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Institut Pertanian Bogor * University of Wisconsin

GRADUATE EDUCATION PROJECT

Aid Project 497-0290

Report No. 14

BARRETT

REPORT OF PROJECT ASSOCIATE

ON

COMMUNITY NUTRITION AND FAMILY RESOURCES

TO

INSTITUT PERTANIAN BOGOR (IPB)
BOGOR, INDONESIA

By

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I. DURATION OF CONSULTANCY

The consultant 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 14, 1982.

II. OBJECTIVES OF CONSULTANCY

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

A. Design the two year S_2 (Sarjana 2 or M.S. equivalent) curriculum in Community Nutrition and Family Resources.

B. Prepare objectives and outlines for four new S_2 courses:

1. Socio-Economic and Cultural Influences on Family Food Habits.
2. Nutrition and the Development of the Child.
3. Community Nutrition
4. Information Transfer Technology.

C. Prepare lecture notes for new S_2 classes

D. Assist in formulation of an informative pamphlet about the S_2 program for distribution to interested groups.

E. Develop new laboratory facilities and improve current laboratory conditions.

G. Continue cooperation with U.W. counter parts and assist in introduction of new project associates.

III. BACKGROUND INFORMATION

A. <u>Departemen Gizi Masyarakat dan Sumberdaya Keluarga</u> (GMSK)

1. <u>History</u>

The Institut Pertanian Bogor was officially started in 1963 by a decree of the Ministry of Education and Culture, authorized by the President of Indonesia. In 1966, the Department of Social Economics began offering a course in Home Economics, and in 1967 the field of Home Economics was attached to the Bureau of Extension.

The Department of Home Economics was officially established in 1969 and existed as such until 1973. In 1973 the department began to offer a Nutrition curriculum in addition to their Family Life curriculum.

The Department of Home Economics (Ilmu Kesejahteraan Keluarga Pertanian or IKKP) officially changed its name to the Department of Community Nutrition and Family Resources (Gizi Masyarkat dan Sumberdaya Keluarga or GMSK) in 1980, along with the change in departmental emphasis. At present, the department offers courses in both the fields of Community Nutrition and Family Resources.

2. Goals

The goals of the Department of Community Nutrition and Family Resources are to :

> "Prepare graduates to be capable of working in the fields of education and agricultural extension that are interlocked with the improvement of family or community nutrition. In addition, to prepare graduates for work in food and nutrition problem research, and also for work in nutrition problems and family life".

3. Staff

There are sixteen full-time staff members. Five of the staff members have M.S. degrees while the remaining have S_1 or B.S. degrees. None of the staff have a Ph.D degree. Appendix A lists the staff members, the courses they teach and their positions. The department is composed of four senior lecturers, eight lecturers, three junior lecturers, and one assistant. The strength of the department lies in the food and nutrition area, with twelve of the full-time staff having nutrition-oriented training. Only four of the staff are trained primarily in home economics.

In addition to the sixteen full-time staff members, there are nine part-time lecturers in the department. A list of these part-time staff members is given in Appendix B.

4. Students

The total number of students who have graduated from Departemen GMSK from 1964 to 1982 is 64. The table below shows the student enrollment in the department for the last eight years. Enrollment almost doubled between 1979 and 1980. This may be attributed to the emphasis on nutrition, and also to the increase in enrollment in IPB in general.

Table 1

Student Enrollment in Departemen IKKA / GMSK - IPB

	1975	1976	1977	1978	1979	1980	1981	1982
2nd year students	1	3	4	8	32	42	48	54
3rd year students	-	1	3	4	6	34	42	38
4th year students	6	4	2	4	7	6	30	42
	7	8	9	16	45	82	120	134

The greatest number of students, 19, graduated from GMSK this year, in 1982, and the number steadily increases every year. The 64 graduates, to date, have gone on to jobs in the following areas :

Table 2

Areas of Employment, GMSK Graduates

17.4 %	Department of Agriculture
6.5 %	Department of Public Works and Transmigration
6.8 %	Department of Industry
6.5 %	Department of Health
34.8 %	Educated Labor
4.3 %	Department of Education and Culture
2.2 %	Bulog and Cooperatives
2.2 %	Horticulture
2.2 %	Family Planning Board
10.9 %	Research centers
6.6 %	Private organization (Consultants, Food industry, Horticulture).
100 %.	

The largest percentage, 34.8 %, are working as educated laborers. This includes professors, doctors, and other positions that require education.

5. Facilities

Classroom and laboratory facilities are inadequate for the current program and need to be expanded. The facilities include :

	Area
Classrooms	99 m2
Instructional Laboratory	39 m2
Food Experimentation Lab	57 m2
Library	20 m2
Staff Office	80 m2
Administration Office	13 m2

There is a definite need for more reference books and audio-visual materials.

The Center for Research and Development in Nutrition(CRDN) allows students to use their laboratory facilities also. These facilities are usually used for food analysis experiments.

B. Sarjana 1 Program

1. Required courses

All students at IPB take the same courses for the first year. Following the first school year (two semesters), students enter their individual departments and take the courses required by each. In order to achieve the four year (8 semester) Ir. degree, a student must pass all the required courses with at least a 2.0 (C) average overall. The courses required for students in Departemen GMSK are listed in Appendix C. Courses in horticulture, plant protection, statistics and research methods are taken outside the department. All students at IPB serve for three months in the Student Service Program (Kuliah Kerja Nyata or KKN) after their third year. Also, each student is required to do a special research project and write a "Senior Thesis" in their last year.

Within Departemen GMSK, 20 courses are offered at the S_1 level. A list of these courses appears in Appendix D.

The courses may be divided into the following general areas :

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

BEST AVAILABLE

2. Student Services Program (Kuliah Kerja Nyata or KKN).

Every student at IPB is required to work in the field for 2 - 2½ months (June to August) following the third year at IPB. Students are given approximately 150 hours of training prior to departure, of which only six hours are spent on home economics - related subjects. Of these six hours, two are spent on nutrition, two on sanitation, and two on general home economics.

3. Research

During the last year in Departemen GMSK (7th and 8th semesters), senior students take a course in "Special Problems", in which they conduct individual research projects. These projects are supervised by two members of the staff. All memebrs of the staff participate in this activity. At the end of the 8th semester, students are given an oral seminar on their projects and submit a written thesis. Some topics of research include the following :

a) Community Nutrition
b) Home and Family Life
c) Regional Food Patterns
d) Local Food for Hotel and Restaurant Use
e) Basic Needs of Estate Laborers
f) Money Management
g) Home Gardening
h) Consumption Patterns and Nutrition 1 S

i) Nutrition Education
j) Vitamin A
k) Fresh Water Shellfish
l) Sago
m) Meat
n) Rice
o) Cereals
p) Tubers & Starchy Foods
q) Legumes
r) Eggs
s) Vegetables
t) Fish and meat
u) Fruits

Research within the department is almost entirely limited to that of 4th year students, and should therefore be expanded.

There are, at present, only 6 on-going research projects at the departmental level. These projects are all funded by grants from the Ministry of Education They include :

a) Improvement of Existing Sago Recipes, Use of Sago as a Staple in the Indonesian Diet (Ibu Mariyati).
b) Food Consumption and Income (Pak Suhardjo)
c) Vitamin A Content of Vegetables (Ibu Amini)
d) Time Allocation of Estate Crops Workers (Ibu Suprahatin)
e) Utilization of Cassava in the Diet (Ibu Endang)
f) Use of Fuel in Household Practices (Ibu Ani)

C. Sarjana 2 Program

1. Rationale

Rather than sending students interested in Community Nutrition and Family Resources abroad for Study towards the M.S. (S_2 equivalent) degree, it would be much easier and more relevant to establish an M.S. (S_2) program in the existing Department of Community Nutrition and Family Resources at IPB. This would allow IPB staff to obtain the S_2 while still carrying out their departmental duties. It would not require learning a foreign language or extensive re-settling overseas. It would be more economically feasible for students, and an Indonesian - based program would provide information much more relevant to the Indonesian food, nutrition, and family life situation. Because there are few

oriented nutrition and family life programs, the S_2 program at IPB would serve as a model for other Indonesian universities and promote IPB as a leader. Finally, it would allow men and women with children and family responsibilities to remain in Indonesia while obtaining advanced training.

2. Program Emphasis

During March and April of 1980, a preliminary proposal for the S_2 program was formed by Departemen GMSK, with the guidance of Dr. Celia Jean Weidemann (USAID Consultant, School of Family Resources and Consumer Sciences, University of Wisconsin). Dr. Weidemann's suggestions are detailed in the report submitted at the end of her one month consultancy. In summary, a decision was made to initiate two S_2 programs with the Departemen GMSK. The first program, in Family Resources and Community Nutrition, was to be an interdisciplinary S_2 degree offered by the Departments of Community Nutrition and Family Resources, Socio-Economics, and Agronomy (Horticulture). Courses from all three departments were to be included. The second S_2 program was to be in Community Nutrition and was to be offered by the Departemen GMSK, with additional lecturers from the Center for Research and Development in Nutrition (Bogor).

Following Dr. Weidemann's consultancy, the staff of Departemen GMSK continued to inprove on the proposed curriculum for the two S_2 programs. In March, 1981, Dr. Nancy Johnson (USAID Consultant, Department of Nutrition, University of Wisconsin) arrived to work with Departemen GMSK to further upgrade the proposed S_2 curriculum. The Project Associate (Diane M. Barrett) arrived to work with Departemen GMSK at the same tine.

After a series of meetings, it was determined that due to staff limitations and lack of training in the area of Family Resources, only one S_2 Program should be offered. This S_2 curriculum will be composed of courses common to both Family Resources and Community Nutrition, but emphasis should be on Community Nutrition.

Hopefully, in the near future, with more staff training in Family Resources, two separate S_2 degrees, with common "core" courses, can be offered. In the meantime, it was decided that the S_2 program should be started, stressing GMSK's strongest field, Community Nutrition.

3. Students

Candidates for the S_2 program can be expected from the following areas :

Department of Health
Department of Agriculture
Department of Transmigration
Department of Internal Affairs
Department of Education and Culture
National Family Planning Board
Social Welfare Department
BAPPENAS (National Planning Board)
BAPENDA (Kabupaten level governing group)
Graduates and staff of IPB and other-Universities.

Candidates would be required to have an S_1 degree in a related field, and might be required to take additional S_1 courses in Departemen GMSK if they lack the proper background. It is hoped that, during the the first year, 10 - 15 students will be enrolled in the S_2 program.

4. Staff

Staff for the S_2 Program would be taken from the Departemen GMSK and additional related IPB departments, from the Center for Research and Development in Nutrition, and from various governmental organizations.

5. S_2 Program Starting Date

The S_2 program was originally scheduled to begin in September, 1982, however due to administrative difficulties, the S_2 program will not officially begin until September of 1983. In the meantime, the new S_2 courses will be offered by Departement GMSK for credit

The department sees the first year of the S_2 program as a trial period during which the staff members at GMSK will attend the new S_2 courses, and train themselves prior to opening the program to the public.

The first two S_2 courses to be offered by Departemen GMSK will be :

1. Socio-Economic and Cultural Influences on Family Food Habits
2. Nutrition and the Development of the Child.

It was decided that these two courses would be a good starting point for the S_2 program. In addition, two Project Associates with training in these areas will be working with the staff from September, 1982 to February, 1982, therefore it would be best to offer these courses during their consulting period.

IV. PROJECT ASSOCIATE'S ACTIVITIES

Most of the project associate's activities were involved in the S_2 program, as described in the objectives of this Consultancy, however some involvement also took place in the S_1 program.

A. S_1 program

1. Preliminary Information Search

One of the initial steps in development of the S_2 program was a search of libraries and other resources to procure information related to nutrition and family life in Indonesia. During this search, the project Associate found information pertinent to courses offered at the S_1 level. When books, films, or other resources were found, the Project Associate made them available to other staff members in Departemen GMSK. Details on these resources appear in the section on the S_2 program in this report. (VIB3).

2. Laboratories

One request of Departemen GMSK was for the Project Associate to examine the existing laboratories and laboratory courses at the S_1 level, to upgrade these and to make suggestions regarding additional labs for the future. At present, there are only 2 laboratories, occupying 96 m2, in Departemen GMSK. However, the department will be acquiring more space next year and plans to expand their laboratories to approximately 150 m2.

There are 5 classes at the S_1 level which use laboratory facilities. These are :

1. Food Analysis	Pak Sudjana
2. Food Quality Evaluation	Ibu Endang
3. Food Processing	Ibu Endang
4. Food Science	Ibu Mariyati
5. Experimental Foods	Ibu Amini

In order to better assess the needs of each course, the Project Associate asked for course outlines and lecture syllabus' from each of the course instructors. Course syllabus' were received for Food Analysis, Food Processing, Food Science and Experimental Foods, however a syllabus has not yet been received for Food Quality Evaluation.

From the course outlines, it was possible to determine the instrument, equipment, material and chemical needs for each course. Summaries of these needs appear in Appendix E. Experimental Foods is a laboratory course which builds on the principles taught in the other four courses. Each student designs his/her experiment, therefore it is impossible to know exactly which instruments, equipment and materials will be required. However, the instruments and equipment should be the same as those used in the previous four courses. Because the syllabus for Food Quality Evaluation has not been submitted, it was not possible to assess the needs for this class.

The next step in analysis of the laboratory situa'tion was to obtain lists of the instruments, materials and equipment that the department has.

Departemen GMSK has all the instruments required for the four courses. An in-depth look at whether all the equipment and materials required are available has not been conducted yet, due to lack of time.

Various analytical instruments owned by Departemen GMSK are not functioning. These include a nitrogen analyzer, viscotester, and rotavapor. The Project Associate did a preliminary examination of these instruments, but repair will require more time. Preliminary visits to be Nutrition Academy and CRDN have already been made to see their labs and estalbish contacts.

3. Experimental Foods Course

The project Associate assisted in the restructuring of the course on Experimental Foods. In the past, similar principles have been taught in this class and in the class titled Food Quality Evaluation, therefore it was necessary to restructure one or both courses.

Following discussions with the course instructors, Ibu Amini, Ibu Mein and Ibu Emmy, it was decided that the course of Food Experimentation should incorporate knowledge from courses on Food Science, Food Analysis, Consumer Education, Basic Nutrition, Food Quality Evaluation, and Statistics. Students would be required to design a research project, write a research proposal, perform the research, analyze the results and present them in oral and written form. The Project Associate gave the first lecture, in bahasa Indonesia, concerning the principles of food and nutrition research and the steps involved in any experiment. The Project Associate also wrote a 20 page synopsis of this Seminar (in bahasa Indonesia) and distributed typed copies to the instructors and students. The Project Associate will serve as an advisor to students for the duration of the course.

4. Food Science - Related Courses

The Project Associate has preliminarily examined the Food Science related courses, but there is need for a more in-depth look at course content, objectives, activities and materials used.

5. Student Seminars

At the end of the 4th year (8th Semester), each GMSK student is required to give a one hour seminar on their special research project. This seminar usually involves a 20 - 30 minute summary of the project, followed by a 30 - 60 minute question/answer session with fellow students and staff. Each student is given a grade at the end of the seminar. The Project Associate has participated in many of the these seminars.

The student seminars are usually well presented and informative. The question/answer period is well conducted and is an excellent opportunity for students to learn how to conduct laboratory and field research, and how to critically examine their own and fellow students' projects. It might be useful to distribute evaluation forms to the audience so that the student knew more specifically his/her strengths and weaknesses.

6. Overall S_1 Emphasis

The general types of courses are specified in section III B of this report. The S_1 curriculum consists of courses in basic principles, analysis, family life, community nutrition, research methods, planning and solving problems and skills. If these courses are classified as far as course content, the breakdown would be as follows :

Table 3. Course Content Classifications - S_1

Nutrition	Family Life	Food Science	Public Health
1. Basic Nutrition 2. Advanced Nutrition 3. Food and Nutrition Problems 4. Methods of Food and Nutrition Survey 5. Nutrition Education 6. Nutrition Economics 7. Nutrition Planning	1. Family Life Education 2. Family Ecology 3. Family Development 4. Consumer Education	1. Food Science 2. Food Analysis 3. Food Quality Evaluation 4. Food Processing 5. Experimental Food 6. Food Control	1. Public Health

From Table 3, we can see that seven out of eighteen courses offered by Departemen GMSK at the S_1 level (excluding the two semester Special Problems courses) concern nutrition, while four courses concern family life. Six courses actually fall into the classification of food science, and one course concerns public health. Broken down in percentages, the S_1 curriculum emphasis is :

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

The food science emphasis in the S_1 curriculum seems too heavy for a department of Community Nutrition. There is a definite need to re-assess the curriculum and determine whether the goals of the department are being followed.

As a first step in this process, the Project Associate gave a 2½ hour seminar/discussion on Curriculum Development. The written format of this seminar appears in Appendix F. This written report was distributed to each staff member. The purpose of the seminar was to describe the logical progression from goals to specific objectives, that is followed in development of both departmental curriculum and individual course content. The seminar was attended by all but one staff member and was very well received. The Project Associate urged staff members to write specific objectives for each of their courses, and all agreed to do so. The staff concluded that additional discussion is needed on the subject of curriculum development, and special focus should be placed on Departement GMSK. The Project Associate plans to hold additional seminar / discussions in the near future. A need was also determined for a seminar or workshop on teaching methods, use of visual aids and supportive activities. The Project Associate will work on this also.

7. FAO-AID Guidelines for Curriculum Content

In August, 1982, the Project Associate was notified about a proposal by FAO and AID to test the recently developed "Guidelines for Curriculum content for Agricultural Training in Southeast Asia" in an established agricultural institution. The Project Associate was contacted by Dr. Clayton Seeley and Ms. Julie Klement (of U.S. AID-Jkt) concerning the possibility of using these nutrition-related guidelines in IPB programs.

After discussion with Pak Suhardjo, the department head, it was determined that parts of the Guidelines would fit into various S_1 level courses in the Departemen GMSK. The Project Associate drew up a preliminary plan of integration of these Guidelines and informed Dr.Seeley and Ms.Klement from AID. Action is being taken with contacts in Washington D.C.

B. S_2 Program

1. General S_2 Curriculum

As mentioned in Section III C 2 of this report, one of the first activities of the Project Associate was to work with the staff of GMSK and Dr. Nancy Johnson on development of a two-year S_2 curriculum. After a series of meetings, a curriculum including courses on community nutrition and family resources, with emphasis on the former, was developed. The curriculum appears in Table 4, along with a tentative list of instructors. This final curriculum outline was Draft III, or the third revision, since Dr. Celia Jean Weidemann's consultancy.

The emphasis of the S_2 program, for the time being, is on Community Nutrition. Nine of the fifteen courses (25 credits) included in the S_2 program are tought by Departemen GMSK. Three courses (9 credits) are taught by the Department of Social Economics, one course (4 credits) by the Department of Statistics, one (3 credits) by the Department of Rural Sociology, and one (3 credits) by the Department of Animal Sciences.

Therefore the S_2 curriculum consists of a total of 44 credits. If we divide these courses into the same general types used in Section III B-1 of this report, we find the following classifications :

a. Basic Principles	2	SPD562, PTK603
b. Analysis	2	STK511 Information Transfer Technology
c. Family Life	4	Socio-Economic and Cultural Influences on Family Food Habits.
		Family Health and the Environment
		Family Sociology
		Family Economics
d. Community Nutrition	3	Food and Nutrition Systems
		Nutrition and the Development of the Child
		Community Nutrition
e. Research Methods	3	SPD590, GMS 699, GMS690.
f. Planning, analyzing, solving problems	1	PWD651.

Table 4

S_2 CURRICULUM IN

COMMUNITY NUTRITION AND FAMILY RESOURCES

1st Semester	Credits	Instructor
1. Socio-Economic and Cultural Influences on Family Food Habits	3	Suhardjo
2. Nutrition and the Development of the Child	3	Suprahatin Guhardja
* 3. Family Sociology	3	
* 4. Statistics	4	
	13	

2nd Semester		
1. Food and Nutrition Systems	3	M. Khumaidi
2. Family Health and the Environment	3	Mariyati Sukarni
* 3. Demography	3	
* 4. Physiology and Biochemistry of Nutrition	3	
	12	

3rd Semester		
1. Community Nutrition	3	Suhardjo, M.Khumaidi, Sudjana Sibarni
2. Family Economics	2	
3. Information Transfer Technology	1	Suprahatin Guhardja
* 4. Basic Principles of Planning and * Policy of Rural Development	3	Sudjana Sibarni
* 5. Methodology of Social Research	3	
	12	

4th Semester	
1. Research and Thesis	6
2. Seminar	1
	7

* Offered by department other than Community Nutrition and Family Resources.

As far course content, the courses can be classified as follows :

Table 5

Course Content Classification - S_2

Community Nutrition	Family Resources	Community Nutrition and Family Resources
1. Food and Nutrition Systems	1. Family Health and the Environment	1. Socio-Economic and Cultural Influences on Family Food Habits
2. Physiology and Biochemistry of Nutrition	2. Family Sociology	2. Nutrition and the Development of the Child
3. Community Nutrition	3. Family Economics	3. Statistics
		4. Demography
		5. Information Transfer Technology
		6. Basic Principles of Planning and Policy of Rural Development.
		7. Methodology of Social Research
		8. Research
		9. Seminar

It appears that almost equal emphasis is being placed on Community Nutrition and Family Resources in the S_2 program. However, the community nutrition emphasis appears slightly heavier in the courses common to both options.

As mentioned in Section III A 4, graduates of the S_1 program in Departemen GMSK went on to jobs with governmental organizations (46 %), private organizations (6.6 %), research centers (10,9 %), horticulture (2.2 %) and as educated laborers (34.8 %). It is the belief of the department that graduates of the S_2 program will go on to positions involving administration, policy and planning of community nutrition and family resources programs.

Graduates would be employed by the groups mentioned in section III C 3 of this report. With this "end product" in mind, the S_2 curriculum was designed to both give advanced education in community nutrition and family resources and to train students in the technique of policy-making. The S_2 program was scheduled to begin in September 1982.

2. S_2 Course Outlines

Dr. Nancy Johnson and the Project Associate developed objectives and outlines for four of the seven new courses to be taught by Departemen GMSK. These courses were :

a. Socio-Economic and Cultural Influence on Family Food Habits.

b. Nutrition and the Development of the Child

c. Community Nutrition

d. Information Transfer Technology

Outlines of these four courses appear in Appendix G-J. It was decided that objectives and outlines for the remaining three courses would be developed by the staff members who would be teaching them. The Family Economics course will require consultation and additional family training by a family economics specialist. Ibu Mariyati is capable of writing objectives and an outline for Family Health and the Environment, and Pak Suhardjo, Khumaidi and Sudjana are capable of writing objectives and an outline for Community Nutrition.

3. Preliminary Information Search

As stated in Section IV A 1, one of the initial steps in the S_2 program development was a preliminary search of information related to nutrition and family in Indonesia. The following libraries were visited :

a) GMSK Library
b) IPB Graduate School Library
c) IPB General Library
d) Biblioteca Bogoriensis (Bogor City Library)
e) Center for Research and Development in Nutrition Library
f) Regional Center for Tropical Biology (BIOTROP) Library
g) Nutrition Academy Library (Jakarta)
h) U.S.A.I.D. Library (Jakarta)
i) Rural Sociology Library (Bogor).

The Project Associate made a list of all food, nutrition and family related books at each library and circulated these among the staff, for their information. The USAID library was visited periodically and books were borrowed for use by the Project Associate and the GMSK staff.

In addition to the libraries listed above, the Project Associate visited and established contacts with the following organizations :

a) U.S. Agency for International Development (Jakarta)

Ms. Julie Klement (Jakarta) - Nutrition Officer
Ms. Molly Gingerich (Jakarta) - Health Officer
Mr. David Pyle (Washington, D.C.) - Nutritionist
Ms. Marcia Griffiths (Manoff International, Washington D.C. - Nutritionist)

b) Center for Research and Development in Nutrition (Bogor) (Department of Health)

Dr. Darwin Karyadi - Director
Dr. Hussaini - Medical Nutritionist
Dr. Muhilal - Biochemist
Ibu Mein Machmud - Nutritionist
Pak Hermana - Nutritionist
Ibu Dewi Slamet - Food Chemist

c) Food Technology Development Center (Bogor) (Dept. of Education, Institut Pertanian Bogor)

Dr. F. G. Winarno - Director
Dr. Soewarno - Food Processing Engineer
Dr. Dedi Fardiaz - Food Chemist (Head of Food Science Department)
Dr. Andi Fardiaz - Microbiologist
Dr. Hadi Karya - Food Engineer

d) Agricultural Products Pilot Plant (Bogor) (Dept. of Education, Institut Pertanian Bogor)

Dr. Aman Wirakartakusumah - Director

e) Faculty of Agricultural Engineering (Bogor) (Dept. of Education, Institut Pertanian Bogor)

Dr. Eriyatno - Dean of Agricultural Engineering Faculty.

f) Department of Industrial Products Technology (Bogor)
(Dept. of Education, Institut Pertanian Bogor

Mr. Suhadi Hardjo - Chairman
Ms. Jenny Saono - Food Microbiologist

g) Department of Rural Sociology (Bogor)
(Dept. of Education, Institut Pertanian Bogor)

Dr. Sayogyo - Rural Sociologist, Head of Center for Rural Sociology Research.

Ibu Sayogyo - Rural Sociologist
Pak Syafri - Rural Sociologist
Ibu Aida Vitalaya Syafri - Rural Sociologist

h) Department of Agronomy (Horticulture)
(D.pt. of Education, Institut Pertanian Bogor)

Ibu Yayah Koswara - Agronomist
Ibu Sri Setyati Harjadi - Agronomist

i) Center for the Technology of Education and Cultural Communication (Teknologi Komunikasi Pendidikan dan Kebudayaan, Dept. of Education, Ciputat)

j) Asia Foundation (Jakarta)

k) Catholic Relief Services (Jakarta)

Patrick Jones - Director
Michael Frank - Assistant

l) Helen Keller International (Jakarta)

Dr. Robert Tilden- Project Officer

m) SEAMEO Nutrition Program (Jakarta)
(University of Indonesia)

Dr. Soemilah Sastroamidjojo - Head of Education Unit

n) Nutrition Academy (Jakarta)
(Dept. of Health)

Ibu Sunita - Director
Pak Soedirno - Acting Director
Ibu Sudarmani - Head of Laboratories
Pak Subagio - Head of Education

o) Diponegoro Labs (Jakarta)
(Dept. of Health)

Dr. Lie Goan-Hong - Director
Ms. Oey Kam-Nio - Biochemist

p) World Bank (Jakarta)

Dr. Allen Berg (Washington D.C.) - Nutritionist
Mr. Jim Mullen - Nutrition Project Officer

The Center for Technology of Educational and Cultural Communication, under the Ministry of Education, has slides, films, and filmstrips which are available on loan to IPB. The Project Associate visited this center, reviewed the lists of slides, films, and filmstrips available for visual aids pertaining to Department GMSK, then made a list of all the pertinent materials and distributed this to each staff member. The visual aids may be borrowed free of charge for a two week period. The Project Associate actively encouraged incorporation of these visual aids into S_1 and S_2 courses. A copy of the list given to the staff appears in Appendix K.

The Asia Foundation is a U.S. - sponsored organization that distributes books, free of charge, to Asian universities and institutions. The Project Associate visited this foundation, obtained permission for Departemen GMSK to receive books and selected approximately 10 books related to food, nutrition and the family. New books are constantly added to the Asia Foundation stock, so this foundation should be periodically visited by a GMSK staff member.

4. Brochure Describing New S_2 Level GMSK Courses

In order to inform interested universities, organizations and other IPB departments that two new S_2 level courses would be offered by Departemen GMSK in September, 1982, (Socio-Economic and Cultural Influences on Family Resources, and Nutrition and the Development of the Child) it was decided that a brochure would be distributed describing them.

The Project Associate desisted in writing the brochure, and translated the brochure from bahasa Indonesia into English. Copies, both Indonesian and English, appear in Appendixes L and M.

Three staff members of the Department of Animal Husbandry, Diponegoro University, Semarang, showed interest in the new courses, however a decision was made to postpone their enrollment until the S_2 program officially opens in September, 1983.

5. Lectures for Socio-Economic and Cultural Influences on Family Food Habits

As stated in the Objectives of this report, one of the tasks of the Project Associate was to prepare lecture notes for new S_2 level courses. The highest priority for these lecture notes was placed on the two courses to be offered in September, 1982. The Project Associate started working on the most dificult of these two, Socio-Economic and Cultural Influences on Family Food Habits, first.

In preparing the lecture notes for this course, the Project Associate worked with the course instructor, Pak Suhardjo. Each lecture was discussed in a "brainstorming" session, then the lecture was written by the Project Associate, who subsequently returned it to Pak Suhardjo for his review and suggestions.
This system worked extremely well and allowed the Project Associate to keep in close contact with the course instructor. It also allowed for a good exchange of information relative to family food habits specific to Indonesia.

Information concerning socio-economic and cultural influences on family food habits was obtained from various sources (see sources listed in section IV B 3). The course will consist of 15-16 three hour lectures, taking place once a week, therefore the general course outline was divided into fifteen specific lectures. Each lecture was prepared individually and included lecture notes, visual aids, ideas for activities, homework and discussions, and references for outside reading. A general format used for designing lectures appears in Appendix N.

This activity, preparing lecture notes, was extremely time consuming due to the relative difficulty in finding recent information relative to Indonesia. The Project Associate spent at least 60 % of her 6 mos consultancy in writing these lecture notes. Eleven of the fifteen lectures were completed by mid-August, then were typed and copied. In Mid-August, another Project Associate, Ms. Jeralyn Pigott, arrived and took over this activity.

6. Computer Program to Assess Food Consumption Data

In the past, most analysis of food consumption data in Departemen GMSK has been done by hand, usually with the aid of a calculator. This is a tedious task, therefore the Project Associate suggested the use of an Apple II computer which belongs to IPB.

Information Transfer Technology, a new course to be offered in the third semester of the S_2 program, will included use of data analysis intruments, i.e. the calculator and the computer. The goal of the course is to teach students how to transform raw data gathered from surveys, questionaires, and other research, into simple, understandable results. The computer is one instrument used for data analysis. Departemen GMSK has access to an Apple II computer, therefore it was decided that students would be instructed in the advantages and disadvantages of computers, and their various uses, and then use of the Apple II would be demonstrated. Approximately half the course time will be spent discussing the computer. It is hoped that, in the future, a similar course will be taught through the Information Resources Center.

Use of the Apple II should be demonstrated in relation to analysis of nutritional data. With this goal in mind, the Project Associate, who has had training in Fortran and Basic (two computer languages) proposed to write programs to analyze food consumption surveys. The computer program would serve two purposes :

(1) Instruct students taking "Information Transfer Technology" in the use of computers to transform raw data into significant results.

(2) Simplify analysis of food consumption data for staff and upper division students.

This proposal was enthusiastically received by the staff. The computer program(s) will perform the following tasks:

(1) On a family basis, input demographic information concerning each family member.

(2) On a family basis, input name of each food and quantity consumed for a period of 48 hours (2 days).

(3) Divide the amount of food consumed by the number of persons eating to determine intake/person/day.

(4) Determine nutritional intake per person per day for the two days by comparing the type and quantity of each food consumed to a food composition table already established as a data base.

(5) Determine the % RDA each family member averages by comparing each person's intake per day (averaged over 2 days) to the Recommended Daily Allowances for his/her age, weight and health condition.
(The RDA table for Indonesia also exists as a data base).

(6) Graph each family member's consumption per day against the Recommended Daily Allowance.

Computer programs to set up the food composition data base, the RDA data base, to print out tables, to correct program errors, to input demographic information and to input food consumption information have already been completed, and appear in Appendix O - S. However, the program to compare average food consumption per day to each persons RDA has not been completed. This program should be completed in the near future.

All programs were written in cooperation with Larry Murdock, a University of Wisconsin student currently instructing IPB staff in use of the Apple II Computer.

7. Local Food Composition Data

In order to determine the nutritional value of foods for the computer program to analyze food consumption surveys the Project Associate was required to search for quantitative information on the nutritional composition of local Indonesian foods. This search proved to be more difficult than expected. The Project Associate found that the following sources were being used ti tabulate nutritional composition data :

a) Daftar Komposisi Bahan Makanan (1979)
(Food Composition Tables)

Direktorat Gizi Departemen Kesehatan R.I.

b) Handout of Analyzed Values of Local Food Sources in Bogor (1972)

M. Enoch, Nutrition Research Center, Bogor.

c) Komposisi Zat Makanan Indonesia
(Composition of Indonesian Foods)

Dewi S. Slamet and Ignatius Tarwotjo
Penelitian Gizi dan Makanan, No. 4, 1980.

d) Food Composition Tables for Use in South Asia (1972)

U.S. Department of Health Education and Welfare
Food and Agriculture Organization, United Nations.

The Daftar Komposisi Bahan Makanan is by far the most widely used source. The values in this reference are for raw foods, and are taken from both literature values and experimental values obtained at the Academy of Nutrition, University of Indonesia. However, it is impossible to distinguish, within this reference, which values are from the literature and which are the results of actual laboratory analysis.

The Handout of Analyzed Values of Local Food Sources in Bogor also contains values for raw foods and data is all taken from the literature. An attempt was made to express literature values in terms of local Indonesian measures (i.e. rice spoon, teaspoon, fingers, ets.), however the Project Associate found several obvious evrors which could not be explained by the author. For this reason, the credence of this reference is questionable.

Komposisi zat Gizi Makanan Indonesia contains information on both raw and cooked foods. The labolatory analysis took place at the Nutrition Academy University of Indonesia. This is perhaps the best source of actual laboratory data on local Indonesian foods. However, the study is by no means extensive, and does not contain data on the analysis of food mixtures, for example, mie baso, sate ayam, or asinan.

The Food Composition Tables for Use in South Asia lists nutrient composition values for raw foods native to South Asia. Laboratory analysis of these foods was done in labs outside of South Asia.

There is an obvious need for information concerning:

a) Laboratory analysis of all foods in the Daftar Komposisi by a local Indonesian laboratory.

b) Laboratory analysis of local Indonesian food mixtures.

Knowledge of the nutritional composition of local Indonesian foods is essential for various reasons. In order to improve the nutritional status of Indonesian people, we must first be aware of the nutritional composition of the present intake. We cannot assess their present nutritional status without quantitative information on local food values. In addition, many times food intake values in food consumption surveys are reported in terms of Cooked food. Without quantitative information on the nutritional composition of Cooked Indonesian foods, the consumption surveys are meaninglees.

The Project Associate suggested that analysis of local Indonesian foods and food mixtures could be done by S_1 and S_2 students in Departemen GMSK in fulfillment of their special Problems projects. In this way , laboratory analysis of these foods could be accomplished over the next few years. This research would also be educational for students. Laboratory facilities already exist, and students have training (during the S_1 program) in Food Analysis. The only difficulty might lie in finding funds for materials and equipment.

The concept of having students analyze local Indonesian foods was well received by the GMSK staff. At the moment, the Project Associate and the GMSK staff are attempting to access funds from various sources, including USAID and the Ministry of Education.

8. Community Involvement in S_2 Program

"Departemen Gizi Masyarakat dan Sumberdaya Keluarga" means the Department of Community Nutrition and Family Resources. The department aims to educate students about the nutrition situation in Indonesian communities. Most of the students who enter the S_1 and S_2 programs in GMSK are middle or upper-class Indonesians who come, basically, from an urban environment. Therefore, it is essential that students who are to be trained in community nutrition visit the villages to observe and also to improve the rural environment.

In the S_1 program, three courses involve one-day visits to the villages. These courses are : Public Health, Food Processing and Family Development. In addition, S_1 students spend about 2½ months working in the village through the Student Service Program (KKN). It would be advantageous to include more visits to rural areas in the S_1 program.

In the S_2 program, there is an even greater need for visits to and work in the community. Most S_2 graduates will go on to administrative positions where they will be involved in nutrition policy and planning.

Actual work in the villages will be limited, therefore it is essential that S_2 students become familiar with the nutritional situation in Indonesian village communities while they are in school. Some S_2 students may be IPB graduates, therefore they may have prior contact with village communities. However, it is highly probable that S_2 students will come from non-nutrition fields, and therefore will have no background knowledge concerning the nutritional situation in Indonesian villages.

At the present time, S_2 courses are in the initial stages of development and inclusion of community work would be relatively easy. The GMSK staff acknowledges the need for community involvement within the S_2 program and is enthusiastic about a more experience and problem-solving related curriculum. There are, however, a few forseeable problems. Transportation, meals, lodging and other expenses may limit the number and length of visits to villages. Also, it may be difficult to obtain local government permission for visits to rural areas.

The Project Associate is in the process of contacting various nutrition - related organizations to ascertain whether village community programs exist, and whether GMSK Students may become involved in them. The following persons have already been contacted in this regard :

a) Ms. Julie Klement	-	Nutritionist USAID, Jakarta
b) Dr. Darwin Karyadi Ibu Mein Machmud	- -	Director, CRDN Center for Research and Development in Nutrition, Bogor
c) Dr. Eriyatno	-	Dean Faculty of Agricultural Engineering (IPB)
d) Dr. and Ibu Sayogyo	-	Rural Sociologists Department of Rural Sociology (IPB)
e) Mr. Patrick Jones	-	Director Catholic Relief Services, Jakarta
f) Mr. Fadholi Hernanto	-	Social Economist Deparment of Social Economics and Extension Service, IPB.

There are possibilities of cooperation with all of the above groups, however the best opportunity, at present, appears to be with the IPB Extension Service. IPB is involved in a Campus Development Project in seven villages which surround the new campus area in Dharmaga (approximately 12 kilometers outside of Bogor). This project involves development of economic opportunities and social preparation for the seven villages which surround Dharmaga. A Social Laboratory exists, which allows IPB students to observe and participate in community life within these villages. According to Mr. Fadholi, it is possible for our GMSK students to work in these seven village areas, with permission from the IPB Extension Service. The Project Associate plans to investigate this program, and the others mentioned above, in greater detail.

9. Introduction of New Uw Project Associates

On August 18, 1982, two new Project Associates from the University of Wisconsin, Jeralyn Pigott and Mary Roach, arrived to work to Departemen GMSK. Jeralyn (Jeri) has an M.S. degree in Nutrition while Mary has an M.S. degree in Child Development. Both were hired by the UW-IPB Graduate Education Project to assist in the development of the S_2 program.

The Project Associate introduced Jeri and Mary to the GMSK staff and briefed them on the goals and objectives of GMSK, the S_1 and S_2 programs, staff's backgrounds, and activities of the Project Associate during the last six months. Plans were made, with Departemen GMSK, for activities of the two new Project Associates for the next six months. It was decided that Jeri will be involved in teaching "Socio-Economic and Cultural Influences of Family Food Habits", will assist in development of "Community Nutrition" and will advise lecturers on course content of nutrition-related S_1 and S_2 courses. Mary will be involved in teaching "Nutrition and the Development of the Child" and will advise lecturers on course content of family-related S_1 and S_2 courses. The Project Associate was available to supply information and / or assist the new Project Associates in any way possible.

V. ACHEIVEMENT OF OBJECTIVES

During the six month consultancy, the Project Associate was able to acheive the following objectives (as proposed in section II of this report) :

A. Design the two year S_2 curriculum in Community Nutrition and Family Resources.

B. Prepare objectives and outlines for four new S_2 courses (as mentioned in section II B).

C. Prepare lecture notes for new S_2 courses. Lecture notes were prepared for the course on "Socio-Economic and Cultural Influences on Family Food Habits". However, there was not enough time to begin lecture notes for the other S_2 courses.

D. Assist in formulation of an informative pamphlet about the S_2 program for distribution to interested groups.

E. Design a computer program to assess food consumption data. These programs are almost finished. (See Section IV B 6 of this report)

F. Develop new laboratory facilities and improve current laboratory conditions. This task has been started, but not completed (See Section IV A 2).

G. Continue cooperation with U.W. counterparts and assist in introduction of new Project Associates.

VI. RECOMMENDATIONS

A. Departemen Gizi Masyarakat dan Sumberdaya Keluarga

1. Staff

As stated earlier, the strength of the department lies in nutrition. There is a need for staff training in the area of family resources. The introduction of the new Project Associate, Mary Roach, will hopefully serve to upgrade existing family resources courses and will provide further staff training in the area of child development.

Further training is planned at the University of Wisconsin - Madison for Ibu Suprahatin and Pak Khumaidi during the months of March and April, 1983. Ibu Suprahatin will study Family Economics and Child Development, while Pak Khumaidi will study Community Nutrition and Food and Nutrition Systems. In addition, there are plans to send Pak Umar Tuanaya, whose background is in Demography, to Wisconsin to study for an M.S. degree in Child Development and Family Resources.

Further training of staff is needed in the area of family resources. This training might involve family planning, appropriate technology for the household level, family processes, anthropology, extension program planning and evaluation, and introduction of rural-based industries at the household level.

In the area of nutrition, further training in nutrition surveillance, preventative medicine and nutrition, and nutrition program development and management would be helpful. Jeri Pigott, one of the two new UW Project Associates will be able to upgrade existing nutrition-related courses and provide further staff training also. It is recommended that the GMSK staff receive additional training in curriculum development, teaching methods, use of visual aids and classroom activities.

2. Facilities

Classroom and laboratory facilities for Departemen GMSK are inadequate. At the present time, the department shares a building with LPPM, the University Extension Service. In the future, however, LPPM will move to another building and Departemen GMSK will take on their space. The amount of space available to GMSK will be almost doubled and will allow for creation of new laboratories and greater office space. This move is anticipated to take place in 1983.

Prior to this move, plans should be made for the new laboratories and offices. It is recommended that the staff assess their needs and consult contractors and scientists familiar with laboratory layout as soon as possible in order to hasten the expansions.

It is recommended that Departemen Gizi attempt to expand their library facilities by whatever means possible. This might include :

- making copies of books available from other libraries
- regular visits and book requests to the Asia Foundation (Jakarta)
- requests to the University of Wisconsin
- requests for the many journals and bulletins available to developing countries by various aid organizations

B. Sarjana 1 Program

1. Required Courses and Overall Program Emphasis

The first year of courses at IPB is the same for every student and consists of basic principles of biology, chemistry, math, english, physics, Indonesian, economics, sociology, religion and military science.

As stated in section VI A 6 of this report, 39 % of the GMSK S_1 level courses are related to nutrition, 22 % to family life, 33 % to food science and 6 % to public health. It is recommended that the department re-assess the S_1 curriculum to determine whether this is the emphasis they wish to achieve. As there already exists a Food Science Department within IPB which offers the same courses as the Departemen GMSK, the Project Associate suggests that these courses might de dropped from the GMSK curriculum to avoid duplication. There may be problems involved with laboratory expenses that prohibit our students taking courses in another department, however this suggestion merits further investigation.

The staff also needs to determine whether a food science emphasis should be required in a department concerned with nutrition and family life. Perhaps this option should be offered as a series of electives rather than required courses. Training in food (nutrient) analysis is relevant for nutritionists, however training in food science, food quality evaluation, and experimental foods may not be.

Presently, students at the S_1 level have two options in course work emphasis. They may decide to emphasize laboratory analysis of foods, and therefore take courses entitled Food Quality Evaluation and Experimental Design, or they may decide to emphasize social analysis of nutritional and family situations, and therefore take Statistical Methods II and Research Methods in Sosial Science. Students do not take both options.

It is recommended that the GMSK staff re-examine this practice to determine whether the laboratory analysis of foods should be included, and if so, whether it should be given such a heavy emphasis. Both community nutrition and family resources would seem to involve more social, rather than actual laboratory research.

In addition, it is recommended that, if community nutrition and family resources are to be given equal weight within the department, the number of family-related courses be increased. This recommendation is contingent on the future training of staff in this discipline. Additional courses might include :

Psychology
Sociology
Anthropology
Family Planning
Child Development
Family Resource Management
Appropriate Technology for the Household Level
Business Management
Extension Program Planning and Management
Human Development

As far as the nutrition component is concerned, additional courses in the following areas might be considered :

Nutrition Program Implementation, Management and Evaluation

Clinical Nutrition

It is recommended that the staff of Departemen GMSK continue to assess the goals of GMSK, the curriculum content, and the demand for S_1 graduates, possibly by means of a series of seminar/workshops, as suggested in section IV A 6 of this report. It would also be useful to obtain copies of curriculum outlines from other nutrition and family resources programs world wide.

2. Community Involvement

It is recommended that more community involvement be included in the overall S_1 program. As discussed in Section IV B 8 of this report, only three courses in the S 1 program include visits to the village. With easy access to the "Social Laboratory", or 7 villages surrounding the Dharmaga campus, visits to actual communities for practical knowledge could be easily arranged.

Community visits would be desirable in the following S_1 level GMSK courses :

Basic Nutrition
Advanced Nutrition
Family Life Education
Food Science (village level industries)
Family Ecology
Food and Nutrition Problems
Experimental Foods
Nutrition Planning
Food Control

3. Research (S_1 level)

It is recommended that the department, as a whole, establish tentative student research project plans for the next few years. A thorough examination of past research needs to be done initially, followed by an assessment of departmental goals and needs in the area of research. Research capabilities will depend on the availability of facilities and materials.

4. Laboratories

An in-depth look at lab facilities, equipment and materials required by the five S_1 level laboratory courses needs to be taken as soon as possible. Assessment of needs, and determination of the current lab situation, as mentioned in Section IV A 2 of this report, must be continued. Analytical instruments which are not being used should be repaired and put into operation.

5. Student Seminars

An evaluation form should be developed and used for the S_1 student seminars to give students a better idea of their strengths and weaknesses.

C. Sarjana 2 Program

1. Required Courses and Overall Program Emphasis

As discussed in Section III C 2, the department found difficulty with its original goal of two separate S_2 programs in (1) Community Nutrition and (2) Family Resources. The resulting S_2 curriculum contains courses in both areas, (See Table 5, Section IV B 2 of this report) with slightly heavier emphasis on the community nutrition option. This might be anticipated due to the more extensive staff training in this discipline.

It is recommended that the staff re-assess the goals of the S_2 program to determine whether it is wiser to offer an S_2 program containing a mixture of two disciplines, or whether it might be better to offer

a good, solid training in community nutrition and postpone inclusion of the family resources discipline until that time when the staff is better trained in this area. This decision should be made following determination of Indonesia needs and marketable numbers of graduates in both disciples.

There is a need for additional courses, in the following areas, to be developed at the S_2 level :

Nutrition Program Implementation, Management and Evaluation
Nutrition Policies
Nutritional Surveillance
Research Proposals and Grants

Most of the S_2 graduates will go on to administrative positions in government or universities, and therefore will need training in program implementation, management and evaluation. A course in nutrition policies will also be important to nutritionists who are designing national programs. Nutritional Surveillance is also an important course for administrators. Most nutrition planners in Indonesia are realizing the importance of surveillance as a means of obtaining current information on nutritional status, determining standards for different regions of Indonesia, and planning nutrition programs for the future, The last course recommended, Research Proposals and Grants, would be useful for students both for planning their second year's research project and for writing proposals and grants in their future jobs. Family Resources experts should be consulted to identify additional courses in this discipline.

2. Students

The staff has done some recruiting of students, primarily in the form of circulating the brochure describing the S_2 Program to various universities and governmental agencies. Additional recruiting, perhaps by visiting interested groups or holding a workshop at GMSK to discuss the program, is recommended.

It is also recommended that the department establish firm prerequisites for students who wish to enter the S_2 program. It is anticipated that students lacking a nutrition background will need to take some S_1 level courses prior to entry in the S_2 program.

3. Staff

As stated in Section VI A 1 of the report, additional staff training is required in the areas of nutrition, family resources and general curriculum development. For the S_2 program, it might be advantageous to include guest lecturers to supplement GMSK courses. Some possibilities might be :

Table 6. Proposed Guest Lecturers for S_2 Program

Course	Proposed Guest Lecturer
1. Socio-Economic and Cultural Influences on Family Food Habits	Ibu Pudjiwati Sayogyo (Dept. of Social Economics, IPB).
	Bapak Sjafri Mangkuprawira (Dept. of Social Economics, IPB)
2. Nutrition and the Development of the Child	Ibu Yayah Husaini (Center for Research and Development in Nutrition)
	Ibu Sudjana (PUSKES MAS, Citeureup)
3. Food and Nutrition Systems	Dr. Ignatius Tarwotjo (Dept. of Health, Jakarta)
4. Family Health and the Environment	Dr. Budi Harsana (University of Indonesia)
	Dr. Lie Goan Hong (Diponegoro Lab. Jakarta)
5. Community Nutrition	Dr. Darwin Karyadi (Center for Research and Development in Nutrition)
	Dr. Sayogyo (Dept. of Social Economics, IPB).
6. Family Economics	Dr. Anwar Affendi (Dept. of social Economics, IPB)
	Bapak Zulkifli Azzaino (Dept. of Social Economics,IPB)
	Dr. K. Sabudiasih (Dept. of Social Economics, IPB).

4. S_2 Course Outlines

It is recommended that course outlines be developed for the 3 S_2 courses which lack them, in conjunction with the intructors for each course. These courses are :

Family Health and the Environment
(Ibu Mariyati)

Food and Nutrition Systems
(Pak Suhardjo and Pak Khumaidi)

Family Economics
(Ibu Suprahatin)

This activity should take place as soon as possible.

5. Lectures for S_2 Courses

Lectures for the new S_2 courses should be prepared by each instructor, if possible with the help of UW Project Associates. Each lecture should be developed from the general course outline.

6. Computer Program to Assess Food Consumption Data

The computer program to assess food consumption data should be finished in the near future. In addition, programs to assess other nutritional status information, to perform simple statistics and to assist in departmental research should be developed. At least one GMSK staff member should be trained in the use of the Apple II computer and should be instructed in the use at the nutrition oriented computer programs. It is recommended that Pak Hardinsyah, who is currently attending a six month course in computer science, undertake this job.

7. Student Research

One of the goals of the S_2 program is to train students how to conduct each phase of program or research project planning, implementation and management. Students receive practical experience in these skills by means of their "Special Problem" or research project.

At the present time, the S_2 curriculum allows only on semester (the 4th) for actual research. It is hoped that students will develop the methodology for their project during the course on Methodology of Social Research, during their third semester. It is recommended that a course entitled Research Proposals and Grants be offered in the second semester. This would teach students how to write their research project proposals an would force them to start thinking about their research project.

As recommended for S_1 level research, the department should think about their future research goals and develop numerous tentative projects. There should also be a concentrated search for funds, either from the Ministry of Education or from outside sources. As recommended in Section IV B 7 of this report there is a tremendous need for laboratory analysis of local Indonesian foods. This would be an excellent project to undertake at the S_2 level.

8. Community Involvement

As discussed in Section IV B 8 of this report there is a need for more community involvement at the S_2 level. This possibility should be pursued with the groups mentioned earlier.

The following S_2 level courses would greatly benefit from community involvement :

Socio-Economic and Cultural Influences on Family Food Habits.

Nutrition and the Development of the Child

Family Health and the Environment

Community Nutrition

Family Economics

Basic Principles of Planning and Policy of Rural Development.

BEST AVAILABLE

Table 7. Plan of Work, Diane M. Barrett

ACTIVITY	October	November	December	January	February	March
A. Administrative Structure						
1. Help write proposal for S_2 program		———				
2. Develop S_2 program prerequisites	-------					
3. Write proposal for inclusion of FAO/AID "Nutrition Education Guidelines" in S_1 program	-------					
B. Program Development						
1. Examine S_1 and S_2 curriculum emphasis assess current program	----------	----------				
2. Write outlines for all S_2 Courses		----------	----------			
3. Develop computer programs to assess nutritional status	----------	----------	----------			
4. Write lectures for Information Transfer Technology			----------			
5. Work on recruitment of students for S_2 program						----------
6. Contact outside lecturers for S_2 program						
7. Determine needs of S_1 level laboratory courses	----------	----------				
8. Design new laboratories for S_1 courses			----------	----------		
9. Develop for S_1 and S_2 level students seminars				------		

ACTIVITY	October	November	December	January	February	March
10. Help determine research needs for the department						
11. Write up potential S_1 and S_2 level research projects, with each staff member						
12. Identify means of increasing community involvement at S_1 and S_2 levels						
13. Integrate community involvement into existing courses						
C. Facility Development						
1. Physical design of new labs for food analysis and nutrition-related areas						
2. Search for additional nutrition, food and family reference books for library expansion						
D. Staff Development						
1. Assist with staff training at the University of Wisconsin						
2. Train Pak Hardinsyah in use of the Apple 2 computer						
3. Continue staff training in curriculum development and teaching methods						
E. Technical Assistance						
1. Continue S_1 student advising						
2. Maintain ties with Dr. Nancy Johnson						
3. Continue ties with Indonesian nutrition related groups						

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	Lecturer
4. Emmy Karsin	Family Ecology Experimental Foods	Lecturer
5. Endang Tjiptaningrum	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. M. Khumaidi	Family Ecology Nutrition Problems	Senior Lecturer
10. Ratna Megawangi	Food Analysis	Junior Lecturer
11. Siti Madanijah	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

Part-time Staff Members, Department of Community Nutrition and Family Resources 1982

Name	Class Taught	Affiliation
1. Dr. Budi Harsana	Public Health	University of Indonesia, Jakarta.
2. Dr. Darwin Karyadi	Food and Nutrition Problems	Center for Research Development in Nutrition (CRDN), Bogor.
3. Dewi Sabita Slamet	Food Analysis	CRDN
4. Dr. Husaini		CRDN
5. Ig. Tarwotjo	Methods of Food and Nutrition Suvey	Dept. of Health, Jakarta
6. Mien Mahmud	Experimental Food	CRDN
7. Dr. Muhilal	Bio energetics	CRDN
8. Suhadi Hardjo	Food Processing	IPB
9. Dr. Virginia Rahardjo	Nutrition Education	Dept. of Health, Jakarta

Appendix C

Courses Required for Sarjana 1, Departemen GMSK - IPB

1st Semester		2nd Semester	
Physics	3 (2-3)	Matrix Algebra	3 (3-0)
Indonesian	2 (2-0)	General Biology	3 (2-3)
English	3 (2-3)	Biological Chemistry	3 (3-0)
Mathematics	3 (2-3)	General Economics	3 (2-3)
General Chemistry	2 (2-0)	Intro to Agriculture	1 (1-0)
Religion	2 (2-0)	Rural Sociology	3 (2-3)
Pancasila	2 (2-0)	Military Science	2 (2-0)

3rd Semester		4th Semester	
Basic Management	3 (3-0)	Statistical Methods I	3 (3-0)
Fund. Agronomy	4 (3-3)	Family Life Ed.	2 (2-3)
Fund. Climatology	3 (2-3)	Microbiology	3 (2-3)
Bioenergetics	2 (2-0)	Annual Crops	3 (2-3)
Prin. of Soil Science	4 4(3-3)	Demography	3 (2-3)
Basic Nutrition	3 (2-2)	Food Science	3 (2-3)

5th Semester		6th Semester	
Micro Economics	3 (3-0)	Plant Protection	4 (3-2)
Production Economics	3 (2-2)	Advanced Nutrition	3 (2-2)
Food Analysis	3 (2-3)	**Exp. Design	3 (3-0)
Consumer Ed.	2 (2-0)	Horticulture	3 (2-2)
Family Ecology	3 (2-0)	Puldic Health	3 (2-2)
Family Development	2 (2-0)	Food Processing	3 (2-3)
*Statistical Methods II	4(3-2)	Study Service	6
**Food Quality Eval	3 (2-2)		

7th Semester		8th Semester	
Food and Nut. Problem	3(2-2)	Nutrition Economics	3 (2-2)
*Research Methods in Social Science	3 (2-2)	Nutrition Planning	3 (2-2)
Experimental Food	3 (2-3)	Food Control	2 (2-0)
Nutrition Ed.	3 (2-2)	Scientific Writing II	3
Survey Method in Food and Nut.	4 (2-4)		
Scientific Writing I			

* Not offered for students taking courses Marked **

** Not offered for students taking courses *

Appendix D

Courses Offered by Departemen GMSK, S_1 Level

Course Number	Course Name	No. of Credit	Instructor
GMK 212	Bio energetics	2 (2-0)	Dr. Muhilal Cuteh Admanto
GMK 211	Basic Nutrition I	3 (2-3)	Amini Nasoetion
GMK 213	Family Life I	3 (2-3)	Hartanti Santoso
GMK 214	Food Science	3 (2-3)	Mariyati Sukarni
GMK 321	Food Analysis	3 (2-3)	Sudjana Sibarani Dewi S. Slamet Faisal Anwar Ratna Megawangi
GMK 322	Family Ecology	3 (2-3)	Emmy Karsin
GMK 333	Consumer Education	3 (3-0)	Sri Rihati Kusno
GMK 341	Advanced Nutrition	3 (2-3)	Suhardjo
GMK 334	Public Health	3 (2-3)	Mariyati Sukarni
GMK 341	Food Processing	3 (2-3)	Endang Tjiptaningrum Suhadi Hardjo Emmy Karsin
GMK 481	Food and Nutrition Problems	3 (2-3)	M. Khumaidi Dr. Darwin Karyadi
GMK 441	Experimental Foods	3 (2-3)	Amini Nasoetion Mien Machmud Emmy Karsin
GMK 331	Family Life II	2 (2-0)	Suprihatin Guhardja
GMK 442	Nutrition Education	3 (2-3)	Suprihatin Guhardja Siti Madanijah
GMK 471	Methods of Food and Nutrition Survey	4 (2-4)	Sudjana Sibarni Hardinsyah
GMK 499	Special Problems	3 (2-3)	-
GMK 443	Nutrition Economics	3 (2-3)	Suhardjo
GMK 482	Nutrition Planning	3 (2-3)	Suhardjo
GMK 444	Food Control	3 (2-3)	Mariyati Sukarni Endang Tjiptaningrum
GMK 499	Special Problems II	3 (0-0)	-

Appendix E

Instrument, Equipment, and Materials Needs of GMSK Lab Courses

Item	Food Analysis	Food Processing	Food Science	Experimental Foods
Analytical Instruments	1. Analytical balance 2. Oven (110°C) 3. Furnace (500-600°C) 4. Spectrophotometer 5. Centrifuge 6. Water bath	1. Analytical balance 2. Penetrometer 3. pH meter 4. Grinding mill 5. Oven/Stove (Kitchen)	1. Analytical balance 2. Penetrometer 3. Oven/stove (Kitchen) 4. Freezer	1. Analytical balance 2. Thermometer 3. Spectrophometer 4. Penetrometer 5. Viscometer 6. Colorimeter 7. pH meter
Equipment/ Glass ware	1. Dessicator 2. Porcelain dishes 3. Bunsen burners 4. Pipets (10,20 ml) 5. Erlenmeyer (flasks (250,300,500, 50 ml) 6. Volumetric flasks (100,500 ml) 7. Cuvettes 8. Gooch Crucibles 9. Kjeldahl flasks 10. Kjeldahl distillation apparatus 11. Filter funnels 12. Soxhlet flasks and apparatus	1. Pots 2. Bowls 3. Spoons 4. Knives 5. Plastic wrap 6. Baskets 7. Fermentation Containers 8. Foil 9. Plastic Containers 10. Frying pan 11. Sieve	1. Pots 2. Spoons 3. Measuring cups 4. Thermometers 5. Bowls 6. Filtering cloth (cheesecloth) 7. Spatulas 8. Tahu press 9. Forks 10. Frying pans	All equipment and glassware used for the other four cours

Appendix E (cont)

Item	Food Analysis	Food Processing	Food Science	Experimental Foods
Equipment/ Glassware (cont)	13. Extraction flasks 14. Co_2 Or N_2 gas. 15. Condensers			
MATERIALS (Chemicals,Food)	1. HCl 2. Distilled H_2O 3. Bromocresol green 4. CH_3COO Na 5. $(COOH)_2 \cdot 2H_2O$ 6. NH_4OH 7. H_2SO_4 8. $KMnO_4$ 9. Mohr Sah 10. NH_2CH-HC 11. Acetate buffer 12. NH_4NO_3 13. Molybdate 14. NaOH 15. H_3BO_3 16. Ether 17. Oxalic Acid 18. Aquades 19. Phenol red 20. KOH 21. C_2H_5OH 22. Na_2SO_4 23. $CHCl_3$ 24. $SbCl_3$ 25. CH_3OH 26. Na_2SO_4 27. Xylol 28. Phenyl alcohol 29. Na_2CO_3 30. Sodium nitrite 31. Asbestos 32. Alcohol 33. Amino asetophenon	1. Chicken eggs 2. Duck eggs 3. salt 4. Ash 5. Wood 6. Clay 7. Lime 8. Ginger 9. Soybeans 10. Starter cultures 11. Banana leaves 12. Cassava 13. Sweet potatoes 14. Rice	1. Sugar 2. Water 3. Fruit 4. Vegetables 5. Starch 6. Wheat hour 7. Rice 8. Corn starch 9. Eggs 10. Vinegar 11. Salt 12. Oil 13. Coconut milk 14. Soybeans 15. Tahu 16. Tempe 17. Meat 18. Papaya leaves 19. Banana leaves 20. Fish 21. Limes 22. Long Beans 23. Baking Soda	Choice of materials is determined by students

APPENDIX F

CURRICULUM DEVELOPMENT

September 11, 1982

Diane Barrett
Departemen Gizi Masyarakat dan
Sumberdaya Keluarga

Seminar Outline

I. INTRODUCTION

A. Objectives of this Seminar

B. Importance of this Seminar

II. GOALS AND REQUIREMENTS

A. Goals of Indonesian Higher Educational System

B. Goals of Institut Pertanian Bogor

C. Requirements of Institut Pertanian Bogor

1. S_1

2. S_2

III. PREPARATION OF CURRICULUM TO MEET GOALS

A. Approaches of Curriculum Development

B. From Goals to Objectives

C. Departmental Level

D. Course Level

IV. OBJECTIVES OF DEPARTEMEN GIZI MASYARAKAT DAN SUMBERDAYA KELUARGA

I. INTRODUCTION

A. Objectives of this Seminar

1. Summarize goals and requirements of the Indonesian Higher Educational System, Institut Pertanian Bogor and Departemen Gizi Masyarakat dan Sumberdaya Keluarga.
2. Define "Objectives"
3. Point out need for objectives.
4. Specify the elements of an objective.
5. Describe the use of objectives at the departmental and course level.
6. List the objectives of GMSK.

B. Importance of this Seminar

1. Give guidelines for the development of curriculum.
2. Force us to examine our own department and courses.

II. GOALS AND REQUIREMENTS

A. Goals of Indonesian Higher Education System

Tridharma Principle : 1) Instruction
2) Research
3) Public Service

The goal of the Indonesian Higher Education System is to provide these three things. Repelita III has a priority for agriculture, and Repelita IV will also have high priority on agriculture.

B. Goal of Institut Pertanian Bogor

IPB was officially established on September 1, 1963 in order to :

" become the center of modernization and development of agricultural crop sciences and technology through the application of the threefold function of Higher Education"

C. Requirements of IPB

1) S_1

a) Entry Level

1. Graduates of SMA, IPA (Ilmu Pengetahuan Alam)
2. Proyek Perintis II - IPB chooses students from a list of the top 10 % of SMA graduates from the best SMAs.
3. Proyek Perintis I - the remaining 90 % of SMA (IPA) students take an entry test and IPB chooses students with the top grades.

b) Graduation

1. Students complete 8 semesters (16 weeks each) of coursework with a grade point average of 2.0 (C) or higher.
2. Any classes with a grade of 0.0 (F) are repeated.
3. Each student takes the same courses for the first year (Tingkat Persiapan Bersama). See Appendix 1.

2) S_2

a) Entry Level

1. Students must have an S_1 degree
2. Grade point average for S_1 program must be 2.75 (C+) or higher.

b) Graduation

1. Students must complete all courses required by a specific department.

2. Students must have a score of 3.0 (B) or more.

D. Goals of Departemen Gizi Masyarakat dan Sumberdaya Keluarga (GMSK)

"to prepare students to be graduates that are capable of working in the fields of education and agricultural extension that are interlocked with the improvement of family and community nutrition. In addition, to prepare students for work in research related to nutrition and food, and also to work in the field of nutritional problems and family life."

E. Requirements of Departemen GMSK

1. S_1

a) Entry Level

1. Students must have completed Tingkat Persiapan Bersama with an overall grade point average of 2.0 (C), or higher.

2. Students must have good scores in :

- Mathematics
- Matrix Algebra
- English

3. Students should indicate GMSK as their first or second choice for Department of study.

b) Graduation

1. Certain classes (Appendix 2) are required for graduation from GMSK. Students should complete these with an overall grade point average of 2.0 (C) or more.

2. Students must complete 144 credits total.

2. S_2

a) Entry Level

1. Prospective students must have completed the S_1 degree, with an overall grade point average of 2.75 (C+).

2. The S_1 degree must be in a related field.

b) Graduation

1. Students must complete the required courses for the S_2 program in GMSK (Appendix 3).

2. Students must have an overall grade of 3.0 (B).

3. Students complete 42 credits total.

III. PREPARATION OF CURRICULUM TO MEET GOALS

A. Approaches to Curriculum Development

Goals are defined as : " broady conceived statements that express, in general, what schools should try to accomplish".

Goals are static. They do not change much over time. We must translate our goals to objectives, desired knowledge and skills.

There are several approaches to curriculum development. Two general objectives are to view curriculum as subject matter and experiences.

1. Subject Matter

a) Primary goal is to give children (students) information that is considered important.

b) "Knowledge for the sake of knowledge".

c) Produce a well-trained person.

d) Does not necessarily produce a critically aware person.

e) Does not teach student's how to process or use information

2. Experiences

a) Emphasis on a process or skill to be mastered, rather than knowledge alone.

b) Subject matter is important to know first, experiences show you how to use this information.

c) Teach students how to solve problems and study things in greater depth.

The best approach to curriculum design is probably a combination of subject matter and experiences. The student should learn information, but also should be able to process and use information.

3. Curriculum and Individual Differences

Individual students are different, therefore their present knowledge and capacity for learning are different. When designing curriculum, we should remember the students :

a) Level of ability

b) Home environment

c) Interest and motivation

d) Goals for the future

We cannot design the perfect curriculum for each student, but if we know more about the students and their individual differences, it will help us.

4. Decisions to Make During Curriculum Development

Some of the things that affect the decisions we make about curriculum are :

a) geographic location of the school

b) types of persons hired to teach.

c) social class orientation of the instructor and materials

d) instructional materials available to instructor

e) cultural, intellectual, emotional and social attributes of the student

f) need to produce a "consumable product"

We should make decisions, as educators, about the following subjects :

a) goals

b) objectives

c) levels of instruction

d) how to plan a lesson

e) interactions among students (discussions, panels, etc.)

f) classroom procedures

B. FROM GOALS TO OBJECTIVES

Goals are broad statements about what we hope to accomplish in a department or a course. It is important to translate these goals into more precise, clearer guidelines for expected student output. These are objectives. Objectives are important because they tell students what knowledge and skills they will learn.

Objectives :

1. Clarify the intent of the department/course for the staff/ instructor.
2. Clarify intent of the department/course for the student
3. Make it easier to measure student achievement.
4. Make it easier to measure the effectiveness of the department/ course.
5. Help to develop more effective communication systems between teachers, students, administrators and parents.

There are two levels of objectives that we use :

general objectives - a general statement of something toward which an effort is directed. More specific than a goal.

specific objective - a specific statement of something toward which an effort is directed. More specific than a general objective. Describes a performance or behavior which the student will demonstrate.

Therefore, the steps in designing curriculum are :

GOAL → GENERAL OBJECTIVE → SPECIFIC OBJECTIVE

1. General Objectives

a) General objectives are useful as guidelines but are not specific enough for direct implementation (use) in a course.

b) General objectives are usually used in a course outline.

2. Specific objectives

a) There are three elements to a specific objective,

(1) the performance term

(2) the elaboration of conditions

(3) the minimum acceptable behavior

b) Specific objectives are used when an instructor is planning each lecture.

(1) The Performance Term

Every objective must state a performance or behavior which the student will learn. We use an "action" verb that describes an observable performance or behavior. For example :

"action"verbs - list, classify, define, graph, memorize, predict, rank, specify.

"non action" verbs - know, learn, understand, analyze.

In the objective, we must use a verb that is easy to evaluate at the end of the course. How can we test if a student "understands" the nutritional requirements of the 3 year old child? It is much easier to test a student by saying he should "list" the nutritional requirements of the 3 year old child! Words such as know, understand, etc., are usually used in general objectives.

(2) Elaboration of Conditions

Here we describe the circumstances under which the learner must perform.

Usually, conditional elements refer to :

(a) What materials may be used.

(b) How the performance may be accomplished - for example, from memory, from the textbook, etc.

(c) Time elements

(d) Location of the performance.

Examples of conditional elements of an objective are :

"From memory ..... "

"Within a 10-minute span of time ..... "

"With a compass, ruler and calculator ..... "

(3) Minimum Acceptable Performance

The last element of an objective is the minimum acceptable performance element.

Examples :

" ..... within 2 mm ..... "

" ..... 8 out of 10 trials ..... "

" ..... in 10 seconds or less ..... "

These are standards within which the student must perform.

EXAMPLES

Here are some examples of goals, general and specific objectives :

Goal	General Objective	Specific Objective
1. Increase the student's knowledge about food.	1. Know the four main food groups.	1. Given a list of 10 possible food groups, the student must identify the four main ones.
2. The student will recognize Indonesian nutritional deficiency diseases.	2. Learn about protein-calorie malnutrition, anemia, Vitamin A deficiency and goiter.	2. After reading the handout about nutritional deficiency diseases, list the three main problems in Indonesia and suggest at least 3 ways to solve each one.

Remember that general objectives are usually used in a course outline, and specific objectives are used to plan each lecture.

C. DEPARTMENTAL LEVEL

At the departmental level, when we are planning the emphasis of our department, we do this in a general sequence :

1. Determine the goals of the department
2. Look at the educational background and experience of incoming students.
3. Look at the requirements of future employers.
4. Determine the knowledge and skills needed to produce the desired result.
5. Determine the objectives (general) of the department.
6. Determine the "balance" of the department. For example, is the emphasis on nutrition ? Food science ? Family resources ?

7. Decide how many courses are needed to teach all the stated objectives.
8. Determine the sequence of courses.
9. Examine each teacher's background, interest, and time allocation to decide who teaches what.
10. Design a standard evaluation form for all courses, (Appendix 4) given at the end of the course.

D. COURSE LEVEL

At the course level, we should already have a goal for the whole course. We break this down into general objectives. This becomes your outline. Then, we divide these general objectives further into specific objectives. Then, knowing how many weeks we have for that course, we decide how many weeks to spend on each specific objective. We should also decide what activities (trips to the village, panel discussions, etc.) to include in each lecture, and what materials (books, films, handouts, etc.) we will use in each lecture. A sample planning form is given in Appendix 5.

SUMMARY

Planning the curriculum of a department, and the content of courses, is a difficult task. However, if we organize our planning and move in a logical sequence from GOALS ⟶ GENERAL OBJECTIVES ⟶ SPECIFIC OBJECTIVES, our task becomes much easier. The goals of the Indonesian Higher Educational System, the Institut Pertanian Bogor, and Department Gizi Masyarakat dan Sumberdaya Keluarga are well known.

It is our task to translate those goals into general objectives for GMSK, and to further translate those into general objectives for our individual courses. Specific objectives must be determined to help in designing individual course and lecture content.

Source : Teaching Strategies

by Donald C. Orlich et.al.
D.C. Heath and Company
Lexington, Massachusetts 1980.

Assignment

Each instructor in GMSK is to list the 5 general objectives of each course he/she teaches.

* Please give these to Diane by September 25.

APPENDIX 1. Required Courses, First Year of S_1 Program

Semester 1

FIS	101	Physics	3 (2-3)
FSM	101	Indonesian	2 (2-0)
FSM	102	English	3 (2-3)
STK	101	Mathematics	3 (3-0)
FSM	115	Chemistry	3 (2-3)
FSM	108	Religion	2 (2-0)
FSM	117	Pancasila	2 (2-0)
FSM	206	Introduction to Agriculture	1 (1-0)

Semester 2.

STK	102	Mathematics (Matrix Algebra)	3 (3-0)
BOT	102	Biology	3 (2-3)
FSM	116	Biological Chemistry	3 (3-0)
SEP	101	General Economics	3 (2-3)
SEP	121	Rural Sociology	3 (2-3)
FSM	202	Military Science	3 (2-0)

APPENDIX 2. Courses For Department GMSK

Third Semester		Fourth Semester	
Bio Energetics	2 (2-0)	Food Science	3 (2-3)
Basic Nutrition	3 (2-3)	Family Life Education	3 (2-3)
Fundamentals Agronomy	4 (3-3)	Annual Crop	3 (2-3)
Basic Management	3 (2-3)	Demography	3 (2-3)
Fundamentals Climatology	3 (2-3)	Microbiology	3 (2-3)
Principles of Soil Science	4 (3-3	Statistics I	3 (3-0)

Fifth Semester		Sixth Semester	
Food Analysis	3 (2-3)	Advanced Nutrition	3 (2-3)
Consumer Education	2 (2-0)	Public Health	3 (2-3)
Family Ecology	3 (2-3)	Food Processing	3 (2-3)
Family Development	2 (2-0)	Horticulture	3 (2-3)
Micro Economics	3 (2-3)	Plant Protection	4 (3-2)
Production Economics	3 (2-3)	Experimental Design **)	3 (3-0)
Statistics II *)	4 (3-3)	Field Work	6
Food Quality Evaluation Methods	3 (2-3)		

Seventh Semester		Eighth Semester	
Experimental Study of Food **)	3 (2-3)	Nutrition Economics	3 (2-3)
Food and Nutrition Problems	3 (2-3)	Nutrition Planning	3 (2-2)
Nutrition Education	3 (2-3)	Food Control	2 (2-0)
Methods of Food and Nutrition Survey	4 (3-3)	Scientific Writing II (undergraduate thesis)	3
Methods of Research in Social Science *)	3 (2-3)		
Scientific Writing I (undergraduate thesis)	3		

*) Not offered for students taking Food Quality Evaluation and Experimental Design.

**) Not offered for students taking Statistics II and Methods of Research in Social Science.

APPENDIX 3. S_2 CURRICULUM IN

COMMUNITY NUTRITION AND FAMILY RESOURCES

	1st Semester	Credits
	1. Socio-Economic and Cultural Influences on Family Food Habits	3
	2. Nutrition and the Development of the Child	3
*	3. Family Sociology	3
*	4. Statistics	4
		13
	2nd Semester	
	1. Food and Nutrition Systems	3
	2. Family Health and the Environment	3
*	3. Demography	3
*	4. Physiology and Biochemistry of Nutrition	3
		12
	3rd Semester	
	1. Community Nutrition	3
	2. Family Economics	2
	3. Information Transfer Technology	1
* *	4. Basic Principles of Planning and Policy of Rural Development	3
*	5. Methodology of Social Research	3
		12
	4th Semester	
	1. Research and Thesis	6
	2. Seminar	1
		7

* Offered by department other than Community Nutrition and Family Resources.

APPENDIX 4. Sample Course Evaluation Form

Student
Number _____ Date _____
Course _____

1. Which three topics did you find most useful in this course ?
   a)
   b)
   c)

2. Which three topics did you find least useful ?
   a)
   b)
   c)

3. Did the instructor present a course outline ? _____ Yes _____No.

4. Do you feel that adequate time was spent on every subject in the outline ? _____ Yes _____No. Please explain.

   _____

   _____

5. Did the instructor present course objectives ? _____ Yes _____No.

6. Do you feel the objectives were acheived by the end of the course ?

   _____ Yes _____ NO. Please expalin.

   _____

   _____

7. Was the instructor available for consultation outside of class time ?

   _____ Yes _____ No.

8. Were homework assignments educational ? _____ Yes _____ No.

9. Was enough time allowed for completing homework ? _____ Yes _____ No.

10. Was this course more or less informative than other courses in GMSK ? _____ More _____ Less.

11. Was this course more or less enjoyable than other courses in GMSK ? _____ More _____ Less.

12. Was there any overlap of information given in this course with information in other courses ? _____ Yes. _____ No.

Please explain

_____

_____

13. What other topics do you think should be included in this course ? What topics should be left out ? Any additional comments ? (use back of paper)

APPENDIX 5. Sample Course Planning Form*)

General Course Objectives	Specific Course Objectives	Individual Course Content	Activities	Materials
1. Clarify the principles of food experimentation	a) List the "Steps in any experiment" 1. Recognition of problem 2. Literature review 3. Project statement 4. Data analysis interpretation 5. Report 6. Presentation of data	Lecture 1	1. Lecture 2. Discussion 3. Examples 4. Trip to Puslitbang Gizi	1. Survey Research Methodology (Shah and Chaudhari) 2. Pedoman Menulis Tesis (IPB) 3. Film, "Research Project" (TKPK)
		Lecture 2	1. Quiz	

*) This is an example for the first 2 lectures of a class on Food Experimentation.

APPENDIX G

BEST AVAILABLE

SOCIO-ECONOMIC AND CULTURAL INFLUENCES ON FAMILY FOOD HABITS

Many socio-economic and cultural factors influence the selection, purchase and consumption of foods in a family environment.

These factors and their effect on the nutrition quality of the family diet are analyzed, and methods for changing food behavior are studied. The capability to assess, quantify and interpret individual, household, and national food production, consumption and balance data is developed.

Course Objectives :

1. Understand the many factors that influence selection, purchase and consumption of foods in a family environment.
2. Know how economic variables affect food purchase and consumption patterns.
3. Become aware of regional and country differences and similarities in food consumption.
4. Understand ways in which attitudes, food beliefs and taboos affect food consumption patterns.
5. Examine the impact of media and advertising on food behaviors.
6. Understand the impact of changes in food patterns on the nutritional quality of diets.
7. Learn methods useful in changing food behaviors.
8. Develop the capability to assess, quantify and interpret data on food consumption patterns of individuals and

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household.

9. Understand methods of evaluating national food production, consumption and balance data.

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COURSE OUTLINE

Number of Weeks

I. Nutrition is a Biocultural Phenomenon

A. Interactions Between Various Processes — 1

1. Social
2. Economic
3. Political
4. Cultural

B. Reciprocity Between Nutrition and the Environment

1. Biological Environment
   a. Nutrition and Human Disease
   b. Malnutrition
2. Social Environment
   a. Urban Spread
   b. Tradition and acceptance of change
3. Economic Environment
   a. Rural economy
   b. Poverty

II. Factors Which Influence the Selection, Purchase and Consumption of Food in a Family Environment — 1

A. Use of Models to show Interrelationships Between Nutrition and Various Factors

1. Biosocial Factors and Low Weight Gain
2. Homemakers Employment status and Food Consumption

B. Factors Which Influence Family Food Habits — 4

1. Physical availability
   a. Food production

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Number of Weeks

a. Food production

1) Natural environment

(a) geography
(b) soil fertility
(c) climate
(d) ecology

2) Technological development

(a) cultivation practices
(b) mechanization practices
(c) facilities for storing, processing and transporting food
(d) road and type of transporting system
(e) stage of industrialization

3) Economic forces

(a) subsistence vs. market economy
(b) level of purchasing power
(c) percentage of food imports in region

4) Social forces

(a) land tenure systems
(b) level of education of farmers and homemakers
(c) availability of health facilities and services

b. Food preservation

1) home-drying

2) smoking

3) canning

4) dehydration

5) freezing

Number of Weeks

c. Food distribution
   1) Between nations
   2) Between regions of a country
   3) Within a community
   4) Intrafamily

d. Food preparation
   1) Tradition
   2) Cooking method
   3) Health
   4) Convenience
   5) Appearance
   6) Taste, aroma, temperature

e. Equipment and Facilities
   1) Utensils
   2) Fuel

2. Cultural Availability

a. Social Status of Food
   1) Relation to Nutrient Content
   2) Economic conditions Affecting status
   3) Availability

b. Physical status of Foods
   1) A g e
   2) S e x
   3) Illness state
   4) Pregnancy and lactation

c. Social or ceremonial Role
   1) Social celebrations
   2) Special days
   3) Attitudes, Food Beliefs and Taboos

Number of Weeks

d. Food Etiquette
   1) Use of utensils
   2) Indication of preference

e. Division of Labor
   1) Child
   2) Mother
   3) Father
   4) Urban vs. Rural Environment

III. Economic Situation and Its Influence on Family Food Habits 2

A. Household Purchasing Power
   1. Measures of Purchasing Power
      a. gross income
      b. disposable income
      c. permanent income
      d. net wealth
   2. Variables Included in Purchasing Power
      a. land area cultivated
      b. capital goods owned
      c. consumer goods owned
      d. land area owned
      e. type of house owned

B. Household Size and Composition
   1. S i z e
   2. Occupation of Members
   3. Education of Members
   4. Total yearly expenditures per household member
   5. Total weekly expenditures per household member

Number of Weeks

C. Market Prices for Food and Non-Food Items and Services

2

IV. Food Consumption Pattern Data

A. Dietary Surveys

1. Purpose, Uses, Limitations
2. Individual
3. Household
4. National

B. Data Processing and Interpretation

C. Dietary Standards

V. Regional and Country Differences and Similarities in Food Consumption 2

A. Food Consumption in Indonesia

1. Island to Island Differences and Similarities
2. Within Java, Regional Differences and Similarities
3. Factors Influencing Differences and Similarities in Food Consumption in Indonesia

B. Differences and Similarities Between Food Consumption in Indonesia and Other Countries

1. Southeast Asia
2. Developing Countries
3. Developed Countries

Number of Weeks

VI. Impact of Changes in Food Patterns on Nutritional Quality of Diet 3

A. Causes for changes

1. Environmental
2. Economic
3. Faddism
4. Acquaintion of Knowledge
5. Cultural
6. Attitudes, Beliefs, Taboos
7. Migration

B. Mechanism for Change

1. Advertising
2. Mass Media

RESOURCES

Sanjur, Diva. "Social and Cultural Perspectives in Nutrition" Prentice-Hall Inc., Englewood Cliffs, N.Y., 1982.

Schmitt, Bernard A. "Protein, Calories and Development : Nutritional Variables in the Economics of Developing Countries", Westview Press, Boulder, Colorado, 1979, Chapters 3, 5 and 6.

Tan, et.al., "Social and Cultural Aspects of Food Patterns and Food Habits in Five Rural Areas in Indonesia", National Institute of Economic and Social Research (LEKNAS) LIPI and Directorate of Nutrition, Department of Health, Republic of Indonesia, Jakarta, 1970.

Whyte, Robert Orr. "Rural Nutrition in Monsoon Asia", Oxford University Press, London, 1974, Chapters 1, 2.

Abelson, Philip H.ed. "Food : Politics, Economics, Nutrition and Research", American Association for Advancement of Sciences, 1975.

Appendix H

NUTRITION AND DEVELOPMENT OF CHILDREN

Nutrition, physical growth and mental development are all closely related in children. Ability to ~~some~~ solve problems and integrate complex information has been shown to be related to the diet of infants and small children. Also, the nutritional status of the pregnant woman can affect the birth weight of the infants as well as the normal development of the fetus. Children are an important family and national resource and the optimum conditions for their growth and development need to be studied.

Course Objectives:

1. Learn the nutritional requirements of the pregnant women.
2. Be aware of health and environmental factors that affect the outcome of pregnancy.
3. Be able to evaluate various methods of infant feeding with special attention to advantages of breast feeding.
4. Understand relationships between nutrition and environment and the physical and mental development of infants and children.
5. Learn special nutrition needs and the development processes that occur at different age level from birth to adulthood.
6. Be able to assess and monitor the physical growth, and intellectual and behavioral development of children.
7. Appreciate the role of the child in the family and in social and economic development of the nation.

8. Recognize the economic contribution of children to national resource development.
9. Examine current national policies related to children and child care facilities.
10. Learn about national and community health and day care programs for children from birth to 2 years; from 2 to 5 years; from 5 to 12 years; and from 12 to 18 years.

Course Outline

	Number of Weeks
I. The Effect of Maternal Nutrition on the Outcome of Pregnancy	2
A. Indexes of Maternal and Infant Health	
B. Risk Factors	
1. A g e	
2. Number of pregnancies	
3. Health history	
4. R a c e	
5. Social class	
6. Length of gestation	
7. Maternal height and weight	
8. Cigarettes	
9. Alcohol	
10. Dietary factors	
11. Food beliefs	
II. Physiological Changes in Mother and Fetus	2
A. Maternal Physiology in Pregnancy	
1. Changes in body composition	
2. Weight gains	
3. Nutrient requirements	
B. Growth and Development of the Fetus	
1. Stages of cell growth	
2. Brain cell growth and development	
3. Effect of nutrition on cell growth and development	
4. Effects of fetal malnutrition on growth and development	
5. Mental development of the fetus	

	Number of Weeks
III. Special Needs of the Newborn Infant	2
A. Health care	
1. Monitoring of growth and health needs	
2. Diarrhea	
3. Sanitation	
4. Immunization	
B. Food and Fluid Needs	
1. Water as a critical nutrient	
2. Breast feeding	
3. Infant formulas	
C. Emotional Needs	
D. Family Environment	
E. Nutrient Requirements for the first Six Months	
IV. Growth and Development in Infancy	2
A. Growth, Physiological and Developmental Changes from Birth to ~~Six~~ Twelve Months	
1. The first three weeks	
2. Changes in the first three months	
3. From three to six months	
4. From ~~nine~~ six to twelve months	
V. Growth and Development of Pre-school Children	2
A. The first year	
1. Physical growth and nutrient needs	
2. Mental growth and development	
3. Emotional growth and development	
B. Family Members	

Suppl Feeding — Austin (Nutr. Intervention)
"Human Milk" etc. (Jelliffe)
Food: Politics etc. (Lappe)

"Cellular Growth" Nutrition, Nat. Def. and Learning (Eichs, Schmechaw)

	Number of Weeks
C. Child care providers	
1. Who	
2. Where	
3. How	
D. From 2 to 5 years	
1. Physical growth and nutrient needs	
2. Mental growth and development	
3. Emotional growth and development	
VI. The Child From Five to Ten Years	2
A. Physiological growth and development	
B. Mental growth and development	
C. The role of the child in the family structure	
D. Social institutions for children	
1. Schools	
2. Recreational facilities	
E. Peer influence	
VII. The Adolescent Years	2
A. Physiological growth and development	
B. Mental and emotional growth and development	
C. The role of the adolescent in the family structure	
D. Social environment	
E. Changing roles and responsibilities	
F. Cultural influence on behaviors	

	Number of Weeks
VIII. The Nation and Its Children	2
A. Children as a natural resource	
B. Future planning for children	
C. Development and regulation of day care centers and institutions for children	
D. Education	
E. Economic costs and contribution of children	
F. Child health care systems	

REFERENCES

B.S. Worthington - Roberts. "Nutrition in Pregnancy and Lactation", C.V. Mosby Co., 1981, 2nd ed.

P.L. Pipes. " Nutrition in Infancy and Childhood". 2nd edition, C.V. Mosby Co., 1981.

V.A. Beal. "Nutrition in the Life Span". John Wiley and Sons, N.Y., 1980.

M. Mc Williams. "Nutrition for the Growing years", 3rd edition, John Wiley and Sons, 1980.

M.C. Latham. "Human Nutrition in Tropical Africa" F.A.O, Rome, 1979.

APPENDIX I

COMMUNITY NUTRITION

Nutrition in a community is determined by a variety of environmental, social, cultural, economic, political and biological factors.

A number of programs have been designed to alleviate mal - nutrition; these programs are analyzed and evaluated.

Methods of assessing, planning, implementing and evaluating community nutrition programs are studied.

Course Objectives :

1. Understand the many factors and characteristics of countries and local communities that affect the nutritional status of individual family members.
2. Understand the unique relationship between population pressure and nutrition of the community.
3. Understand the role of public policy in the development of community nutrition programs.
4. Learn procedures for the design and development of effective community nutrition programs.
5. Understand the structure, function and scope of the various nutrition programs in Indonesia.
6. Learn to design, develop and evaluate nutrition education and nutrition intervention programs.
7. Know and understand the system of linkages and interrelationships between agencies and organizations that have a responsibility for nutrition research, education and intervention programs.

8. Be able to identify situations and provide temporary and long range solutions to crisis.

9. Learn of similarities and differences between nutrition programs in Indonesia and those of other countries.

COMMUNITY NUTRITION

Course Outline

	Number of Weeks
I. Community Characteristics and Nutritional Status 1)	
A. Characteristics of local communities	2
1. Political organization 2. Social organization 3. Cultural characteristics 4. Economic stratification 5. Health care systems 6. Transportation 7. Housing 8. Climatic variables 9. Family composition and hierarchy 10. Communication facilities 11. Land and water practices 12. Energy supplies 13. Religious views 14. Food availability	
B. Assessment of the Nutrition Status of the Community	2
1. Information requirements vital statistics, socio-economic data, food consumption data, health statistics, nutritional status studies, vulnerable groups, food production and preparation practices.	
2. Survey techniques and data interpretation.	
3. Multi-factorial causation of malnutrition.	
4. Identification of the nutritional problem.	

1) Mc Laren, D.S. "Nutrition in the Community", John Wiley and Sons, N.Y., 1976, Chapters 2, 6, 7.

1) Also, Frankle and Owen, "Nutrition in the Community", Chapter 4.

	Number of Weeks
II. Population Pressure and Nutrition[2)]	1
A. Population projections	
B. Food production projections	
C. Relationships between family size and nutrition	
D. Special needs of infants and children	
1. New foods	
2. Formula feeding	
3. Working mothers	
E. Rural migration and urban resources	
III. Public Policy and Community Programs[3)]	2
A. Government policy for Indonesian Nutrition Programs	
B. Implementation of policy by ministries and by other agencies and organizations	
C. An example of policy and program development from the Philippine experience.	
D. Advisory policy committees : national, regional and local.	
IV. Development of Community Nutrition Programs	2
A. Program planning and design	
1. Role of planner	
2. The planning process	
3. Goal, objective setting	
4. Identification of strategies	
5. Identification of resources	
6. Programatic activities	
7. Evaluation and program reporting	
B. Different types of intervention programs	
C. Nutrition education programs	
1. Curriculum planning	
2. Outcome evaluation	

2) Mc Laren, Chapter 4.

3) Mc Laren, Chapter 13; Suhardjo (Indonesian Policy and Plans)

	Number of Weeks
V. Assessment and Analysis of Program Effectiveness and Benefit/Cost Ratios	1
A. Evaluation framework	
B. Measures of effectiveness	
C. Output indicators	
D. Performance indicators	
E. Evaluation approaches	
F. Case studies	
VI. Crisis Programs : A Special Case	1
A. Identification of Crisis situations	
B. Actions for crisis alleviation	
C. Preparation for crisis	
1. Training	
2. Stockpiling food	
D. Food security	
VII. Community Nutrition Programs in Indonesia (for each program)	4
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	
VIII. Community Nutrition Programs in Other Countries	1
A. Developing countries	
B. Developed countries	

BEST AVAILABLE

REFERENCES

Franklo and Owen. "Nutrition in the Community" C.V. Mosby Co., 1978, Chapters 3 and 4.

J.E. Austin. "Nutrition Intervention in Developing Countries", AID, Oelgeschlagen, Couhm and Haris, Cambridge, Mass., 1981. Chapters 2 and 3.

D.S. Mc Laren. "Nutrition in the Community". John Wiley and Sons, N.Y., 1976, Chapters 2, 4, 6, 7, 13, 29.

Suhardjo. "Food Security and Food Self Sufficiency in Indonesia". Inst. S.E. Asian Studies, Singapore, 1981.

World Bank Publications.

Indonesian Nutrition Papers.

APPENDIX J

BEST AVAILABLE

INFORMATION TRANSFER TECHNIQUE

Information is not useful unless it is presented in a simple, understandable form. Data gathered from surveys, observations, and research must be analyzed and transferred into results and conclusions before it can be understood. The technology of data manipulation and analysis will be studied. The use of computers, radio, television, printing, audio-visuals, microfilm, and other methods of information transfer will be taught.

Objectives :

1. Study the methods and resources available for data analysis and manipulation.
2. Learn to use various instruments for data analysis and manipulation.
3. Examine the significance of results from new data.
4. Learn methods for presenting results in an attractive form.
5. Discuss current systems of information transfer in Indonesia.

BEST AVAILABLE

INFORMATION TRANSFER TECHNOLOGY

COURSE OUTLINE

Number of Hours

I. Data Analysis and Manipulation

A. Organization of data prior to Analysis

B. Physical methods of Analysis

1. Manual calculations
2. Use of Calculator
3. Use of Computer

II. Use of Data Analysis Instruments

A. Calculator 1

1. Uses
2. Limitations
3. Practical examples

B. Computer 7

1. Uses
2. Limitations
3. Instruction in Use of the Apple 2
4. Practical examples

III. Significance of Results

A. Statistical Tests Used to Analyze Significance 3

1. Use of calculator for statistical tests
2. Use of computer for statistical tests

BEST AVAILABLE

B. Similarities and Differences Between Results and Prior Investigations

1. Use of library to access information

2. Accessing information from other sources

a. Within Indonesia

b. Outside of Indonesia

3. Computer literature searches

IV. Presentation of Results 4

A. Resources available for presentation of results

1. Radio

2. Television

3. Posters, Visual Aids

4. Lectures, Seminars

V. Current Systems of Information Transfer in Indonesia 4

A. National Documentation Center (BDIN), Jakarta

B. Center for Research and Development in Nutrition (PUSLITBANG GIZI), Bogor

C. Others.

Appendix K

DAFTAR AUDIO-VISUAL AIDS YANG DAPAT DIPINJAM DARI TEKNOLOGI KOMUNIKASI PENDIDIKAN DAN KEBUDAYAAN

Cara Peminjaman : Dapat dengan menulis surat kepada Kepala TKPK

Jangka waktu pinjam : 2 minggu.

I. SLIDES

	Judul	Nomer Slides	Nomer Induk
1.	Keluarga Berencana (KB)	33	05
2.	Simulasi Bimbingan Masyarakat (BIMAS)		10
3.	Pusat Kesehatan Masyarakat (PUSKESMAS)		12
4.	Ekonomi Rumah Tangga		13
5.	Masalah Penduduk		17
6.	Gizi : 4 Sehat 5 Sempurna	30	29
7.	T.B.C.	41	37
8.	Sampah dan Kotoran/Kesehatan	24	47
9.	Menjaga Kebersihan		
10.	Kebutuhan Makanan Bidang Studi IPS	21	65
11.	Macam-macam Kebutuhan Manusia	33	69
12.	Kalor dan Pengukurannya	34	73
13.	Makanan Bayi dengan Mengutamakan ASI	35	82
14.	Cara Membuat Taoge	40	115
15.	Membuat Sale Arben	50	117
16.	Bagaimana Memasak Nasi Yang Baik	22	221
17.	Kebersihan Diri, Rumah dan Pekarangan	38	134
18.	Menuju Keluarga Sehat	32	133
19.	Pertanian Rakyat, Perkebunan dan Hasil-hasilnya	30	135
20.	Bagaimana Cara Mengikuti Keluarga Berencana	24	136
21.	Penghasilan dan Pengeluaran Keluarga	28	139

II. FILMS	Nomer Menit	Nomer Induk
1. Gardens for Everyone	11	14
2. What is Ecology	11	32
3. Food from the Sun	10	44
4. Body Defenses Against Disease	-	46
5. Water for All Living Things	10	52
6. Hidup Sehat dan Segar	-	64
7. Kearah Kesejahteraan		90
8. Menuju Keserasian dan Kelestarian Lingkungan Hidup		104
9. Picture of Health		105
10. Cottage Industries : A Contribution to the National Economy		114
11. You and Your Family	13	117
12. Healthy, Wealthy and Happy	21	129
13. Metode Demonstrasi	-	132
14. Metode Eksperimen		134
15. Kerja Kelompok		135
16. How Children Learn	23	152
III. FILMSTRIPS		
1. Why Do We Eat		39
2. That All the World May Eat		40
3. Children of Asia		44
4. Modern Indonesiaa and the Philippines		80
5. Water and It's Importance		95
6. Keeping Well		126
7. Keeping Clean		127
8. Your Food		128
9. Focus on the Family		182

Mata-mata kuliah ini dipersiapkan sebagai langkah pertama dalam usaha membuka program S2 Bidang Keahlian Gizi Masyarakat dan Sumberdaya Keluarga di IPB yang akan dimulai pada bulan September 1983 dengan susunan kurikulum sebagai berikut :

Semester 1 : Pengaruh Sosial Ekonomi dan Budaya Terhadap Kebiasaan Makan Keluarga (3 - 0), Kesehatan Keluarga dan Lingkungan (3 - 0), Sosiologi Keluarga (3 - 0), Analisis Statistika (3 - 2).

Semester 2 : Sistem Gizi dan Pangan (2 - 3), Gizi dan Perkembangan Anak (3 - 0), Demografi (3 - 0), Fisiologi dan Biokimia Gizi (3 - 0).

Semester 3 : Gizi Masyarakat (2 - 3), Ekonomi Keluarga (2 - 0), Pesan Alih Teknologi (0 - 2), Prinsip-Prinsip Dasar Perencanaan dan Kebijaksanaan Pembangunan Pedesaan (3 - 2), Metode Penelitian Sosial (3 - 0).

Semester 4 : Seminar (1), Penelitian dan Tesis (6).

APPENDIX L.

MATA KULIAH/COURSE ON :

1. PENGARUH SOSIAL-EKONOMI DAN BUDAYA TERHADAP KEBIASAAN MAKAN KELUARGA/SOCIO-ECONOMIC AND CULTURAL INFLUENCES ON FAMILY FOOD HABITS
2. GIZI DAN PERKEMBANGAN ANAK/NUTRITION AND DEVELOPMENT OF CHILDREN

1982/1983

Diasuh oleh/Offered by :

Departemen Gizi Masyarakat dan Sumberdaya Keluarga/Department of Community Nutrition and Family Resources

FAKULTAS PASCA SARJANA
INSTITUT PERTANIAN BOGOR

Mata-mata kuliah ini akan diberikan :

1. Selama satu semester mulai September 1982
2. Masing-masing mata kuliah mempunyai bobot kredit (3 - 0) atau 3 SKS.
3. Diberikan dalam bahasa Indonesia dan Inggris.

Dosen Penanggung jawab :

Suhardjo	(IPB)
M. Khumaidi	(IPB)
Jeralyn J. Pigott	(Wisconsin)
Mary A. Roach	(Wisconsin)

Program ini diselenggarakan dalam rangka kerjasama antara Institut Pertanian Bogor dengan Universitas Wisconsin, Amerika Serikat.

1. PENGARUH SOSIAL-EKONOMI DAN BUDAYA TERHADAP KEBIASAAN MAKAN KELUARGA

Makanan dalam kehidupan sesungguhnya hanya berfungsi sebagai bahan dasar untuk pertumbuhan dan kesehatan. Tetapi dalam arti luas ternyata makanan ditentukan oleh banyak faktor, antara lain kebiasaan makan (food habit).

Dari banyak penelitian terungkapkan bahwa kebiasaan makan dipengaruhi oleh lingkungan hidup. Hampir setiap jenis bahan makanan mempunyai kedudukan khusus dalam status sosial. Taraf ekonomi keluarga juga mempengaruhi jumlah maupun mutu makanan yang dipilihnya sehari-hari. Meskipun jenis-jenis bahan makanan berkadar gizi tinggi tersedia melimpah, tetapi apabila pola budaya setempat tidak sesuai, maka zat-zat gizi yang terkandung didalamnya tak akan sampai ke mulut orang yang membutuhkannya.

Atas dasar uraian singkat tersebut di atas, jelas bahwa pengaruh sosial-ekonomi-budaya terhadap kebiasaan makan keluarga sangat penting untuk dipelajari dan diteliti. Lebih-lebih dalam kehidupan keluarga-keluarga Indonesia yang sangat besar keanekaragaman sosial-ekonomi dan budayanya.

Mata ajaran ini bermanfaat untuk menunjang analisis-analisis terpadu bidang pangan yang menyangkut perumusan kebijakan program pangan baik tingkat daerah maupun nasional.

2. GIZI DAN PERKEMBANGAN ANAK

Pertumbuhan ragawi (fisik) dan perkembangan rohani anak sangat erat hubungannya dengan gizi. Kekurangan gizi pada masa pertumbuhan dini akan berakibat mundurnya kemampuan jasmani dan kecerdasan anak dikemudian hari.

Keadaan gizi dipengaruhi secara langsung oleh makanan yang dikonsumsi sejak anak masih di dalam kandungan ibu. Seorang ibu yang sedang hamil akan melahirkan bayi yang rendah beratnya apabila makanan sehari-harinya selalu kurang baik jumlah maupun mutunya.

Anak bagi keluarga adalah buah hati, dan bagi masyarakat atau bangsa adalah generasi penerus dimana taraf kesehatan mereka yang optimal merupakan pra-kondisi yang sangat didambakan.

Mata ajaran ini akan membahas secara luas, mendalam dengan informasi-informasi hasil penelitian mutakhir tentang peranan dan pengaruh dan akibat-akibat gizi terhadap pertumbuhan ragawi dan perkembangan rohani anak. Dibahas pula tentang interaksinya dengan lingkungan sekitar, baik lingkungan fisik, biologi maupun sosial ekonomi.

APPENDIX H

COURSES ON :

1. SOCIO-ECONOMIC AND CULTURAL INFLUENCES ON FAMILY FOOD HABITS
2. NUTRITION AND THE DEVELOPMENT OF CHILDREN

1982/1983

OFFERED BY :

DEPARTMENT OF COMMUNITY NUTRITION AND FAMILY RESOURCES

FACULTY OF GRADUATE EDUCATION

BOGOR AGRICULTURAL UNIVERSITY

These courses will be given :

1. For one semester beginning in September 1982
2. Each course has a weight of 3.0 credits, or 3 SKS.
3. Courses will be given in Indonesian and English.

Instructors :

Suhardjo	(IPB)
M. Khumaidi	(IPB)
Jeralyn J. Pigott	(Wisconsin)
Mary A. Roach	(Wisconsin)

This program will be offered under the supervision of a cooperative project between the Bogor Agricultural University and the University of Wisconsin, United States of America.

1. SOCIO-ECONOMIC AND CULTURAL INFLUENCES ON FAMILY FOOD HABITS

Food is actually the only substance that functions as a material for growth and health. However, in the broad sense it appears that food is influenced by many factors, among other things food habits.

Many research reports have shown that food habits are influenced by living environment. Almost every kind of food has a special position in social status. The economic level of the family will also affect the quantity as well as the quality of food selected every day. Although foods with high nutritional quality are plentifully available, when local cultural polls are not suitable, nutritional substances that are concealed within them will not reach the mouth of the person who needs them.

Based upon the facts briefly mentioned above, it is obvious that it is very important to study and investigate socio-economic and cultural influences on family food habits. Moreover, within Indonesian family life there is very great diversity in social-economies and culture.

This instruction is useful in supporting the integrated analysis of food problems corresponding to the formulation of food policy at both the regional and national level.

2. NUTRITION AND THE DEVELOPMENT OF CHILDREN

Physical growth and mental development of the child are closely correlated to nutrition. Insufficient nutrition during the early growth period will result in deterioration of physical capacity and future intelligence of the child.

Nutritional is directly influenced by the child's consumption from the time the child is still in the mother's womb. A mother who is pregnant will give birth to a baby of low weight when her daily diet is always below standard in quantity as well as quality.

Children are the loved ones of the family, and of the society or the nation and they are members of the coming generation, where their optimum level of health will shape the most desirable conditions.

This course will broadly and indeptly study, with recent results of research, topics regarding the acts and influences and consequences of nutrition with respect to the physical growth and the mental development of the child.

There will also be examination of interactions with the environment, including physical, biological and social-economical environments.

These courses are being prepared as the first step in the work of opening the S_2 (M.S. equivalent) program in the Department of Community Nutrition and Family Resources, in the Bogor Agricultural University, which will start in September, 1983 with the following curriculum :

Semester 1 : Socio-Economic and Cultural Influences on Family Food Habits (3-0), Nutrition and the Development of the Child (3-0), Family Sociology (3-0), Statistics (3-2).

Semester 2 : Food and Nutrition Systems (2-3), Family Health and the Environment (3-0), Demography (3-0), Physiology and Biochemistry of Nutrition (3-0).

Semester 3 : Community Nutrition (2-3), Family Economics (2-0), Information Transfer Technology (0-2), Basic Principles of Planning and Policy of Rural Development (3-2), Methodology of Social Research (3-0).

Semester 4 : Research and Thesis (6), Seminar (1).

APPENDIX N

Sample Course Planning Form

General Course Objectives	Specific Course Objectives	Individual Lecture Content	Advities	Materials

Appendix 5

Computer Program to Establish Food Composition Table

```
]LOAD FOODCTABLE
]LIST

1 D$ = CHR$ (4)
2 DIM KAL(75),PROTEIN(75),LEMAK(75),HIDR(75),CALSIUM(75),FOS(75),BESI(75)
    ,VITA(75),B1(75),C(75),AIR(75),CODE(75)
3 FOR I = 1 TO 72
4 HOME
10 PRINT "FOOD NUMBER ";I
20 PRINT
25 INPUT "FOOD CODE NUMBER  ";CODE(I)
27 PRINT
30 INPUT "KALORI(KAL) ";KAL(I)
40 INPUT "PROTEIN(GR) ";PRO(I)
50 INPUT "LEMAK(GR)   ";LEMAK(I)
60 INPUT "HIDRAT(GR)  ";HIDR(I)
65 INPUT "CALSIUM(MG) ";CAL(I)
70 INPUT "FOSFOR(GR)  ";FOS(I)
80 INPUT "BESI(GR)    ";BESI(I)
90 INPUT "VIT A (SI)  ";VITA(I)
100 INPUT "VIT B1(MG) ";B1(I)
110 INPUT "VIT C (MG) ";C(I)
120 INPUT "AIR (GR)   ";AIR(I)
200 NEXT I
210 PRINT D$;"OPEN FOOD.D1"
220 PRINT D$ "WRITE FOOD"
230 FOR I = 1 TO 72
235 PRINT CODE(I)
240 PRINT KAL(I)
250 PRINT PROTEIN(I)
260 PRINT LEMAK(I)
270 PRINT HIDR(I)
280 PRINT CALSIUM(I)
290 PRINT FOS(I)
300 PRINT BESI(I)
310 PRINT VITA(I)
320 PRINT B1(I)
330 PRINT C(I)
340 PRINT AIR(I)
350 NEXT I
360 PRINT D$"CLOSE"
370 END
```

BEST AVAILABLE

Appendix 5

Computer Program to Load Demographic and Food Consumption Data

```
]LOAD DATA KELUARGA MAKER
]LIST

1 MEAL$(1) = "PAGI":MEAL$(2) = "SIANG":MEAL$(3) = "MALAM"
2 D$ = CHR$ (4)
5  DIM PROMPT$(100),CODE$(100)
10  FOR SET = 1 TO 4
20  READ TITLE$(SET)
30  READ OFFSET(SET)
40  READ NOMR(SET)
50  FOR I = 1 TO NOMR(SET)
60  READ PROMPT$(OFFSET(SET) + I)
70  READ CODE$(OFFSET(SET) + I)
80  NEXT I
90  NEXT SET
100  HOME
110  PRINT : PRINT : PRINT : PRINT
120  PRINT "            DATA KELUARGA"
130  PRINT : PRINT : PRINT : PRINT
140  INPUT "NOMOR KELUARGA ? ";KELUARGA
150  IF KELUARGA < 0 OR (KELUARGA > 999) THEN 140
160 JAWAB$ =  STR$ (KELUARGA):LNGTH = 3: GOSUB 1000
170 KLRGA$ = JAWAB$
180  INPUT "NOMOR DESA ? ";DESA
190  IF DESA < 0 OR (DESA > 999) THEN 180
200 JAWAB$ =  STR$ (DESA):LNGTH = 3: GOSUB 1000
210 KLRGA$ = KLRGA$ + JAWAB$
220  INPUT "NOMOR PROPINSI ? ";PROPINSI
230  IF PROPINSI < 1 OR (PROPINSI > 28) THEN 220
240 JAWAB$ =  STR$ (PROPINSI):LNGTH = 2: GOSUB 1000
250 KLRGA$ = KLRGA$ + JAWAB$
260  INPUT "TANGGAL WAWANCARA ? (HHBBTT) ";JAWAB$
265  IF  LEN (JAWAB$) <  > 6 THEN  PRINT "MISALNYA 010282": GOTO 260
280 KLRGA$ = KLRGA$ + JAWAB$
500  HOME : PRINT : PRINT : PRINT
510  PRINT "         I-SUSUNAN KELUARGA"
520  PRINT : PRINT : PRINT
530  INPUT "BERAPA ORANG DALAM RUMAHNYA ? ";NKELUARGA
540  IF NKELUARGA > 10 THEN  PRINT "MEMANG ADA ";NKELUARGA;" ORANG DALAM R
     UMAHNYA (B/T) ";: INPUT JAWAB$: IF  LEFT$ (JAWAB$,1) = "T" THEN 530
550  FOR ANGGOTA = 1 TO NKELUARGA
551  HOME
552  PRINT "ANGGOTA KELUARGA KE.";ANGGOTA
555 ANGGOTA$(ANGGOTA) = ""
560  PRINT
570 SET = 1: GOSUB 5000
580  REM
590  INPUT "LELAKI ATAU PEREMPUAN ? (L/P) ";JAWAB$
600  IF  LEFT$ (JAWAB$,1) = "L" OR  LEFT$ (JAWAB$,1) = "P" THEN 620
610  GOTO 590
620 ANGGOTA$(ANGGOTA) = AN$(AN) + LEFT$ (JAWAB$,1)
625  IF  LEFT$ (JAWAB$,1) = "P" THEN SX = 1: GOTO 630
626 SX = 0
630  PRINT "UMURNYA BERAPA ? (BULAN JADI PRAKSI     MISALNYA 1 TAHUN 3 BUL
     AN JADI 1.25) "
```

```
640  INPUT JAWAB
650  IF JAWAB < 0 OR (JAWAB > 150) THEN 620
655 UMUR = JAWAB
656 JAWAB$ = STR$ (JAWAB)
657  IF  LEN (JAWAB$) = 6 THEN 660
659  FOR I = 1 TO 6 - LEN (JAWAB$):JAWAB$ = " " + JAWAB$: NEXT I
660 ANGGOTA$(ANGGOTA) = AN$(AN) + JAWAB$
670  INPUT "BERAT BADAN ? ";JAWAB
680  IF JAWAB > 200 THEN 670
690 JAWAB$ =  STR$ ( INT (JAWAB))
700  IF  LEN (JAWAB$) = 3 THEN 715
710  FOR I = 1 TO 3 - LEN (JAWAB$):JAWAB$ = " " + JAWAB$: NEXT I
715 ANGGOTA$(ANGGOTA) = AN$(AN) + JAWAB$
720  INPUT "TINGGINYA BADAN ? ";JAWAB
730  IF JAWAB > 200 THEN 720
740 JAWAB$ =  STR$ (JAWAB)
750  IF  LEN (JAWAB$) = 3 THEN 760
755  FOR I = 1 TO 3 - LEN (JAWAB$):JAWAB$ = " " + JAWAB$: NEXT I
760 ANGGOTA$(AN) = AN$(AN) + JAWAB$
770  IF UMUR < 5.01 THEN 790
780 JAWAB$ = "  ": GOTO 820
790  INPUT "LINGKAR LENGAN ATAS ? ";JAWAB
800  IF JAWAB > 50 THEN 790
810 JAWAB$ =  STR$ (JAWAB): IF  LEN (JAWAB$) = 1 THEN JAWAB$ = " " + JAWAB
    $
820 ANGGOTA$(ANGGOTA) = AN$(AN) + JAWAB$
830  INPUT "LAMA BERSEKOLAH ? (TAHUN - MISALNYA:    LULUS SD JADI 6 TAHUN
    - ) ";JAWAB
840  IF JAWAB > 25 THEN 830
850 JAWAB$ =  STR$ (JAWAB): IF  LEN (JAWAB$) = 1 THEN JAWAB$ = " " + JAWAB
    $
860 AN$(AN) = AN$(AN) + JAWAB$
870  HOME :SET = 2: GOSUB 5000
875  HOME :TITLE$(SET) = "PEKERJA SAMBILAN": GOSUB 5000
876 TITLE$(SET) = "PEKERJA UTAMA"
880  IF SX = 1 THEN  HOME :SET = 3: GOSUB 5000
881  IF SX = 0 THEN AN$(AN) = AN$(AN) + " "
885  HOME
890 SET = 1: GOSUB 5000
900  NEXT ANGGOTA
1000  FOR HARI = 1 TO 2
1005  FOR MEAL = 1 TO 3
1010  HOME
1020  PRINT "        KONSUMPSI PANGAN KELUARGA"
1030  PRINT "              (PENIMBANGAN)"
1040  PRINT "              HARI KE- ";HARI
1045  PRINT "              MAKAN ";MEAL$(MEAL)
1046  PRINT : PRINT : PRINT
1047  INPUT "BERAPA MACAM MAKAN ? ";NMBROFFOODS
1048  PRINT
1050  IF NMBROFFOODS = 0 THEN 1100
1070  FOR DISH = 1 TO NMBROFFOODS
1075  GOSUB 9000
1080 FOOD$(HARI,MEAL,DISH) = MAKANAN$(DISH)
1085  PRINT "----------------------------------------"
1090  NEXT DISH
1100 FDINDEX(HARI,MEAL) = NMBROFFOODS
1110  NEXT MEAL
```

```
1120  NEXT HARI
1130  HOME
1140  INPUT "MAU SIMPAN KE DISK ? (B/T) ";JAWAB$
1150  IF  LEFT$ (JAWAB$,1) = "B" THEN 1200
1160  IF  LEFT$ (JAWAB$,1) = "T" THEN  END
1170  GOTO 1140
1200  PRINT D$"OPEN KELUARGA,L50,D2"
1210  PRINT D$"READ KELUARGA,R1"
1220  INPUT ZNMBR
1230  PRINT D$"CLOSE"
1240 JAWAB$ =  STR$ (ZNMBR)
1250 LNGHT = 3
1260  GOSUB 4000
1270 ZNMBR$ = JAWAB$
1280  PRINT D$"OPEN ANGGOTA,L26,D2"
1290  PRINT D$"READ ANGGOTA,R1"
1300  INPUT ANGGOTAS
1310  FOR I = 1 TO NKELUARGA
1320  PRINT D$"WRITE ANGGOTA,R";ANGGOTAS + I
1330  PRINT ZNMBR$ + ANGGOTA$(I)
1340  NEXT I
1350  PRINT D$"WRITE ANGGOTA,R1"
1360  PRINT ANGGOTAS + NKELUARGA
1370  PRINT D$"CLOSE ANGGOTA"
1375 ADDITI = 0
1380  PRINT D$"OPEN MAKANAN,L11,D2"
1390  PRINT D$"READ MAKANAN,R1"
1400  INPUT NUMREC
1410  FOR HARI = 1 TO 2
1420  FOR MEAL = 1 TO 3
1425  IF FDINDEX(HARI,MEAL) = 0 THEN 1480
1430  FOR DISH = 1 TO FDINDEX(HARI,MEAL)
1440  PRINT D$"WRITE MAKANAN,R";NUMREC + ADDITI + DISH
1450  PRINT FOOD$(HARI,MEAL,DISH)
1455  NEXT DISH
1460 ADDITI = ADDITI + FDINDEX(HARI,MEAL)
1480  NEXT MEAL
1490  NEXT HARI
1500  PRINT D$"WRITE MAKANAN,R1"
1510  PRINT NUMREC + ADDITI
1520  PRINT D$"CLOSE"
1600 JAWAB$ = STR$ (ANGGOTAS)
1610 LNGHT = 3
1620  GOSUB 4000
1630 KLRGA$ = KLRGA$ + JAWAB$
1640 JAWAB$ = STR$ (NKELUARGA)
1650 LNGHT = 3
1660  GOSUB 4000
1670 KLRGA$ = KLRGA$ + JAWAB$
1680  FOR HARI = 1 TO 2
1690  FOR MEAL = 1 TO 3
1700 JAWAB$ = STR$ (NUMREC)
1710 LNGTH = 3
1720  GOSUB 4000
1730 KLRGA$ = KLRGA$ + JAWAB$
1740 JAWAB$ = STR$ (FDINDEX(HARI,MEAL))
1750 LNGTH = 2
```

```
1760  GOSUB 4000
1770 KLRGA$ = KLRGA$ + JAWAB$
1780 NUMREC = NUMREC + FDINDEX(HARI,MEAL)
1790  NEXT MEAL
1800  NEXT HARI
1810  PRINT D$"OPEN KELUARGA,L50,D2"
1820  PRINT D$"READ KELUARGA,R1"
1830  INPUT ZNMBR
1840  PRINT D$"WRITE KELUARGA,R";ZNMBR + 1
1850  PRINT KLRGA$
1860  PRINT D$"WRITE KELUARGA,R1"
1870  PRINT ZNMBR + 1
1880  PRINT D$"CLOSE"
1890  HOME
1900  INPUT "ANDA MAU MASUKKAN KELUARGA LAGI ? (B/T) ";JAWAB$
1910  IF  LEFT$ (JAWAB$,1) = "B" THEN 100
1920  END
2000  PRINT "(  /  /  )";
2010  HTAB (TB + 1)
2015 J$ = ""
2020  FOR LOOP = 1 TO 6
2030  IF LOOP = 3 THEN  HTAB (TB + 4)
2040  IF LOOP = 5 THEN  HTAB (TB + 7)
2050  GET J$
2060  IF J$ = " " AND ((LOOP = 1) OR (LOOP = 3) OR (LOOP = 5)) THEN  PRINT
      J$; : GOTO 2200
4000  IF  LEN (JAWAB$) < LNGTH THEN 4020
4010  RETURN
4020  FOR LOOP = 1 TO LNGTH -  LEN (JAWAB$)
4030 JAWAB$ = " " + JAWAB$
4040  NEXT LOOP
4050  RETURN
5000  PRINT TITLE$(SET)
5010  PRINT
5020  FOR I = 1 TO NOMR(SET)
5030  PRINT I;"-";PROMPT$(OFFSET(SET) + I)
5040  NEXT I
5050  PRINT
5055  INPUT "PILIH YG MANA DARI ATAS ? ";JAWAB
5060  IF JA < 1 OR (JA > NOMR(SET)) THEN 5000
5070 AN$(AN) = AN$(AN) + CODE$(OFFSET(SET) + JAWAB)
5080  RETURN
6000  PRINT "MAKANAN NOMOR ";DISH;" - HARI KE: ";HARI;" MAKAN ";MEAL$(MEAL
      )
```

```
8010  INPUT "CODE MAKANAN ? ";JAWAB
8020  IF JAWAB > 500 THEN 8010
8030 JAWAB$ =  STR$ (JAWAB)
8035  IF  LEN (JAWAB$) = 3 THEN 8070
8040  FOR I = 1 TO 3 -  LEN (JAWAB$)
8050 JAWAB$ = " " + JAWAB$
8060  NEXT I
8070 MAKANAN$(DISH) = JAWAB$
8080  INPUT "BANYAKNYA BAHAN MAKANAN ? (GRAM) ";JAWAB
8090  IF JAWAB > 9999 THEN 8080
8091 JAWAB$ =  STR$ (JAWAB)
8092  IF JAWAB > 999 THEN 8099
8093  FOR I = 1 TO 4 -  LEN (JAWAB$)
8094 JAWAB$ = " " + JAWAB$
8095  NEXT I
8099 MAKANAN$(DISH) = MA$(DI) + JAWAB$
9100  INPUT "ASAL BAHAN ? (HS,B,P,L) ";JAWAB$
9110  IF  NOT (JAWAB$ = "HS" OR (JAWAB$ = "B") OR (JAWAB$ = "P") OR (JAWAB
      $ = "L")) THEN 9100
9115  IF  LEN (JA$) = 2 THEN JAWAB$ =  LEFT$ (JAWAB$,1)
9120 MAKANAN$(DISH) = MA$(DI) + JAWAB$
9150  INPUT "JUMLAH ORANG YANG MEMAKAN ? ";JAWAB
9160  IF JAWAB > 99 THEN 9150
9170 JAWAB$ =  STR$ (JAWAB)
9180  IF  LEN (JAWAB$) = 1 THEN JAWAB$ = " " + JAWAB$
9190 MAKANAN$(DISH) = MA$(DI) + JAWAB$
9200  RETURN
9000  DATA  "HUBUNGAN DENGAN KK"
9010  DATA  8,15
9020  DATA  "KK","1"
9030  DATA  "ISTERI","2"
9040  DATA  "IBU KK","3"
9050  DATA  "BAPAK KK","4"
9060  DATA  "IBU ISTERI KK","5"
9070  DATA  "BAPAK ISTERI KK","6"
9080  DATA  "ADIK KK","7"
9090  DATA  "KAKAK KK","8"
9100  DATA  "ADIK ISTERI KK","9"
9110  DATA  "KAKAK ISTERI KK","0"
9120  DATA  "ANAK","A"
9130  DATA  "MENANTU","B"
9140  DATA  "CUCU","C"
9150  DATA  "PEMBANTU","D"
9160  DATA  "ORANG LAIN","E"
9200  DATA  "PEKERJAAN UTAMA"
9210  DATA  15,8
```

```
9160  DATA  "ORANG LAIN","E"
9200  DATA  "PEKERJAAN UTAMA"
9210  DATA  15,9
9220  DATA  "PROP,AHLI TEK,DAN AHLI YG SEJENIS","1"
9230  DATA  "KEPEMIMPINAN DAN KETATALAKSANAAN","2"
9240  DATA  "ADMIN,TATA USAHA DAN LAIN2 YG SEJENIS","3"
9250  DATA  "PENJUALAN","4"
9260  DATA  "JASA-JASA","5"
9270  DATA  "PETANI","6"
9280  DATA  "PROD DAN SEJENIS DAN OPERATOR ALAT-ALAT                    PENGANG
      KUTAN","7"
9290  DATA  "LAIN-LAIN","8"
9300  DATA  "  "
9310  DATA  22,6
9320  DATA  "HAMIL : 0-3 BULAN","1"
9330  DATA  "HAMIL : 4-6 BULAN","2"
9340  DATA  "HAMIL : 7+ BULAN","3"
9350  DATA  "MENETIKI","4"
9360  DATA  "MENETEK","5"
9370  DATA  "TIDAK SATUPUN","6"
9400  DATA  "KEADAAN KESEHATAN WAKTU DISURVEI"
9410  DATA  29,12
9420  DATA  "SEHAT","1"
9430  DATA  "SAKIT PANAS","2"
9440  DATA  "SAKIT MATA","3"
9450  DATA  "SAKIT GIGI","4"
9460  DATA  "SAKIT KULIT","5"
70  DATA  "SAKIT PERUT","6"
9480  DATA  "SAKIT TELINGA","7"
9490  DATA  "SAKIT MALARIA","8"
9500  DATA  "PUSING","9"
9510  DATA  "KEJANG","0"
9520  DATA  "BATUK PILEK","A"
9530  DATA  "TBC","B"
9540  DATA  "SAKIT LAIN","C"
```