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

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Introduction

This is the final report I will submit to BKS PTN INTIM/WSU/USAID. Basically it covers the period of JAN through April 1984, the period since my last report. As you can see, this report consists of a letter to Dr. Margaret Hard. The contents of the letter cover everything of relevance and is more readable, I think, than a structured report.

The letter covers following topics:

1) Food Science and Nutrition Teaching Manuals
2) Food Science Laboratory Equipment Acquisitions for UNSRAT
3) Acquisition of Library Materials in Food Science and Nutrition
4) Technical Assistance Visits to UNCEN and UNPATTI
5) Self-Evaluation
6) Overall Project Evaluation

I have not limited my comments to facts but include impressions and feelings about some of my latest experiences.
Dear Margaret:

I am in the midst of the hectic activities of getting ready to go home and finish-up project related duties. You know what it is like with everyone inviting you over for one last meal. There aren't enough hours in the day. The purpose of writing to you is to fill you in on the final activities in a complete sense. This letter will probably form my final report. Though this letter was started on April 18 I am writing it over the course of several days while processing out of Indonesia and the project. I will try to be as concise as possible but I don't want to exclude some personal feelings from my final account of my assignment in Indonesia.

Since Jan 1984 I have been caught up in a whirlwind of activities: Basically they can be organized as follows: 1) Food Science and Nutrition Teaching Manuals; 2) Acquisition of Food Science Lab Equipment for UNSRAT; 3) Acquisition of Library Materials in Food Science and Nutrition; 4) Technical Assistance Visits to UNCEN and UNPATTI.

The teaching manuals are turning out to be much better than was originally planned. At that time loan monies were still frozen, so Dan Sembel and I tried to keep things simple. The final products are of greater quality and quantity that our original concept. The meetings of the authors are great examples of the networking aspect of this activity. Some real leaders are emerging which I see as a real benefit of this process. As you well know a lot of these people suffer from a lack of self-confidence. Writing these manuals has been an opportunity for the authors to gain well-deserved self-confidence. We held a meeting April 16-19 in Manado. Dr.'s Sri-Kandi and Dedi Fardiaz attended as well as editors from UNHAS and IKIP-Manado.
The authors decided to request one more session in May at which time the manuals are expected to be turned in to the printers. There will be seven manuals: Food and Nutrition; Food Technology (2 volumes); Food Quality Control; Food Chemistry; Food Science Manual IKIP-U.P. (Nutrition, Home Food Preparation, Institutional Food Service); Food Science Manual IKIP-Manado (Food Hygiene, Food Technology, Food Chemistry).

The IKIP-Manado manual has had some problems. It has suffered from the changing of authors due to pregnancy, new job assignments outside IKIP and lack of leadership. In this last meeting they made significant improvements and had Sakidja involved in shaping its final form. In the end I think it will be fine. The only other problem is money. Dau and I underestimated the volume of manual materials so we under-budgeted for printing. Dan thinks he can work this out. If P dan K regards these manuals as 'text-books' then they will foot the bill for printing and nation-wide distribution. I feel they could be regarded as text books. We should know before June 30.

The one activity I feel personally best about is the acquisition of laboratory equipment for Food Science and Nutrition at UNSRAT. I thought this would be the big gap in your original Food Science Laboratory concept forced by lack of funding. But the U.P. office gave me the go ahead to buy ready stock items from vendors in Jakarta. I started shopping in October but made my final selections in Jan and Feb. We have already received almost everything and some items have already been put to use. I couldn't get everything I wanted but got what was needed to give UNSRAT the capability for teaching, conducting proximate analysis, basic food microbiology and some simple research. The Food Science building will house the lab. Dan has already built lab benches along two walls complete with two double sinks. He is also having some re-wiring done. They will need some voltage stabilizers too. I designed a floor plan for the lab which Dan hopes to get constructed as soon as possible. They are short on money but I believe UNSRAT wont let things hang. There are a few people at UNSRAT who are capable to keep the equipment functioning. Sakidja has been involved in receiving the equipment shipments and plans to use UNSRAT'S facilities in his teaching and research. I think UNSRAT and IKIP-Manado will cooperate on this. More detailed lab procedures are needed by those who will be working in the lab.

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The Food Science mini-library at UNSRAT has perhaps two hundred titles now thanks to WSU and the lack of copyright laws in Indonesia. We have acquired a wealth of photocopied books to add to our collection of originals. We are still waiting for the big book shipments which have arrived in Indonesia but which have not yet been cleared through customs and/or distributed. The mini-library is very well used. Everything has been catalogued and Hetty is very strict in lending of all materials. I still have mixed feelings about the way the books are controlled. The mini-library is turning into another independent library on campus. These books won't likely be placed at the central library. At first I objected to this but eventually came to believe it was the best way in the short term. The materials will be better used and effectively controlled using this mini-library approach. Still I made it known that I would like to see all these books eventually placed in the central library. I doubt they will be. Perhaps they will at least be catalogued through the central library.

UNSRAT is not the only institution that I've tried to supply books to. Whenever I came across a book I thought useful or was requested to photocopy by someone I photocopied it. It's actually quite cheap. At some point, every BKS-T institution has gotten photocopied books from me - they found out I had a hard time saying no.

As you know I made a couple of trips to the eastern islands of Ambon and Irian Jaya last February and March. I know you would have liked to go yourself but didn't get the chance. Without making this a travel-log I will try to fill you in on some details.

In going to Irian Jaya I was intending to work with UNCEM'S PKK-oriented staff in Abepura and perhaps KKN and Experimental Village staff. At Manokwari I intended to follow up on the solar drying shortcourse put on by U of I last Dec. Basically, I did what I intended but a bit more. As usual I came packing 60 pounds of photocopied books and they were well received. At Abepura I gave a lecture on water sanitation and wastewater treatment which was well attended. I looked over their lab but was unable to repair their broken fume exhaust fan. We had discussions with the local Vocational-
Technical High School (STM) about the eIP solar dryer and solar possibilities in the rural areas. At Manokwari I spent a few slow days. I lectured on preservation of animal products and tried to repair an Atomic Absorption apparatus in their soil science lab. I saw Dean Waggai and Fred Luhulima.

The high light of the Irian trip was when Rector Rudy Tarumingkeng sent me up to the primitive central highlands to make observations about traditional food systems, preservation and nutrition. Before going, Mr. Mehmet Rusmaedy told me I should go up there because I would not see anything else like it in the world. I found it a fascinating, puzzling and humbling experience. My education didn’t prepare me for what I saw up there. A person needs to be a nutritional anthropologist or nutritional ecologist or linguist to be effective in the highlands. The Christian missionaries are at the forefront of progress being made to ease the tribes people from the Stone Age to the modern world. The Indonesian government seems to realize this and for now appear to encourage the efforts of these missionaries who are European, North American, Australasian and Indonesian. They deal with poverty, malnutrition and a primitive culture that will not be seen for long.

The “Baliem Valley is a large valley in the central highlands, the range that forms the backbone of this huge island. The main settlement is called Wamena. It is the home of the Dhani tribespeople who like all people indigenous to this region are Melanesian (Negroid featured). Isolated Wamena is about an hour’s flight west-southwest of Jayapura. There are no roads, only wild forests, swamps, rivers and mountains in between. The valley has an elevation of 1600m (5280 ft.) surrounded by limestone and snow-capped peaks ranging from 12,000 to over 16,000 ft. This is all at 4 degrees South latitude. Temperatures range from highs of 19-25°C to occasional lows of 10 degrees C. Frosts are rare but not unheard of. Rainfall is moderate - something around 65 or 70 cm annually. The valley is almost denuded of trees. People walk for hours or days to gather wood. There are no coconut trees at that elevation. There are cultivated banana trees near Wamena.

The polygamous tribesmen have a complex culture of which I know very little, but which does affect their nutritional status greatly. They wear almost

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no clothing in the cool climate. They value pigs above other possessions and their staple is the sweet potato (55 varieties in the region). The Dhani's have been gardeners for generations yet until the last 20 - 30 yrs they raised essentially only sweet potatoes. The missionaries introduced garden vegetables which thrive in the mild climate. Though the Dhani's raise an overabundance of vegetables they themselves don't eat them but rather sell them at Wamena's market. They eat sweet potatoes everyday and pork and chicken occasionally at big feasts. I saw signs of protein deficiency in children under five years and other resulting health problems. In other outlying areas the situation is not exactly the same. Where missionaries have made inroads the tribesmen consume peanuts and vegetables. Where available they eat pandanus fruit and pandanus brazimus which are vit A, protein & essential fatty acid sources. Near Wamena, the government settlement, tribesmen are introduced to outside ways which don't seem to mesh with their traditional ways. They sell wood and vegetables or handcrafts for money they use to buy cigarettes, sweets or other consumer goods. They seem to be a very kind people. It was sad to see their children malnourished.

Their concept of food preservation seems to be to leave the sweet potatoes in the ground until they're ready to eat them. They don't cook with water. Rather they bake. They dig a pit and layer in river rocks and firewood. The rocks are heated up and there are hot coals. The sweet potatoes are wrapped in their leaves and tossed into the pit to bake then the pit is covered with grass. When the spuds are cooked they are eaten. I never saw anyone eating the leaves but I'm told they do.

Their houses remind me of the old lodges of the Mandan and Minataree Indians of the Upper Missouri River. The people sleep on raised bunks in their huts, near the ceiling where the warmth of the fire is best captured. At the same time they breathe in the smoke accumulated near the ceiling. They have chronic lung trouble and many people die of pneumonia when they become "old".

I know I am painting a grim picture but that is what I observed. Out in the higher back country, may be the situation is not so bad. May be the modern world hasn't impacted so much. Of the 300,000 inhabitants of the Kabupaten,
60 - 70% are still hunter-gatherers. They have a better protein supply.

There have been nutrition studies done through Irian by Ms. Jean Eng-Underhill. I never heard of any nutritional status studies done near or including Wamena. I sent you, via Dr. Froseth, what I found written by Ms. Eng. I hope you found the reports informative and have shared them with others who are interested. I found the reports in the Irian Jaya Development Information Service Center at UNCEN (supported by the Asia Foundation).

I saw some possibilities for trying to help these people out. The big problem is how to intervene. The missionaries are having more success than the government with nutrition education. The needs are very basic. If they could be accepted, legumes would grow well here. Potatoes thrive but the Dhani's won't eat them. The concept of preservation and storage needs to be introduced. I heard that traditionally the Dhani's have a special garden plot for an especially delicious or big type of sweet potato. Interveners might take advantage of this tradition in introducing a "special" crop like some legume. These plots should be seed plots, not only food producing plots.

The solar potential in the Baliem Valley is tremendous. The solar radiation at that elevation and latitude is very intense. The Indonesians living in houses in Wamena could cut down on use of firewood by heating water initially using solar energy and set an example for others.

I see a potential for solar drying of tuber crops. I could see a cottage industry cassava and sweet potato chips being developed to serve the soup and snack demands of Indonesia—especially Java. Dried foods would reduce weight and thus shipping costs by air. Again the question becomes. 'How do you intervene'?

I felt fortunate to have the experience of seeing and meeting the Dhani's and their fabulous valley. At the same time I felt very humbled and powerless to help. I took some slide of what I saw. Wayne Gash has much better slides. Hopefully we can put on a show for you later this summer.

The other traveling I did took me to UNPATTI at Ambon. There it is another situation again—different than Irian Jaya or Sulawesi. The Moluccas are an
archipelago within an archipelago. The fisheries potential is vast. UNPATTI has been working with the University of Washington (UW) developing Marine Sciences for the past five years.

Through the UW project UNPATTI has acquired a good aquaculture lab and some biology lab equipment that could be used for food science courses. Twenty years ago UNPATTI got some food processing equipment from the Russians and recently from UW. I was asked to help install the equipment or at least help make better use of it.

UNPATTI has developed the principle that improvement of fisheries and fish processing has to be based upon traditional fish processing methods used throughout east Indonesia. However, just what the traditional processes are and how they differ has never been documented. Dr. Jan Nanere and Mrs. Charlotte Nanere asked for help in trying to get this documentation. I helped them to write a proposal to have a training workshop for all BKS-T institutions where they could gather regional information and get instruction from outside experts on how to modernize the traditional processing methods. The workshop was approved and was held March 27 - 29 in Ambon. Experts were: Mr. John Pieters (WSU), Dr. Suwarno (IPB) and Dr. Sumpeno Putro (Indonesian Fisheries Development Body). Dr. Putro and Mrs. Nanere did post-graduate work at UW so this workshop was a real state of Washington affair.

We had 'Keystone Cops' - like problems with electricity during the workshop but it did not detract from the success of the workshop. There were several outcomes from this workshop. Methods of traditional fish processing from east Indonesia were documented and proceedings are being produced and distributed. BKS-T networks were strengthened. UNPATTI made steps establishing itself as a leader in fisheries education development in Indonesia. WSU and UW together helped make this gathering possible. The participants made recommendations on modernizing traditional fish processing methods. These fell under the categories of processing, product safety and marketing. These were further organized for implementation under research, training and extension. The recommendations are being written up by Dr. Putro.

I was disappointed that the participants didn't further synthesize their
recommendations themselves. They instead handed them over to Dr. Putro for final adjustments. The participants seemed satisfied but I felt they were passing off their responsibility.

I never did get to work with the food processing equipment I'd been told about. It seems it was locked in a storeroom and the key could not be found.

Dr. Nanere thinks he will be getting a sum of money from the governor for a Food Science Lab and pilot plant. Using my experience at UNSRAT and Mr. Pieter's help we drew up designs for these facilities I provided UNPATTI with list of all the lab equipment UNSRAT acquired and some that UNSRAT did not get but needs. If UNPATTI can get the lab, pilot plant and equipment they will have a better facility than UNSRAT. At the moment however, UNSRAT's staff is much stronger.

In retrospect I guess I can evaluate myself in my work here the past 21 months in three categories: facilitator, teacher and technical. I have mixed feelings about how well I've done in each.

As a facilitator I feel I've done well. I linked people and resources as well as I could. When I arrived almost nobody at UNSRAT had an idea of what Food Science in the context of Indonesia was. My concept changed from the beginning too. As I left Manado I felt the concept had taken root and that UNSRAT, with IPB's help, will take it from there.

As a teacher I didn't do so well. First of all I didn't have much classroom teaching experience coming into this job. Secondly I didn't have good enough command of Bahasa Indonesia for effective lecturing. One on one I did much better because it's informal, language problems can be worked out–there's more time.

As a technician I rate myself as only fair. I did very little in the way of lab or food processing work mostly due to a lack of facilities, but also because I didn't think it was the best way to use my time. I thought I would be a better information resource than a technician. For example, I provided information to go into the satellite Food Science Course but Sigfreid Berhimpun is taking the lead on the technical end of things. In the end I was able to get lab equipment but not able to install it all completely or work out detailed
lab procedures. The potential for leaving a vacuum behind is very real (no pun intended).

On a larger scale I often try to evaluate this project on the whole. After seeing UW's Ambon project and U of Wisconsin's IPB project I realize the large scale and depth of WSU's BKS-T project. I don't know how Yarberry's were able to handle everything they did in the years before Wayne got to U.P. It's a shame and probably a mistake that this project is not to be extended in some way. There is much that could still be done.

I see a problem with this project which is inherent in administering any such project and that is communication. I know I haven't done as good a job of communicating with people as they would have liked and that's my fault. There is a tendency for people 'on the ground' to feel that people back in the states don't understand exactly what's going on and that people at home get frustrated because they don't get enough good information from people in-county. In both cases there's substance to the complaints. I don't know for certain what should be done that isn't already being done. I would like to see Pullman people at the administrative level to get a chance to spend longer periods of time in-country. This would have to be designed into the project. Campus responsibilities would have to allow for it. I am talking about 6 to 8 weeks at a time at several intervals over a five year period. This would promote a deeper understanding of the in-country situation by Campus administrators. It would promote deeper understanding between Campus and in-country staff and aid in prudent decision making on both ends.

On a personal level, I feel I've had a good experience. It's a real broadening sort of experience that will be hard to explain on a resume. You know what kind of things one is exposed to and special relationships you develop. As I look toward my re-entry adjustments, I can't help but feel it's too bad more people won't really care what I've experienced in the past two years. Still, I know what I've got.

I'll sign off now Margaret. Thanks for everything. I hope to see you at the end of June. Please give my regards to Art.

Sincerely,

ROBERT J. HAGGERTY