



PD-HAR-525

Eastern Islands Agricultural
Education Project
Report on Short-term Consultancy
FOOD SCIENCE
June 25 - September 23, 1983
Margaret Hard

Report to BKS/WSU/USAID
Eastern Islands Agricultural Education Project in Indonesia

Margaret M. Hard

October 1983

In January, 1983, a coordinated plan was submitted by senior technical advisors, Alberta Hill (Home Economics) and Margaret Hard (Food Science and Human Nutrition). This plan (MMH portion given below) covered an anticipated assignment of six months in Indonesia. Since the actual assignment was for three months (June 25 - September 24) not all the objectives were completely realized. However, activities were carried out for most of the proposed procedures and objectives as indicated by an asterisk. The tentative time schedule was revised and is presented in Table 1. The complete text for the coordinated plan is given in Alberta Hill's final report.

Two aspects of the BKS/WSU/USAID project which are closely allied are presented here. These are: 1) the completion and follow-up of the work of the senior technical adviser in food science and nutrition (Hard), and 2) the in-service education for Home Economics (PKK) and for Food Science and Human Nutrition lecturers.

Objectives listed are built upon previous work done by Alberta Hill and Margaret Hard. Consideration was also given to the original proposal developed by Rector Karim, IKIP, Ujung Pandang, for a home economics development program and to the Food Science Laboratory proposed by UNSRAT. The objectives also take into consideration the work done by Bob Haggerty and Doug Podall and the reports of other technical advisors, particularly Alice Spitzer, Bob Howell and Bob Norton.

Plan for Senior Technical Adviser -- M. Hard

A. The Objectives were to:

1. Explore the possibility of "importing" new plant cultivars suitable for experimentation in the Eastern Islands to improve production, quality and nutritive value of agricultural crops.
- *2. Further explore the availability of in-country resources, national and regional, appropriate to the planning and implementation of teaching, research, extension and non-formal education university programs in human nutrition, food science and technology and clothing; strengthen the resource base by providing some illustrative material and library holdings.
- *3. Continue in-service training of staff to strengthen subject-matter background.
- *4. Provide in-depth assistance with class subject-matter content and with laboratory experience and management; explore with staff the inclusion of other (than laboratory) learning experiences into class content.
- *5. Develop interrelations between the experimental farm(s) and Food Science and Technology programs for teaching, research and extension purposes.
- *6. Assist with the formulation of lecture-note manuals in human nutrition, food science and technology and clothing.
7. Explore and implement methods of working with rural women including implications for teaching, research, extension and non-formal education programs in universities.
- *8. Discuss research planning, methodology and implementation.
- *9. Review with Bob Haggerty, Food Science and Technology activities in 1982-83 and plan with him and appropriate staff and administration activities for 1983-84.
- *10. Assist staff members who have returned from long-term participant programs at WSU to develop teaching, research, extension and non-formal education programs.
11. Visit and provide technical assistance to other (than UNSRAT and IKIP's) BKS institutions as appropriate.
- *12. Explore the initiation of appropriate in-country professional societies.
- *13. Investigate the possibility of using satellite communication as one method of in-service training among BKS institutions.

B. Suggested Procedures were:

1. Spend two to three days enroute to Jakarta at the Asian Vegetable Research and Development Center in Taiwan.
- *2. Spend at least 1 week in Jakarta and Bogor to discuss common interests and availability of resources with appropriate personnel in USAID, Ministry of Agriculture, Ministry for Women, Ministry for Education and Culture, Ministry of Health and Medicine, private agencies, staff members at IPB, University of Indonesia and IKIP, Jakarta.
3. Make local and regional contacts with the above agencies.
- *4. Review 1982-83 activities with Burl Yarberry, Bog Haggerty, Doug Podall, institutional Komisariss; further plan details for implementing stated objectives.
5. Provide in-service training of staff through workshops and individual and small group conferences. The following topics could be included:
 - *a. Human nutrition in the life cycle with implications for teaching, research, extension and non-formal education programs.
 - *b. Food quality evaluation.
 - c. Nutritional status surveillance methods.
 - d. Evaluation of the nutritional value of regional diets.
 - *e. Development and evaluations of acceptable food combinations to improve nutritional intake.
 - *f. Food safety in industry and the home.
 - *g. Social, cultural and economic aspects of family living.
 - *h. Management and assessment of laboratory and other learning experiences.
 - *i. Preparation of teaching materials for university teaching, distance-learning, TV presentation.
 - j. Purchasing and maintenance of equipment.
6. Develop interrelations between the experimental farm(s) and Food Science and Technology programs through:
 - a. Introduction of new plant cultivars and animal types suitable for the fresh market, for processing (canning, drying) and for improvement of nutrition.
 - *b. Evaluation of new plant cultivars and animal types for processing, nutritional value, consumer acceptance.

- *c. Development (with ARH) of efficient, simple, low-cost methods of refrigeration, drying, grinding and irrigation.
- *7. Present research methodology including project planning, funding, progress reports, publication as well as appropriate chemical, biological and statistical methods.
- *8. Assist with the coordinated planning and execution of BKS workshops for personnel in PKK, Food Science and Technology and Human Nutrition.
- *9. Initiate and/or review/revise lecture-note manuals in food science and nutrition and clothing, in both workshop sessions and individual conferences.

The report presented here summarizes a) recommendations and b) activities of the senior technical advisor for Food Science and Technology (MMH).

Names of person contacted are given in Appendix I.

B. ACTIVITIES

I. Pre-assignment

Conferences were held with Dr. Hill to coordinate activities, collect resources and do preliminary planning of in-country training for Home Economics (PKK) staff. Some discussion occurred with other senior technical advisors in regard to possible interrelations of assignments, i.e., food and nutrition with the experimental farm and experimental village projects.

Resource materials - textbooks, lecture notes, journal articles, teaching aids - were assembled in food science and technology, human nutrition, nutrition education, working with rural families, income generation for women, family clothing. Sets of 35 mm slides were purchased or reproduced from available sets at the Instructional Media Services. Titles included the following:

Beef Conformation, Swine Conformation, Poultry and Egg Quality,
Poultry Processing, Microbial Fingerprints, Sanitation in Meat

Table 1. Schedule of Activities for M. M. Hard, Indonesia, July 25-September 24.

Dates	Activities
June 25	Arrived in Jakarta with A. Hill
June 27-30	Conferences in Bogor (IPB) and Jakarta with individuals and appropriate agencies.
July 1	Travel to Ujung Pandang
July 2-6	Conferences with BKS and IKIP Ujung Pandang personnel. Initial planning of Home Economics and Food Safety and Sanitation training programs.
July 7	Travel to Manado
July 8 - August 4	Consultations, in-service staff training at IKIP-Manado and UNSRAT; planning Food Safety and Sanitation Training Program; preparation for PKK training program.
August 5	Travel to Ujung Pandang
August 8-13	PKK Training Program (with A. Hill)
August 15-16	In-service training with PKK staff Ujung Pandang.
August 17	Travel to Manado.
August 18 - September 10	Continued consultation and in-service staff training at IKIP Manado and UNSRAT. Preparation for Food Safety and Sanitation Training Program; ceremonies at IKIP and UNSRAT for presentation of resource materials; planning with Bob Haggerty and D. Sembel.
September 12-16	Food Safety and Sanitation Training Program and preparation/revision of Food Science and Technology Diktats in Bahasa Indonesia (with A. Hill, Bob Haggerty, IKIP and UNSRAT staff, D. Sembel).
September 18	Travel to Ujung Pandang

Table 1. Continued

Dates	Activities
September 19-20	Consultations with BKS personnel, Akil Malla and Abdul Rasjid.
September 21	Travel to Jakarta
September 22	USAID, Jakarta
September 23	Depart Indonesia

Processing Plants, Sanitation for Foodservice Workers (6 sets).
Helping Your Baby Grow (4 sets), Menu Planning for Day Care Centers,
Positive Living in the Senior Years, Clothes for Little People,
Clothing and the Aging Process, Clothing for the Physically
Handicapped.

Lists of resources are presented in Appendices IV, VI and VII.

Bob Haggerty and Dr. Sembel (UNSRAT) were contacted in regard to
program development and needed resources.

A. R. Hard contacted the University of Idaho in regard to solar drying
(Postharvest Institute for Perishables). He found that under a USAID
contract, the University of Idaho could provide experienced technical
assistance teams upon request to developing countries at no cost to the
country or the local AID Mission.

Mr. Hard also visited with Dr. Bill Klontz, College of Fisheries,
University of Idaho and took slides of his controlled-environment fish-
culture tanks as a possible research technique for the Faculty of Fisheries,
UNSRAT. Dr. Klontz provided drawings for construction of the tanks.

M. M. H. and A. R. H. attended the very good orientation to Indonesia
sessions and participated in 6 lessons in Bahasa Indonesia.

II. Indonesia

A. After arrival in Jakarta, several days were spent in visiting with
persons engaged in foods and nutrition programs to learn about on-going
programs in Indonesia, to make contacts with resource personnel for BKS
programs and collect educational materials.

- (1) Ministry of Health Nutrition Research and Development Center Bogor,
Dr. Darwin Karyadi, Director; Dr. Karyadi brought us about-to-date

on current projects in progress at the center. The evaluation of the family nutrition improvement project in Sulawesi Selatan is nearing completion. He also provided information in regard to the Asian Nutrition Congress in Thailand in October. As a result, arrangements were made for Akil Malla (IKIP Ujung Pandang) to attend the Congress.

- (2) Food Technology Development Center and the Department of Food Technology, IPB, Bogor: this was a follow-up to contacts made by M. M. H. in 1981-82, and to a visit in May 1983 made by Bog Haggerty and Dr. D. Sembel. Arrangements were confirmed for Dr. Dedi Fardiaz and Dr. Srikandi Fardiaz to participate in the Food Safety and Sanitation Training Program in Manado. Dates were set pending approval by UNSRAT for September 12-16. Dr. Wirarno discussed the status of graduate students from UNSRAT staff attending IPB in Food Science and Technology, the initiation of a teaching media center at IPB whose services will be available to BKS insititutions and research studies in the Center.
- (3) Center for Rural Sociology Research, IPB: Dr. Pudjiwati Sajogyo informed us about their research on community nutrition and the interrelations with household economy and the role of women.
- (4) Bulog Library, Jakarta: a new Food Science and Technology and Agriculture Library; the holdings are international, 10% are in Bahasa Indonesia.
- (5) USAID: Conferences were held with Dr. Clayton Seeley, Walter Tappan and Ken Prussner, Division of Agriculture; Julie Klement, Division of Nutrition. Information was provided about procedures for requesting the PIP, University of Idaho short-course on the

"Solar Dryer with Supplemental Heat Source." Ms. Klement provided nutrition policy statements and discussed the operational problems in the national family nutrition improvement program.

(6) Yayan Indonesia Seyaatera, Dr. Lukas Hendrata, Director: Obtained educational materials and manuals used in the family nutrition improvement program.

(7) Ministry of Agriculture Extension Service, Ms. Farida Macharam: The main objective of this service is to improve family nutrition and food selection through food production. Names of the project leaders in Sulawesi Selatan and Sulawesi Utara were provided.

B. UNSRAT

(a) Food Safety and Sanitation Training Program: This in-country training program was based on a proposal submitted in 1982 by M. M. H. A joint UNSRAT-IKIP Manado organizing committee made the local arrangements. The meetings were held on the UNSRAT campus. Consultants included Dr. Srikandi Fardiaz (IPB), Dr. Alberta Hill, Bob Haggerty and Margaret M. Hard (WSU). Staff members from IKIP and UNSRAT also presented parts of the program. A copy of the proceedings is on file in Dr. M. Waananen's office and the BKS-T office in Ujung Pandang. Copies were distributed to participants, BKS-T rectors and USAID.

(b) Prepared a paper on "The Role of Research in Technology, Innovation and Development," to be presented at a seminar in October (on file at UNSRAT).

(c) Discussed the potential for research in Food Science and Technology with Dr. L. Sondakh, Director of the Research Center, Dr. Waworoentoe, Head of the Division of Food Science and Technology, UNSRAT Research Center, D. Sembel and Bob Haggerty.

(d) Made arrangements with the Postharvest Institute for Perishables (PIP), University of Idaho to conduct a short-course on the construction and use of a solar dryer with supplementary heat (Appendix II).

(e) Prepared a paper on "Community Nutrition: A Perspective for UNSRAT," as the basis for developing a Community Nutrition Program at UNSRAT (Appendix III). Discussed this possibility with Dean Wowar, Dean, Faculty of Medicine and with Dr. Pangalila.

(f) Discussed the relation of the Experimental Farm Program to Food Service and Technology instructional, research and community-service activities with Rector Waworoentoe, Dr. Pangalila, Dr. D. Sembel, Dr. L. Sondakh and Bob Haggerty.

(g) Presented resource material in Food Science, Engineering, Animal Husbandry, Fisheries, Community Nutrition to UNSRAT at a short ceremony, September 9, 1983. A listing is given in Appendix IV.

(h) Discussed potential research and community-service projects as well as teaching assignments with Henny Pakasi, a long-term training participant at WSU. Ms. Pakasi earned the MS degree in poultry production and nutrition.

(i) See Appendix V for written interim report.

C. IKIP Manado

(a) Weekly meetings were held with the PKK staff in consultation and discussion. Following is a list of topics covered in these meetings:

- (1) "Save the Children."
- (2) "Help Your Child Grow."
- (3) "Nutrition of Adolescents, Adults and the Elderly" (a complete set of lecture notes).
- (4) Nutrient content of typical Minahasa foods.
- (5) Food quality evaluation.
- (6) Experimental design as a laboratory technique.
- (7) Management of a foods laboratory.

- (8) PKK research - a detailed course outline.
- (9) Community-service activities in PKK.
- (10) Child care and development (given by Alberta Hill).
- (11) Developing learning experiences and evaluation methods (Alberta Hill).

(b) Prepared the PKK staff for participation in two in-country training programs, i.e., PKK training at Ujung Pandang (Aug. 8-13) and Food Safety and Sanitation, Manado (Sept. 12-16).

(c) Resource materials for PKK and Food Science were presented in a brief ceremony, September 10, 1983 (Appendix VI).

(d) PKK facilities and equipment were reviewed.

(e) See Appendix VI for written interim report.

D. IKIP - Ujung Pandang

(a) PKK in-country training program: assisted with the planning and presented the subject-matter content in clothing. A copy of the proceedings is on file in Dr. M. Waananen's office and the BKS-T office in Ujung Pandang. Copies were distributed to participants and BKS-T Rectors and USAID.

(b) Presented a seminar to PKK staff on Management of a Foods Laboratory (with A. Hill).

(c) Discussed potential research and community service projects with Akil Malla (MS in Nutrition, WSU) and Abdul Rasjid (MS, Food Science, WSU).

(d) Presented resource materials for PKK, Human Nutrition and Food Science (Appendix VII).

(e) See Appendix VII for written interim report.

E. BKS-T

(a) In-country PKK Training Program, August 8-13, 1983, Ujung Pandang: assisted with the general planning; gave the subject-matter lectures in

clothing; discussed clothing learning experiences including examples of audio-visual material, field trips and laboratory sessions; presented principles of laboratory management and evaluation techniques; "brainstormed" on conditions in Indonesian society which have an effect on families and individuals and how these affect curriculum development.

(b) In-country Training Program in Food Safety and Sanitation: assisted with the detailed planning; presented a paper on "Problems of Water Pollution in Developing Countries," with Alberta Hill, led the sessions dealing with food safety and sanitation in the home and food service management (See Proceedings of the Food Safety and Sanitation Training Program on file in Dr. Wanaanen's office).

(c) Diktat Preparation/Revision: this was a continuation of the BKS-T group meeting held in Manado, February 8-10, 1982. Outlines developed at that time formed the basis of course lecture notes used in the universities in the interim. Participants in (b) above coordinated/revised/edited these lecture notes into Diktats in Food Technology, Nutrition, Quality Control, Food Chemistry in Bahasa Indonesia to be tested in classes in 8 BKS-T universities. The proceedings of (b) became the Diktat in Food Microbiology. Similar Diktats were written in Human Nutrition, Family Food Preparation and Management Food Chemistry, Food Technology, Institution (foodservice), Management and Food Hygiene to be tested in the two IKIP's.

The Diktats will be tested by appropriate lecturers in the fall or spring semester, 1983-84, depending on when the class is taught. A common form, developed by Alberta Hill will be used as the evaluation tool.

The Food Science and Human Nutrition Diktats are an excellent example of the networking systems operating within BKS-T.

(d) With Associate Technical Advisor Bob Haggerty prepared a plan of work for 1983-84 (Appendix VIII).

(e) Worked with Alice Spitzer on the Library purchase list for Home Economics, Food Science and Technology and Human Nutrition books.

A. RECOMMENDATIONS

I. BKS-WSU-USAID

(a) Strong interrelationships should be developed among the BKS Experimental Farm and Experimental Village projects and the KKN, non-formal education, Food Science and Technology and Community Nutrition programs in the universities. Crops and animals produced on experimental farms or villages can act as demonstrations for KKN, non-formal education programs and formal education classes; they can be the source of new nutritionally-improved products to assist in preventing undernutrition among rural low-income families; and can provide excellent controlled raw materials for processing, food quality, food chemistry, food safety teaching and research food science and technology activities.

(b) Research results must be effectively disseminated through community-service and non-formal education to farmers and families as well as industries. Research is needed to develop innovative communication programs. In the meantime, a BKS training program on working with rural people would stimulate and encourage community-service/extension activities.

(c) As the long-term BKS-T participants at WSU return to their respective institutions, their training and expertise can enhance the quality of instruction, research, non-formal education and community-service programs. They should be encouraged to initiate innovative programs in their Faculties and among BKS-T institutions via the Satellite telecommunications project.

(d) Networking activities could be extended to include BKS group meetings by subject areas on research needs, project development,

methodology, funding and publication. Such meetings could form the basis for regional professional organizations/societies.

(e) Short-term training of staff in field crop and animal research methods at WSU, the Asian Vegetable Research and Development Center, the Phillipines, Malaysia, the University of Pacific or a combination of locations would assist in the introduction of new cultivars and improved breeds into Indonesia and would greatly assist the developing experimental farm/village projects.

(f) Consideration should be given to a repeat short-course on the "Solar Dryer with Supplemental Heat Source" at a second BKS-T institution. If the University of Idaho is not available, staff from UNSRAT could assist Bob Haggerty.

(g) High priority should be placed on visitations and consultations by Bob Haggerty to other BKS-T universities.

(h) The Manuals in Bahasa Indonesia for Food Science and Technology in the universities and for Foods and Human Nutrition at the IKIP's (PKK) should be revised, tested and edited in the very near future. This has become an excellent example of networking among the BKS-T members.

(i) Manuals in Bahasa Indonesia for PKK subject areas should be initiated using the proceedings of the in-country PKK training program as a basis.

II. UNSRAT

(a) The Food Science Satellite telecommunications class should be clarified and developed in the near future. The manuals could act as a basis. UNSRAT should take the initiative and leadership.

(b) The resource materials in the Food Science and Technology Departmental Library should be cataloged.

(c) A Community Nutrition Program or an Applied Nutrition Course should be initiated to serve North and Central Sulawesi. This program could be based in the Faculty of Medicine and be cooperative with the Faculty of Agriculture and the Food Science and Technology Program.

(d) The interrelationships among the Experimental Farm Project, the Food Science and Technology Program and the Research Center should be encouraged and strengthened.

(e) Bob Haggerty's expertise could be effectively utilized in designing and arranging the new food science laboratory and in planning laboratory experiences for the students.

III. IKIP - Manado

(a) The resource material presented at IKIP by BKS-WSU should be cataloged.

(b) Future IKIP budget considerations should include new facilities and equipment for the PKK department.

(c) PKK can give leadership in providing non-formal education particularly for low-income rural women. To facilitate this PKK responsibility, close cooperation and working activities should be developed between the PKK staff and the staff of non-formal education, KKN and the Experimental Village Project.

(d) A systematic program of advanced study should be initiated for PKK staff.

(e) Time should be allowed in the PKK working schedules to allow for research activities. Suggestions for such activities have been discussed with the staff.

IV. IKIP - Ujung Pandang

(a) The resources presented to IKIP-UP by BKS-WSU should be cataloged.

(b) The long-term BKS participants who earned a MS in food science and/or human nutrition at WSU should be encouraged to develop innovative programs in instruction, research and non-formal education. In cooperation with appropriate PKK staff they can greatly enhance the educational component of the Experimental Village Project. Contacts and cooperation with provincial and national Ministries of Health and Agriculture are important to the effective performance of their responsibilities.

(c) Attendance of staff at regional, national and international professional meetings should be vigorously pursued.

(d) A systematic program of advanced study should be implemented for PKK staff.

APPENDIX I
PERSONS CONTACTED

Technical Assistance Input

Dr. Darwin Karyadi
Director Nutrition, Research and Development Center
Ministry of Health
Bogor

Dr. F. G. Winarno
Director Food Technology Development Center
Bogor Agricultural University (IPB)
Bogor

Dr. Pudjiwati Sajogyo
Center for Rural Sociological Research
IPB, Bogor

Dr. Dedi Fardiaz
Department of Food Science and Technology
IPB
Bogor

Dr. Srikandi Fardiaz
Department of Food Science and Technology
IPB
Bogor

Librarian
Bulog Library
Jakarta

Ms. Farida Macharam
AAETE, Ministry of Agriculture
Jon Ragunan No. 15
Pasar Minggu
Jakarta

Dr. E. Clayton Seeley
Educational and Human Resources Division
USAID
Jakarta

Walter Tappan
Chief, Agriculture Development
USAID
Jakarta

APPENDIX I. Continued

Ken Prussner
Assistant Chief, Agriculture Development
USAID
Jakarta

Sam Baskin
Science and Technology Office
USAID
Jakarta

Julie Klement
Nutritionist
USAID
Jakarta

Molly Gingerich
Nutrition Division
USAID
Jakarta

Ada Wenas
Women in Development Programs
USAID
Jakarta

Dr. Lukas Hendrata
Director, Yayan Indonesia Seyaatera
Jakarta

Robert Wierbach
Project CONCERN
Manado

Ir. M. Sagala
Penelitian Dan Pengenibangan Industri
Manado

IKIP - Ujung Pandang

Rector P. Parawansa
BKS Komisaris Dr. Anwar Pasau
Secretary, BKS, Nurdiah Maning
Dean Ambo E. Abdullah, FIP
Dean M. Yunus, Faculty of Technology and Skills
PKK staff, Ms. Tuna, Chairman
Asfah Rahman, Interpreter
Abdul Rajab Joharni, Interpreter
Akil Malla, Interpreter
Abdul Rasjid

APPENDIX I. Continued

UNHAS

Rector Hasan Walinono
BKS Secretary, Basri Hasanuddin

UNSRAT

Rector W. J. Waworoentoe
Vice Rector, P. E. A. Pangalila
Assistant to the Vice Rector, Juul Rampas
BKS Komisaris, Dr. D. Sembel
Associate Technical Advisor, Food Science and Technology, Bob Haggerty
Dean of the Faculty of Medicine, Dr. Wowor
Director Research Center, Dr. L. Sondakh
Dean Timboelang, Faculty of Engineering
Mrs. Arini Waworentoe, Chemistry
Ms. Wohongan, Social Economics
Ms. Nenny Soekarclota, Food Science and Technology
Ir. S. Berhimpon
Ir. Ny H. Pakasi
Ir. V. Rantung
Ir. B. Malingkas
Dr. B. Dundu
Dr. Ny Waworoentoe
Ir. D. D. Malik

IKIP - Manado

Rector A. E. Sinolungan
Assistant Rector, W. Sendick
BKS Komisaris, H. Wagey
Dean S. Pamantung, FIP
Dean Juul Tirajoh, Faculty of Arts and Letters
Ms. Roggi, Dean Faculty of Arts and Letters
Dean Ben Demassabu, Faculty of Sciences
Dra. J. Pangkey, Chairman PKK Staff
Dra. D. Kalangi, Secretary
Dra. Adel Doda, Interpreter
Drs. Gustaaf Lasut
PKK staff

APPENDIX II
CORRESPONDENCE IN REGARD TO A WORKSHOP ON THE CONSTRUCTION
AND USE OF A SOLAR DRIER WITH SUPPLEMENTARY HEAT



DEPARTEMEN PENDIDIKAN DAN KEBUDAYAAN
UNIVERSITAS SAM RATULANGI

Kampus UNSRAT Bahu Manado Telp. 3586, 3786, Telex 74131

Letter No.: 1008/PT15/B4/G.83
Subject : Invitation.

July 19, 1983

Dr. Robert E. Julian
Field Director
Postharvest Institute for Perishables
College of Agriculture
University of Idaho
Moscow, Idaho 83843 USA.

Dear Dr. Julian,

We have heard about your USAID project "Postharvest Institute for Perishables" from Arthur R. Mard and Margaret M. Mard who are acting as consultants in Food Science and Technology at the University of Sam Ratulangi Manado Indonesia. Their service is one component of a USAID-Washington State University project.

We understand that PIP will provide an experienced technical assistance team upon request to developing countries at no cost to the host country or the local USAID Mission.

On behalf of the University of Sam Ratulangi (UNSRAT) at Manado, North Sulawesi, Indonesia and the Consortium of Eastern Islands Universities I invite you to present a short course on the construction and use of the solar-combustion drier which you have designed and constructed. We hope the technical team include an agricultural engineer and food technologist and provide up to 20 person-days of assistance.

It would.....



DEPARTEMEN PENDIDIKAN DAN KEBUDAYAAN
UNIVERSITAS SAM RATULANGI

Kampus UNSRAT Bahu Manado Telp. 3586, 3786, Telex 74131

- 2 -

It would be advantageous to have your visit coincide with the Hards' tenure at UNSRAT. Therefore we suggest a starting date of September 19 for the short course.

We understand that you will clear this proposal with USAID-Jakarta. Kenneth A. Prussner is the new Agricultural Development officer, USAID-Jakarta.

We are looking forward to your visit and short course at the University of Sam Ratulangi.

Sincerely,

W.J. Laworoentoe.
Rector, Unsrat.

cc. Burl Tarberry
Dasri Hasanuddin
Clayton Seeley
Kenneth Prussman
J.L. Polenewon
Daantje Sembel
Robert Laggerty ✓
Margaret Hard
P.E.A. Pangalila



Postharvest Institute for Perishables

Instituto para el Estudio de Pérdidas Post-cosecha en los Cultivos Perecederos
Institut Pour l'Etude des Pertes Post-récolte de Cultures Périssables

August 3, 1983

Arthur R. Hard
USAID-WSU Project
C/O Bob Haggerty
Kotak Pos 182
Kantor Pos Pusat
Manado
Sulawesi, Utara
INDONESIA

Dear Art:

We were pleased to receive the request letter from the Dr. Waworoentoe, Rector of UNSRAT, for the "Solar Dryer with Supplemental Heat Source" short course that is offered by the Postharvest Institute for Perishables. As you know, our team is presently in the Philippines completing a two-month course and doing some basic research on the dried foods. The team members are Marilyn Swanson and Ken Hoyt. To date, the Philippines course has been going extremely well, and we feel that the solar dryer program will be an excellent supplement for appropriate technology for developing countries. An engineer and a food technologist would be able to put on this course for construction and use of a solar dryer. Our major problem if we were to meet the September 19 date suggested by Dr. Waworoentoe, is the insufficient lead-time for getting manuals prepared, etc.

We would like to propose that the course be scheduled for October 10-22, 1983, with the team of an engineer and a food technologist arriving approximately October 5th. This is necessary for them to procure materials for constructing the dryer. The above date would be about the earliest that we could be prepared.

Tentatively we have selected Dr. Larry Branen as the food technologist and Dr. Louis Riesenber from the Agricultural Engineering Department. Both are extremely qualified people.

We would appreciate knowing what level of training is needed. Our suggestion is that it should include university staff, possibly from the engineering and food technology departments, and the training of extension workers at the same time. This would put more emphasis on outreach possibilities.

University of Idaho

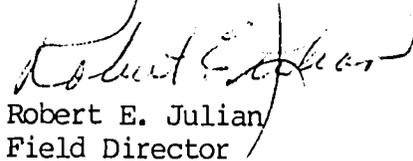
Postharvest Institute for Perishables
College of Agriculture
Moscow, Idaho U.S.A. 83843
Phone (208) 885-6791

Arthur A. Hard
August 3, 1983
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We definitely would rather be putting this on while you and Margaret are still there, but because of the time factor it's almost impossible. You can help us immensely by setting up some of the logistics, making it much it easier for us when we do arrive. I will be sending a form for you to complete regarding logistics, i.e. number of people, where, what level of training, materials availability, etc. Your help in setting this up will certainly be appreciated.

We will be looking forward to visiting with you on your return.

Sincerely,



Robert E. Julian
Field Director

REJ/gw/1931B



BADAN KERJA SAMA PERGURUAN TINGGI NEGERI
INDONESIA BAGIAN TIMUR
(BKS PTN INTIM)
UNIVERSITAS SAM RATULANGI
KAMPUS UNSRAT BAHU MANADO, TELP. : 3886 - TELEX : 74131

OCT 23 1983

OCT 23 1983

August 24, 1983

Dr. Robert E. Julian
Field Director
Postharvest Institute for Perishables
216 Morrill Hall
University of Idaho
Moscow, Idaho, 83843
U S A

Hand file

Dear Dr. Julian:

We are delighted that you can send a team to the University of Sam Ratulangi to conduct the "Solar Dryer with Supplemental Heat Source" short course.

Rector Kaworoentoe will be in Canada until September 19, so we will answer the questions you raised in your August 3 letter.

The suggested dates, October 10 - 22, are quite acceptable. Since October 5 is a national holiday, we recommend that the team members arrive in Manado either October 4 or October 6.

The training is needed at the university faculty level. Staff will be invited from the colleges of Engineering, Fisheries, Agriculture, Animal Husbandry, the Department of Food Technology and the staff Department of Industry Institute for Research and Development. KKN (Student community internship program) and non-formal education staff will be included. There may be as many as 30 people in attendance. Most will be from UNSRAT with some from the teacher-training university (IKIP) which is near-by. Appropriate products would be coconuts, bananas, soybeans, corn, rice, cassava, sweet potatoes, cloves, fish and pork.

We are sorry that we will not be in Indonesia in October. However, the associate technical adviser for Food Science and Technology is Bob Magarty from WSU. He is on a long-term assignment and will be here at that time.

Dr. Joantje Sembel is the contact person from UNSRAT for our WSU-US AID project. We suggest you contact him directly with any further correspondence. He and Bob Magarty can assist you with the language problem with assembling materials and other arrangements for the short course.

We will visit with you when we return to Pullman.



BADAN KERJA SAMA PERGURUAN TINGGI NEGERI
INDONESIA BAGIAN TIMUR
(BKS PTN INTIM)
UNIVERSITAS SAM RATULANGI
KAMPUS UNSRAT BAHU MANADO, TELP. : 3886 - TELEX : 74131

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Many thanks.

Sincerely,

Art Hard

CC: Rector Waworoentoe
Bob Haggerty
Dan Sezbel
Margaret Hard
Burl Yarberry
P.L.A. Pangalila

APPENDIX III

COMMUNITY NUTRITION: A PERSPECTIVE FOR UNSRAT

Margaret M. Hard

I. Introduction

Human nutrition has been defined in several ways, all of them similar in final meaning. Human nutrition is:

1. The study of man's food in relation to health;
2. The study of man's internal environment and the internal and external factors which affect it.
3. That science which deals with the identify and function of these substances in food and water required by the organism for growth, maintenance and reproduction; with the foodstuffs which enable the organism to meet these; and with factors involved in the consumption and utilization of such foodstuffs.

"Professional nutritionists" are trained to do laboratory studies, i.e., nutritional requirements, nutrient balance, nutrient metabolism, clinical trials, and give technical assistance to research and education. "Clinical nutritionists" are qualified to handle nutritional deficiency diseases. A "community nutritionist is an individual with certain specialized skills in nutritional and health sciences, set within a background that emphasizes adaptability to different economic, social and institutional situations. Such an individual helps in identifying community-level nutritional needs, designing appropriate programs of improvement (with emphasis on prevention rather than therapeutics) developing resources which can feasibly be mobilized, implementing approved programs and evaluating the effectiveness" (Workshop on Curriculum Development for Community Nutrition Training, February 10-21, 1975, East-West Center, Honolulu).

Several categories of community nutritionists have been developed:

1. Community-level workers, most of whom could be employed in agriculture and home economics extension, family planning, maternal and child health, community development. The effectiveness of these workers could be increased by a thorough training in practical nutrition and communication skills.

2. Highly trained professional nutritionists who are capable of leading in the development and implementation of community-oriented research and education activities and in providing technical support for community-level workers.

3. Associated professionals in the medical, dental, agricultural and educational fields who generally have little formal training in nutrition, but their services would be more effective if they had better understanding of the nutritional basis of many of the problems they meet.

4. Policy-making and administrative personnel in health, agriculture, community development and educational work who also would be more effective if they were prepared to make policy decisions and support field activities in the realities and practicalities of nutrition.

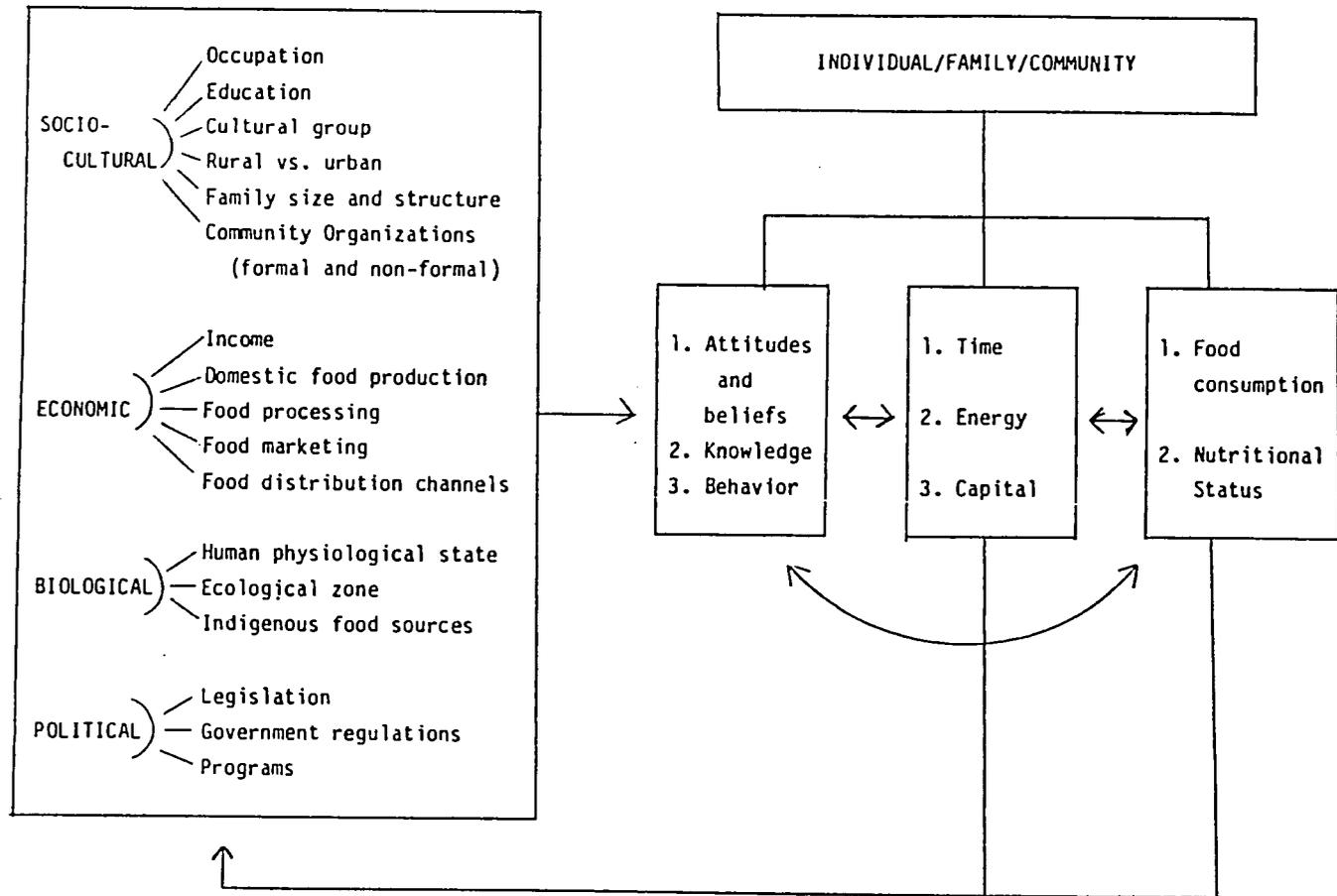
Faculties of Medicine are interested in community-nutrition training to equip the physician with knowledge of the problems of nutrition in Indonesia and with the ability to recognize these problems, assess the nutritional problems of a community and solve problems as part of a health team. The University of Indonesia has such an approach to produce public-health minded and community medicine oriented general practitioners.

Faculties of Agriculture are interested in nutrition from the standpoint of producing an adequate food supply.

Food scientists are called upon to handle the proper processing and storage of food and to develop new food products of high nutritional value. A framework incorporating the interrelations involved in community nutrition is given in Figure 1.

Figure 1

Figure 1.
Framework for Community Nutrition



II. Training a Community Nutritionist

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

In the past, nutrition has focused primarily on the basic principles of biochemistry and physiology. As the concept of preventive health has developed a demand for professional persons who can apply nutrition knowledge as a component of community health programs has also grown. In addition to the basic knowledge of nutrition these persons are required to have a sound understanding of economic-sociocultural aspects of food practices. The role of community nutrition personnel is essentially to induce human change. Therefore, knowledge of behavioral science and education and communication skills is required.

A job description and list of general duties for a professional community nutritionist in Indonesia is presented in Table 1. Similar information for a community nutritionist in Thailand is given in Table 2 (Proceedings of Workshop on Curriculum Development for Community Nutrition Training, 1975, East-West Center, Honolulu).

An outline of principal course requirements for training community nutritionists at the university level is as follows:

1. Basic sciences: 1/3 of total requirement, includes chemistry, physiology, microbiology, biology, ecology relevant to food and health.
2. Nutrition and health sciences: 1/3 of total requirement; includes food science and nutrition, human pathology, epidemiology, public health.
3. Social sciences: 1/3 of total requirement; includes sociology, behavioral science, education economics, agricultural economics, management.

TABLE 1.

PROFESSIONAL COMMUNITY NUTRITIONISTS--INDONESIA

PARTICIPANTS: Ignatius Tarwotjo
 Soemilah Sastroamidjojo
 Suaspendi Notodihardjo

TOPIC: Training guidelines for a professional community nutritionist

I. JOB DESCRIPTION

A professional community nutritionist is a non-medical person whose job is to assist the health officer (or government administrator or voluntary agency) at a provincial/subprovincial level or referral hospital to carry out the health program, particularly the nutrition component.

II. LIST OF GENERAL DUTIES

JOB: Professional community nutritionist

DUTIES	FREQUENCY OF PERFORMANCE	IMPORTANCE
1. To collect data on nutritional deficiency and related diseases	quarterly	critical importance

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TASK	FREQUENCY OF PERFORMANCE	IMPORTANCE	LEARNING DIFFICULTY
1.4 Carry out clinical assessment of nutritional status	incidentally	critical importance	moderate
1.5 Carry out simple biochemical and other laboratory assessments of nutritional status	incidentally	moderate importance	moderate

IV. TASK DETAILING SHEET

JOB: Professional community nutritionist
 DUTY: Collect data on nutritional deficiency and other related diseases
 TASK: Conduct anthropometric assessment of nutritional status of children under five

STEPS IN PERFORMING THE TASK	TYPE OF PERFORMANCE	LEARNING DIFFICULTY
1.2.1 Determine accurate age of children under five	comprehensive	easy
1.2.2 Be able to measure weight, height, arm-circumference and skinfold properly	comprehensive	easy
1.2.3 Process and analyze the data	comprehensive	moderately difficult
1.2.4 Interpret anthropometric data against standard	comprehensive	moderately difficult
1.2.5 Present data appropriately	comprehensive and psychomotor	moderately difficult

V. OBJECTIVES

1. Be able to measure weight properly.
2. Be able to measure height properly.
3. Be able to measure arm circumference properly.
4. Be able to measure skinfold properly.

TABLE 1. (continued)

VI. LEARNING ACTIVITIES

OBJECTIVE	INFORMATION AND DIRECTION FOR TRAINER	ACTION FOR TRAINEES	MATERIALS NECESSARY
Student will be able to measure weight.	1. Explains the importance of measuring weight accurately.	1. Listens and takes notes.	Balance scales
	2. Illustrates various types of scales.	2. Looks at pictures and actual scales. Takes notes.	Chalkboard Pictures
	3. Demonstrates proper way to read weight measurement.	3. Practices weighing an object over and over and writes down the readings.	Chart
	4. Explains the importance of periodic checks of scale's accuracy.	4. Listens and takes notes.	Object for weighing
	5. Demonstrates procedure of weighing individuals of different age groups.	5. Practices weighing various subjects with different scales.	

VII. EVALUATION

1. Responses to questions, oral/written by indicating examples.
2. Describe various types of scales.
3. Indicate consistency of several readings of weight.
4. Indicates proper method of weighing different subjects.

TABLE 2. (continued)

COMMUNITY NUTRITIONIST-THAILAND

PARTICIPANT: Anothai Jatanasen

TOPIC: Training of a community nutritionist

I. JOB DESCRIPTION

A community nutritionist is a member of a provincial health team who is responsible for a nutrition program as a component of a total health program. He is under the supervision of a provincial health officer, but has access to technical nutrition support at the ministry level. He is employed as a provincial nutritionist, a nutritionist of the Health Ministry, or a comprehensive health worker. He has a three-year training and one year of experience in a related health field.

II. LIST OF GENERAL DUTIES

JOB: Community nutritionist

DUTIES	FREQUENCY OF PERFORMANCE	IMPORTANCE
1. Collects information on nutrition problems in relation to the health problems of an individual or group	periodic (provincial)	1
	routine (district)	1
2. Analyzes and interprets information obtained	occasionally (provincial)	1
	frequently (district)	1
3. Conducts and monitors specific activities to correct nutrition problems	routine (district)	1
4. Educates people on prevention of malnutrition and promotion of good health	frequently (provincial)	1
	frequently (district)	1
5. Provides counselling on nutrition education activities to be carried out by other health personnel	frequently (district)	1
6. Trains and supervises village health volunteers in the nutrition program	frequently (district)	1
7. Trains auxiliaries or aides working in programs relating to health and nutrition	occasionally	2

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TABLE 2. (continued)

III. TASK LISTING SHEET

JOB: Community nutritionist

DUTY: Collection of information on nutrition problems

TASK	FREQUENCY OF PERFORMANCE	IMPORTANCE	LEARNING DIFFICULTY
<u>At the provincial level:</u>			
1.1 Collection of data for processing:			
- morbidity/mortality	monthly	2	moderate
- growth and development	monthly	1	easy
- food consumption	periodic	2	moderate
1.2 Performing nutritional assessment	routine	1	moderate
1.3 Gather information for community diagnosis on needs, organization and resources	depends on the setting	2	difficult
1.4 Recognize personal health and environmental health	frequently	1	moderate
<u>At the district level:</u>			
1.5 Identify the nutritional status of an individual or a family or group	routine	1	moderate

IV. TASK DETAILING SHEET

JOB: Community nutritionist

DUTY: Collection of information on nutrition problems

TASK: Identify the nutritional status of an individual or family or group

STEPS IN PERFORMING THE TASK	TYPE OF PERFORMANCE	LEARNING DIFFICULTY
1.5.1 Observe food resources (to judge availability)	recall	moderate
1.5.2 Interview or question on family food habits (to know cause, severity)	discrimination	difficult
1.5.3 Record food intake to determine if requirement is a must	recall comprehension	easy
1.5.4 Give simple physical examination	recall	moderate
1.5.5 Take simple anthropometric measurement of growth	recall	easy
1.5.6 Construct questionnaires to be used for interview and observation		moderate
1.5.7 Make household visits for interview and observation		moderate
1.5.8 Evaluate results or findings with requirements or selected standards		moderate

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TABLE 2. (continued)

V. OBJECTIVES

1. Analyze and interpret the collected data.
2. Know the methods in nutrition survey and apply them correctly.
3. Illustrate the types of data necessary for nutrition assessment
4. Identify the nutritional status of an individual or a group of persons.
5. Recognize the relationship of factors affecting nutritional status of a person.

VI. LEARNING ACTIVITIES--on next page

VII. EVALUATION

1. Example of tests to be made.
 - a. Students can make correct associations of certain signs with specific deficiency diseases; can give correct answer after seeing pictures of symptoms.
 - b. Students report errors encountered in making food consumption studies and anthropometric measurements.
2. Case study--student completes a nutritional status study of a person and makes a report identifying characteristic nutrition problems.

VI. LEARNING ACTIVITIES

TABLE 2. (continued)

OBJECTIVES	INFORMATION AND DIRECTION FOR TRAINER	ACTION FOR TRAINEES	MATERIALS NECESSARY
1. Conduct food consumption study.	1. Provides record sheets of food intake.	1. Practice preparation of a meal.	Dietetic scale and measuring cups; food record; data sheet
2. Conduct physical exam.	2. Demonstrates equipment to be used for measuring foods, dietetic scales (household measuring cups).	2. Measure ingredients and keep records of description and use of foods.	Questionnaire form
3. Conduct anthropometric measurements.	3. Discusses varieties of foods in different forms and quantities to be recognized by students.	3. Interview and record each others' daily food intake.	Food consumption table
4. Conduct community and health studies.	4. Takes students out in the field and lets students make a combined family food consumption report.	4. Observe foods available in community markets.	Food items
	5. Describes signs and symptoms associated with deficiency diseases.	5. Visit family for an interview and note food intake, resources.	Criteria sheet of signs and symptoms of deficiency diseases
	6. Gives demonstration of simple physical examination.	6. Observe and examine description of diseases.	Physical exam form
	7. Demonstrates weighing and measuring using students as subjects.	7. Practice exams and measurement techniques on schoolchildren	Slides of deficiency signs
	8. Takes students out to a school to practice on school students.	8. Discuss findings and evaluate results.	Slides or films on nutrition assessment method
	9. Arranges visit to a community.	9. Conduct a KAP interview of a family in the community.	Growth chart
			Questionnaire forms

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Direct experience in working with multidisciplinary teams in community programs should be emphasized. The work experience could consist of participants in nutrition intervention or epidemiological programs, studies of nutritional status, food and dietary consumption, food acceptance and food habits, anthropometric measurements, or nutrition education activities.

Special courses in "Sociocultural and Economic Influences on Family Food Behavior" and in "Community Nutrition" are offered at IPB in the Department of Community Nutrition and Family Resources. Outlines of these courses are attached (Attachments I and II). Such courses are very practical in a community nutrition training program. IPB offers both S_1 and S_2 degrees. The S_2 curriculum is given in Attachment III.

"Nutrition in the Human Life Cycle" is another important class offering (Attachment IV). At the Medical School, University of Indonesia, nutrition is taught in 5 of the 6 years of medical training. Included are classes in basic nutrition, food science, clinical nutrition, dietetics, applied nutrition, nutrition education and home economics. During the fifth and sixth years, the students receive practical experience through a clerkship which is offered cooperatively by the Departments of Nutrition, Public Health and Child Health, Obstetrics, Internal Medicine, and Radiology. The students are assigned to assess the health and nutritional status of a rural-urban and a rural community.

At the graduate level, the University of Indonesia offers a "Regional Graduate Applied Nutrition Course." The program gives participants an understanding of the complex nature of food and nutrition problem and the necessity of an interdisciplinary approach. Since the objective of the course is to train workers to assume responsibility for foods and nutrition programs in their own regions or countries, it is open to workers in medicine,

agriculture, education and other disciplines who have a S_1 degree plus practical experience in nutrition.

In recent years, Indonesia and other developing countries have tried to meet the need of combating malnutrition by training field workers in community nutrition. The training of community nutrition workers in Indonesia's family nutrition improvement program is an example. An evaluation of this training program stresses the need for hands-on experience, a core of technical information and skills and interpersonal skills in communication and motivation. An outline of a program to provide nutrition-oriented training for health personnel at the community level in the Republic of China is given in Attachment V. It is pointed out that nutrition is not only the concern of health authorities. Cooperation with other agencies is essential to prevent wasteful overlap.

The current concept of nutrition training and teaching is that it should be problem-oriented. Nutrition problems can be observed in rural and urban areas by surveys, in hospitals and in health centers. The training of field workers could be accomplished as a community-service activity from a university or as part of the job of a university-trained community nutritionist.

Another group requiring training is the volunteer workers in community nutrition programs. This training should be kept relatively simple: demonstrations on how to prepare and distribute food, sanitation techniques and learning the nutritional needs of specific groups, i.e., playschool children, and how to meet those needs, how to develop and use teaching aids, as well as simple techniques on how to weigh and measure a child. Again, this type of training could be performed by a community-nutritionist or as a community-service activity from the university.

III. Assessment of Community Nutrition

This subject is covered in detail in two excellent publications which are among the resource material presented to UNSRAT. They are:

1. "Nutritional Assessment in Health Programs," G. Christakis, editor, 1972.
2. "Laboratory Tests for the Assessment of Nutritional Status," H. E. Sauberlich, R. P. Dowdy, J. H. Skala, 1981.

The assessment of nutrition in a community forms the basis for educational programs if such are indicated.

IV. Nutrition Education Programs

Examples of such programs in Indonesia are:

1. Vitamin A Deficiency and Xerophthalmia (Helen Keller Foundation).
2. Kartu Menuju Sehat (UNICEF)
3. Nutrition Education in Child Feeding Programs in the Developing Countries (USAID).
4. Family Nutrition Improvement Program (UPGK, Ministry of Health)
5. Save the Children.
6. Maternal and Child Nutrition (USAID) - a component of the Family Planning Programs.

V. Recommendations for UNSRAT

1. That UNSRAT initiate plans for the development of a Community Nutrition Program or an Applied Nutrition Course based in the Faculty of Medicine but cooperative with the Faculty of Agriculture and the Food Science and Technology Program. Such a program could service North and Central Sulawesi regions.

2. That the Community Nutrition Program extend existing nutritional training in the above faculties.

3. That emphasis be placed first on S_1 -level training with inclusion in a S_2 degree program at a later date.
4. Possible resource persons for consultation during the developmental phases include:

Dr. Darwin Karyadi
Director Nutrition Research & Development Center
Ministry of Health
Bogor

Dr. F. G. Winarno
Director, Food Technology Development Center
IPB
Bogor

Ms. Julie Klement
USAID
Jakarta

Mr. Ignatius Tarwotjo
Director, Academi Gizi
P.O. Box 8 KBB, Kebayoran, Jakarta

Mr. Suaspendi Notodihardjo
Head, Nutrition Education Division
Nutrition Directorate
Ministry of Health
Jakarta

Dr. Soemilah Sastroamidjojo
Head, Department of Nutrition
Faculty of Medicine
University of Indonesia

Prof. Dr. Sajogyo
Center for Rural Sociological Research
IPB
Bogor

Dean Tjitaisa
Faculty of Medicine
University of Udayana
Denpasar

Suggested References:

1. Beal, V. "Nutrition in the Life Span."
2. Valadian, I. "Physical Growth and Development from Conception to Maturity."
3. Ganong, W. F. "Review of Medical Physiology."
4. A basic nutrition test.
5. Christakis, G. "Nutritional Assessment in Health Programs."
6. "Recommended Dietary Allowances," National Academy of Science, 1980.
7. "Food Composition Table for Use in East Asia."

ATTACHMENT 1.

OUTLINE FOR "SOCIOCULTURAL AND ECONOMIC INFLUENCES ON FAMILY FOOD BEHAVIOR"

- I. Introduction to Course
 - A. View nutrition as biocultural issue
 - B. Questions to ask to improve nutrition
 - C. Goals of course
 - 1. Specific objective for students
 - 2. Broader goals
- II. Sociocultural Influences on Nutrition
 - A. Definitions of culture
 - B. Impact of culture on behavior
 - C. Characteristics of culture
 - 1. Learned
 - 2. Logically integrated whole
 - 3. Constantly changing
 - 4. Value system
 - 5. Facilitates routine interaction
 - D. "Culture-bound" and ethnocentrism
 - E. Socioeconomic influences
 - F. Interaction models
 - 1. Pelto's "Lifestyle Model of Dietary Behavior"
 - 2. Jerome and colleagues' "Ecological Model for Nutritional Anthropology"
 - G. Foodways
 - H. Food behavior and food habits
 - 1. Definitions
 - 2. Four parameters
 - I. Meanings of food
 - 1. Nutritive uses
 - 2. Maslow's hierarchy of needs
 - 3. Aspects of food classification
 - 4. Methods of food classification
 - 5. Functions of food in culture

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ATTACHMENT 1. (continued)

6. Analysis of functions of specific foods in culture
 7. Nutritional significance of food classifications
 8. Categories of custom
- J. Models for studying food behavior
1. Importance of theoretical framework
 2. Historical analysis of approaches to study food behavior
 3. Model 1 - multidimensional code
 4. Model 2 - multidisciplinary analysis of children's food consumption behavior
 5. Model 3 - physical and cultural availability of foods
 6. Model 4 - the channel theory
- K. Religion
1. What is religion
 2. Five major religions
 3. Riddle of the pig
 4. Generalizations about impact of religion on food behavior
- L. Social roles of food
1. Gifts
 2. Conspicuous consumption and competition
 3. Festivals and feasts
 4. Selametan
- M. Pica
1. Definitions
 2. Types of pica
 3. Etiological theories
 4. Pica and iron deficiency anemia
 5. Pica in children
 6. Pica in pregnancy
 7. Mechanisms for adverse effects of pica
- N. Impact of culture on specific population groups
1. Two major explanations for sex-differential nutrition
 2. Food taboos
 3. Impact of culture on breastfeeding
 4. Impact of culture on Balita

ATTACHMENT 1. (continued)

5. Impact of culture on young girls
6. Impact of culture on women
7. Other food beliefs and taboos in Indonesia
8. Factors leading to malnutrition in Balita

III. Economics and Nutrition

- A. Economic situation as a determinant of food availability
 1. Urban poor
 2. Adjustments to poverty
 3. Feast or famine
- B. Poverty
 1. Definitions
 2. Relative vs. absolute
 3. Internal vs. external
 4. Features of poverty
 5. Types in the developing world
 6. Causes
 7. Indonesian poverty line
- C. Relationships between income and diet
 1. Engel's law
 2. Proportion of money spent for different food groups changes with changes in income
 3. Rising incomes lead to more refined, processed, and convenience foods
 4. Price elasticity
 5. Income elasticity
 6. Income distribution
- D. Defining socioeconomic status of the family
 1. Development of scales
 2. Microeconomic differentiation
 3. Socioeconomic index
- E. Women's roles
 1. Background
 2. Present reality of rural women in Africa
 3. Value of women's work

ATTACHMENT 1. (continued)

- F. Economic value of breastfeeding
 - 1. In Indonesia
 - 2. In Ghana and Ivory Coast
- G. Effects of urbanization of food behavior
 - 1. Urbanization statistics
 - 2. Differences in rural and urban caloric intake
 - 3. Causes of urban malnutrition
 - 4. Health problems in urban areas
 - 5. Rural and urban differences in ecology of PCM
 - 6. Diagnostic questions to answer
 - 7. Categories of information to collect
 - 8. Conditions which encourage organization of health and nutrition services in urban areas
- H. Transmigration
 - 1. Definition
 - 2. Historical context
 - 3. Rationale for transmigration
 - 4. Factors for successful transmigration
 - 5. Legitimate roles for government
 - 6. Evaluation of transmigration
 - 7. Effects of transmigration on food behavior
- IV. Food Consumption Patterns
 - A. Food consumption in Indonesia
 - 1. Java
 - 2. Bali
 - 3. Outer islands
 - 4. Comparison of food patterns across country
 - B. Food consumption in Southeast Asia
 - 1. Malaysia
 - 2. Thailand
 - 3. Philippines
 - 4. Singapore
 - C. Comparison of food patterns
 - 1. Indonesia to Southeast Asian nations
 - 2. Less vs. more developed countries

ATTACHMENT 1. (continued)

V. Changing Food Behavior

- A. Technological effects on food behavior
 - 1. Functions of mass media in society
 - 2. Categories of mass media
 - 3. Reasons for using mass media
 - 4. Influence of mass media
 - 5. Influence of advertising
 - 6. How advertisers sell their products
 - 7. Analyzing a food advertisement
 - 8. Potential of mass media for nutrition education
- B. Nutrition education as planned change
 - 1. Rationale
 - 2. Ethical considerations
 - 3. Audiences for nutrition education
 - 4. Dynamics of change
 - 5. Factors influencing potential for behavior change
- C. Mechanisms for changing food behavior
 - 1. Nutrition education
 - 2. Planning educational approaches
 - 3. Designing the teaching-learning environment

ATTACHMENT 2.

TENTATIVE OUTLINE FOR "COMMUNITY NUTRITION"

I. Introduction to Community Nutrition

A. Definition

B. Goals

II. Methods of Studying the Community

A. Community assessment

1. Political organization
2. Social organization
3. Cultural characteristics
4. Economic stratification
5. Health care systems
6. Transportation
7. Housing
8. Climatic variables
9. Land and water practices
10. Energy supplies
11. Food availability
12. Communication facilities
13. Family composition and hierarchy
14. Religious views
15. Historical perspectives of nutrition in the community

B. Nutritional assessment

1. Anthropometry
2. Dietary methodologies
3. Clinical assessment
4. Biochemical or laboratory assessment
5. Biophysical methods

C. Participant observation

1. Definition
2. The investigator/observer

ATTACHMENT-2. (continued)

3. Methods of study
 4. Data classification
 5. Advantages and disadvantages
 6. Ethical questions
 - D. Survey methodology
 1. Types of surveys
 2. Planning
 3. Fieldwork
 4. Analysis
 5. Interpretation
 6. Action
- III. Training Community Nutritionists
- A. Social process skills and knowledge
 1. Getting to know the community
 2. Identifying problems in the community
 - B. Technical skills and knowledge
 1. Measuring and monitoring children's growth and nutriture
 2. Breastfeeding
 3. Diets for Balita
 4. Maternal nutrition
 5. Identification, management, and prevention of common nutritional deficiencies
 6. Diarrhea
 7. Nutrition and infection
- IV. Organizations Involved in Community Nutrition in Indonesia
- A. Governmental
 1. Ministry of Health
 2. Ministry of Education and Culture
 3. Ministry of Agriculture
 4. Ministry of Manpower and Transmigration
 5. Ministry of Industry

ATTACHMENT 2. (continued)

6. Ministry of the Interior
 7. BAPPENAS/BAPPEDA
 8. BULOG
 9. BKKBN
 10. Inter-ministerial programs
- B. Non-governmental
1. United Nations agencies
 2. Private voluntary organizations

ATTACHMENT 2. (continued_

REFERENCES

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- J.E. Austin. "Nutrition Intervention in Developing Countries",
AID, Oelgeschlagen, Couhm and Harris, Cambridge, Mass.,
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- Suhardjo. "Food Security and Food Self Sufficiency in
Indonesia". Inst. S.E. Asian Studies, Singapore, 1981.
- World Bank Publications.
- Indonesian Nutrition Papers.

S₂ CURRICULUM FOR COMMUNITY NUTRITION AND FAMILY RESOURCES

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

ATTACHMENT 4. (continued)

TOPIC OUTLINE

INTRODUCTION

The Life Cycle
Standards of Nutrient Intake

STAGES OF THE LIFE CYCLE

<u>Physiological system studied</u>	<u>Dietary Components & Nutrients Emphasized</u>	<u>Special Topics</u>
<u>INFANT</u>		
Nervous System	Protein, carbohydrate Vitamin B ₆	Malnutrition Mental and Behavioral chan
<u>PRECHOOL</u>		
Gastro-intestinal system	Digestion and absorption of all nutrients, fiber	Lactose Intolerance
<u>SCHOOL CHILD</u>		
Eyes, Teeth, Skin, Cells	Vitamin A, C, Riboflavin Fluorine, Biotin, Essential fatty acids, Zinc	School Feeding Programs
<u>ADOLESCENCE</u>		
Skeletal and Muscular Systems	Calcium, Magnesium, Phos- phorus, Vitamin D, Niacin Food energy	Exercise Obesity
<u>ADULT</u>		
Circulatory and Respiratory Systems	Transport of nutrients Iron, Copper, Folic Acid, Cholesterol, Vitamin B ₁₂ Vitamin E	Anemia Heart Disease
<u>PREGNANCY AND LACTATION</u>		
Female Reproductive system	Most nutrients	Pica Adolescent Mother
<u>MATURITY AND OLD AGE</u>		
Renal and Endocrine Systems	Water, Sodium, Potassium Thiamin, Iodine, Alcohol	Alcoholism

ATTACHMENT 4

"NUTRITION IN THE HUMAN LIFE CYCLE"

Description: The relationship of the stages of the human life cycle to nutrient needs and the physiological and anatomical changes which influence these needs.

Prerequisites: Organic Chemistry
Human Physiology

Goals of The Course: Each student shall be able to:

1. Describe the stages of the life cycle and identify the physiological changes occurring at each stage.
2. Translate the changes in function into changes in nutrient need during the life cycle.
3. Use the knowledge of the changes in nutrient need to interpret necessary changes in food intake in the life cycle.
4. Analyze the nutrient intake of a subject at one stage of the life cycle by using the 24-hour recall method.

Treatment of Topics: For each stage of the life cycle:

1. Anatomy and histology (review)
2. Physiological changes
 - (a) at that stage,
 - (b) throughout the life cycle.
3. Nutrients of particular interest at the stage of the cycle
 - (a) chemistry
 - (b) function in the body
 - (c) recommended allowances for the age group and comparison to other stages of the cycle.
4. Food sources which supply the nutrients.
5. Special topics.

ATTACHMENT 5. (continued)

6. Nutrition of Vulnerable Groups:
 - a. Nutrition during pregnancy and lactation
 - b. Nutrition during infancy
 - c. Supplementary feeding
 - d. Build up good food habits
 - e. Nutrition for children and teenagers
 - f. Diet for the preschool child
 - g. Diet for the school-age child
 - h. Diet for the teenager
7. Nutrition Education:
 - a. Health channels
 - b. Other channels
 - c. Methods and materials
8. Food Sanitation and Standards:
 - a. Food hygiene
 - b. Food legislation and regulations
 - c. Food standards
9. Administration and Coordination:
10. Nutrition Surveys:
 - a. Ecological factors
 - b. Surveys of nutritional status
11. Applied Nutrition Programs:
 - a. Improved food production
 - b. Improvement of community nutrition programs

ATTACHMENT 5.

Course Description

The following is an outline of the general content of the nutrition-oriented training program for health personnel.

1. General Introduction:
 - a. Introduction to the course
 - b. Nutrition status of the nation
 - c. Nutrition problems and programs
2. Principles of Nutrition:
 - a. Food composition
 - b. Nutrition requirements
3. Principal Foods in the Country:
 - a. Foods which are primarily sources of energy
 - b. Foods which are primarily sources of protein
 - c. Foods which are primarily sources of minerals and vitamins
4. Nutrition and Health:
 - a. Nutrition and growth and development
 - b. Nutrition affects mortality and morbidity patterns
5. Nutritional Disorders:
 - a. Protein-calorie deficiency
 - b. Vitamin and mineral deficiency
 - c. Other nutritional deficiencies and diseases

APPENDIX IV

LIST OF RESOURCE MATERIALS PRESENTED TO UNSRAT

September 9, 1983

- "Recommended Dietary Allowances," National Academy of Sciences, 1980.
- "Nutrition and the World Food Crisis," M. A. Caliendo, 1979.
- "Principles of Enzymology for the Food Sciences," J. R. Whitaker, M. Dekker.
- "Principles of Food Science. Part I. Food Chemistry," M. Dekker.
- "The Chemistry and Biology of Fishes," R. M. Love, Vols. I and II.
- "Fish Physiology," W. S. Hoar and D. J. Randall, 8 volumes.
- "Protein Calories and Development: Nutritional Variables in the Economics of Developing Countries," B. A. Schmitt, 1979.
- "Water Pollution Control in Developing Countries," Vols. I and II, 1978.
- "Food Composition Table for Use in East Asia," 1972.
- "Nutritional Evaluation of Food Processing," R. S. Harris and E. Karmas, 1975.
- "Breast Feeding and Health," UNICEF, 1981.
- "Ilmu Kesehatan Anak di daerah Tropis," G. J. Ebrahim Yayasan Essentia Medica.
- "Petunjuk-Praktis Ibu Untuk Menyasui," Yayasan Essentia Medica.
- "Air Susu Ibu," G. J. Ebrahim, Yayasan Essentia Medica.
- "Metode Mencari Penyebab Kekurangan Gizi Pada Anak-Anak," J. E. Brown and R. C. Brown.
- "Nutrition in the Life Span," V. A. Beal, 1980.
- "Nutrition Education in Child Feeding Programs in the Developing Countries," USAID, Washington, D.C.
- "Laboratory Tests for the Assessment of Nutritional Status," H. E. Sauberlich, R. P. Dowdy and J. H. Skala, 1981.
- "Pre-School Child Malnutrition," Academy of Sciences, Washington, D.C., 1965.
- "Nutrition of Wheat Foods," Washington Wheat Commission.

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APPENDIX IV. Continued

- "Nutrition and Hepatic Diseases," Blanklan.
- "Development, Acceptability and Nutritional Evaluation of High-Protein Soy-Supplemented Rice Noodles for Thai Children," A. Seigel, A. Bhumirstana.
- "Patterns of Food Intake and Nutritional Health of Preadolescent Girls, Demographic Clinical and Anthropometric Methods," 1977.
- "The Training of Community Nutrition Workers in Indonesia's Family Nutrition Improvement Program," P. Fajans, 1982.
- "Usaha Perbaikan Gizi Keluarga".
- "Social-Political Constraints on Primary Health Care," G. Williams and Satoto, 1976.
- "Bahan Makanan Campuran Dalam,"
- "Pedoman Untuk Kaderidi Desa Dalam, Membina Taman Gizi," Sayogyo, IPB, 1977.
- "Program Pemberian Makanan Tambahan" NIPP, 1977.
- "Menuju Gizibaik Yang Merata di Pedesaan dan di Kota," Sajogyo, 1981.
- "Penelitian Penyuluhan Gizi Masyarakat di Pedesaan Jawa Barat," PIB team, 1980.
- "Resep-Resep Sedernana Masakan Bahan Makanan Campuran Beras-Kedelai," Hermanana, 1977.
- "Memanfaatkan Khastiat Tempe," Hermana, 1981.
- "Perkembangan Pembuatan Bahan Makanan Campuran," Hermana, 1977.
- "Effects of Foods and Nutrition Education on Food Practices of Low Income Families in Four Mississippi Counties, 1966," P. T. Harris, Miss. State University.
- "The Culture Context of Food," V. P. Steelman, Louisiana State University, 1974.
- "Food Consumption and Dietary Levels of Households in Hawaii" and "Foods and Nutrition Intake of Individuals in 1 Day," USDA, 1981.
- "Workshop I on Curriculum Development for Community Nutrition Training," East-West Center, Hawaii, 1975.
- "Nutritional Assessment in Health Programs," G. Christakis, 1972.

APPENDIX IV. Continued

- "Malnourished People. A Policy View," A. Berg, Poverty and Basic Needs Series, 1981.
- "Pedoman Praktis Program Penimbangan Anak-Anak Dibawah Umur Lima Tahun (Balita)" YIS, 1980.
- "Menuju Hidup Sehat Melalui Sekolah," YIS, 1980.
- "Pedoman Praktis Kegiatan Gizi," YIS, 1982.
- "Pedoman Kader Kehehatan," YIS, 1981.
- "Sweet Potato Processing and By-Product Utilization in the Tropics," F. G. Winarno, IPB.
- "Problems of Food and Nutrition and the Role of Food Science and Technology with Particular Reference to Indonesia," F. G. Winarno, Food Tech. in Australia, 35:176, 1983.
- "Food Quality Assurance," W. A. Gould, 1977.
- "Postharvest Physiology Handling and Utilization of Tropical and Subtropical Fruits and Vegetables, E. B. Pantastico, 1975.
- "Coffee Technology," M. Swetz and N. W. Derosier, 1979.
- "Coconuts: Production, Processing, Products," J. G. Woodruff, 1979.
- "The Safety of Foods," H. D. Braham, 1980.
- "Food Oils and Their Uses," Weiss.
- "Food Processing Waste Management," J. H. Green and A. Kramer, 1979.
- "Hygenic Design and Operation of Food Plant," R. Jowitt, 1980.
- "Soybeans: Chemistry and Technology," Vol. I, A. K. Smith and S. J. Circle, 1978.
- "Poultry Products Technology," G. L. Mountney, 1976.
- "Fruit and Vegetable Juice Processing Technology," P. E. Nelson and D. K. Tressler, 1980.
- "Laboratory Manual in Food Preservation," M. L. Fields, 1977.
- "Food Carbohydrates," D. R. Lineback and E. Inglett, 1982.
- "Rice: Production and Utilization," B. S. Luh, 1980.

APPENDIX IV. Continued

"Foodborne and Waterborne Diseases," I. J. Tartakow and J. H. Vorperian, 1981.

"Nutritional Evaluation of Food Processing," R. S. Harris and E. Karmas, 1975.

"Principles of Food Packaging," S. Sacharow and R. C. Griffin, 1980.

"Food and Economics," L. S. Hungate and R. W. Sherman, 1976.

"Tropical Foods. Chemistry and Nutrition," Vol. I and II, G. E. Inglett and G. Charlambous.

"Advances in Fish Science and Technology," J. J. Connell.

35 mm Slide Sets:

"Vitamin A Deficiency and Xerophthalmia," Helen Keller Foundation, with script.

"Experimental Fish Production Laboratory, University of Idaho," with drawings of fish tanks.

"Beef Conformation," with script (Pakasi).

"Poultry and Egg Quality," with script (Pakasi).

"Poultry Processing," with script (Pakasi).

"Sanitation in Meat Processing Plants," with script.

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APPENDIX V

TO: Rector W. J. Waworoentoe, UNSRAT

FROM: Margaret M. Hard, Senior Technical Advisor, Food Science and Human Nutrition, BKS-T-WSU-USAID.

SUBJECT: Interim Report

DATE:

COPIES: Deputy Rector Pangalila
Dr. Daantje Sembel
Mr. Bob Haggerty
Dr. Alberta Hill
Dr. Burl Yarberry

I am impressed with the progress that has been made in the Food Science and Technology program and related areas during the past year: installation of the computer, initiation of plans to participate in the rural Satellite communications project, development of the university Research Center, coordination of instructors in various faculties who are teaching similar courses, location of sites for the experimental farm project, new buildings for the Faculties of Engineering and Fisheries and for Food Science and Technology. Bob Haggerty and Daantje Sembel have made real progress on the Food Science and Technology diktat project. This was given further impetus during the Food Safety and Sanitation training workshop. Bob also has prepared extensive lists of supplies and equipment to be purchased for the new Food Technology building. Much credit should be given to Mr. Haggerty and Dr. Sembel for their untiring efforts.

The Food Safety and Sanitation training program, September 12-16, 1983, was well attended and highly productive. It afforded UNSRAT recognition as a leader in Food Science and Technology in the community and the region as well as among the BKS-T universities. A joint UNSRAT-IKIP Manado

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organizing committee did an excellent job of making the local arrangements. The upcoming proceedings of the workshop will form the basis for the Diktat on Food Safety. Diktats in Bahasa Indonesia on Food Quality Control, Nutrition, Food Technology, Food Chemistry were prepared/revised and will be tested by instructors in the BKS-T institutions during the next few weeks. Certificates of Completion were presented to participants.

Art and I are sorry that we will not be here for the "Solar Dryer with Supplemental Heat Source" short-course but we are happy and excited that we could initiate the arrangements for it. This will be the first demonstration of this equipment in Indonesia. Perhaps a second workshop would be appropriate at a later date at another BKS-T university. The proposed workshop on the construction and use of the solar drier has implications for formal and non-formal instructional programs and for research activities in Agriculture, Animal Husbandry, Fisheries, Engineering, Medicine, KKN as well as industry and state laboratories.

The Research Center gives visibility to the research activities at UNSRAT and acts as an administrative unit for funding and initiating research projects. It can facilitate the coordination of an interdisciplinary approach toward solving complex problems of the Indonesian society. The philosophy of using internal funds as "seed money" to assist young researchers to initiate research is a good one. Results of such research act as a basis for developing projects for external funding and help to validate the qualifications of the individual researcher. Research proposals should be developed by appropriate staff members. Consultation can be given by outside specialists such as the BKS-T technical advisors. Dr. L. Sondakh has invited me to submit a short paper on "The Role of Research in Technology, Innovation and Development," a copy is attached.

The Experimental Farm Project and the Food Science and Technology program are closely related. Crops and animals grown under controlled conditions are excellent raw materials for processing, food quality, food chemistry and food safety research, teaching and community-service activities. Students participating in research activities gain a broader point of view and professional experience. Experiments at the experimental farm can act as demonstrations in the non-formal education of village farmers.

As the long-term BKS-T participants at Washington State University return to UNSRAT, their training and expertise can add to the quality of the teaching, research and non-formal education program in their Faculties. They can initiate innovation programs in formal and non-formal education as well as in research. Mr. Haggerty can act as a consultant for the development of teaching laboratories and other learning experiences.

Resource materials were presented to UNSRAT in a short ceremony on September 9, 1983 in the new Food Science and Technology building. Books, pamphlets, research publications and 35 mm slide sets were included in the areas of Food Science, Animal Husbandry, Fisheries, Engineering and Community Nutrition. A list is attached. The list of books and journals in Food Science and Human Nutrition submitted to you in December, 1982 has been incorporated by Alice Spitzer into a list of books to be purchased for the main library.

Since community nutrition is an important component of the over-all Food Science and Technology program, I have prepared a short paper on "Community Nutrition: A Perspective for UNSRAT." It is submitted herewith.

I very much appreciate the cooperation, courtesy and friendship extended to Art and myself during this current assignment to BKS-T. It has been an enjoyable and positive experience.

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APPENDIX VI

TO: Dr. A. Sinolungan, Rector, IKIP, Manado

FROM: Margaret M. Hard, Senior Technical Advisor, Food Science and Human Nutrition, BKS-T-WSU-USAID

SUBJECT: Interim Report

DATE:

COPIES: Deputy Rector, W. Senduk
Dean S. Pamantung, FIP
Drs. Hans Wagey
Dra. J. Pangkey
Dr. Albert Hill
Dr. Burl Yarberry

The past 2½ months spent with the PKK staff, IKIP Manado have been busy and productive. We have met weekly for at least two hours in consultation and discussion. Following is a list of topics covered in these meetings.

1. "Save the Children," a non-formal education packet, an example of teaching material and methods for the villages.
2. "Help Your Child Grow," 4 slide sets dealing with child nutrition and development for ages 0 to 6 months, 6 months to 1 year, 1 to 3 years and 3 to 5 years.
3. "Nutrition of Adolescents, Adults and the Elderly," lecture notes for a course were developed by Mrs. Hard including resource material and suggested learning experiences.
4. Nutrient content of typical Minahasa foods with particularly emphasis on sources of calcium and high quality proteins.
5. Food quality evaluation.
6. Experimental design as a laboratory technique.
7. Management of a foods laboratory.
8. "PKK research," a detailed course outline including goals of PKK research, project development, research methodology, suggested research problems, research reporting and class projects.

9. Community service activities in PKK.
10. Child care and development - a lecture to FIP by Dr. Alberta Hill (Senior Technical Advisor for Home Economics).
11. Developing learning experiences and evaluation methods (Alberta Hill).

PKK staff also have participated in two BSK-T in-country training workshops:

1. Home Economics (PKK) Training Workshop. August 8-13, 1983 held in Ujung Pandang; Technical Advisors Alberta Hill, Margaret Hard.

STATED PURPOSES:

- (1) Strengthen subject matter background of lecturers in PKK.
- (2) Continue in development of university programs which will develop competencies in all aspects of PKK.
- (3) Develop methods needed to validate content of courses, identifying needs of families and evaluate courses taught.
- (4) Review outlines developed by lecturers and Indonesian Curriculum Committees and further develop lecture notes for these outlines.
- (5) Expand knowledge and skills in teaching methods appropriate for KKN, distance learning (BJJ), satellite teaching and non-formal education.
- (6) Develop contacts among lecturers in BKS-T universities which will make it possible to share ideas and materials.

Subject-matter covered included child care and development, housing and household equipment, home management, clothing and textiles, family sociology. Eight lecturers from PKK, IKIP Manado attended. Certificates of Completion were presented to participants. A complete proceedings is forthcoming.

2. Food Safety and Sanitation Training Program, September 12-16, 1983, held in Manado; Technical Advisors Bob Haggerty, Alberta Hill, Margaret Hard, and Dr. Srikandi Fardias (Food Science Department, IPB). The workshop

was planned by a joint UNSRAT-IKIP Manado organizing committee. Six PKK lecturers, IKIP Manado attended. Certificates of Completion were presented.

Objectives of the training program were to:

- (1) Develop and reinforce awareness of basic principles of food science and technology.
- (2) Increase knowledge of specific topics involved in safety and sanitation of typical Indonesian foods and commodities.
- (3) Gather, select and evaluate teaching materials for revision of the Food Science and Technology manuals for use in BKS-T institutions.
- (4) Become aware of applied research projects, methods of research and extension activities which could be used in BKS-T institutions.
- (5) Exchange ideas and express concerns with training program staff and with fellow participants.

Topics covered by all participants included microbiology, food additives, food poisoning, thermal processing, water sanitation, application of knowledge to course development. Special sessions were held for those interested in commercial and industrial applications and for those interested in problems in foodservice management and the home. One day was spent on preparation and revision of Diktats in Bahasa Indonesia in the areas of family food management, food chemistry, human nutrition, food technology and food service management. The Proceedings of the food safety training session will act as a Diktat in Food Safety.

Arrangements were made by Hill for 1 staff member from IKIP Manado (Ms. Pangkey) and 1 staff member from IKIP Ujung Pandang (Ms. Maming) to attend a PKK training program in Japan, the Phillipines and Malaysia, September 5-22, 1983.

Resource materials for PKK teaching research and community service were presented to the University, September 10, 1983. A listing is attached

(I). A comprehensive list of books for PKK was submitted to the Rector in November, 1982 and has since been incorporated by Alice Spitzer into a list of books to be purchased for the IKIP library. These books are in addition to the books presented to IKIP in September.

Recognition should be given to the community service activities of the PKK staff. Reports have been published on four non-formal education workshops which were organized or conducted by PKK personnel.

1. Genataran Teknologi Kerumahtuggaan (1980).
2. Pelaksanaan Bimas Pendidikan/Penuluhan Gizi (1980).
3. Kursur Dasar Kerumahtuggaan (1981).
4. Kursus Kader Pembina Ibudan Balita (1983).

I understand that a member of the PKK staff has been involved in KKN activities. This is highly commendable. Such PKK cooperation with KKN and non-formal education programs should be encouraged and extended. A workshop on methods of working with rural women would be helpful for PKK, KKN and non-formal education staffs. Ms. Ada Wenas, in charge of women's programs at the USAID Jakarta Mission would be an excellent resource person for such a training session.

Facilities available for PKK programs are very limited. Three rooms are assigned to the department, one in the new FIP building for clothing and two other rooms for foods in a smaller building 2 or 3 blocks removed from FIP. The only sewing machines for clothing construction classes are also housed in those latter rooms which widely separates clothing instructional activities. With a PKK enrollment of 300 or more students the effectiveness and efficiency of instructional and learning experiences are severely reduced. The food laboratory has been improved somewhat during the past year. Screening should cover the louvers to prevent entry

of birds and insects. Additional storage space is needed. It is my understanding that the PKK facilities are temporary. In this case future IKIP budget consideration should include a new PKK building to house the foods and nutrition and textiles and clothing activities. An estimated area for such a structure is 266 square meters. This should be in close proximity to the PKK Home Management Center scheduled for construction in the near future. Plans for both these buildings have been previously submitted but are attached hereto for your reference (II and III).

The long-term training participants from IKIP Manado to Washington State University are now returning. Ms. Adelreid Doda and Mr. Gustaaf Lasut have been here since July, the others will finish Masters degrees in the new few months. The five staff members from IKIP Manado have performed very well at WSU and are well trained in the areas of their expertise. I know you agree that they should be given every opportunity to use their knowledge and training in developing innovative formal and non-formal educational programs, as well as appropriate research projects.

The PKK staff are enthusiastic and eager to improve themselves in order to perform their assignments effectively. Since the over-all responsibilities include research and community-service as well as teaching the schedule of assignments should reflect time allotted to research and extension. Funds for research should be rigorously pursued. Internal "seed money" to initiate research and experimentation is particularly useful to new researchers. They can build on the results and publications so obtained to seek external funding of research.

I am most appreciative of the cooperation and friendship shown me by Deam Pamantung, Mr. Hans Wagey, Mrs. J. Pangkey and the entire PKK staff. Thank you also for your interest. I have enjoyed working at IKIP Manado.

LIST OF RESOURCE MATERIALS PRESENTED IKIP MANDO, SEPTEMBER 10, 1983

PKK

- "Meal Management," F. Kinder, N. R. Green, 1978.
- "Food Fundamentals," M. McWilliams, 3rd Ed., 1979.
- "Illustrated Guide to Food Preparation," M. McWilliams, 3rd Ed., 1976.
- "Understanding Nutrition," E. N. Whitney, E. M. N. Hamilton, 1981, with Manuals.
- "Food Composition Table for Use in East Asia," 1972.
- "Food Preparation," Lecture notes. C. McCartan, 1981.
- "Petunjuk-Praktis Ibu Untuk Menyasui Yayasan Essentia Medica. La Leche League International.
- "Ilmu Kesehatan Anak di daerah Tropics," C. J. Ebrahim, Yayasan Essentia Medica.
- "Air Susu Ibu," G. J. Ebrahim Yayasan Essentia Medica.
- "Metode Mensari Penyebab Kekurangan Gizi Pada Anak- Anak," J. E. Brown and, R. C. Brown.
- "Food Service in Institutions," B. B. West, L. Wood, V. Harger, G. Shugart, 1977.
- "Food for People. A Guide for Developing Programs," State of Washington Home and Family Life Education, 1975.
- "Recommended Dietary Allowance," National Academy of Science, 1980.
- "Quality Control in Food Service," M. E. Thorner and P. B. Manning, 1976.
- "Food Values of Portions Commonly Used," Bowes and Church, 1970.
- "Specific Safety and Hygiene Standards and Practices for Home Economics. Activity Resource Package," Superintendent of Public Instruction, Olympia, WA, 1976.
- "Food Services. A Curriculum."
- "Penuntun Karang Gizi, Penunjang Usaha Perbaikan Gizi Keluarga."
- "Child Care Handbook," American Home Economics Association, 1980.
- "Family Decision-Making: An Ecosystem Aporoach," B. Paolucci, O. A. Hall, N. Axinn, 1977.

LIST OF RESOURCE MATERIALS PRESENTED IKIP MANDO, SEPTEMBER 10, 1983
(continued)

- "Management in Family Living," P. Nickell, A. S. Rice, S. P. Tucker, 1976.
- "Concepts and Generalizations: Their Place in High School Home Economics Curriculum Development," American Home Economics Association, 1967.
- "Home Economics: An Introduction to a Dynamic Profession," F. J. Pauker, 1980.
- "Textiles," N. Hollen, J. Saddler, A. L. Langford, 1979.
- "Independent Living for the Handicapped and the Elderly," E. E. May, N. R. Waggoner and E. B. Hotte, 1974.
- "The Meaning of Human Nutrition," M. W. Lamb and M. L. Harden, 1973.
- "Working with Villagers," American Home Economics Association.
- "Sanitation for Food Service Workers," T. M. Richardson and W. R. Nicodemus, 1981.
- "Income Generation for Rural Women," American Home Economics Associations, 1981.
- "Suggested Student Learning Objectives for Home and Family Life Education: A Guide for Developing Scope and Sequence," Superintendent of Public Instructions, Olympia, WA, 1982.
- "Guidelines for Child Development Laboratories," Coordinating Council for Occupational Education, Superintendent of Public Instruction, Olympia, WA, 1974.
- "Guidelines for Teaching Personal and Family Relations: Parenthood, Child Growth and Development," Superintendent of Public Instruction, Olympia, WA, 1981.
- "Guidelines for Teaching Personal and Family Money Management," Superintendent of Public Instruction, Olympia, WA, 1968.
- "Supplemental Material for Consumer Education," Superintendent of Public Instruction, Olympia, WA, 1974.
- "Nutrition of Teenagers, Program Plans and Activities," Washington Agricultural Extension Service, Pullman, WA, 1981.
- "Food and Nutrition Training Guides for Extension Aides (volunteers in the community), Washington Agricultural Extension Service, Pullman, WA, 1981.

LIST OF RESOURCE MATERIALS PRESENTED IKIP MANDO, SEPTEMBER 10, 1983
(continued)

- "Program Planning Guides," Washington Agricultural Extension Service,
Pullman, WA, 1981.
- "How Food Affects You," Department of Agriculture Extension Service,
Washington, D.C., 1970.
- "Perkembangan Pembuatan Bahan Makanan Campuran, Hermana, 1977.
- "Emanfaatkan", Hermana, 1981.
- "Resep-Resep Sederhana Masakan Bahan Makanan Campuran Beras-Kedelai,"
Hermana, 1977.
- "Guidelines for Clothing Education," Coordinating Council for Vocational
Educations, Olympia, WA, 1972.
- "Developing Curriculum for Middle and Junior High School," Coordinating
Council for Vocational Education, Olympia, WA, 1972.
- "Competencies for the First Year Home and Family Life Teachers,"
Superintendent of Public Instruction, Olympia, WA, 1978.
- "Continuous Threads, Clothing Construction Concepts," M. Perry and M. Gissel,
Clothing Interior Design and Textiles, WSU, 1981.

35 mm Side Sets with Scripts:

- "Menu Planning for Child Care Programs."
- "Helping Your Baby Grow: From Birth to 6 Months; From 6 Months to 1 Year;
From 1 to 3 years; From 3 to 5 years."
- "Clothing and the Aging Process."
- "Microbiological Fingerprints."
- "Save the Children," a packet of educational materials for use with
rural families.

Food Science (Sakidja)

- "Coconuts: Production, Processing, Products," J. G. Woodruff, 1979.
- "Seed Proteins," G. E. Inglett.
- "Tropical and Subtropics Fruits," S. Nagyand, P. E. Shaw, 1980.

LIST OF RESOURCE MATERIALS PRESENTED IKIP MANDO, SEPTEMBER 10, 1983
(continued)

Technology Makanan Gagian I," S. Suwondo, 1981.

Imu Makanan Ternak Umum," R. Auggorodi, 1979.

Biofermentasi dan Biosintesa Protein," F. G. Winarno and S. Fardiaz, 1979.

Penuntun Belajar Kimia," K. Ham, A. Rastiuan, S. Ronisef, Soehito, 1982.

Ilmu Kimia untuk SMA Idan2," 1981.

Handbook for the Home," Yearbook of Agriculture, 1973, United States
Department of Agriculture.

Gardening for Food and Fun," Yearbook of Agricultur, 1977, United States
Department of Agriculture.

Pedoman Pengobatan," Y.E.M., 1981.

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APPENDIX VII

To: Dr. P. Parawansa, Rector
IKIP - Ujung Pandang

From: Margaret M. Hard, Senior Technical Advisor,
Food Science and Human Nutrition
BKS-T - WSU - USAID

RE: Interim Report

Date:

Copies to: Komisaris Dr. Anwar Pasau
Sec. BKS, IKIP Nurdiah Maming
Dean M. Yunus
Chairman PKK, Ms. Tuna
Dr. Alberta Hill
Dr. Burl Yarberrry

IKIP Ujung Pandang has been high in my regard and my respect since my first visit in 1978. I continue to be impressed by the leadership and innovation apparent in the programs with which I have had contact.

My comments herein will emphasis the foods and nutrition aspects of the current assignment. Dr. Hill has reported to you the details of the PKK activities.

The Food Safety and Sanitation Training Program in Manado September 12-16 was very productive. Technical advisors were Bob Haggerty, Alberta Hill, Margaret Hard and Dr. Srikandi Fardiaz (Food Science Department, IPB). Objectives of the training program were to:

- (1) Develop and reinforce awareness of basic principles of food science and technology.
- (2) Increase knowledge of specific topics involved in safety and sanitation of typical Indonesian foods and commodities.
- (3) Gather, select and evaluate teaching materials for revision of the Food Science and Human Nutrition manuals for use in BKS-T institutions.

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- (4) Become aware of applied research projects, methods of research and extension activities which could be used in BKS-T institutions.
- (5) Exchange ideas and express concerns with training program staff and with fellow participants.

Topics covered by all participants included applied microbiology, food additives, food poisoning, thermal processing, water sanitation, application of knowledge to course development. Special sessions were held for those interested in commercial and industrial applications and for those interested in problems in food service management and in the home. One day was spent on preparation and revision of Diktats in Bahasa Indonesia for family food management and preparation, food chemistry, human nutrition, food hygiene, food technology and food service management. The Proceedings will act as a Diklat in food safety. A Certificate of Completion was presented to all participants.

Resources for teaching, research and community-service in home economics, food science and human nutrition were presented to IKIP - Ujung Pandang. A listing is attached. These materials are in addition to the comprehensive list of books submitted to the Rector in November, 1982 which has since been incorporated by Alice Spitzer into a list of books to be purchased for the IKIP Ujung Pandang Library by the BKS-T project.

Two of the long-term training participants from IKIP Ujung Pandang to Washington State University have returned. They are Akil Malla who received his M.S. degree in Human Nutrition and Abdul Rasjid who earned a M.S. in Food Science. Deri Bangkona will finish with a degree in Home Economics Education with an emphasis in Human Nutrition and Foods. These three staff members have performed very well at WSU and are qualified to enrich and develop the foods and nutrition teaching, research and community-service

programs at IKIP Ujung Pandang. I know you agree that they should be given every opportunity to effectively use their training.

Mr. Malla is interested in community nutrition and nutrition education. I understand this is the area of emphasis for IKIP-UP in the BKS-T Experimental Village project. Mr. Malla could make a significant contribution. He should also be encouraged to initiate research to study the nutritional status and food habits of low-income families in Sulawesi Selatan. The elderly, pregnant and lactating mothers and children under 5 years are particularly vulnerable to malnutrition.

Part of the nutritional deficiencies observed in Sulawesi Selatan are caused by a low intake of energy and high-quality-protein foods. Combining rice with legumes (mung beans, red beans, soybeans) produces a protein food of higher quality than has either rice or legumes alone. Fermenting legumes also increases the protein value. Mr. Rasjid has done some work at WSU on fermentation products (i.e., tempeh). Working in conjunction with Mr. Malla, he could continue to develop new food products to alleviate malnutrition. Ms. Bangkona could adopt the new products for use in the home. Acceptability and evaluation studies should follow. These three staff members, Malla, Rasjid and Bongkona, can make an impressive team. Non-formal education and KKN should cooperate in the educational programs in the villages. The best communicative skills and education techniques are required for effective programs with rural people.

We look forward to seeing you at Washington State University.

I have enjoyed working with the staff and administrators of IKIP Ujung Pandang.

LIST OF RESOURCES MATERIALS PRESENTED TO IKIP-UJUNG PANDANG

PKK

- "Food for People. A Guide for Developing Programs," State of Washington Home and Family Life Education, 1975.
- "Food Preparation," Lecture Notes, E. Augustin, 1982.
- "Recommended Dietary Allowances," National Academy of Sciences, 1980.
- "Food Science," H. Charley, 1982.
- "Food Study Manual," H. Charley, 1982.
- "Breast-Feeding and Health," UNICEF, 1981.
- "Ilmu Keshata Anak di daerah Tropis," G. J. Ebrahim, Yayasan Essentia Medica.
- "Petunjuk Praktis Ibu Untuk Menyasui," Yayasan Essentia Medica.
- "Air Susu Ibu," G. J. Ebrahim, Yayasan Essentia Medica.
- "Metode Mencari Penyebab Kekurangan Gizi Pada Anak-Anak," J. E. Brown and R. O. Brown.
- "Bogert's Nutrition and Physical Fitness," Briggs and Calloway, 1979.
- "Professional Food Preparaion," M. E. Terrell.
- "The State of the World's Children," 1982-83.
- "Specific Safety and Hygiene Standards and Practices for Home Economics. Activity Resource Package," Superintendent of Public Instruction, Olympia, WA, 1976.
- "Supplemental Material for Consumer Education," Superintendent of Public Instruction, Olympia, WA, 1974.
- "Guidelines for Teaching Personal and Family Money Management," Superintendent of Public Instruction, Olympia, WA, 1968.
- "Exploring Living Environments," Superintendent of Public Instruction, Olympia, WA, 1981.
- "Guidelines for Teaching Personal and Family Relationships, Parenthood, Child Growth and Development," Superintendent of Public Instruction, Olympia, WA, 1979.

LIST OF RESOURCES MATERIALS PRESENTED TO IKIP-UJUNG PANDANG (Continued)

- "Interior Design and Decoration," S. Whiton, 1974.
- "Home Economics Education," M. L. Blankenship and B. D. Moerchen, 1979.
- "Competencies for First Year Home and Family Life Teachers," Superintendent of Public Instruction, Olympia, WA, 1974.
- "Textile Handbook," American Home Economics Association, 1974.
- "Independent Living for the Handicapped and the Elderly," E. E. May, Nr. R. Waggoner and E. B. Hotte, 1974.
- "The Second Skin," M. Horn and L. M. Gurel, 1981.
- "The Nature of Human Values," M. Rokeach, 1973.
- "Nutrition During Pregnancy and Lactation," California Department of Health.
- "Breast-Feeding and Health," UNICEF, 1981 (2 copies).
- "Food Composition Table for Use in East Asia," U.S. Department of Health Education and Welfare and FAO of United Nations.
- "Nutritive Value of Foods," U.S. Department of Agriculture, 1971.
- "Composition of Foods, Fruits, and Fruit Juices: Raw, Processed, Prepared," Agriculture Handbook #8-9, U.S. Department of Agriculture.
- "Working with Villagers," American Home Economics Association.
- "Suggested Student Learning Objectives for Home and Family Life Education," Superintendent of Public Instruction, Olympia, WA, 1982.
- "Developing Curriculum for Middle and Junior High School," Coordinating Council for Occupational Education, 1974.
- "Guidelines for Child Development Laboratories," Superintendent of Public Instruction, Olympia, WA, 1974.
- "Daftar Komposisi Bahan Makanan"
- "Nutrition in Pregnancy and Lactation," Worthington, Vermeesh, Williams, 1977.
- "Nutrition in Infancy and Childhood," P. L. Pipes, 1977.
- "Sewing for Profit," Superintendent of Public Instruction, Olympia, WA, 1979.
- "Guidelines, Equipment, Facilities for Power Sewing," Superintendent of Public Instruction, Olympia, WA, 1974.

LIST OF RESOURCES MATERIALS PRESENTED TO IKIP-UJUNG PANDANG (Continued)

35 mm Slide Sets with Scripts:

Clothes for Little People
Clothing for the Physically Limited
Charts dealing with Cultural, Behavioral, Aesthetic Aspects of Clothing,
Nutrition and Aging
Sanitation for Food Service Workers
Clothing Charts Used in Training Program, August 8-13, 1983.
Family Planning in Home Economics
Food and Nutrition. A Problem Centered Approach
To Help You Teach

Nutrition-Malla

- "Human Nutrition, Current Issues and Controversies," A. Neuberger and T. H. Jukes, 1982.
- "Breast-Feeding and Health," UNICEF, 1981.
- "See How They Grow," D. Morley and M. Woodland, 1979.
- "Food and Nutrition for the 1980's. Moving Ahead."
- "Vitamin A for Beautiful Eyes," Helen Keller International, 1981.
- "A Review of Issues in Nutrition Program Evaluation," USAID, 1981.
- "Buku Pedoman Petugas Lapangan UPGK," Usaha Perbaikan Gizi Keluarga.
- "Menuja Keluarga Sehat"
- "Better Nutrition Through Nutrition Circles. A Program Manual," YIS, 1978.
- "Volunteer Community Development Workers," YIS, 1979.
- "Manual for Community Based Underfives Weighing Program," L. Hendrata and M. Johnston, YIS, 1978.
- "The School of Healthier Living," YIS, 1978.
- "Nutrition Education. A Child Centered Approach," Project Proposal, Hawaii Agricultural Experiment Station.
- "Food Delivery Programs and Other Factors Affecting Nutrient Intake of Children," D. W. Price et al., Am. J. Ag. Econ. p. 609, 1978.
- "The Profession of Dietetics," 1972.

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LIST OF RESOURCES MATERIALS PRESENTED TO IKIP-UJUNG PANDANG (Continued)

- "The Sodium Content of Food," UPGK Educational Material, 1980.
- "National Nutrition Education Conference," 1971.
- "Research to Meet World Food Needs," 1975.
- Selected Journal Articles. Nutritional Assessment, Nutrition of the Aging, Children Food Consumption.
- Lecture notes Nutrition in the Life Span, Dr. E. M. Mitchell.
- "Pemberian Makanan Pada Bayi, Kanak-Kanak dan Ibu Hamil and Menyusul."
- Lecture notes presented to IKIP-Manado, 1982, M. M. Hard.
- "Penuntan Karang Gizi," Penunggang Usaha Perbaikan Gizi Keluarga."
- "Nutritive Value of American Foods," Handbook #456, USDA, 1975.
- "Nutritive Value of Foods," USDA, 1978.
- "Food for Peace in Indonesia," USAID, 1981.
- "Nutrition and Development in the View of a Planner," A. Berg and R. Muscat, Am. J. Clin. Nutr. 25:186, 1972.
- "Homemaker's Nutritional Knowledge Scores," Georgia Agricultural Experiment Stations, 1967.
- "Usaha Perbaitan Gizi Keluarga," IPB Bogor, 1973.
- "Community Nutrition," P. Sajogyo, IPB, 1977.
- "A Nutrition Survey to Document the Extent of Malnutrition in a Rural Georgia County," O. Simpson, 1971.
- "Teaching Nutrition in Developing Countries," K. W. Shack, 1977.
- "Visual Aids in Nutrition Education," FAO, 1968.
- "Nutrition/Cardiovascular Reviews," 1972.
- "Research Extension and Higher Education in Human Nutrition," 1980.
- "Research Needs for Establishing Dietary Guidelines," 1979.

LIST OF RESOURCES MATERIALS PRESENTED TO IKIP-UJUNG PANDANG (Continued)

Food Science - Rasjid

- "Odor Quality and Chemical Structure," H. R. Maskowitz and C. B. Warren, 1981.
- "Food Taste Chemistry," J. C. Boudreau, 1979.
- "The Growing Challenge," 1977.
- "Global Malnutrition and Cereal Fortification," J. E. Austin, 1984.
- "Perkembangan Pembuatan Bahan Makanan Campuran," Hermana, 1977.
- "Resep-Resep Sedernana Masakan Bahan Makanan Campuran Beras - Kedelai," Hermana, 1977.
- "Memanfaat Kan," Hermana, 1981.
- "World Food and Nutrition in Study: The Potential Contributions of Research," The National Research Council, Washington, D.C., 1977.
- "Supporting Papers: World Food and Nutrition Study," National Research Council, Washington, D.C., 1977.
- "Fermented Vegetable Protein and Related Foods of Southeast Asia with Special Reference to Indonesia," F. G. Winarno, IPB, 1979.
- "Citrus Science and Technology," Vol. II, S. Nagy, P. E. Shaw and M. K. Velohius.
- "Sustainable Food Systems," D. Knorr, 1982.
- "Microbiological Applications."
- "UNL Food Microbiological Laboratory Exercises"
- "101 Problems in Food Science and Technology"
-

APPENDIX VIII

SUGGESTED PLAN OF WORK FOR BOB HAGGERTY 1983-84

The Associate Technical Advisor in Food Science and Technology arrived in Indonesia in July 1982. After language training in Ujung Pandang he moved to Manado in October. During the past year, he has advised and contributed at the Universitas Sam Ratulangi, IKIP Manado and IKIP Ujung Pandang. He has assisted staff in course development and evaluation, in exploring practical experiences for students and in equipping the UNSRAT Food Science laboratory. Details of his activities are given in his 6-month reports to BKS/WSU/USAID. Two main efforts should be recognized, i.e., preparation of manuals (Diktats) in Bahasa Indonesia and the Food Safety and Sanitation In-Country Training Program. His steady encouragement and follow-up assisted the latter to fruition and the former another step closer to completion (as of September 1983).

First priority, in the next months, should be given to: a) publication of the Proceedings of the Food Safety and Sanitation Training Program and b) editing and publication of the manuals.

This second item particularly, will be time consuming and demanding. Serious consideration should be given to the probably need for an extension of Bob's assignment (from February 1 to April 30, 1984) in order to complete the manual effort.

Secondly, high priority should be placed on visitations and consultations to the other BKS-T universities. Requests for the technical assistance have been made by UNHOL, UNCEN and UNPATTI. Sufficient time should be spent at each location to become acquainted with specific problems, to recommend possible approaches and to initiate the implementation of

those recommendations. The expertise university of staff members returning from WSU for instance, the foods and nutrition trained people at IKIP Manado and IKIP Ujung Pandang, might be utilized to assist Bob at the other BKS-T institutions.

As time and available supplies and equipment permit, Bob could help to set up the new food science and technology laboratory at UNSRAT and to develop laboratory experiences for students.

Arrangements should be made to cataloge the resource materials in the Food Science and Technology library.

Laboratorium T balok

Tanggal

Kegiatan-kegiatan yang biasanya
sangat banyak Tangga 1.1.1

1. Kebersihan Tanggapan
2. Perawatan bagi dan perawatan orang
3. Perawatan badan

Adapun dalam Laboratorium T balok

di rumah

Melihat kegiatan-kegiatan tersebut
di sediakan dapat kami kemukakan sebagai

daftar minimal perlengkapan yang perlu
sebagai berikut:

Daftar minimal perlengkapan untuk

No.	Nama barang	Daftar Tanggapan	
		Spesifikasi	Jumlah
1	Rak tempat tas siswa	ukuran Panjang 150 cm Lebar 50 cm Tinggi 100 cm	1 buah
2	Maja dan kurai		
3	Maja makan (dapat serba guna)	ukuran jek di susunikan dengan warna sekelilingnya ukuran Panjang 150 cm Lebar 100 cm	1 utas 1 buah
4	Kurai makan	ukuran jek dapat diatur panjang/pelastiknya	
5	Kitchenette (di lengkapi alat-alat dapur sederhana)	ukuran jek di susunikan dengan warna sekelilingnya	1 buah
6	Rak buku/huruf-jalah	ukuran Panjang 150 cm Lebar 50 cm Tinggi 100 cm	1 buah
7	Meja-buku kapur tulis/huruf-jalah	ukuran Panjang 150 cm Lebar 50 cm Tinggi 100 cm	1 buah
8	Divisoir	ukuran Panjang 150 cm Lebar 50 cm Tinggi 76 - 80 cm	1 buah
9	Papan		
10	Gunting	ukuran Panjang 150 cm Lebar 50 cm Tinggi 76 - 80 cm	3 buah
12	Perlengkapan reparasi	ukuran Panjang ± 18 - 20 cm	4 buah
13	Est service		1 stol
14	Gelas-gelas		
15	Alat pengadung lain		
16	Alat pemborah		
17	Alat-alat pemborah		
18	Alat kerja lain yang digunakan		
19	Alat kerja untuk membuat benda-benda dan membuat benda pakainya	ukuran Panjang 150 cm Lebar 50 cm Tinggi 76 - 80 cm	1 buah

84

No	Nama Barang	Spesifikasi	Jumlah
20	Kopor	Bahan: anyam tanah, jika mungkin lain	1 buah
21	Panci perebus	Bahan: Email Diameter: 0 0 cm	
22	Gayung	Bahan: seng/plastik	2 buah
23	Laber plastik	Bahan: ... Diameter: ± 0 40 cm	beberapa
24	Kou	Bahan: Email Diameter: 0 ± 10 cm	1 buah
25	Rak penjemur	Bahan: ... berant	1 buah
26	Papan setrika	Bahan: dsb, sama dengan untuk papan Lab. Fisika	1 buah
27	Almari untuk menyimpan bahan	Bahan: ds di buat sedemikian rupa sehingga pemakaiannya mudah	1 buah
28	Almari untuk menyimpan perlengkapan		
29	Setrika	1 set, orang	beberapa

Daftar perlengkapan tambahan yang perlu disediakan untuk unit Morawat bayi dan orang sakit di rumah

No	Nama barang	Spesifikasi	Jumlah
1	Tempat tidur (lengkap dg. perlengkapan)	untuk 1 orang	1 set
2	Kursi		1 buah
3	Binokul kecil (light table)		1 buah
4	Tempat tidur bayi (dengan perlengkapan)		1 buah
5	Meja bayi		1 buah
6	Kantong air panas	Bahan: karet	2 buah
7	Botol rumah sakit	Bahan: email	2 buah
8	Kidney basin (atau bertutup ginjal)	Bahan: email	2 buah
9	Flaspet sodak	Bahan: email	1 buah
10	Lampiran center	Bahan: ...	1 buah
11	Suporangkat alat-alat khusus bayi		
12	Laber bayi	Bahan: plastik	1 buah

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Dari diagram tersebut di atas kita dapat sudah menentukan alat-alat dan peralatan yang diperlukan serta mengorganisasikan tata letaknya sehingga kegiatan di laboratorium dapat berjalan secara efisien. Adapun alat-alat dan peralatan yang perlu di sediakan di dalam Laboratorium Makanan ialah sebagai berikut :

Daftar alat-alat minimal yang di perlukan untuk 1 unit (4 - 6 orang)

No.	Nama barang	Spesifikasi	Jumlah
1	2	3	4
1	Panci peribus	Email 0 20 cm	2 buah
2	Panci dadar	Email 0 20 cm	1 buah
3	Sakso pan	Email 1 l	2 buah
4	Panci bertangkai	Email 2 l	2 buah
5	Dandang/risapan	Email/aluminium 1 kg	1 buah
6	Garot	Email/aluminium	1 buah
7	Irus	Email/aluminium/bespuwang	2 buah
8	Satel	Email/loos/stainless steel	1 buah
9	Serok	Email/all/seng	1 buah
10	Sendok kayu	Bulat	2 buah
11	Sendok kayu	Ber sudut	1 buah
12	Telonan	Kayu ± 20 x 30 cm	1 buah
13	Pisau dapur	Besi/ stainless steel	4 buah
14	Garpu dapur	Stainless steel	1 buah
15	Pengode telur	0 5 cm	1 buah
16	Spatula	Plastik/karet	1 buah
17	Saringan kelapa/serat	0 20 cm	1 buah
18	Saringan teh	0 5 x 7 cm	1 buah
19	Gelas pengukur	Bahan : gelas/plastik	1 buah
20	Takalangan		1 buah
21	Gugkir pengukur	Zhwinin	1 buah
22	Wiring copar	Email	8 buah
23	Kem	Email 0 12 cm	4 buah
24	Kem	Email 0 25 cm	8 buah
25	Cebek	Bahan : Batu/ tanah liat 0 ± 20 x 15 cm	1 buah
26	Ulogan	Bahan : Kayu/bambu	1 buah
27	Wajan	0 40 x 50 cm	1 buah
28	Layang	Seng/aluminium ukuran ukuran ± 30x30 / 30 x 35	2 buah
29	Stasiun pemanasan	Bahan : Kayu Lebih baik yang lebih banyak	1 buah
30	Sendok makan	Stainless steel	8 buah

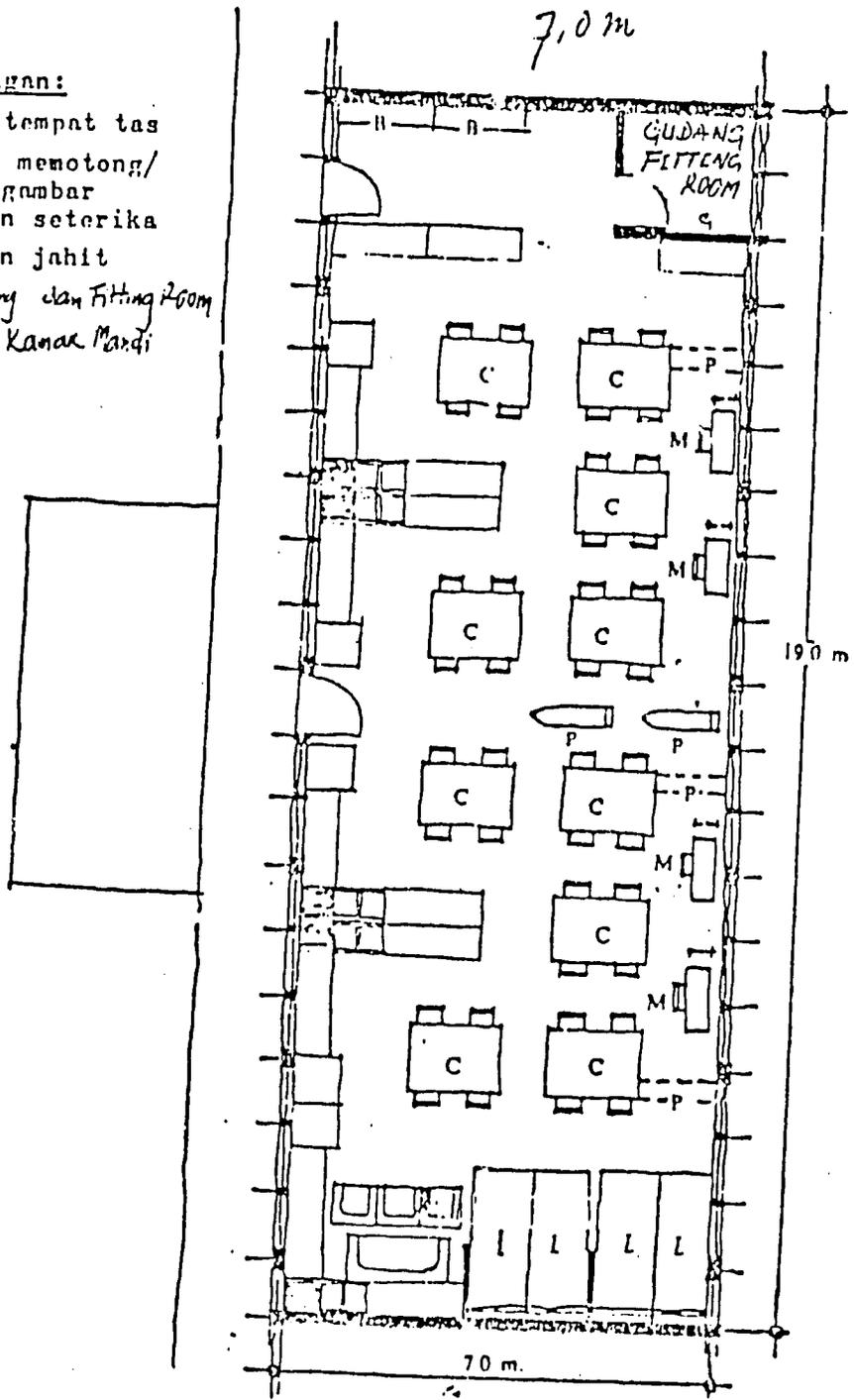
1	2	3	4
31	Garpu makan	Stainless steel	8 buah
32	Sendok teh	sda	8 buah
33	Sendok sayur	sda	3 buah
34	Pisau makan	sda	8 buah
35	Piring makan	Porse lin/bermotif	8 buah
36	Piring kue	sda	2 buah
37	Piring daging	sda	2 buah
38	Wangkuk sayur	sda	4 buah
39	Piring ceper	sda	3 buah
40	Gangkir + cawannya	sda	8 buah
41	Gelas minum	Kaca	8 buah
42	Kan teh/kopi	Porcelain/stainless steel	1 buah
43	Basi bertutup	sda	1 buah
44	Serbiet makan	Polca/bermotif	6 buah
45	Serbiet jari	sda	6 buah
46	Alas meja makan	sda	1 buah
47	Lap pengering	Bahan katun	2 buah
48	Lap kerja	sda	2 buah
49	Kain pel	sda	1 buah
50	Tapisan tepung	Ø ± 20 - 25 cm	1 buah
51	Bald	Kayu/plastik	1 buah

*Laboratorium busana lengkap dgn isinya
ukuran 7 x 19 m*

Contoh - contoh lab. serba guna, satu ruang dapat diatur menurut keperluan.

Keterangan:

- B= Rak tempat tas
- c= Meja memotong/
menggambar
- P= Papan setrika
- M= Mesin jahit
- G = Gudang dan Fitting Room
- I = WC / Kamar Mandi

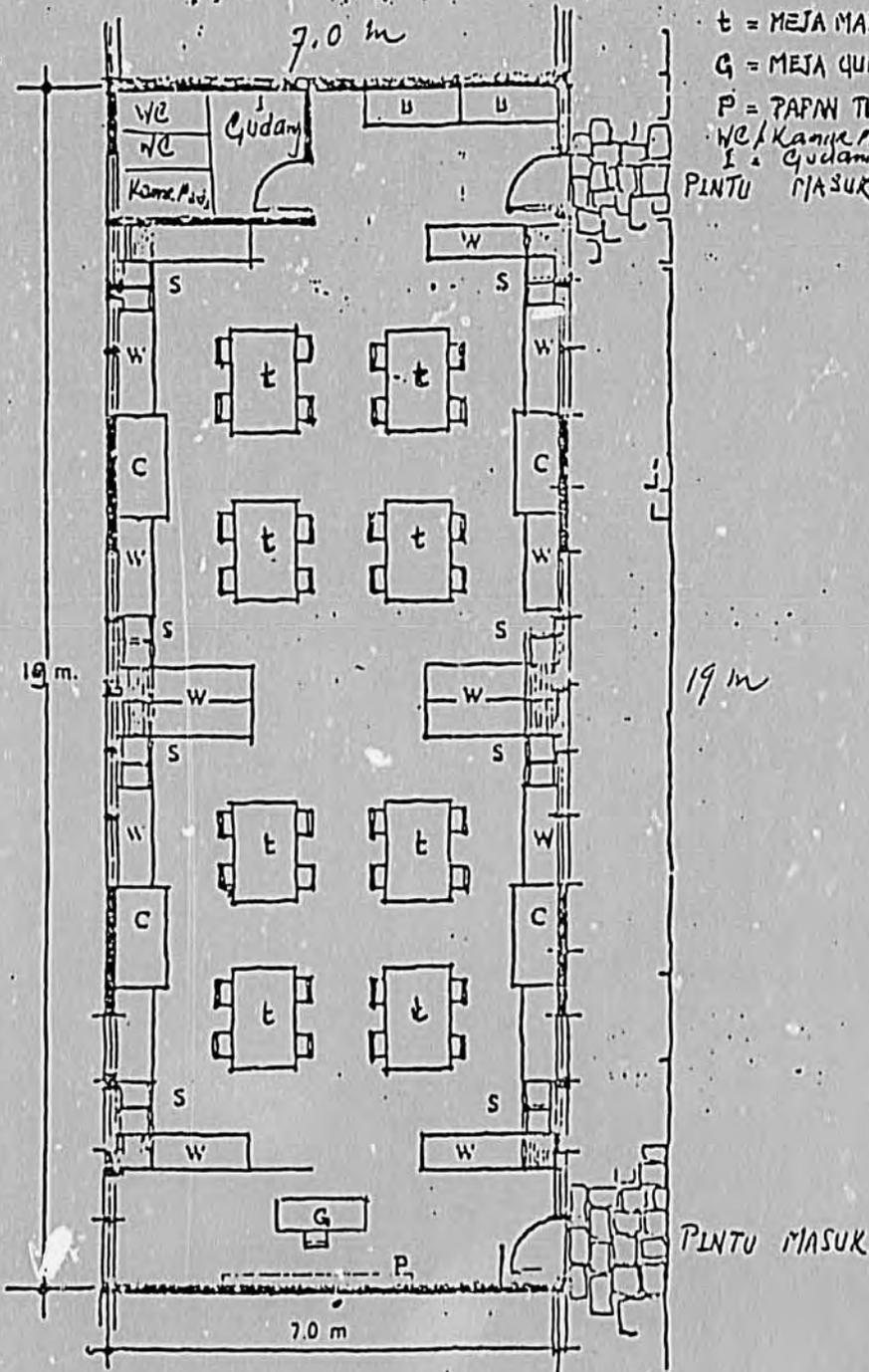


Ruang serba guna untuk kegiatan menjahit.

Laboratorium Kaya lengkap dgn wingnya
 ukuran 7x19m. II

LEMBAGAAN :

- B = RAK BUKU.
- S = PUSAT MENCUCI
- W = MEJA KERJA
- C = KOMPOR
- t = MEJA MAKAN + KURSI
- G = MEJA GURU
- P = PAPAN TULIS
- WC / Kamar Mandi
- I = Gudang



Gambar Denah Lab. Makanan
 Untuk ± 40 Siswa

- 1 -

Daftar perlengkapan minimal yang perlu di sediakan untuk
unit merawat keanifilan.

No.	Nama Bahan	Spesifikasi	Jumlah
1	Maja berhias / toilet		1 s 2 buah
2	Kursi		1 s 2 buah
3	Kursi panjang untuk mencuci bersihkan muka		1 s 2 buah
4	Perlengkapan cuci rambut		1 s 2 buah
5	Almari/obinet/rak tempat alat-alat keanifilan	itu a berhias	1 buah

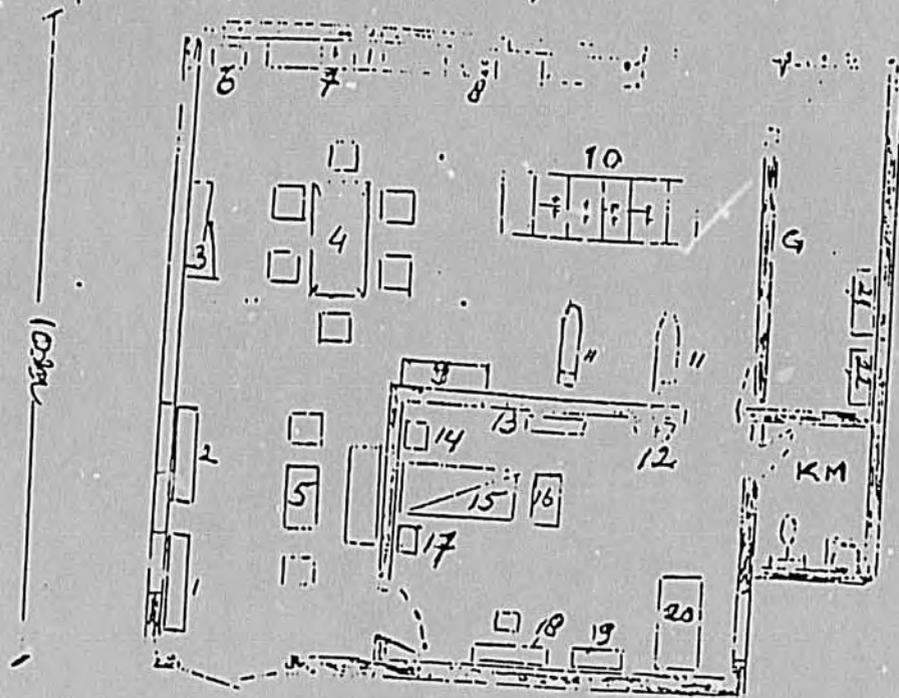
Berdasarkan diagram tersebut perlengkapan Laboratorium Pakalain dapat di tentukan sebagai berikut :

Perlengkapan minimum yang perlu di sediakan untuk Lab. Pakalain.

No.	Nama Barang	Spesifikasi	Jumlah
1.	Moja memotong dan menggambar pola	Ukuran: Panjang 150 cm Lebar 100 cm Tinggi 80 cm	1 buah 4 cm
2	Kursi duduk	Bersandar	11 unit. 1 setoran
3	Mesin jahit	Mesin tangan/kaki electric	4 buah
4	Papan setrika lengkap dengan pelapis dan penutupnya	Lebar 35 cm Panjang 1,35 m penutupnya	2 buah
5	Setrika	Listrik/aring (bergantung ke-adaan)	2 buah
6	Rak tempat menyimpan tas para siswa	Ukuran: Panjang 150 cm Dalar 50 cm Tinggi 120 cm	1 buah
7	Tempat menyimpan hasil pekerjaan siswa	Jika dapat cabinet yang berlaci. Tetapi jika tak mungkin almari biasa juga dapat	1 buah
8	Moja guru	Ukuran: Panjang 150 cm Lebar 50 cm Tinggi 80 cm	1 buah
9	Perlengkapan mesin jahit (misalnya spool dll)		
10	Pita pengukur	Panjang 200 cm	4 buah
11	Penggaris kayu	Panjang 100 cm	4 buah
12	Penggaris silu-silu		4 buah
13	Gunting untuk memotong	Panjang 18 cm	8 buah
14	Moja untuk mengadakan pengujian tekstil	Panjang 150 cm Lebar 50 cm Tinggi 76 - 80 - 90 cm	1 buah Jika di mungkin 1 unit.

III

Laboratorium Tata Laksana Rumah Tangga
 Lengkap dengan isinya.
 ukuran 7 x 10 m
 7 m



DENAH LABORATORIUM TATA LAKSANA
 RUMAH TANGGA

DEFINISI GAMBAR :

1. Rak tempat tas siswa
2. Rak/Lemari buku/wajalah
3. Dressier
4. Meja makan dengan kursinya
5. Meja tamu dengan kursinya
6. Lemari oc
7. Kitchenetto
8. Kempor
9. Meja untuk menghilangkan noda + memperbaiki pakaian
10. Unit mencuci dan set meja kerjanya
11. Papan setrika
12. Washtable
13. Meja bayi
14. Kursi
15. Tempat tidur
16. Tempat tidur bayi
17. Meja kecil (untuk L.L.L.)
18. Meja makan dengan kursinya
19. Meja makan dengan kursinya
20. Lemari alat kesihatan
21. Tempat merawat muka
22. Lemari alat-alat mencuci
23. Lemari alat-alat pembersih
- KM = bilik mandi - WC
- G = bilik