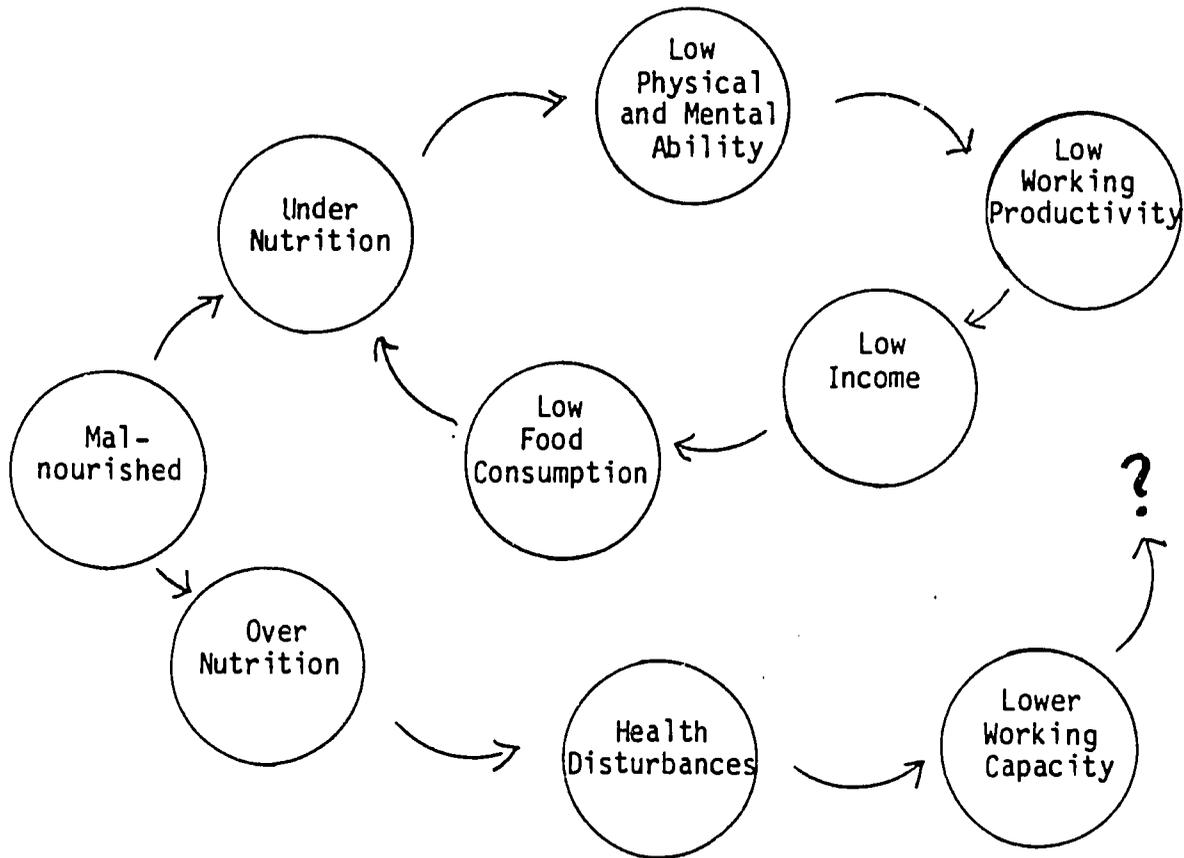
S<sub>1</sub> COURSES - COMMUNITY NUTRITION AND FAMILY RESOURCES

<u>1st Semester</u>			<u>2nd Semester</u>		
Physics	3		Matrix Algebra	3	
Indonesian	2		Biology	3	
English	3		Biol. Chemistry	3	
Mathematics	3		Economics	3	
Chemistry	2		Agriculture	1	
Religion	2		Rural Sociology	3	
Pancasila	2		Military Science	2	
 <u>3rd Semester</u>			 <u>4th Semester</u>		
Basic Management	3	SEP 241	Statistics	3	STK 211
Agronomy	4	AGR 211	Family Life Education	3	GMK 213
Climatology	3	AGM 211	Nutrition	3	GMK 212
Bioenergetics	2	GMK 211	Annual Crops	3	AGR 261
Soil Science	4	TNH 212	Demography	3	SEP 221
Basic Microbiology	3	BOT 202	Food Science	3	AGR 214
 <u>5th Semester</u>			 <u>6th Semester</u>		
Micro Economics	3	SEP 242	Plant Protection	4	HPT 211
Production Economics	3	SEP 352	Advanced Nutrition	3	GMK 341
Food Analysis	3	GMK 321	Experimental Design	3	STK 331
Consumer Education	2	GMK 333	Horticulture	3	AGR 363
Family Ecology	3	GMK 332	Public Health	3	GMK 334
Family Development	2	GMK 331	Food Processing	3	GMK 342
Statistical Methods	4	STK 311	Study Service	6	GMK 399
Food Quality Evaluation	3	GMK 322	Prog.		
 <u>7th Semester</u>			 <u>8th Semester</u>		
Food & Nut. Problems	3	GMK 481	Nutrition Economics	3	GMK 443
Research Methods	3	SEP 473	Nutrition Planning	3	GMK 482
Experimental Foods	3	GMK 441	Food Control	2	GMK 444
Nutrition Education	3	GMK 442	Scientific Paper II	3	GMK 499
Survey Methods	4	GMK 471			
Scientific Paper I	3	GMK 499			

APPENDIX C

WHAT AND HOW

NUTRITION EDUCATION IN THE  
DEPARTMENT OF COMMUNITY NUTRITION AND FAMILY RESOURCES  
BOGOR AGRICULTURAL UNIVERSITY



DEPARTMENT OF COMMUNITY NUTRITION AND FAMILY RESOURCES  
FACULTY OF AGRICULTURE  
BOGOR AGRICULTURAL UNIVERSITY  
1982

COMMUNITY NUTRITION AND FAMILY RESOURCES  
(GIZI MASYARAKAT DAN SUMBERDAYA KELUARGA-GMSK)

The department of Community Nutrition and Family Resources (Gizi Masyarakat dan Sumberdaya Keluarga or GMSK) is one of five divisions in the Faculty of Agriculture, Bogor Agricultural University (Institut Pertanian Bogor or IPB). Department GMSK has had formal standing since June 13, 1981, at which time a Working Permit (No. 120) was authorized by the Rector of IPB.

A. OBJECTIVES

The Department of Community Nutrition and Family Resources will prepare students to be skilled graduates who are capable of working as planners, researchers, supervisors, and educators in the fields of food and nutrition and family living, related to agriculture.

B. EDUCATION PROGRAM

Coinciding with the education program of IPB, the nutrition education program in Department GMSK is four years, or eight semesters, long.

The education program during the first two semesters consists of required courses which are taken by every IPB student. After the third semester, the students are supervised by the Department GMSK.

In order to enter Department GMSK, every student is required to achieve a grade of 2.0 (C) or above in Mathematics and English, two first-year courses.

The eight-semester GMSK educational program consists of at least 144 credits, including the student services program. After the fifth semester, the GMSK curriculum offers two areas of orientation: the laboratory orientation and the field orientation. These two orientations differ in only a few electives (see Curriculum, p. 4).

In the seventh semester, the GMSK student is directed to finish his or her educational program by preparing his or her research project. Research projects are initiated in the seventh semester Scientific Papers I class.

It is hoped that GMSK students finish their research projects during the eighth semester, in the Scientific Papers II course. (In the past this course was called Special Programs or Thesis.)

Within the GMSK education program there are also two guidance systems. These two guidance systems are:

- 1) Advisor System - where students who enter Department GMSK are advised by a GMSK staff member. This advice concerns student living, prevention of student problems, and discussions about education emphasis.
- 2) Scientific Paper Advisor - where every student in the fourth year is advised by one or two GMSK staff members concerning their Scientific Paper.

### C. CURRICULUM

In order to achieve the objectives and minimum credit weight mentioned earlier, the curriculum requirements are arranged in a systematic manner. According to world-wide instruction methods, GMSK courses are divided into the following seven subject groups:

1. Basic Principles (Prerequisites)(GMK 211, GMK 212, GMK 213, and GMK 214).
2. Analysis (GMK 321 and GMK 322).
3. Family Life (GMK 331, GMK 332, GMK 333, and GMK 334).
4. Community Nutrition (GMK 341, GMK 342, GMK 441, GMK 442, GMK 443, and GMK 444).
5. Research Methods (GMK 471).
6. Planning, Analyzing, and Solving Food Problems (GMK 481 and GMK 482).
7. Skills (GMK 499).

The GMSK curriculum, after the first year of general required courses, is as follows:

#### Semester 3

GMK 212	Bioenergetics	2 (2-0)
SEP 214	Basic Management	3 (3-0)
AGR 211	Basic Agronomy	4 (3-3)
AGM 211	Basic Climatology	3 (2-2)
BOT 202	Basic Microbiology	3 (2-3)
TNA 211	Soil Science	2 (2-0)

Semester 4

GMK 211	Basic Nutrition	3 (2-3)
GMK 213	Family Life I	3 (2-3)
GMK 214	Food Science	3 (2-3)
STK 211	Statistical Methods I	3 (3-0)
AGR 261	Annual Crops	3 (2-3)
SEP 211	Demography	3 (2-3)

Semester 5

GMK 321	Food Analysis	3 (2-3)
GMK 332	Family Ecology	3 (2-2)
GMK 333	Consumer Education	3 (3-0)
SEP 242	Micro Economics	3 (3-0)
SEP 352	Production Economics	3 (2-3)
	Elective*	3 (2-3)

Semester 6

GMK 341	Advanced Nutrition	3 (2-3)
GMK 334	Public Health	3 (2-3)
GMK 342	Food Processing	3 (2-3)
HPT 211	Plant Protection	3 (2-3)
STK 331	Experimental Design**	3 (3-0)
AGR 363	Horticulture	3 (2-3)
KKN 399	Student Services Program	6 (0-0)

Semester 7

GMK 481	Food and Nutrition Problems	3 (2-3)
GMK 441	Experimental Foods	3 (2-3)
GMK 331	Family Life II	2 (2-0)
GMK 442	Nutrition Education	3 (2-3)
GMK 471	Methods of Food and Nutrition Survey	4 (3-3)
GMK 499	Scientific Paper I	3 (0-0)
SEP 473	Methods of Social Research***	3 (2-3)

Semester 8

GMK 443	Nutrition Economics	3 (2-3)
GMK 482	Nutrition Planning	3 (2-3)
GMK 444	Food Control	3 (2-3)
GMK 499	Scientific Paper II	3 (0-0)

---

\* Students in the laboratory orientation take Food Quality Evaluation (GMK 322) 3 (2-3), students with field orientation take Statistics II (STK 311) 4 (3-3).

\*\* Taken by students with the laboratory orientation.

\*\*\* Taken by students with the field orientation.

D. EMPLOYMENT OPPORTUNITIES AND ALUMNI

1. Employment Opportunities

There are many employment opportunities open to GMSK graduates; however, there are also opportunities with other food, nutrition, and family-related organizations which are being explored.

Ideally, GMSK graduates will find positions in the following areas: Department of Agriculture, Department of Manpower and Transmigration, Department of Industry, Department of the Interior, Department of Health, Department of Education and Culture, the National Logistics Board (BULOG), Estate Crops, Research Centers (agriculture, food crops, Nutrition and Health), the National and District Level Development Planning Boards (BAPPENAS/BAPPEDA), National Family Planning Board, and other related Departments as well as related private organizations.

2. Alumni

The total number of alumni, from 1964-1982, with the food, nutrition, and family affiliation is 70.

GMSK graduates are now working in the following areas: 17.4% Department of Agriculture, 6.5% Department of Labor and Transmigration, 6.8% in the Department of Industry, 6.8% in the Department of Health, 4.3% in the Department of Education and Culture, 34.8% as Lecturers, 2.2% in the Family Planning Board, 10.9% in research centers, and 7.6% in private entrepreneurships and joint ventures.

#### E. TEACHING STAFF

Within Department GMSK there are 16 full-time staff members and nine part-time staff members. If these staff members are grouped according to degree held, there are four Doctors, nine Master's degree equivalents, 11 B.S. degree equivalents (Ir.) and one diploma degree equivalent. The staff members are as follows:

1. Amini Nasoetion Ir. Agriculture (IPB)
2. Budi Harsana dr. (University of Indonesia)  
MPH (University of Indonesia)
3. Chuteh Admanto Ir. Animal Science (IPB)
4. Darwin Karyadi dr. (University of Indonesia)  
Doctor (University of Indonesia)
5. Dewi Sabita Slamet Dra. Biology (University of Indonesia)
6. Djiteng Roedjito Ir. Agriculture (IPB)  
Diploma Nutrition (SEAMEO Regional Training  
Program, Jakarta, Indonesia)
7. Emmy Karsin Ir. Agriculture (IPB)  
Diploma Food Science (Rijks Universiteit of  
Gent, Belgium)
8. Endang Tjiptaningrum Ir. Agricultural Products Technology (IPB)
9. Hartanti Santoso M.S. (New York State University - Plattsburg)
10. Hardinsyah Ir. Agriculture (IPB)
11. Husaini M.S. Nutrition (London University)  
Doctor Nutrition (IPB)

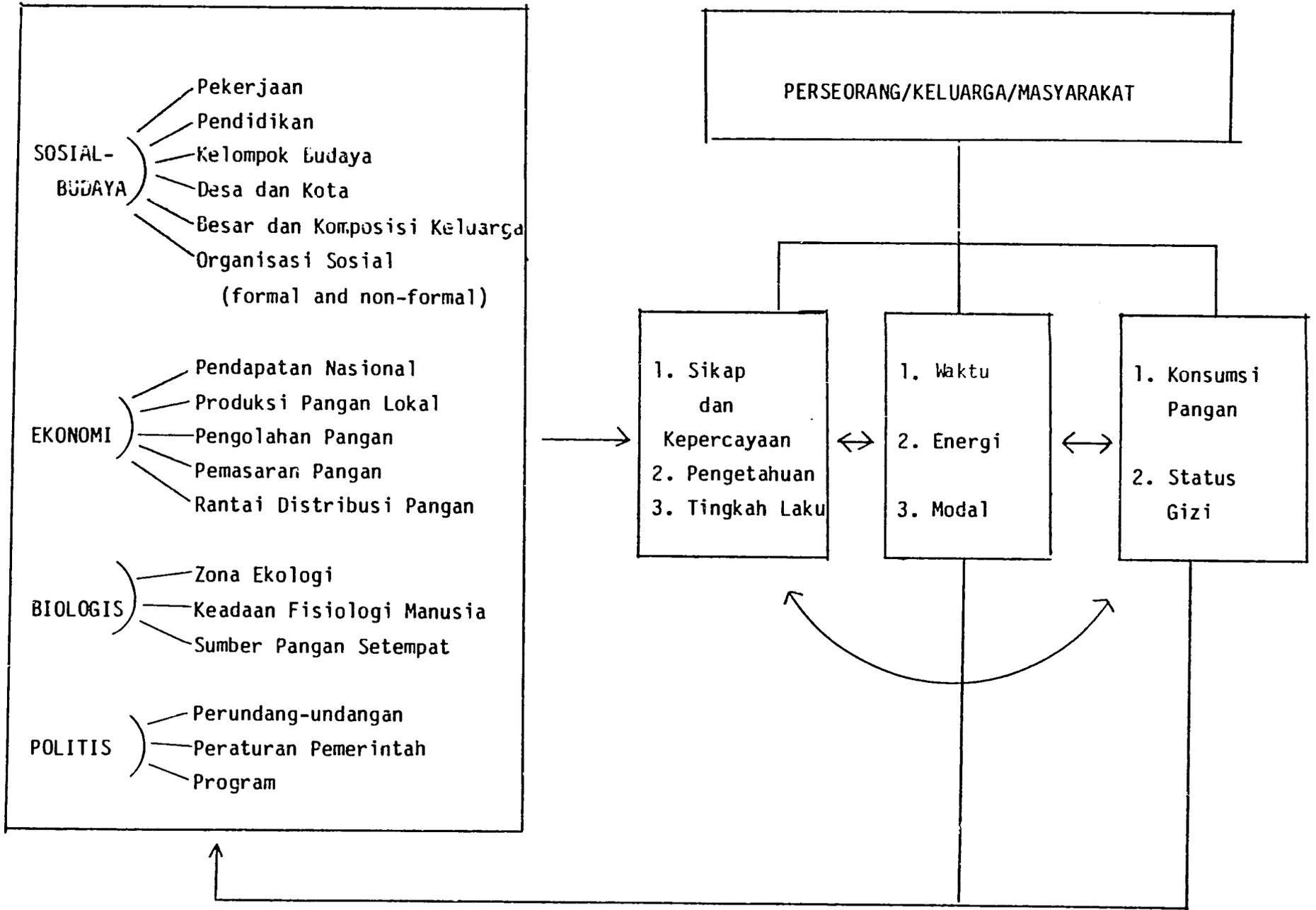
12. Ig. Tarwotjo M.S. (University of Tennessee)
13. Mariyati Sukarni Ir. Agriculture (IPB)  
MPH (University of Kentucky)
14. Muhamad Khumaidi Ir. Agriculture (IPB)  
M.S. Nutrition (London University)
15. Mien Mahmud M.S. Food Science (IPB)
16. Muhilal Doctor Biochemistry (Liverpool University)
17. Ratna Megawangi Ir. Agriculture (IPB)
18. Siti Madanijah Ir. Agriculture (IPB)
19. Sudjana Sibarani Ir. Agriculture (IPB)  
M.S. Nutrition (SEAMEO Regional Training Program)
20. Suhardjo Ir. Agriculture (IPB)  
M.S. Food and Nutrition (Nottingham University)
21. Suhadi Hardjo M.S. Food Science (Univ. California-Davis)
22. Suprihatin Guhardja Ir. Agriculture (IPB)
23. Sri Rihati Kusno Ir. Agriculture (IPB)
24. Virginia S. Rahardjo M.S. Nutrition (University of Florida)  
Dr. Nutrition (University of Florida)
25. Faisal Anwar B.S. (Academy of Chemical Analysis, Bogor,  
Indonesia)

#### F.. HIMAGITA

Department GMSK has a student organization called "Himagita" which began September 27, 1978. This student group organizes activities for Department GMSK students and is affiliated with the student Senate of the Faculty of Agriculture.

APPENDIX D

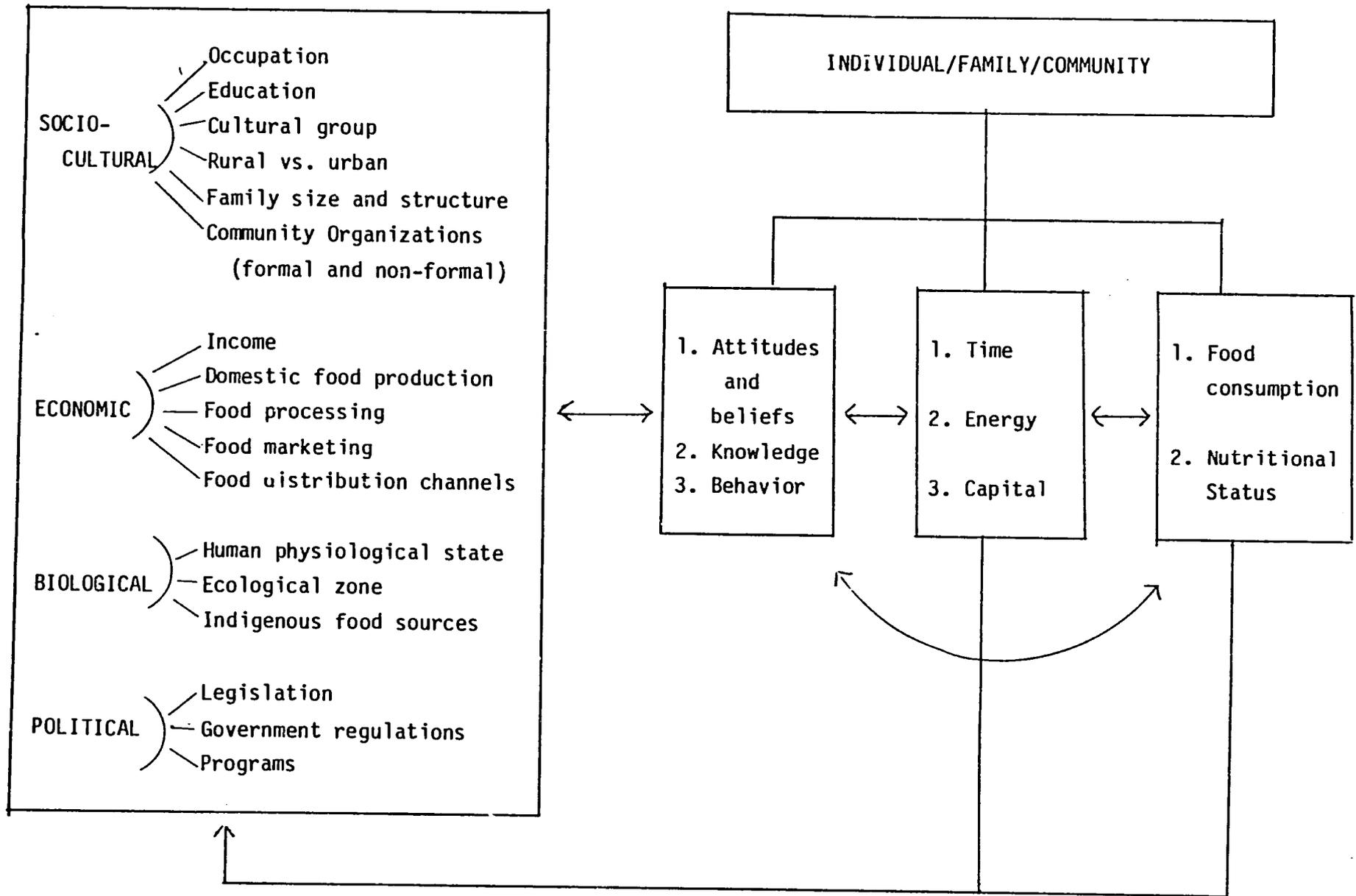
KERANGKA PEMIKIRAN TENTANG GIZI MASYARAKAT DAN SUMBERDAYA KELUARGA



APPENDIX E

Research Framework for Community Nutrition and Family Resources

-28-



APPENDIX F

REFERENCES FOR TOPIC NO. 1, FAMILY HEALTH AND THE ENVIRONMENT

OUTLINE SECTION/SUBJECT	LIBRARY		
	NUMBER	TITLE OF BOOK	PAGES
I. THE INDONESIAN FAMILY			
A. <u>The Family &amp; Its Characteristics</u>	IKK/L/386	*Buku Saku 1980/1981	a/1
1. National Statistics			
2. Social and Cultural Characteristics	Ibu Mar	Masalah Kependudukan dan Kesehatan Masyarakat	24-43 48-51 59-73
3. Economic Characteristics			
4. Genetic and Biological Characteristics	IKK/KS/86	Preliminary Report Operational Study on	14-16
5. Nutritional Requirements		Health Services in Pasaruum - E. Java	
		*Keadaan Status Kesehatan Masyarakat dan Faktor Lingkungan Fisik, Biologis, Serta Sosial dan Budaya	2-4 50-53
	IKK/S/39	*Social and Cultural Aspects of Food Patterns and Food Habits in Five Rural Areas in Indonesia	211

		*Family Composition and Structure in Relation to Health and Nutrition Problems	14-40
IKK/KS/40			
		Social-Cultural Factors Affecting Health Care Delivery in Nigeria	211
IKK/KS/41			
		Evaluating the Impact of Nutrition and Health Programs	7-29 183-228 269-308
IKK/G/288			
		*Effect of Household Socio-Economic Status and Community Environment on Fertility and Mortality	2-17 17-22
IKK/K/158			
		Beberapa Pemikiran Bagi Study Gerak Penduduk-Ind.	all
IKK/K/107			
		Recommended Dietary Allowances for Indonesia	all
IKK/G/305			

B. Health of the Individual

1. Health of the Infant	IBU	*Teaching Strategies for Primary Health Care	100-140
2. Health of the Child	MAR		
3. Health of the woman			
4. Health of the Man	IKK/KS/38	*Programming for Women and Health	all

IBU MAR	*Child Health in the Tropics	all
IBU MAR	*Primary Child Care Book I	all
IBU MAR	Malnourished Children of the Rural Poor	83-100
IBU MAR	*Primary Health Worker	38-74 79-94
IKK/K/160	Levels and Trends in Fertility and Childhood Mortality in Indonesia	5-55 55-76
IKK/K/156	The Status of Women and Fertility	8-16 16-26 26-37
IBU MAR	*Prioritas Pediatri di Negara Sedang Berkembang	20-62 88-139

atau lebih pada skala penilaian 0 - 4 atau tidak kurang dari 6.25 pada skala nilai 0 - 10 selama masa pendidikan sarjana.

Di samping itu harus memenuhi persyaratan lain yang ditentukan oleh Fakultas Pasca Sarjana IPB.

#### CARA MELAMAR

Surat permohonan untuk menjadi mahasiswa di alamatkan kepada :

Pendaftar Sekolah Pasca Sarjana  
Institut Pertanian Bogor  
Jalan Raya Pajajaran  
Bogor

dengan disertai (rangkap dua) :

1. Salinan yang disahkan dari Ijazah tertinggi perguruan tinggi
2. Salinan daftar angka hasil pelajaran serta NMR selama di perguruan tinggi.
3. Surat keterangan kesehatan (termasuk kesehatan paru-paru)
4. Riwayat hidup.
5. Karya ilmiah
6. Nama dua orang dan alamatnya, yang dapat dimintai keterangan tentang kelayakan akademik pelamar.
7. Surat izin dari atasan pelamar untuk mengikuti pendidikan di Fakultas Pasca Sarjana IPB, apabila pelamar telah bekerja.

#### APPENDIX G

8. Surat jaminan bahwa biaya hidup pelamar selama belajar di Fakultas Pasca Sarjana ada yang menanggung.
9. Surat jaminan bahwa biaya pendidikan ada yang menanggung.
10. Resu wesel pos yang membuktikan bahwa pelamar telah mengirimkan uang sebesar Rp. 2500.- (dua ribu lima ratus rupiah) kepada Dekan Fakultas Pasca Sarjana IPB untuk biaya pendaftaran

#### BIAYA PENDIDIKAN

Disarankan agar calon mahasiswa Pasca Sarjana mencari sponsor yang dapat membiayai uang pendidikan, penelitian dan biaya hidup selama pendidikan.

Besar uang pendidikan untuk program pendidikan ini adalah Rp. 500.000.- per semester, atau sebesar Rp. 1.000.000.- per tahun.

Biaya penelitian diperkirakan sekurang-kurangnya Rp. 600.000.- per tahun.

## PROGRAM MAGISTER SAINS

BIDANG :

GIZI MASYARAKAT

DAN

SUMBERDAYA KELUARGA



FAKULTAS PASCA SARJANA  
INSTITUT PERTANIAN BOGOR

1983

**PROGRAM MAGISTER SAINS  
 BIDANG GIZI MASYARAKAT DAN  
 SUMBERDAYA KELUARGA**

Fakultas Pasca Sarjana Institut Pertanian Bogor,  
 mulai September 1983 membuka Bidang Keahlian  
 Gizi Masyarakat dan Sumberdaya Keluarga.

**LATAR BELAKANG**

Peningkatan taraf hidup masyarakat dapat dicapai bila setiap keluarga sebagai unit terkecil masyarakat mampu memenuhi kebutuhan-kebutuhannya dengan mengelola sumberdaya yang dimilikinya.

Keluarga mempunyai beragam kebutuhan, hal ini dipengaruhi oleh sumberdaya yang dimiliki dan sistem pengelolaannya. Kebutuhan jasmani merupakan kebutuhan yang paling menonjol, jenis kebutuhan ini meliputi makanan, pakaian, perumahan dan kesehatan, yang juga lebih dikenal dengan sebutan Kebutuhan Dasar Manusia. Jenis kebutuhan ini lebih terukur dibanding kebutuhan lainnya.

Akhir-akhir ini telah dirasakan pentingnya peranan analisis Pangan dan Gizi dalam mengukur taraf hidup keluarga dan masyarakat. Demikian pula peranan pengelolaan sumberdaya keluarga, di mana untuk mengelola sumberdaya secara efisien diperlukan kondisi jasmani yang baik. Di sini unsur gizi sangat menentukan.

**TUJUAN**

Program ini bertujuan, menghasilkan tenaga ahli dalam bidang Gizi Masyarakat dan Sumberdaya Keluarga yang mampu menganalisa masalah di bidang tersebut dan mampu mencari alternatif pemecahannya.

Lulusan program ini diharapkan mampu bekerja sebagai peneliti di berbagai lembaga penelitian, sebagai pengajar di Perguruan Tinggi, sebagai perencana di berbagai lembaga kedinasan, sebagai konsultan dalam berbagai program pengembangan gizi dan kehidupan keluarga.

**KURIKULUM**

**Semester 1**

GMK 511 Pengaruh Sosial-ekonomi Budaya terhadap kebiasaan makan keluarga	(3)*
GMK 514 Gizi Masyarakat	(4)
STK 511 Analisis Statistika	(4)

**Semester 2**

GMK 513 Perencanaan Gizi dan Pangan	(3)
SPD 590 Metode Penelitian Sosial	(3)
PTK 603 Biokimia dan Fisiologi Gizi	(3)

**Pilihan :**

SPD 562 Kependudukan	(3)
atau	
GMK 523 Gizi dan Perkembangan anak	(3)

\* ) Angka dalam kurung adalah bobot kredit mata ajaran ybs.

**Semester 3**

GMK 512 Sistem Gizi dan Pangan	(3)
GMK 515 Metode Penelitian Gizi dan Konsumsi Pangan	(2)
GMK 522 Ekonomi Keluarga	(3)
<b>Pilihan :</b>	
PWD 651 Prinsip-prinsip Dasar Perencanaan dan Pelaksanaan Pembangunan Pedesaan	(3)
atau	
GMK 521 Kesehatan Keluarga dan Lingkungan	(3)

**Semester 4**

1. Seminar	(1)
2. Penelitian dan Tesis	(6)

**Catatan :** Bagi calon mahasiswa yang belum pernah mendapat kuliah Ilmu Gizi, diharuskan mengikutinya pada kuliah alih tahun (18 Juni - 25 Agustus)

**SYARAT PENERIMAAN**

Calon mahasiswa yang dapat diterima program ini adalah lulusan fakultas / Institut : Pertanian, Perikanan, Peternakan, Teknologi Pertanian, Kedokteran Hewan, Kedokteran, Kesehatan Masyarakat dan IKIP yang mempunyai NMR (nilai mutu rata-rata) 2.75

APPENDIX H

MASTER OF SCIENCE PROGRAM

IN:

COMMUNITY NUTRITION

AND

FAMILY RESOURCES

GRADUATE SCHOOL FACULTY

BOGOR AGRICULTURAL SCHOOL

1983

MASTER OF SCIENCE PROGRAM  
IN COMMUNITY NUTRITION AND  
FAMILY RESOURCES

---

THE GRADUATE FACULTY AT THE BOGOR AGRICULTURAL UNIVERSITY WILL OPEN THE COMMUNITY NUTRITION AND FAMILY RESOURCES SPECIALTY IN SEPTEMBER 1983.

BACKGROUND

Improvement of the standard of living within a community can be accomplished if every family, as the smallest unit of the community, is able to fulfill their needs by managing the resources they have.

Families have many kinds of needs, which are influenced by the available resources and their system of managing these resources. Physical needs appear to be the most important. These are known as the "Basic Human Needs" and include such things as food, clothing, housing, and health. This type of need is more measurable than others.

It is now felt that the aspect of food and nutrition analysis is vital to measuring family and community standards of living. In addition, the aspect of family resources management, which determines efficient use of resources, requires a healthy physical condition. In this case, nutrition is a determining factor.

OBJECTIVES

The program is aimed at producing experts in the fields of Community Nutrition and Family Resources who are capable of analyzing problems in the above fields and finding alternative solutions.

Graduates of this program will hopefully work as researchers in various research centers, as lecturers in higher education, as planners in various government offices, and as consultants in nutritional improvement and family life programs.

CURRICULUM

Semester 1

GMK 511	Socio-economic and Cultural Influences on Family Food Behavior	(3)*
GMK 514	Community Nutrition	(4)
STK 511	Statistics	(4)

Semester 2

GMK 513	Food and Nutrition Planning	(3)
SPD 590	Methodology of Social Research	(3)
PTK 603	Biochemistry and Physiology of Nutrition	(3)
	Electives:	
	SPD 562 Demography	(3)
	GMK 523 Nutrition and Child Development	(3)

Semester 3

GMK 512	Food and Nutrition Planning	(3)
GMK 515	Methodology of Food Consumption and Nutrition Research	(2)
GMK 522	Family Economics	(3)
	Electives:	
	PWD 651 Basic Principles of Planning and Policy of Rural Development	(3)
	GMK 521 Family Health and the Environment	(3)

Semester 4

1. Seminar (1)
2. Research and Thesis (6)

NOTE: Candidates that have not had background in Basic Nutrition must take this prerequisite course (June 18 - August 25 every year).

\* The values in parentheses are the weighted credits for each course.

### ENTRY REQUIREMENTS

Student candidates eligible for reception into this program are graduates of the following faculties or institutes: Agriculture, Fisheries, Animal Science, Agricultural Technology, Veterinary Science, Medical Science, Public Health, and the Teacher's Training Institute (IKIP). Student candidates must have a GPA (grade point average) of 2.75 or above on the scale of 0-4 or not less than 6.25 on a scale of 0-10 for the duration of their B.S. (Sarjana 1) degree program.

In addition to this, candidates must fill other requirements of the Faculty of Graduate Education, Bogor Agricultural University.

### APPLICATION PROCEDURE

The letter of application should be sent by the student to:

Pendaftar Sekolah Pasca Sarjana  
Institut Pertanian Bogor  
Jalan Raya Pajajaran  
Bogor

with the following (2 copies):

1. Copy of diploma (certificate) of highest degree achieved.
2. Copy of transcripts and GPA for entire B.S. (S<sub>1</sub>) study.
3. Health certification (including lung x-ray).
4. Short autobiography.
5. Scientific papers.
6. Names and address of two persons from whom recommendations about academic potential may be obtained.
7. Letter of permission from candidate's employer if candidate is currently employed.
8. Letter of insurance that a sponsor will pay cost of living during study at the Graduate School, IPB.

9. Letter of insurance that a sponsor will pay cost of education during study.
10. Post receipt of the money order, proving that the candidate has sent Rp 25,000. (twenty-five thousand Rupiah) to the Graduate School for registration costs.

#### COST OF EDUCATION

It is suggested that candidates for the Graduate School look for a sponsor who will pay the costs of tuition, living, and research during the educational period.

Tuition for the program of education is Rp 500,000. per semester, or Rp 1,000,000. per year.

Research costs are approximately Rp 600,000. per year or more.

APPENDIX I

COURSE DESCRIPTIONS (S<sub>2</sub>)

- GMK 511 Socio-Economic and Cultural Influences on Family Food Behavior 3(3-0)1  
Study of the elements of culture relating to and influencing individual and family food consumption. Study of individual and family behavior towards food from the economic and social aspects. Examination of methods of identification and evaluation of food consumption patterns of individuals or groups. Discussion of the relationship of food patterns with nutritional quality. Testing of methods of approaching food improvement. Analysis of comparative studies of food consumption patterns between regions.
- GMK 521 Food and Nutrition System 3(3-0)3  
Nutrition problems are the ultimate result of an earlier sequence of causes and effects. Beginning with the problems of production, food stock, distribution, and consumption, discussion will also cover nutritional status of individual groups or populations. Everything shaping one system and all the factors that influence interactions with each other will be examined.
- GMK 513 Food and Nutrition Planning 3(3-0)2  
Study of the various approximations and steps in food and nutrition planning and the cycle of food planning, implementation, and evaluation. Identification of problems, appraisal of food and nutrition situations, analysis of resources and obstacles, determination of objectives and targets, policy directions, and alternatives with exact uses in program planning will be studied.

GMK 541 Community Nutrition 3(2-3)1

Study of the factors and characteristics of the community that influence individual and family nutritional status. Search for the relationship between the population problem and community nutrition. The role of government services in development of community nutrition. The study of planning procedures and implementation in the nutritional improvement program (UPGK). Examination of the relationships and interactions between bodies and organizations concerned with research, education, and nutrition intervention. Study of differences and similarities between nutrition programs in Indonesia and other countries.

GMK 521 Family Health and the Environment

Characteristics of the Indonesian family and health of each family member (baby, child, woman, and man) as influenced by the home, work, and community environment. Measures of mortality, morbidity, fertility, and population growth. Analysis of the Indonesian health planning system and health programs currently active. Review of Indonesian health problems related to the physical and biological environment, health disturbances, the public health system, and health workers. Methods of health program evaluation. Training professional and community health workers. Future health needs and integration of health and nutrition in Indonesia.

GMK 522 Family Economics

Study of the behavior of the family as a consumer and producer as related to a means of optimizing needs based on available resources, and factors that influence this behavior. Discussion about the theories of household utilization and production.

GMK 523 Nutrition and Development of the Child 3(3-0)2

Relationship between nutrition of the pregnant mother and health of the baby. Physiological changes during pregnancy. Nutritional requirements, growth, and development of the baby, pre-school child, school-age child and teenager. The child as a resource of the family, community, and nation.

PWD 651 Basic Principles of Planning and Policy of Rural Development 3(3-0)3

Prediction of background history and influence of various development philosophies/doctrines about policy and planning of village areas. Doctrines concerning the need for fusion between the theoretical principles and policies in the efforts to develop village communities. Based on these doctrines, discussion of application of theory to the actual carrying out of rural development, also searching for alternative ways out from problems that are faced.

Special discussions about agricultural problems (land tenure), industrialization, sectoral development such as forestry, fisheries, private agricultural, plantation, tourism, and others and how they influence (each) the local situation and implications to layout of planning.

Besides this, comparison between experiences from different developed countries which has connection with strategy and programs of rural development.

STK 511 Statistical Analysis 4(3-2)1

Prerequisites of introductory statistics, theories about basic statistics. Assuming and testing hypotheses based on values of sample surveys and surveillance data. Linear regression, double linear regression, simple correlation, and double correlation. Discrete analysis of data and other statistical methods. Some model applications.

SPD 562 Demography 3(3-0)2

Problems and situations in the aspects of demography within the framework of village and agricultural development: policies of family planning, problems of food and the green revolution, work opportunities in the village area, and new transmigration areas.

PTK 603 Biochemistry and Physiology of Nutrition

Interrelationships between food substances, deficiency of food, absorption and transport, utilization of nutrients, regulation of metabolism, metabolism pools and turnover, and regulation of appetite for food.

SPD 590 Methodology of Social Research

Research problems, frameworks and theoretical concepts, research methods for testing causal hypotheses, measurements, scales and indexes, planning questionnaires, techniques of preparing surveys, reporting research results, and assembling in social research.

APPENDIX J

COMMUNITY NUTRITION

(Short Outline)

- I. Introduction to Community Nutrition
  - A. Definition
  - B. Goals
- II. Nutrition Problems in Indonesian Communities
  - A. PEM
  - B. Vitamin A Deficiency
  - C. Nutritional Anemia
  - D. Iodine Deficiency
  - E. Others
- III. Tools for Identifying Nutritional Problems
  - A. Community Assessment
  - B. Nutritional Assessment
    - 1. Anthropometry
    - 2. Dietary Methodologies
    - 3. Clinical Assessment
    - 4. Biochemical and Laboratory Assessment
    - 5. Biophysical Methods
  - C. Participant Observation
  - D. Survey Methodology
- IV. Factors Causing Nutritional Problems
  - A. Lack of Knowledge
    - 1. Nutrition Education in the Community
    - 2. Training Community Nutritionists
  - B. Lack of Resources
    - 1. Manpower
    - 2. Supplies and Equipment
    - 3. Facilities
    - 4. Financial Support

- C. Low Income
  - 1. Production Problems
  - 2. Methods of Income Generation
- V. Community Nutrition Programs
  - A. Indonesian
  - B. Other Countries
- VI. Organizations Involved in Community Nutrition in Indonesia
  - A. Governmental
  - B. Non-Governmental

APPENDIX K

COMMUNITY NUTRITION

(Long Outline)

- I. COMMUNITY NUTRITION
  - A. Definition
  - B. Goals
- II. NUTRITIONAL PROBLEMS IN INDONESIAN COMMUNITIES
  - A. PEM
    - 1. Types of PEM
    - 2. Causes of PEM
    - 3. Vulnerable Groups
    - 4. Percentage of PEM in Indonesian Communities
    - 5. Treatment
  - B. Vitamin A Deficiency
    - 1. Causes
    - 2. Vulnerable Groups
    - 3. Percentage Vitamin A Deficiency in Indonesian Communities
    - 4. Treatment
  - C. Nutritional Anemia
    - 1. Causes
    - 2. Vulnerable Groups
    - 3. Percentage Nutritional Anemia in Indonesian Communities
    - 4. Treatment
  - D. Iodine Deficiency
    - 1. Causes
    - 2. Vulnerable Groups
    - 3. Percentage Iodine Deficiency in Indonesian Communities
  - E. Others
- III. TOOLS FOR IDENTIFYING NUTRITIONAL PROBLEMS
  - A. Community Assessment
    - 1. Political Organization

2. Social Organization
  3. Cultural Characteristics
  4. Economic Stratification
  5. Health Care Systems
  6. Transportation
  7. Housing
  8. Climatic Variables
  9. Land and Water Practices
  10. Energy Supplies
  11. Food Availability
  12. Communication Facilities
  13. Family Composition and Hierarchy
  14. Religious Views
  15. Historical Perspectives of Nutrition in the Community
- B. Nutritional Assessment
1. Anthropometry
    - a. Definition
    - b. Advantages and Disadvantages
    - c. Measurement Techniques
      - 1) Weight
      - 2) Height/Length
      - 3) Circumferences
        - a) Mid Upper-arms
        - b) Head
        - c) Chest
      - 4) Fatfolds
        - a) Triceps
        - b) Subscapular
    - d. Standardization of Techniques
    - e. Growth Charts/Standards of Reference
      - 1) International
      - 2) Indonesian
    - f. Selection of Appropriate Anthropometric Method

2. Dietary Methodologies
  - a. Family of Group Methods
    - 1) Family Food Accounts
    - 2) Food Records
    - 3) Food Lists
  - b. Individual Intake Methods
    - 1) Food Recall
      - a) 24 hour
      - b) 3 or 7 day
    - 2) Food Records
    - 3) Food Frequency
    - 4) Diet History
    - 5) Weighed Intake Studies
  - c. Comparison of Methodologies
3. Clinical Assessment
  - a. Lack of Specificity of Clinical Signs
  - b. Advantages and Disadvantages
  - c. Nutritional Relevance of Clinical Signs
  - d. Standardization
  - e. Physical Signs by Body Area
    - 1) Hair
    - 2) Face
    - 3) Eyes
    - 4) Lips
    - 5) Tongue
    - 6) Teeth
    - 7) Gums
    - 8) Glands
    - 9) Skin
    - 10) Nails
    - 11) Subcutaneous Tissues
    - 12) Muscular and Skeletal Systems

- 13) Internal Systems
  - a) Cardiovascular
  - b) Gastrointestinal
  - c) Nervous
4. Biochemical or Laboratory Assessment
  - a. Functions
    - 1) Detection of Marginal Nutrient Deficiencies
    - 2) Supplementation of Other Assessment Methods
  - b. Advantages and Disadvantages
  - c. Appropriate Nutrients to Assess
    - 1) Serum Protein
    - 2) Blood-forming Nutrients
      - a) Iron
      - b) Folacin
      - c) Vitamin B<sub>6</sub>
      - d) Vitamin B<sub>12</sub>
    - 3) Water-soluble Vitamins
      - a) Thiamine
      - b) Riboflavin
      - c) Niacin
      - d) Vitamin C
    - 4) Fat-soluble Vitamins
      - a) Vitamin A
      - b) Vitamin D
      - c) Vitamin E
      - d) Vitamin K
    - 5) Minerals
      - a) Iron
      - b) Iodine
      - c) Other Trace Minerals
    - 6) Levels of Blood Lipids
      - a) Cholesterol
      - b) Triglycerides

- c) Glucose
- d) Enzymes Implicated in Heart Disease, Diabetes, Other Chronic Diseases
- d. Standards for Interpretation of Results
- 5. Biophysical Methods
  - a. Radiographic Examination
  - b. Tests of Physical Function
  - c. Cytological Test
- C. Participant Observation
  - 1. Definition
  - 2. The Investigator/Observer
    - a. Role of the Observer
    - b. Need for Establishing a Good Relationship with the Community
    - c. Status Differentials
    - d. Age Differentials
    - e. Knowledge of the Culture and Society Being Observed
  - 3. Methods of Study
    - a. Small Groups
    - b. Informal Interviews
  - 4. Data Classification
    - a. Field Notes
    - b. Life Histories
    - c. Personal Diary
  - 5. Advantages and Disadvantages of Participant Observation
  - 6. Ethical Questions
- D. Survey Methodology
  - 1. Types of Surveys
    - a. Longitudinal Incidence Studies
      - 1) Advantages and Disadvantages
      - 2) Techniques
      - 3) Data Collected During Longitudinal Surveys

- b. Cross-sectional Prevalence Studies
  - 1) Advantages and Disadvantages
  - 2) Types of Prevalence Surveys Available
- 2. Planning
  - a. Preliminary Planning
  - b. Preliminary Visit to the Field (Survey Area)
  - c. Technical Planning
    - 1) Selection of Methods
    - 2) Statistical Guidance
    - 3) Selection of Equipment
    - 4) Training of Personnel
- 3. Field Work
  - a. Household Surveys (Home Visits)
  - b. Surveys of a Geographical or Administrative Unit (at Collecting Points)
  - c. Rapid Ecological Visits
- 4. Analysis
  - a. Age Considerations
  - b. Expression of Results
    - 1) Clinical Signs
    - 2) Nutritional Anthropometry
    - 3) Biochemical Tests
    - 4) Dietary Assessment
- 5. Interpretation
  - a. Principal Deficiency Diseases in the Community
  - b. Probable Causative Factors
- 6. Action
  - a. Follow-up Surveys
  - b. More Detailed Investigation
  - c. Recommendations for Further Action

#### IV. FACTORS CAUSING NUTRITIONAL PROBLEMS

##### A. Lack of Knowledge

1. Nutrition Education in the Community
  - a. Existing Knowledge and Skills
  - b. Cultural Beliefs and Practices
  - c. Receptiveness to Change
  - d. Methods of Teaching Nutrition Knowledge and Skills
2. Training Community Nutritionists
  - a. Social Process Skills and Knowledge
    - 1) Getting to Know the Community
      - a) Values, Beliefs, Customs
      - b) Family System
      - c) Child-bearing Practices
      - d) Food Consumption Patterns
      - e) Attitudes Toward Nutrition
      - f) Resources
      - g) Political Structure
      - h) Religion
      - i) Population
    - 2) Finding Out Problems in the Community
      - a) Home Visits
      - b) Identification of Persons with Nutritional Problems
      - c) Identification of Persons who can Help Improve Health in the Community
      - d) How to Give Nutrition Messages Convincingly
      - e) Organizing and Taking Part in Community Meetings
  - b. Technical Skills and Knowledge
    - 1) Measuring and Monitoring the Growth and Nutrition of Children
      - a) Growth Measurements
      - b) Determining Age
      - c) Weighing Children Accurately

- d) Growth Charts
- e) Measuring Nutritional Status
- 2) Breast-feeding
  - a) Teaching About advantages of breast-feeding
  - b) Problems associated with breast-feeding
  - c) Dispelling fears about breast-feeding
  - d) Dangers of bottle-feeding
- 3) Diets for Young Children
  - a) Identification of Suitable Local Foods
  - b) Appropriate Foods for Various Ages
  - c) Design of a Child-feeding Time Chart
- 4) Nutrition of the Mother
  - a) Nutrition and Health During Pregnancy and Lactation
  - b) Malnutrition and Anemia in Pregnancy
- 5) Identification, Management and Prevention of Common Nutritional Deficiencies
  - a) PEM--Recognition of the Various Types
  - b) Understanding the Causes of PEM
  - c) Identification of Persons in Danger of Vitamin A Deficiency
  - d) Action to Treat and Prevent Vitamin A Deficiency
  - e) Identification of Persons with Anemia and Those at Risk of Becoming Anemic
  - f) Action to Treat and Prevent Anemia
- 6) Diarrhea and Nutrition
  - a) Causes of Diarrhea
  - b) Identifying Children with Diarrhea
  - c) Treating Children with Diarrhea
  - d) Oral Rehydration Solutions
  - e) Preventing Diarrhea
- 7) Nutrition and Infection
  - a) How Infectious Diseases Affect Nutrition
  - b) Symptoms of Common Infections

- c) Treatment of Infectious Diseases and Dietary Management
  - d) Prevention of Disease
  - e) Immunization
- B. Lack of Resources
- 1. Manpower
    - a. Number of Professional Nutritionists and Health Workers Throughout Indonesia
    - b. Projected Need for Professional Workers
    - c. Number of Trained Community Nutritionists Throughout Indonesia
    - d. Projected Need for Community Nutritionists
  - 2. Supplies and Equipment
    - a. Nutritional Supplies and Equipment Available
    - b. Projected Needs
  - 3. Facilities
    - a. Nutritional Care Facilities
    - b. Nutritional Education Facilities
    - c. Nutritional Research Facilities
  - 4. Financial Support
    - a. Governmental
    - b. Non-Governmental
- C. Low Income
- 1. Production Problems
    - a. Methods of Increasing Agricultural Production
    - b. Alternative Methods of Food Production
      - 1) Home Gardening
      - 2) Raising Animals
      - 3) Raising Fish
  - 2. Methods of Income Generation
    - a. Farming

b. Alternatives to Farming

- 1) Skilled Labor
- 2) Vendor
- 3) Manufacturing
- 4) Others

V. COMMUNITY NUTRITION PROGRAMS

A. Indonesian

1. Program Name
2. Program Purpose or Goal
3. Factors Causing the Nutrition Program
4. Nature of Activities
5. Target Group
6. Effectiveness

B. Other Countries

1. Developing Countries
2. Developed Countries

VI. ORGANIZATIONS INVOLVED IN COMMUNITY NUTRITION IN INDONESIA

A. Governmental

1. Ministry of Health
2. Ministry of Education and Culture
3. Ministry of Agriculture
4. Ministry of Manpower and Transmigration
5. Ministry of Industry
6. Ministry of the Interior
7. BAPPENAS/BAPPEDA
8. SEAMED
9. BULOG
10. BKKBN
11. Inter-Ministerial Programs

B. Non-Governmental

1. United Nations Agencies
  - a. World Health Organization

- b. Food and Agriculture Organization
  - c. UNICEF
  - d. UNESCO
  - e. U.N. High Commission on Refugees
2. Private Voluntary Organizations
- a. Catholic Relief Services
  - b. Church World Service
  - c. CARE
  - d. World Vision International
  - e. Helen Keller International
  - f. Save the Children
  - g. Yayasan Indonesia Sejahtera
  - h. Yayasan Bina Desa
  - i. Yayasan Tani Membangun

APPENDIX L

FOOD AND NUTRITION PLANNING  
(Short Outline)

- I. Introduction to Food and Nutrition Planning
  - A. Definition
  - B. Why Plan?
- II. Nutrition Planning Models
  - A. Proposed by Leonard Joy (1973)
  - B. Proposed by the United Nations Inter-Agency Meeting in Santiago (1973)
  - C. Proposed by Alan Berg (1973)
  - D. Proposed by Kane (1974)
  - E. Proposed by Dean Wilson (1976)
  - F. Proposed by J. Perisse (1979)
  - G. Proposed by J. Toro (1979)
- III. Steps Involved in Food and Nutrition Planning
  - A. Definition of the Problem
  - B. Analysis of Problem Causes (Causal Analysis)
  - C. Preliminary Statement of Goals
  - D. Identification and Comparison of Alternative Measures
  - E. Choice of Intervention Method by Decision-Makers
- IV. Program Implementation
  - A. Causes of Implementation Problems
  - B. Definition of the Operating System
  - C. Goal Setting
  - D. Formulation of Strategy for Meeting Goals
  - E. Physical Control of Supplies, Equipment, and Personnel (Logistics)
  - F. Communications
  - G. Finance
  - H. Control
  - I. Organization

- V. Program Evaluation
  - A. Review of Program
  - B. Types of Evaluation
  - C. Choice of Indicators
  - D. Control of Confounding Factors
  - E. Conclusions from Evaluation
- VI. Role of the Nutrition Planner
  - A. Knowledge and Skills Required
  - B. Responsibilities
- VII. Food and Nutrition Planning, Implementation, and Evaluation in Indonesia
  - A. Government Policy for Indonesian Nutrition Programs
  - B. Food and Nutrition Planning at Various Levels
    - 1. National
    - 2. Provincial
    - 3. Regional
  - C. Implementation of Policy at Various Levels
  - D. Evaluation of Programs at Various Levels
  - E. Resources Available for Planning, Implementation, and Evaluation
- VIII. Community Nutrition Programs in Indonesia
  - A. Program Name
  - B. Program Purpose or Goal
  - C. Agency Responsible
  - D. Scope of Activities
  - E. Nature of Activities
  - F. Fiscal Expenditure
  - G. Administrative and Operational Structure
  - H. Target Group
  - I. Interagency Linkages
  - J. Evaluation Procedures
  - K. Effectiveness
- IX. Community Nutrition Programs in Other Countries
  - A. Developing Countries
  - B. Developed Countries

APPENDIX M

Food and Nutrition Planning  
(Long Outline)

- I. INTRODUCTION TO FOOD AND NUTRITION PLANNING
  - A. Definition
  - B. Why Plan?
- II. NUTRITION PLANNING MODELS
  - A. Proposed by Leonard Joy
    - 1. Causal Analysis
    - 2. Identification of Relevant Measures
    - 3. Impact of Preliminary Intervention Proposals
    - 4. Impact on Health and Performance
    - 5. Impact of Development Policies and Projects
    - 6. Review of Size and Composition of Nutrition Intervention Programs
    - 7. Review of Size and Composition of Related Programs (Health, Agriculture, Education, Food Processing)
    - 8. Detailed Planning Briefs (to Agencies)
  - B. Proposed by the U.N. Inter-Agency Meeting in Santiago
    - 1. Food Supply
      - a. Food Production
      - b. Marketing
      - c. Industrialization
      - d. International Food Trade
    - 2. Food Demand
      - a. Income Distribution
      - b. Employment
      - c. Food Prices
      - d. Supplementary Feeding
      - e. Consumer Education
      - f. Population Policy

3. Biological Utilization of Food
    - a. Control of Parasitic and Infectious Diseases
    - b. Strengthening Health Services
    - c. Prevention and Control of Communicable Diseases
    - d. Nutrition and Health Education
    - e. Environmental Sanitation
  - C. Proposed by Alan Berg
    1. Identifying the Problem
      - a. Food Balance Sheets
      - b. Consumer Expenditure Surveys
      - c. Food Consumption Surveys
      - d. Medical Nutrition Surveys
    2. Identifying Nutrition Objectives
    3. Causes of the Nutritional Problem
    4. Identification and Comparison of Alternative Interventions
      - a. Costs and Benefits
      - b. Impact on Non-Nutrition Sectors
      - c. Constraints
    5. Decision Concerning Chosen Intervention
  - D. Proposed by Kane
    1. Identification of Community Health Problems
    2. Development of Alternatives
    3. Choice of a Solution
    4. Implementation
    5. Evaluation
  - E. Proposed by Wilson
    1. Relationship of the Nutrient Gap to Nutritional Status and Health Status
    2. Factors Influencing Nutrient Consumption
- III. STEPS INVOLVED IN FOOD AND NUTRITION PLANNING
- A. Definition of the Problem
    1. What are the Nutritional Deficiencies?
    2. How Severe are the Problems?
    3. Who is Affected?
    4. Where are those Affected?

5. What are the Trends?
  6. Confirming Indicators
    - a. Food Balance Sheets
    - b. Consumer Expenditure Surveys
    - c. Food Consumption Surveys
    - d. Medical Nutrition Surveys
    - e. Second-Source Surveys
- B. Analysis of Problem Causes
1. Immediate Causes
    - a. Insufficient Nutrient Intake
    - b. Poor Utilization of Nutrients
    - c. Increased Nutritional Needs Due to Infection
  2. Intermediate Causes
    - a. Low Family Income
    - b. Local Ecological Deficiencies
    - c. Distribution Shortcomings
    - d. Price Relationships
    - e. Food Waste
  3. Long Range Causes
    - a. Inadequacy of Natural Resources
    - b. Rapid Population Growth
    - c. Other Causes Related to Underdevelopment
- C. Preliminary Statement of Goals
1. Long-Term Objectives
    - a. Nutritional Status
    - b. Human Well-Being
    - c. Health
  2. Short-Term Objectives
    - a. Area Involved (Physical)
    - b. Budgetary Factors
    - c. Specific and Numerical Target
    - d. Time Frame
    - e. Resources Required

D. Identification and Comparison of Alternative Measures

1. Identification

- a. How Much Nutritional Improvement is Feasible?
- b. How Powerful Would Realization of Nutritional Benefit be as a Behavioral Determinant?
- c. How Successful Would this Measure be at Motivating People to Change?

2. Comparison

- a. Cost-Benefit
- b. Cost Effectiveness
- c. Impact in Non-Nutrition Sectors
- d. Constraints

E. Choice of Intervention Method by the Decision-Makers

1. Role of the Planner vs. That of the Decision-Maker
2. Analysis of Immediate, Intermediate, and Long-Term Payoffs.

IV. PROGRAM IMPLEMENTATION

A. Causes of Implementation Problems

1. Shortage of Professionally Trained Administrators
2. Programs Usually Staffed by Technical Personnel Lacking Management Skills and Experience
3. National Program Implementation Involves Coordination of Many Groups

B. Definition of the Operating System

1. Commercial vs. Non-Commercial
2. Private vs. Public
3. Operating vs. Supportive

C. Goal Setting

1. Goals Should be Specific
2. Goals Should be Measurable
3. Goals Should be Realistic
4. Goals Should be Dynamic

- D. Formulation of Strategy for Meeting Goals
  - 1. Determine Each Organization's Relative Strengths or Weaknesses
  - 2. Identify Environmental Constraints
  - 3. Identify Gaps in System
  - 4. Consider Multiple Time Frames
- E. Physical Control of Supplies, Equipment, and Personnel
  - 1. Supplies and Equipment
    - a. Procurement Procedures
    - b. Inventory Handling
    - c. Scheduling
    - d. Distribution
  - 2. Personnel
    - a. Sharing Trained Personnel with Other Organizations
    - b. On-the-Job Training
  - 3. Location of Intervention
    - a. Clinic
    - b. Households
    - c. Other
- F. Communications
  - 1. Internal
    - a. Educational Information for Training and Motivating Personnel
    - b. Management Information System--Providing Managers with Data Necessary to Make Decisions
  - 2. External
    - a. Communications Aimed at Motivating and Educating Actual and Potential Clients
    - b. Motivating and Educating the Public in General
- G. Finance
  - 1. Generation of Finances
    - a. International Funding Agencies
    - b. Domestic Fund Raising

2. Disbursement of Funds
  - a. Detailed Operating Budget
  - b. Accounting System
- H. Control
  1. Financial Control of Fund Flows
  2. Operating Control of Personnel Performance and Supplies
- I. Organization
  1. Decentralization of Responsibility and Authority
  2. Examples of Implementation Organization
- V. PROGRAM EVALUATION
  - A. Review of Program Objectives
    1. Focus of Program
      - a. Individual
      - b. Family
      - c. Community
      - d. Region
      - e. Nation
    2. Program Activities
    3. Resources Used in Carrying Out Program
  - B. Types of Evaluation (Measures)
    1. Quantity
    2. Quality
    3. Efficiency
    4. Cost-Effectiveness
  - C. Choice of Indicators
    1. Type of Indicator
      - a. Input
      - b. Intermediate Outcome
      - c. Ultimate outcome
    2. Criteria for Choosing
      - a. Relationship to Objective
      - b. Statistical Relationship to Objective

- c. Reliability of Measure
- d. Complementary Data Needed
- e. Cost of Using Indicator
3. Direct vs. Indirect Measurements
4. Commonly Used Indicators
5. Control on Confounding Factors
6. Conclusions from Evaluations
  - a. Degree of Success
  - b. Lessons Learned
  - c. Further Action/Recommendations

#### .VI. ROLE OF THE NUTRITION PLANNER

##### A. Knowledge and Skills Required

1. Knowledge of the Science and Art of Planning
2. Knowledge of Community Organization
3. Knowledge of Agency Administration
4. Knowledge of Health and Service Problems

##### B. Responsibilities

1. Deciding on Objectives for the Program
2. Deciding on the Kind of Program
3. Deciding on the Time Frame
4. Deciding on a List of Possible Participants
5. Investigating Facilities
6. Screening Participants and Deciding on Employability
7. Preparing the Program, Confirming Activities
8. Supervise Implementation
9. Evaluate the Program

#### VII. FOOD AND NUTRITION PLANNING, IMPLEMENTATION, AND EVALUATION IN INDONESIA

##### A. Government Policy for Indonesian Nutrition Programs

##### B. Food and Nutrition Planning at Various Levels

1. National
2. Provincial
3. Regional

- C. Implementation of Policy at Various Levels
  - 1. National
  - 2. Provincial
  - 3. Regional
- D. Evaluation of Programs at Various Levels
  - 1. National
  - 2. Provincial
  - 3. Regional
- E. Resources Available for Planning, Implementation, and Evaluation
  - 1. Manpower
  - 2. Training Facilities
  - 3. Equipment and Supplies
  - 4. Financial Resources

VIII. COMMUNITY NUTRITION PROGRAMS IN INDONESIA

- A. Program Name
- B. Purpose or Goal
- C. Agency Responsible
- D. Scope of Activities
- E. Nature of Activities
- F. Fiscal Expenditure
- G. Administrative and Operational Structure
- H. Target Group
- I. Interagency Linkages
- J. Evaluation Procedures
- K. Effectiveness

IX. COMMUNITY NUTRITION PROGRAMS IN OTHER COUNTRIES

- A. Developing Countries
- B. Developed Countries

APPENDIX N

FOOD AND NUTRITION SYSTEMS  
(Short Outline)

- I. Food and Nutrition Problems as a System
- II. Factors Determining each Sub-System
  - A. Production
  - B. Post-Harvest
  - C. Distribution
  - D. Consumption
  - E. Metabolism in the Body
  - F. Nutritional Status
- III. Natural History of Nutritional Diseases Model
  - A. Description of Model
  - B. Involvement of Trained Workers and Administrators
- IV. Systems Approach to Overcoming Food and Nutrition Problems
  - A. The Food and Nutrition System in Relation to the Natural History of Nutritional Diseases Model
  - B. Overcoming Nutrition Problems at Each Step in the System
- V. Nutritional Surveillance

APPENDIX O

FOOD AND NUTRITION SYSTEMS

(Long Outline)

- I. FOOD AND NUTRITION PROBLEMS AS A SYSTEM
  - A. Production
  - B. Post-Harvest
  - C. Distribution
  - D. Consumption
  - E. Metabolism in the Body
  - F. Nutritional Status
- II. FACTORS DETERMINING EACH SUB-SYSTEM
  - A. Production
    - 1. Land Fertility
    - 2. Land Holding
    - 3. Food Production Potential
    - 4. Population
    - 5. Government Policies
  - B. Post-Harvest
    - 1. Monitoring and Prevention of Food Losses and Food Deterioration
    - 2. Factors Influencing Loss and Deterioration
      - a. Humidity
      - b. Temperature
      - c. Internal and External Contaminands
      - d. Storage Conditions
    - 3. Government Policies
  - C. Distribution
    - 1. Government Policies
      - a. Stockpiling
      - b. Setting Floor and Ceiling Prices
      - c. Food Control
      - d. Prevention of Nutrient Losses During Processing
      - e. Small Farmholders

2. Transportation
  3. International Collaboration
    - a. Title II
    - b. Other Food Aid
  4. Export-Import Policies
- D. Consumption
1. Social, Cultural, and Economic Aspects Influencing Consumption
    - a. Biological Vulnerability
      - 1) Mothers
        - a) Pregnant
        - b) Lactating
      - 2) Infants
      - 3) Pre-School Children
      - 4) Elderly
    - b. Ecological Vulnerability
      - 1) Drought Areas
      - 2) Flood Areas
      - 3) Earthquake areas
      - 4) Volcano Areas
      - 5) Areas with Low Mineral Content in Soil
    - c. Economical Vulnerability
      - 1) Rich vs. Poor
      - 2) Social Research Case Studies
  2. Quality and Quantity of Consumption
    - a. Compared to Nutritional Requirements
    - b. Population Basis
    - c. Individual Basis
  3. Government Policies
- E. Metabolism
1. Influence of Health Status on Metabolism
    - a. Communicable Diseases
    - b. Diarrhea
    - c. Worms
    - d. Malaria

2. Environment Stress to Metabolism
  - a. Climate
  - b. Working Conditions
  - c. Population Structure
- F. Nutritional Status
  1. Direct Indicators
    - a. Prevalence of PEM
    - b. Prevalence of Vitamin A Deficiency
    - c. Prevalence of Goiter
    - d. Prevalence of Nutritional Anemia
  2. Indirect Indicators
    - a. Age-Specific Death Rate
    - b. Infant Mortality Rate
    - c. Crude Death Rate
    - d. Maternal Mortality Rate
    - e. Disease-Specific Mortality Rate
    - f. Others
  3. Government Policies and Regulations

### III. NATURAL HISTORY OF NUTRITIONAL DISEASES

- A. Description of Model
  1. Stages
    - a. Pre-Pathogenesis Period
    - b. Incubation Period
    - c. Pathogenesis Period
    - d. Post-Pathogenesis
  2. The Clinical Horizon and Threshold of Clinical Recognition
  3. Possible Outcomes
    - a. Death
    - b. Continued Illness
    - c. Recovery
  4. Levels of Prevention by Stages

B. Involvement of Trained Workers and Administrators

1. Agriculturalists
  - a. Pre-Pathogenic
  - b. Post-Pathogenic
2. Nutritionists
  - a. Pre-Pathogenic
  - b. Post-Pathogenic
3. Health Workers
  - a. Pre-Pathogenic
  - b. Pathogenic
  - c. Post-Pathogenic

IV. SYSTEMS APPROACH TO OVERCOMING FOOD AND NUTRITION DISEASES

A. The Food and Nutrition System in Relation to the Natural History of Nutrition Diseases Model

B. Overcoming Nutrition Problems at Each Step in the System

1. Production
2. Post-Harvest
3. Distribution
4. Consumption
5. Metabolism
6. Nutritional Status

V. NUTRITIONAL SURVEILLANCE

- A. Indicator Identifications
- B. Sources of Information
- C. Immediate and Long-Term Predictions
- D. Dependent and Independent Variables
- E. Combined Criteria for Pointing Out Particular Critical Situation
- F. Monitoring System of Food Situation
- G. Emergency and Long-Term Programs

APPENDIX P

NUTRITION RESEARCH METHODOLOGY

(Short Outline)

- I. Review of Methods of Nutritional Assessment
  - A. Anthropometry
  - B. Dietary Methodology
  - C. Clinical Assessment
  - D. Biochemical and Laboratory Assessment
  - E. Biophysical Methods
  - F. Participant Observation
  
- II. Comparison of Assessment Methods Available
  - A. Advantages of Each Method
  - B. Disadvantages of Each Method
  - C. Use of Combinations of Methods
  - D. Methods Appropriate to Different Situations
  
- III. Student Research
  - A. Review of Each Student's Research Methodology
  - B. Critical Analysis of Methodology
  - C. Recommendations
  
- IV. Critical Readings in Nutrition Research
  - A. National and International Nutrition-Related Journals and Bulletins Available
  - B. Analysis and Critical Review of Selected Research Articles
  - C. Recommendations

APPENDIX Q

NUTRITION RESEARCH METHODOLOGY

(Long Outline)

I. REVIEW OF METHODS OF NUTRITIONAL ASSESSMENT

A. Anthropometry

1. Definition
2. Advantages and Disadvantages
3. Measurement Techniques
  - a. Weight
  - b. Height/Length
  - c. Circumferences
    - 1) Mid Upper-Arm
    - 2) Head
    - 3) Chest
  - d. Fatfolds
    - 1) Triceps
    - 2) Subscapular
4. Standardization of Techniques
5. Growth Charts/Standards of Reference
  - a. International
  - b. Indonesian
6. Selection of Appropriate Anthropometric Method

B. Dietary Methodology

1. Family or Group Methods
  - a. Family Food Accounts
  - b. Food Records
  - c. Food Lists
2. Individual Intake Methods
  - a. Food Recall
    - 1) 24 Hour
    - 2) Three or Seven Day

- b. Food Records
- c. Food Frequency
- d. Diet History
- e. Weighed Intake Studies
- 3. Comparison of Methodologies
- C. Clinical Assessment
  - 1. Lack of Specificity of Clinical Signs
  - 2. Advantages and Disadvantages
  - 3. Nutritional Relevance of Clinical Signs
  - 4. Standardization
  - 5. Physical Signs by Body Area
    - a. Hair
    - b. Face
    - c. Eyes
    - d. Lips
    - e. Tongue
    - f. Teeth
    - g. Gums
    - h. Glands
    - i. Skin
    - j. Nails
    - k. Subcutaneous Tissues
      - 1. Muscular and Skeletal Systems
    - m. Internal Systems
      - 1) Cardiovascular
      - 2) Gastrointestinal
      - 3) Nervous
- D. Biochemical or Laboratory Assessment
  - 1. Functions
    - a. Detection of Marginal Nutrient Deficiencies
    - b. Supplementation of Other Assessment Methods
  - 2. Advantages and Disadvantages

3. Appropriate Nutrients to Assess
  - a. Serum Protein
  - b. Blood-Forming Nutrients
    - 1) Iron
    - 2) Folacin
    - 3) Vitamin B<sub>6</sub>
    - 4) Vitamin B<sub>12</sub>
  - c. Water-Soluble Vitamins
    - 1) Thiamine
    - 2) Riboflavin
    - 3) Niacin
    - 4) Vitamin C
  - d. Fat-Soluble Vitamins
    - 1) Vitamin A
    - 2) Vitamin D
    - 3) Vitamin E
    - 4) Vitamin K
  - e. Minerals
    - 1) Iron
    - 2) Iodine
    - 3) Other Trace Minerals
  - f. Levels of Blood Lipids
    - 1) Cholesterol
    - 2) Triglycerides
    - 3) Glucose
    - 4) Enzymes Implicated in Heart Disease, Diabetes, Other Chronic Diseases
  - g. Standards for Interpretation of Results
- E. Biophysical Methods
  1. Radiographic Examination
  2. Tests of Physical Function
  3. Cytological Test

F. Participant Observation

1. Definition
2. The Investigator/Observer
  - a. Role of the Observer
  - b. Need for Establishing a Good Relationship with the Community
  - c. Status Differentials
  - d. Age Differentials
  - e. Knowledge of the Culture and Society Being Observed
3. Methods of Study
  - a. Small Groups
  - b. Informal Interviews
4. Data Classification
  - a. Field Notes
  - b. Life Histories
  - c. Personal Diary
5. Advantages and Disadvantages of Participant Observation
6. Ethical Questions

II. COMPARISON OF ASSESSMENT METHODS AVAILABLE

A. Advantages of Each Method

1. Anthropometry
2. Dietary Methodology
3. Clinical Assessment
4. Biochemical and Laboratory Assessment
5. Biophysical Methods
6. Participant Observation

B. Disadvantages of Each Method

1. Anthropometry
2. Dietary Methodology
3. Clinical Assessment
4. Biochemical and Laboratory Assessment
5. Biophysical Methods
6. Participant Observation

C. Use of Combinations of Methods

D. Methods Appropriate to Different Situations

### III. STUDENT RESEARCH

- A. Review of Each Student's Research Methodology
  - 1. Oral Presentation of Research Methodology
  - 2. Identification of Methodology
  - 3. Discussion of Library References Used
- B. Critical Analysis of Methodology
  - 1. Discussion of Proposed Method(s)
  - 2. Advantages
  - 3. Disadvantages
  - 4. Review of Other Methods Applicable to the Student's Research
- C. Recommendations
  - 1. "Best" Method(s)
  - 2. Precautions to Take in Use of Method
  - 3. Pre-Testing
  - 4. Others

### IV. CRITICAL READINGS IN NUTRITION RESEARCH

- A. National and International Nutrition-Related Journals and Bulletins Available
  - 1. National
  - 2. International
    - a. American Journal of Clinical Nutrition
    - b. American Dietetics Association Journal
    - c. Others
- B. Analysis and Critical Review of Selected Research Articles
  - 1. Identification of Method
  - 2. Relevance of Method
  - 3. Effectiveness of Method
  - 4. Weak Points in Method
- C. Recommendations
  - 1. Alternative Methods
  - 2. Improvements on the Existing Method

APPENDIX R

FAMILY HEALTH AND THE ENVIRONMENT

(Short Outline)

	<u>Weeks</u>
I. <u>The Indonesian Family</u>	1/2
A. The Family and Its Characteristics	
B. Health of the Individual	
II. <u>The Environment</u>	1
A. Transmission	
B. The Immediate Environment	
C. The Community Environment	
D. The Regional Environment	
III. <u>Measurement of Health</u>	1 1/2
A. Statistical Terms	
B. Mortality	
C. Morbidity	
D. Fertility and Population Growth	
E. Search for a Health Index	
F. Classification of Health States	
IV. <u>The Indonesian Health Planning System</u>	2
A. Historical	
B. Functions of the Health Planning Unit	
C. Organization of the Health Planning System	
D. Health System Resources	
V. <u>Review of Health Problems in Indonesia</u>	2
A. Physical and Biological Environment Problems	
B. Health Disturbance Problems	

C. Problems in Health Service (PUSKEMAS)	
D. Problems with Family Planning (BKKBN)	
E. Problems with Health Workers	
VI. <u>Existing Indonesian Health Programs</u>	2
A. Upgrading Public Health Service	
B. Upgrading Hospital Service	
C. Nutrition Improvement Program	
D. Environment Health Improvement Program	
VII. <u>Health Program Evaluation</u>	2
A. Review of Program Objectives	
B. Types of Evaluation	
C. Choice of Indicators	
D. Control of Confounding Factors	
E. Conclusions from Evaluations	
F. Case Studies	
VIII. <u>Health Problem Interventions</u>	2
A. Physical and Biological Environment Problems	
B. Health Disturbance Problems	
C. Problems in Health Service	
D. Problems with Family Planning	
E. Problems with Health Workers	
IX. <u>Training Health Workers</u>	2
A. Community Health Workers	
B. Professional Health Workers	
C. Continuing Education for Health Workers	
X. <u>Integration of Health and Nutrition</u>	1
A. Rationale	
B. Existing Situation in Indonesia	
C. Recommendations for Future Integration	

APPENDIX S

FAMILY HEALTH AND THE ENVIRONMENT

(Long Outline)

I. THE INDONESIAN FAMILY

A. The Family and Its Characteristics

1. National Statistics

- a. Age and Sex Distribution Throughout Indonesia
- b. Geographic Distribution
- c. Population Density

2. Social and Cultural Characteristics

- a. Size and Structure of Average Family and Average Household
- b. Role of Women
- c. Function of Children
- d. Perceptions of Health and Health Care
- e. Educational Levels
- f. Influence of Religion on Health Attitudes
- g. Customs and Beliefs that Affect Health

3. Economic Characteristics

- a. Occupation
- b. Employment
- c. Income
- d. Gross National Product Per Person

4. Genetic and Biological Characteristics

- a. Racial (regional) Background
- b. Height and Weight Characteristics
- c. Genetic Health Problems

5. Nutritional Requirements

B. Health of the Individual

1. Health of the Infant

- a. The Premature Baby
- b. The Postmature and Low-Birth-Weight Baby
- c. Birth Injuries

- d. Congenital Malformations
  - e. Malnutrition
  - f. Infectious Diseases
  - g. Respiratory Disease
  - h. Diarrhea
  - i. Skin Disease
  - j. Parasitic Infections
2. Health of the Child
- a. Growth and Development
  - b. Malnutrition
  - c. Respiratory Diseases
  - d. Infectious Diseases
  - e. Parasitic Infections
  - f. Intestinal Diseases
  - g. Skin Disease
  - h. Immunizations
3. Health of the Woman
- a. Personal Health
    - 1) Malnutrition
    - 2) Diseases of the Reproductive Tract
    - 3) Respiratory Diseases
    - 4) Infectious Diseases
    - 5) Parasitic Infections
    - 6) Cancer
    - 7) Heart Disease/High Blood Pressure
    - 8) Diabetes
  - b. Reproductive Health
    - 1) Pregnancy and Childbirth
    - 2) Abortion/Miscarriage
    - 3) Contraception

4. Health of the Man
  - a. Malnutrition
  - b. Respiratory Diseases
  - c. Infectious Diseases
  - d. Parasitic Infections
  - e. Cancer
  - f. Coronary Heart Diseases

## II. THE ENVIRONMENT

### A. Transmission

1. Direct
2. Indirect

### B. The Immediate Environment

1. Home
  - a. Water Supply
  - b. Human and Animal Waste Disposal
  - c. Garbage Disposal
  - d. Home/Kitchen Waste Disposal
  - e. Housing: Ventilation, Space, Materials
  - f. Proximity to Livestock, Insects, and Rodents
2. Work
  - a. Physical Hazards
  - b. Chemical Hazards
  - c. Biological Hazards

### C. The Community Environment

1. Community Water Supply
  - a. Quality
  - b. Accessibility
2. Community Waste Disposal
  - a. Human
  - b. Household and Market

3. Sanitation of Market Place
    - a. Food Stall Construction
    - b. Water Supply Availability
    - c. Drainage System
    - d. Regular Cleaning
  4. Sanitation of Schools and Public Buildings
    - a. Water Supply
    - b. Waste Disposal
    - c. Prevention of Animals/Insects
- D. The Regional Environment
1. Regional Water Supply
    - a. Pollution of Water by Inhabitants
    - b. Pollution of Water by Industry
    - c. Pollution of Water by Insecticides, Herbicides, and Fertilizers
  2. Regional Sewage System
  3. Influence of Population Growth on Health
  4. Influence of Urbanization on Health
  5. Influence of Industrialization on Health

### III. MEASUREMENT OF HEALTH

- A. Statistical Terms
1. Ratio
  2. Proportion or Percentage
  3. Rate
  4. Mean, Mode, and Range
- B. Mortality (Death)
1. Infant Mortality Rate
  2. Crude Death Rate
  3. Maternal Mortality Rate
  4. Childhood Mortality Rate
  5. Age-Specific Mortality Rate
  6. Disease-Specific Mortality Rate
  7. Case Fatality Rate

- C. Morbidity (Illness)
  - 1. Incidence (Rate)
  - 2. Prevalence (Rate)
- D. Fertility and Population Growth
  - 1. Crude Birth Rate
  - 2. Crude Rate of Natural Increase
  - 3. Age-Specific Fertility Rate
  - 4. General Fertility Rate
  - 5. Total Fertility Rate
- E. The Search for a Health Index
  - 1. Health Priority Index (Pan American Health Organization)
  - 2. Q-Index (Indian Health Service)
  - 3. Possibility of Developing an Indonesian Health Index
- F. Classification of Health States
  - 1. Well-Being
  - 2. Dissatisfaction
  - 3. Discomfort
  - 4. Disability, Minor
  - 5. Disability, Major
  - 6. Disabled
  - 7. Confined
  - 8. Confined, Bedridden
  - 9. Isolated
  - 10. Coma
  - 11. Death

#### IV. THE INDONESIAN HEALTH PLANNING SYSTEM

- A. Historical
  - 1. Before Pelita I
  - 2. Pelita I
  - 3. Pelita II
  - 4. Pelita III

B. Functions of the Health Planning Unit

1. Long, Medium, and Short-Term Planning
2. Sectoral and regional Planning
3. Annual Health Revenue and Budget Preparation
4. Monitor and Evaluate Ministry of Health Programs
5. Develop Coordination Between the Ministry of Health and the Bureau of General Affairs

C. Organization of the Health Planning System

1. National Level
  - a. BAPPENAS
  - b. Ministry of Finance
  - c. Ministry of Interior
2. Provincial Level
  - a. BAPPEDA
  - b. Directorate of Development
  - c. Directorate of Finance
3. Regional Level
  - a. Badan Swasta
  - b. PUSKEMAS

D. Health System Resources

1. Manpower
2. Health Training Facilities
3. Health Facilities and Equipment
4. Equipment and Supplies
5. Financial Resources

V. REVIEW OF HEALTH PROBLEMS IN INDONESIA

A. Physical and Biological Environment Problems

B. Health Disturbance Problems

1. Nutrition-Related
  - a. Protein Energy Malnutrition
  - b. Vitamin A Deficiency

- c. Iron Deficiency
- d. Iodine Deficiency
- 2. Infections and Parasites
  - a. Tetanus
  - b. Typhoid
  - c. Dysentery
  - d. Cholera
  - e. Mararia
  - f. Others
- 3. Cancer
- 4. Heart Disease
  - a. Rheumatic Fever
  - b. Heart Diseases Caused by Diphtheria
  - c. Arteriosclerosis
  - d. High Blood Pressure
  - e. Heart Failure
- 5. Respiratory Diseases
  - a. Tuberculosis
  - b. Bronchitis
  - c. Pneumonia
  - d. Influenza
- 6. Degenerative Diseases
  - a. Kidney
  - b. Liver
  - c. Stomach
  - d. Diabetes
- 7. Maternal Complications
  - a. Bleeding
  - b. Infection
  - c. Toxemia
- 8. Infant Diseases
  - a. Premature Birth
  - b. Low Birth Weight
  - c. Infectious Diseases

C. Problems in Health Service (PUSKESMAS)

1. Insufficient Number of Doctors, Paramedics
2. Insufficient Medication
3. Geographic Location of PUSKESMAS
4. High Fees for Service
5. Use of Private Health Service and Traditional Herbal Medications
6. Poor Management of PUSKESMAS

D. Problems with Family Planning (BKKBN)

E. Problems of Health Workers

1. Poor Coordination of Worker Program Planning, Training and Assignment
2. Incomplete Training of Worker
3. Insufficient Training Facilities
4. Inadequate Management of Health Worker Career Development

VI. EXISTING INDONESIAN HEALTH PROGRAMS

A. Upgrading Public Health Service

1. PUSKESMAS
2. Family Planning
3. Mother and Child Care
4. Health Efforts for Schools
5. Dental Health
6. Mental Health
7. Laboratory Services
8. Health Development for Rural Societies (PKMD)

B. Upgrading Hospital Service

1. Expansions
2. Quality Improvement
3. Improve Supportive Activities
4. Health Equipment and Medication
5. Contagious Diseases Control Program

6. Malaria Control
  7. Immunization
  8. Tuberculosis Control
  9. Cholera and Gastroenteric Control
  10. Framboesia, Leprosy, and Venereal Disease Control
  11. Control of Diseases Infected by Animals
  12. Health Quarantines for Haji and Populations to be Transferred
  13. Epidemic Control
  14. Dietetics
- C. Nutrition Improvement Program
1. PEM
  2. Vitamin A Deficiency
  3. Nutritional Anemia
  4. Goiter
- D. Environment Health Improvement Program
1. Drinking Water
  2. Housing and Environment
  3. Hygienic and Sanitary Supervision of Food and Beverages
  4. Supervision of Quality of Water for Drinking and Swimming Pools
  5. Supervision of Environmental Pollution and Radiation Protection

## VII. HEALTH PROGRAM EVALUATION

- A. Review of Program Objectives
1. Focus of Program
    - a. Individual
    - b. Family
    - c. Community
    - d. Regional
    - e. National
  2. Program Activities
  3. Resources Used in Carrying Out Program

- B. Types of Evaluation (Measures)
  - 1. Quantity
  - 2. Quality
  - 3. Efficiency
  - 4. Cost-Effectiveness
- C. Choice of Indicators
  - 1. Type of Indicator
    - a. Input
    - b. Intermediate Outcome
    - c. Ultimate Outcome
  - 2. Criteria for Choosing
    - a. Relationship to Objective
    - b. Statistical Relationship to Objective
    - c. Reliability of Measurement
    - d. Complementary Data Needed
    - e. Cost of Using Indicator
  - 3. Direct vs. Indirect Measurements
  - 4. Commonly Used Indicators
- D. Control of Confounding Factors
- E. Conclusions from Evaluations
  - 1. Degree of Success
  - 2. Lessons Learned
  - 3. Further Action/Recommendations
- F. Case Studies
  - 1. A Health Development Model Application to Rural Java
  - 2. Administrative and Organization of Village-Level Integrated Projects in Maharashtra (India)

## VIII. HEALTH PROBLEM INTERVENTIONS

- A. Physical and Biological Environment Problems
  - 1. Extent to Which Problem is Being Solved in Existing Health Programs
    - a. Drinking Water
    - b. Housing and Environment

- c. Hygienic and Sanitary Supervision of Food and Beverages
  - d. Waste Disposal System
  - e. Environmental Pollution
  - 2. Remaining Needs/Suggestions for Future
    - a. Drinking Water
    - b. Housing and Environment
    - c. Hygienic and Sanitary Supervision of Food and Beverages
    - d. Waste Disposal System
    - e. Environmental Pollution
- B. Health Disturbance Problems
- 1. Extent to Which Problem is Being Solved in Existing Health Programs
    - a. Nutrition-Related Problems
      - 1) PEM
      - 2) Vitamin A Deficiency
      - 3) Iron Deficiency
      - 4) Iodine Deficiency
    - b. Tuberculosis
    - c. Infections and Parasites
    - d. Cancer
    - e. Heart Disease
    - f. Pneumonia
    - g. Degenerative Diseases
    - h. Maternal Complications
    - i. Infant Diseases
  - 2. Remaining Needs/Suggestions for Future
    - a. Nutrition-Related Problems
      - 1) PEM
      - 2) Vitamin A Deficiency
      - 3) Iron Deficiency
      - 4) Iodine Deficiency
    - b. Tuberculosis
    - c. Infections and Parasites

- d. Cancer
- e. Heart Disease
- f. Pneumonia
- g. Degenerative Diseases
- h. Maternal Complications
- i. Infant Diseases

C. Problems in Health Service (PUSKESMAS)

1. Extent to Which Problem is Being Solved in Current Health Programs

- a. Insufficient Number of Doctors, Paramedics
- b. Insufficient Medication
- c. Geographic Location of PUSKESMAS
- d. High Fees for Service
- e. Use of Private Health Services and Traditional Herbal Medications
- f. Poor Management of PUSKESMAS

2. Remaining Needs/Suggestions or Future

- a. Insufficient Number of Doctors, Paramedics
- b. Insufficient Medication
- c. Geographic Location of PUSKESMAS
- d. High Fees for Service
- e. Use of Private Health Service and Traditional Herbal Medications
- f. Poor Management of PUSKESMAS

D. Problems With Family Planning

E. Problems with Health Workers

1. Extent to Which Problem is Being Solved in Current Health Programs

- a. Poor Coordination of Worker Program Training and Assignment
- b. Incomplete Training of Worker
- c. Insufficient Training Facilities
- d. Inadequate Management of Health Worker's Career Development

2. Remaining Needs/Suggestions for the Future
  - a. Poor Coordination of Worker Program Training and Assignment
  - b. Incomplete Training of Worker
  - c. Insufficient Training Facilities
  - d. Inadequate Management of Health Worker's Career Development

## IX. TRAINING HEALTH WORKERS

### A. Community Health Workers

1. Knowledge and Skills Required, Criteria for Selection
2. Responsibilities/Functions
3. Training
  - a. Social Process Skills and Knowledge
    - 1) Getting to Know the Community
      - a) Values, Beliefs, and Customs
      - b) Family System
      - c) Child-Bearing Practices
      - d) Attitudes Toward Health, Knowledge of Sickness
      - e) Resources (Monetary, Food, Agricultural, Crafts, Water, Sanitation, Roads, Telephones, Radios, Electricity, Transportation)
      - f) Political Structure
      - g) Religion
      - h) Population
    - 2) Finding Out the Problems of the Community
      - a) Listening Skills
      - b) Empathy
    - 3) Approaching the Community
      - a) Home Visits
      - b) Identification of People Who Can Help Improve Health in the Community
      - c) Identifying People who Need Special Help
      - d) Increasing the Desire of Individuals and Groups to Improve Health

- e) How to Give Health Messages Convincingly
  - f) Organizing and Taking Part in Community Meetings to Discuss Health Matters
- 4) Ranking of Community Health Priorities
- b. Technical Skills and Knowledge
- 1) Communicable Diseases
    - a) Vaccinations
    - b) Fevers
    - c) Diarrhea
    - d) Respiratory Diseases
    - e) Epidemics
  - 2) Maternal Care
    - a) Pregnancy
    - b) Delivery
    - c) Postnatal Care
    - d) Family Planning
    - e) Diseases of Women
  - 3) Child Health
    - a) Breastfeeding
    - b) Growth
    - c) Diet
  - 4) First Aid
    - a) Burns
    - b) Wounds
    - c) Fractures
    - d) Bites
  - 5) Community and Home Sanitation
    - a) Water Supply
    - b) Human Waste Disposal
    - c) Waste Disposal
    - d) Food Protection

- 6) Other Health Problems
  - a) Skin Diseases
  - b) Eye Diseases
  - c) Headaches
  - d) Stomach Aches
  - e) Pains in Joints
  - f) Intestinal Worms
  - g) Weakness and Tiredness
  - h) Diseases of the Mouth and Teeth
  - i) Lumps Under the Skin
  - j) Mental Disease
  - k) Venereal Disease
- 7) Medicines
- 8) Techniques
  - a) Taking a Patient's Temperature
  - b) Intramuscular Injection
  - c) Sub-Cutaneous Injection
  - d) Applying Bandages
  - e) Counting the Pulse
  - f) Anthropometric Measurements
  - g) Plotting Measurements
  - h) Interpreting Growth Curves
  - i) Other Techniques

B. Professional Health Workers

- 1. Physicians
  - a. Required Knowledge and Skills
  - b. Responsibility
- 2. Dental Personnel
  - a. Required Knowledge and Skills
  - b. Responsibility
- 3. Nurses
  - a. Required Knowledge and Skills
  - b. Responsibility

4. Midwives
    - a. Required Knowledge and Skills
    - b. Responsibility
  5. Family Planning Personnel
    - a. Required Knowledge and Skills
    - b. Responsibility
  6. Environmental and Sanitary Engineers
    - a. Required Knowledge and Skills
    - b. Responsibility
  7. Nutrition and Dietetics Personnel
    - a. Required Knowledge and Skills
    - b. Responsibility
  8. Pharmacy Personnel
    - a. Required Knowledge and Skills
    - b. Responsibility
  9. Technicians and Therapists
    - a. Required Knowledge and Skills
    - b. Responsibility
  10. Administrative and Planning Personnel
    - a. Required Knowledge and Skills
    - b. Responsibility
- C. Continuing Education for Health Workers
1. Community Health Workers
  2. Professional Health Workers

X. INTEGRATION OF HEALTH AND NUTRITION

- A. Rationale
  1. Biosocial Reasons for Integration
  2. Organizational Reasons for Integration
- B. Existing Situation in Indonesia
  1. Importance of the Nutrition Factor in the National Health Plan
  2. Budget Allocations for Nutrition (Ministry of Health)
  3. Extent to Which Nutrition Problems are Being Solved
- C. Recommendations for Future Integration

APPENDIX T

DATA SURVEI

KOMPUTASI PERSEN RDA UNTUK SETIAP KELUARGA  
DAN RATA-RATA DARI SEMUA KELUARGA YANG DISURVEI

ADALAH 2 KELUARGA YANG DISURVEI  
JUMLAH HARI SURVEI = 1

		<u>RATA-RATA RDA</u>	<u>RATA-RATA KOMPOSISI</u>	<u>% RDA</u>	KODE KELUARGA: 2/54 NOMOR ANGGOTA: 2
BERAT BADAN	(KG)	51.0			
KALORI	(KAL)	2325	935	40.2%	
PROTEIN	(G)	49.5	46.5	93.9%	
KALSIUM	(MG)	750.0	332.8	44.4%	
BESI	(MG)	19.5	20.2	103.6%	
VITAMIN A	(S.I.)	4000	4099	102.5%	
VITAMIN B1	(MG)	1.0	820	82.2%	
VITAMIN B2	(MG)	40.0			
NIASIN	(MG)	1.4			
VITAMIN C	(MG)	15.3	43.6	283.7%	
LEMAK	(G)		9.4		
HIDRATARANG	(G)		169.6		
FOSFOR	(MG)		560.6		
AIR	(G)		289.2		

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					KODE KELUARGA: 34/5 NOMOR ANGGOTA: 3
BERAT BADAN	(KG)	49.7			
KALORI	(KAL)	2120	1586	74.8%	
PROTEIN	(G)	46.3	79.3	147.3%	
KALSIUM	(MG)	666.7	511.1	76.7%	
BESI	(MG)	17.0	24.6	144.5%	
VITAMIN A	(S.I.)	3833	5460	142.4%	
VITAMIN B1	(MG)	9	113	125.3%	
VITAMIN B2	(MG)	36.7			
NIASIN	(MG)	1.3			
VITAMIN C	(MG)	14.0	72.9	519.6%	
LEMAK	(G)		22.6		
HIDRATARANG	(G)		289.5		
FOSFOR	(MG)		906.7		
AIR	(G)		544.8		

KESIMPULAN, WEIGHTED AVERAGE

DARI KODE ANGGOTA:2/54  
SAMPEI KODE ANGGOTA:34/5  
JUMLAH KELUARGA:2  
JUMLAH ORANG:5

		<u>RATA-RATA RDA</u>	<u>RATA-RATA KOMPOSISI</u>	<u>% RDA</u>
BERAT BADAN	(KG)	50.2		
KALORI	(KAL)	2202	1326	60.2%
PROTEIN	(G)	47.6	59.5	125.1%
KALSIUM	(MG)	700.0	439.8	62.8%
BESI	(MG)	18.0	22.8	126.8%
VITAMIN A	(S.I.)	3900	4916	126.0%
VITAMIN B1	(MG)	9	101	107.0%
VITAMIN B2	(MG)	38.0		
NIASIN	(MG)	1.4		
VITAMIN C	(MG)	14.6	61.2	420.1%
LEMAK	(G)		17.3	
HIDRATARANG	(G)		241.5	
FOSFOR	(MG)		768.3	
AIR	(G)		2212.9	