

TRIP REPORT

Nutrition Collaborative Research Program  
 January 3, 1985 to February 4, 1985 -  
 Dr. Charlotte G. Neumann - Principal Investigator

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1. Cairo Meeting - January 5-11, 1985

A meeting was called by the Principal Investigators of the three Nutrition CRSP Projects. The main purpose of the meeting was to have the projects examine data in hand with a view towards constructing a framework for analysis in order to answer the hypothesis and research questions, and to present a status report to one another in reference to the following:

Progress to Date in All Areas of Data Collection

- food intake
- data entry
- estimate of missing data
- clarification of definitions
- realistic appraisal of procedures, methodologies in terms of yielding quality data
- sharing of common and country specific research data collection

A definition of hypotheses, research questions, and analytic framework was discussed in great detail. The following areas received priority:

Toddlers: the relation of food intake to morbidity, cognitive and psychological function and anthropometry.

Pregnancy: the relation of food intake to pregnancy outcome.

The above were discussed in the context of the upcoming SCB and EEP meetings in February and April.

Due to the large number of Egyptian staff present, there was a good deal of interaction with the Egypt project, which included visits to the field site. Two of the Kenyan staff had RMR tests done in Kalama in order to compare results of the Embu, Kenya RMR laboratory with UCLA, and to see if the results are comparable in the three sites. Also, blood samples were exchanged for quality control purposes.

Management Entity members were Dr. George Beaton and Dr. Hugh Horan. Dr. Eric Carter and Mrs. Anne Coulson in addition to the principal investigators (Bwibo and Neumann) represented the Kenyan project. Dr. Lindsay Allen represented the Mexico project.

The agenda and contents of the meeting are contained in Nancy Myers' report and in notes taken by Dr. C. Neumann which will be presented separately.

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## II. Nutrition CRSP Kenya Project Trip Report

Time in Kenya: January 11 - February 4, 1984. Time spent in Nairobi: January 11-13, 1985, January 21-22, January 30-31, 1985. Time spent in Embu, Eastern Province, at the project site: January 13-21, January 23-30 and February 1-4, 1985.

The time spent in Kenya was extremely busy and eventful. The main set of activities going on in a short space of three weeks included:

(1) Introduction and orientation of three new UCLA field staff members: field director - Dr. Michael Baksh, field physician - Dr. Mark Marquardt, field anthropologist - Dr. Michael Paolisso.

(2) Debriefing the departing staff: field director - Dr. Eric Carter, field anthropologist - Dr. Dorothy Cattle and field physician - Dr. Amrullah Khelghati.

(3) UCLA consultants: Dr. Gerald Gardner evaluated the entire RMR procedure, quality of testing and data. (Details are presented below.) He also checked out some potential difficulties with the Beckman MMC cart and arranged for immediate servicing by the regional Beckman technician (from Dubai).

Mrs. Anne Coulson reviewed the data management procedures and also reviewed the quality control procedures for each of the functional areas. She also introduced and instructed the senior staff in the use of some new programs for the Apple Computer -- an epidemiology program, a statistical program and a food nutrient composition program.

(4) Meetings were held with the administrative managerial group -- William Martin, project administrator, Tom Nguli, project accountant and Mr. David Cheboi, administrative assistant.

(5) Local official in Embu -- The district Commissioner, the district officers, the provincial medical officer, Dr. Agata and the chief, subchiefs and Karumo Health Center Director, Mr. Mbogo and community nutrition worker were all visited to discuss relevant project issues.

(6) There were numerous meetings and consultations with Dr. Bwibo, the co-principal investigator with all of the Kenyan counterparts in each of the functional areas as well as the Kenya senior field staff. Also, the supervisor and enumerator staff were also met with on a cluster basis and by functional areas. A busy recruiting period took place with interviews for a nurse, clinical officer, and Kenyan counterpart Field Director.

(7) Unexpectedly, I had to spend the first week and one-half full time in the field, acting as the field physician for the morbidity function. Dr. Khelghati was sick and hospitalized with fever of unknown origin and Dr. Mark Marquardt had not yet arrived in Kenya. Although this took an unexpectedly large share of my time, it also allowed me to see first hand what the problems were in the disease and morbidity function. The work involved doing daily physical examinations, making home visits to validate illness, morbidity coding, examining newborns, and doing Dubowitz Testing for gestational age.

(8) First Annual Review Meeting of the Kenya Nutrition CRSP Project.

Intensive data review and preparation took place for the first annual review meeting scheduled for January 28th, a one day meeting to which Kenyan representatives of ministries, agencies, nongovernmental and international organizations were invited. The guest list and the Program are appended. The Minister of Water and Embu Member of Parliament addressed the participants and pledged his support for the projects work.

The main purpose of this meeting was to explain in detail what types of data are being collected, what types of analyses are being planned, and to find out from the participants what types of data their organizations are interested in and how they would utilize the information. We were also interested in stimulating interest in possible intervention in the general study area. The field staff, particularly the junior staff, reviewed the data in hand from printouts brought to Kenya, and from analyses done at the field level. They each presented short summaries of descriptive data to give the participants a sample of what types of data would be available.

We also held a project review meeting for the entire field staff (140) so they could get feedback about their work and what information they had gathered. Because of the limitation of space they were not able to attend the formal review meeting in Embu, therefore, it was felt that there should be an abbreviated, more simplified version of the findings to provide feedback for the field enumerators and supervisors.

Project Visitors - Dr. Lindsay Allen, Principal Investigator of the Mexico Nutrition CRSP Project visited Kenya for a week. She spent several days in Nairobi and three days in Embu. She was particularly interested in seeing RMR performed and discussing this aspect of the work with Dr. Gardner. She accompanied Ms. Susan Weinberg to observe and discuss the food intake methodology and observe the data collection on child care giving and the general field logistics. Data flow and management were also of interest to her.

Dr. Hugh Horan of Management Entity visited Kenya for two weeks (January 14 to January 30) to become acquainted firsthand with the Kenya Project, its organization, and logistics. He spent seven days in Embu accompanying the field staff in each of the functional and research areas, spent time with the administrative staff, and went to several staff meetings. He spent a week in Nairobi joining the principal investigators in some meetings. Dr. Nimrod Bwibo set up a meeting with the Kenyan senior investigators. He then visited USAID with the Kenyan PIs and field director and visited other offices on his own. Dr. Horan then returned for the one day Annual Review Meeting in Embu.

There were three community celebrations in each of the study sublocations of the study area and one in a nonstudy adjacent area. The community celebrations were organized by the citizens of the community for several purposes: one was to honor and show their gratitude and appreciation to Dr. Eric Carter and also to Mr. Bill Martin, because of their extraordinary efforts in obtaining and distributing food relief during the famine. Also they wished to honor the Nutrition CRSP Project for its support and effort in the famine relief (food and seed) for the benefit of the entire community.

Two meetings were held with the doctoral student, Mr. James Thomas, who is progressing well in his doctoral research. His duties with the project were defined. He is mainly concerned with quality control of the morbidity function, spot checking and independently recoding morbidity data month on a 5% subsample. He will assist in the standardization tests for quality control of anthropometry and will be of help in running analyses of small data sets on the microcomputer. This will allow for instant feedback of the morbidity picture to the field staff. Also, Dr. Waswa, an MPH student, who was formerly with the project, will now return part time to help in the field supervision of the morbidity function as well as to do a masters level research thesis under the supervision of Dr. Jansen.

A draft of a preliminary proposal for a follow-up study to follow the main Nutrition CRSP study was written in collaboration with Dr. Bwibo and Dr. Jansen. The purpose of this was to extend observations mainly on food intake, anthropometry morbidity, crop and agriculture in order to follow people through a recovery phase of the drought and to obtain a more detailed interviews of how people perceive their own problems and suggested solutions. The above could furnish invaluable information for any intervention phase. The Central Bureau of Statistics, with Mr. Agunda as director, expressed great interest in follow-up in any such study. A very compelling point is that the households have excellent baseline information and there is a well-trained staff that could participate in a follow-up study. The main cost of such a continuation study would be the personnel and petrol and vehicle expense. We are hopeful in obtaining some outside funding to do this.

#### Detailed Description of Activities During the Field Visit/Activities in Nairobi

January 11-13, 1985: Time was spent in planning day-by-day activities in Kenya in conjunction with Professor Bwibo, Dr. Carter and Mrs. Coulson. A visit to USAID was made to introduce the new staff and to meet with the new director of Population and Health, Dr. Gus Merritt and to update Dr. Merritt and Mr. Charles Mantione, the project officer, on the progress of the Nutrition CRSP Project.

January 21-22: Meetings were held with USAID Dr. Gus Merritt, Director of Population and Health, Mr. Mantione, Project Officer, and some other USAID health people, Dr. Hugh Horan accompanied us to this meeting along with Dr. Eric Carter.

Visits were also made to Meena Desai, KMRI\* who is doing proximate analyses on foods in the study area. We also visited the virologist Dr. Tukey at KMRI who is doing viral isolations, free of charge, on respiratory illness cases, doing 10 isolations per week. We met with Dr. Koech and his laboratory staff where immunology is being done to discuss some problems with the antisera in use.

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\*KMRI - Kenya Medical Research Institute

A meeting at the Central Bureau of Statistics (CBS) was held with Mr. Agunda, Director, and Mr. Omoro, Chief Statistician. Progress of the project to date was discussed as well as the possibility that CBS would become the archivist for the tapes produced by the Nutrition CRSP study. The reason for this is they are the group most likely to take advantage of the data collected. The Ministry of Finance and Planning is the umbrella ministry for the Central Bureau of Statistics and also contains the Food and Nutrition Planning Unit under the direction of Mr. Luke Wasonga. CBS has access to the government computer which is large enough and capable of dealing with the complexity of the data set. The University of Nairobi, it is envisioned would interact closely requesting analyses but the Central Bureau of Statistics and the government computer office would join as a group in being able to analyze data in Kenya. Mr. Agunda proposed that we write a proposal for the above. Also, the Central Bureau of Statistics is most eager to be able to get the license for the BM program from UCLA.

January 30-31, 1985: Purpose of this visit was for Professor Bwibo and Dr. Neumann, the co-principal investigators and Dr. Eric Carter to appear on a television interview program, Mandeleo, which translates into self-help. The purpose of the television interview was to explain the Nutrition CRSP Project, the types of information we were gathering and the kinds of information we are producing. The findings per se were not discussed. The interview was a result of the Annual Review Meetings on January 28 which were televised. In addition, a six-minute strip of the actual meeting was viewed on Voice of Kenya Television News. A debriefing visit to USAID took place and we were informed that in the future project staff would report to Linda Lankersham who will be working in the population and health area. She is very experienced in food distribution programs and worked previously in Swaziland.

#### Activities at Project Site in Embu

##### Morbidity Disease Function

At the end of the second week, January 15 Dr. Mark Marquardt the new field physician started work the day after he arrived. The plan is for Dr. Khelghati to overlap with Dr. Marquardt for another month so as to share the workload and to orient Dr. Marquardt to the numerous activities. Then Dr. Khelghati take his official leave and conclude his work with the project. Dr. Marquardt will be joined by Dr. Waswa, a Kenyan physician who spent the first six months working with the morbidity function and left to get an MPH. Dr. Waswa will return to the project to do his field research project, an MPH requirement at the University of Nairobi, under Dr. Jansen and then he will spend at least half time helping with the physical examinations and the field supervision of the enumerators in the morbidity data collection. He will receive only a housing allowance from the project. Dr. Marquardt will be in charge totally of the morbidity data collection, and coding, and all the research aspects. This took effect February 1, 1985. Dr. Marquardt is trained in epidemiology as well as in clinical medicine. Morbidity coding problems were identified and corrected and areas for retraining and ongoing training identified.

There have been difficulties carrying out the illness subroutine, particularly with weighing of toddlers at 3 days, obtaining food intake by recall, and task reassignment of lead males and lead females. The Egypt

project is also having difficulty with the subroutine. We are suggesting the compromise that the subroutine be applied to the serious conditions listed below: pneumonia, diarrhea > 10 stools per day, dehydration, measles, pertussis, fever >40° (or >38° in toddler or any fever in infant 0-6 mos.), headache over 7 days, rash with fever, fever and vomiting in infant, marasmus or kwashiorkor, convulsions, paralysis, severe abdominal pain. The illness subroutine applies only to those illnesses starting on the day of the home visit or within 24 hours of the visit. Weighing would be done at the beginning of the illness and at weekly intervals in any toddler or infant who is discovered to have a serious illness, particularly measles or diarrhea. He or she should be weighed regardless of when the illness started. This matter will be taken up at the February SCB meeting. Morbidity function quality control measures were reviewed and tightened up. These consist of the nurse supervisor, spending one morning per week with each enumerator on their home visits; a reinterview and reobservation by the supervisor unaccompanied by the enumerator on the same day as her visit on a 5% subsample. The physical examination findings will be compared for example, within a week of the physical examination. Mr. James Thomas will do a 5% sample of recoding of forms compared to the original coding. Special attempts are being made with diarrhea disease to validate or confirm the informant's reports by simple recording methods. Also, there will be a request to save stools on a small sample to compare observation and description on reporting.

The household morbidity coding was reviewed and what is being reported is actually household illness prevalence per 4 weekly periods rather than incidence. This is reported for the entire household.

A cross-sectional look at serum zinc will be done, the priority being for pregnant women and toddlers.

Immunizations: The local health center strongly requested that the center do the immunizations, DPT and polio, so that the people will be used to bringing their children to the health center for their boosters. However, we are finding that by six months of age the infants have not all received three immunizations, some of them having only one or two DPTs. The suggestion is that the project take over giving the DPTs to the study infants so that by the six months blood drawing they would have had three DPTs and a response to pertussis vaccine could be determined.

The policy for medical intervention was reviewed for life-threatening illnesses, intervention is carried out immediately. In cases such as tuberculosis, the project will refer for treatment, people who are found to have significantly positive skin tests, they will be referred to Embu Hospital or the Kararumo Health Center. People with positive malaria smears are treated. Families found with parasites, through screening every six months are treated. Individuals with anemia are also treated. The nurses dispense symptomatic treatment for minor symptoms to maintain good will among respondents. Treatment consists of antacids, nose drops, aspirin and some lotions. Infants with diarrhea are given oral rehydration packets.

If any subject requires extensive follow-up or continuous treatment, he/she is referred to the government hospital. If a person comes for a physical examination at the request of the project and a condition is found requiring short-term treatment, the condition is treated. If the illness

requires long-term treatment and follow-up, they are referred to regular care facilities. In the case of very serious illness, or because of convenience people are occasionally sent to the Consulata Kyeni Hospital where the general care is very good. If there are children needing nutritional rehabilitation because of severe malnutrition, they are also sent to Kyeni Consulata Hospital. Embu Hospital has a group of specialists who are able to carry out more extensive diagnostic procedures than Kyeni but is far from the study area. The project has paid for public transport should a subject need to attend Embu Hospital or has sick individuals. The chronic disease update form is being done quarterly. Several new diagnostic codes were added to the household morbidity form, and one code added to the individual morbidity form.

The three deaths that have occurred in target groups have all been in lead males: two were due to hepatoma (confirmed in the hospital) and one due to a pharyngeal cancer. Hepatoma is common in East Africa and is associated with a high rate of hepatitis. An epidemiologist in the Department of Community Health at the Medical School hope to start a cancer registry in Embu. What the role of aflatoxin may be is only conjecture. It has been linked to deaths from liver disease.

Immunology: Cell mediated immune studies are going very well. T-cells enumeration is being done on a daily basis in Embu with excellent internal and external quality control. This is being done primarily by the two laboratory technicians in Embu. Their work is being checked by the laboratory technician from Dr. Koech's laboratory who comes up to the Embu laboratory and does independent measurements of T-cells. To date there have been some low values, mainly among toddlers.

Skin testing is going well. Delayed cutaneous hypersensitivity is a functional measure of cellular immunity. Also tonsillar grading is being done and total lymphocyte counts are being calculated from the routine hematology work.

The immunoglobulin work is being done in Dr. Koech's laboratory and there have been problems. Dr. Koech has found that the supposed specific antisera specific for each of the immunoglobulins, albumin, and pre-albumin are cross-reacting and giving falsely high values. Dr. Koech has reported this with the antisera from several different companies. He is making up his own plates following standard methodology. The analyses will be suspended until the problem is solved. Fortunately, there are duplicate samples in Kenya and UCLA. Dr. Stiehm is now testing out the antisera that have been returned. Duplicate samples for quality control purposes from this whole batch of specimens is at UCLA and will now be analyzed. Dr. Koech reports that the values for C-reactive protein have been in the expected range.

Once the quantitative immunoglobulin values are obtained we will evaluate whether these analyses are yielding results of interest.

Dr. Chandra is actively working on the breast milk secretory immunoglobulins as well as lysozyme, and is doing similar tests in saliva.

The hematology, being done in Embu, is checked once a week on a Coulter Counter at the Kenya Institute of Medical Research (KMRI). This is an electronic counting method and is giving excellent agreement with the work in

Embu. Serum ferritin is being checked with internal known standards and subsamples are being sent to Dr. Kirksey for quality control purposes.

Reproduction Function. To date, as of February, about 80 infants were born into the study. The Dubowitz examination has been missed in about 15% percent of infants. In reviewing the Dubowitz's original papers on determining gestational age they state clearly that the test is valid through the fifth day of life. Therefore, in order to avoid the loss of gestational age data, a vital piece of information, we have recommended through five days. If this is missed, the Dubowitz Test is performed between day four and five. As a last resort the Dubowitz Test could be done as late as day eight. We feel that this is better than no examination information, because if an infant is really preterm its physical appearance will tell us it is preterm and not a full-term small for dates infant. The birth weights are being recorded in almost 100% of cases. The project scale is taken into the hospital. The hospital scales have been calibrated by the project in the event that our staff miss getting the birth weight. Babies born at home are weighed in the home with no problem as there is no prohibition about handling a newborn. The Brazelton Testing is going well. Preliminary information to date shows that the average maternal weight gain during pregnancy is low, about 6.5 kilograms. Despite the maternal weight gain, the infants are being born with a median weight of 3.1 kg.

Food Intake. Finally, all the food intake data has now been recorded in kilograms by ingredients by the dish or recipe type. Standard recipes have also been developed for the most common recipes to be referred to and used when intake is obtained by recall. With the food intake now being recorded as kilograms it will be possible to use the computer programs for food composition at UCLA. There is now microcomputer software in use in the field in Embu that will determine food nutrient composition based on grams of food ingested. As the Kenyan food proximate analyses are completed, we can substitute Kenyan food nutrient values for the American food values. We are now in need of a quality control laboratory in the US for this food composition work. UC Berkeley has promised to do this. If not, the University of Arizona USDA can do this. Use of the ILCA Laboratory in Addis-Ababa was considered but is logistically difficult. As to analyses of trace elements by the International Atomic Energy Commission, at the Cairo meeting the three groups felt that it was probably not worthwhile to pursue this.

In reference to the famine situation, there were fairly good rains in October, 1984 and there is a harvest expected in March. Families are now having a partial harvest of some beans from project-donated bean seed. Food distribution is still going on although this has lessened considerably and any food coming into a household that was donated through relief efforts is carefully documented. Government food relief has only recently reached the general area.

A new validation will be done on the basic food intake research method. The method of mainly weighment with some recall will be validated against total weighment. This is planned during the next month. Originally in the pilot, recall vs. weighment was done but not the study method combination of weighment and recall versus total weighment.

### Crop/Agriculture/Seed Survey

A monthly questionnaire has been in effect to see what crops are planted, what is harvested, what seeds were planted and what is produced. Inquiry into how the crops are used, such as household use, what is sold, etc., is included. As a validation method, on a subsample, there will be actual observation of crops. The fields will be delineated, marked into grids and on a subsample of squares, the actual plants produced will be counted. This will furnish valuable information for the ministries of Agriculture and Planning and will also serve as validation of what is actually produced on a household level.

### Anthropometry

Anthropometry is being done on a monthly basis. Monthly formal standardization tests are run to evaluate the quality of the measurements. Duplicate measures are being done on a 5% subsample. The lead males and the schoolers still elude the enumerators with about a 20-30% missing data rate. Fortunately, since monthly measurements are being obtained, we feel that we will have very good information even if months are missed occasionally.

### Resting Metabolic Rate (RMR)

Drs. Carter and Neumann and Mrs. Coulson had RMR done on the Metabolic Machine (Beckman) in Egypt and in Kenya and third set will be done on the Beckman at UCLA for the latter two. Dr. Neumann reported that the room was very cold in Kalama so that there was some shivering and this gave slightly higher values in Egypt than those obtained in Kenya. Also, Dr. Carter was taking a nasal decongestant with an ephedrine compound which accelerates heart rate and his RMR was slightly higher in Egypt. Repeat studies on the same study subjects are being done in Kenya with acceptable agreement.

Dr. Gerald Gardner spent many hours reviewing the tapes and strips of data produced on each RMR and he has come to the conclusion that the recording of the last three minutes of three-10 minute periods is not the optimal way to record the data. Steady states are better in the 2nd 10 minutes and he feels that we should be taking the data and from the first two ten minute periods. He observed that pregnant women complain of back pain and discomfort while lying prone for 30 minutes and schoolers become restless lying on the table for 30 minutes. He believes that 20 minutes may produce better data. Egypt is using the measure of the last 3 minutes of the first and 2nd 10 minute periods because people object to the 30 minute period. This will be settled at the SCB meeting. We are waiting for Dr. Gardner's return from Egypt and we can then discuss how to make the Egypt and Kenyan projects as comparable as possible. In the meantime, the data will be recorded as usual although the other information is on the printout strips of data produced so no information is being lost. Dr. Gardner is quite satisfied that the information in Kenya is reproducible and consistent. All groups of T.I.'s are showing RMR values that are below predicted values based on body surface. These equations of surface area are based on an American population which we feel is inappropriate. Again, we have noticed that body temperatures tend to be low even in the face of infection. The clinical thermometers has been replaced and checked as well as the the temperature taking procedures. The MMC machine was serviced by the agent from Dubai. Dr. Gardner would like to use the bicycle ergometer on a small sample to calibrate heart rate against  $O_2$

uptake. Heart monitors will be used to put "energy price tags" on the activity. He would do 7 lead males, 7 pregnant women and 7 nonpregnant women. There would be heartrate monitoring for 6-8 hours with simultaneous dictation by the subject into a tape recorder as to what activities are being done and then recall for the evening and nighttime activities. Field measurements of oxygen uptake on the subsample would be done using Max Plank apparatus that one of the investigators owns. In summary, there will be incremental work load using the bicycle with heartrate recording, recall of the time that the heartrate is being recorded. This is planned for once per week for the next four months. The above, of course, will be subject to SCB approval. The cost for doing this pilot would be about \$300. No additional cost will be incurred as the apparatus is Kenya and the HR monitors have been in loaned to the project. This will not interfere with core measures.

#### SES Function:

The first round of SES data was subjected to factor analyses which proved to be very useful. Four clear-cut clusters of variables (factors) that seem to account for the main variance are as follows: Factor I had to do with savings, income, belonging to co-ops, banks; Factor II had to do with the ownership of animals, land cultivated, etc. Factor III had to do with educational level and whether or not agricultural agents had visited and their advice adhered to; Factor IV had to do with housing, details such as iron roofs, beautification of the compound with flowers and decorations.

#### Cognitive Psychologic Function

The second round of testing of schoolers has now been completed as well as their classroom and playground observations.

The 24 month testing of toddlers is near completion and the next round is now beginning as they reach 30 months.

Infants born into the study are now reaching 6 mos. old and Bagley and Fagan Testing have started. Visual activity testing has been done in 24 mos. olds and now 30 mos. olds using the University of California School of Optometry Preferential Looking Test. The adult cognitive testing is now almost completed.

#### Review Meeting January 28th, 1985

Please see the enclosed invitation covering the purpose of the meeting, the program and the guest and news clips. This meeting was the First Annual Review Meeting. The main purpose was to share with a wide Kenyan audience and International Community (ministries, organizations, agencies, universities and nongovernmental organizations and international organizations) what the purpose of the Nutrition CRSP Project is; what types of information are being produced; what form of analyses and relationships are being sought; and to find out from the audience what types of information they are interested in for planning, policy and programmatic purposes. The meeting was well attended with well over 60 people coming to Embu for the day and a certain number staying overnight so they could see the field work and setting and speak with the staff at greater length.

There was good press coverage (see the clippings) and television coverage both by Voice of Kenya newscast and a special live interview of Drs. Bwibo, Newmann and Carter on a program "Mandeleo."

A new member of the Department of Community Health, University of Nairobi, a biostatistician and epidemiologist trained at the University of Birmingham, is extremely interested in the project and Dr. Miriam Were, chair, assigned him to represent her at the review meeting. He hopes to work actively with the project and would like to start a cancer registry and help in analyses mainly using a microcomputer so that there can be more instant feedback of findings to the field staff.

A major discussion at the meeting had to do with avenues of intervention and what the various agencies were interested in vis-a-vis the project. All in all the feeling was that the meeting was a success and the attendees stated that they were looking forward to the next review meeting. One of the best spinoffs of the meeting was that the field scientists of each of the functional areas and food intake used the print-outs that were brought from UCLA as well as their own analyses and pulled together descriptive data in each of their areas for presentation. For many this was the first time they ever had to give a formal presentation to an audience and the experience was invaluable. The senior scientists tutored the junior ones in their presentations. What was presented was descriptive information with no linkages of variables at all, and it was stated repeatedly that the data were preliminary merely to give the audience an idea of what was being found.

The meeting was followed by a farewell banquet for the Carters and Dr. Cattle, and a welcome to the new staff. As a farewell to the departing scientists, the world renowned Embu drummers, who reside nearby, were invited to give a performance and it was a fantastic performance!

On March 2 Professor Bwibo returned to the field and a repeat review meeting was held for the 140 field staff and supervisors. This was a condensed version of the meeting with data presented at a level they could understand. We felt that this form of feedback was extremely important to the field staff to inform them as to the kind of data and information that was being produced by their day to day data gathering. At this meeting, Professor Bwibo formally handed over the project to the new field director and the new field anthropologist and field physician also officially took over their new duties.

Community rapport and cooperation with the community district, provincial officials, sublocational leaders and the residents of the area have never been better. There are many expressions of regret that the project has to end and other communities have been inviting the project to come work in their areas. The field director has been invited to sit on the local district development committee. Interest was expressed in ongoing work of the project and possible continuation of some activities with the Central Bureau of Statistics, district authorities or non-governmental organizations. USAID/Kenya mission advised us that there may be major funding for local nongovernmental organizations (NGO's) in Kenya. All of the above depend on obtaining funding.

An expression of gratitude and respect and farewell to Dr. Eric Carter and his family, Mr. Martin and the project specifically, were extended in

three community celebrations in each of the sublocations. These were all afternoon programs with speeches, entertainment, giving of gifts and refreshments. This was in direct appreciation for the famine relief work that brought food and seed to the area. The government efforts are just now producing some relief and surely people would have suffered or died had the project not become actively involved in famine relief for the general area. The Dutch government through Dr. Jansen's efforts must be cited for their contributions of funds so that the project was able to quickly purchase foodstuffs as well as seed. Other agencies, UNICEF, and CARE helped the project pay for transportation of large amounts of food. The project undertook a community survey of adjacent but nonstudy areas to help the Local Famine Relief Committee decide which families should receive aid. This was done voluntarily by the anthropometry staff on the weekends. The gratitude of the community is touching and heart felt and Dr. Carter deservedly received honor after honor including a wife from each of the communities so that he would return! This was an opportune time and each of the communities introduced the new field staff to their citizens and promised their continuing cooperation. Each of the communities hoped that there would be ongoing efforts on behalf of the communities in the form of programs aimed at helping them with their problems.

Administrative Matters. The administrative matters (fiscal) were reviewed with Mr. Bill Martin, the project accountant Tom Nguli and the administrative assistant, David Cheboi. We discussed the outcome of the audit which generally was favorable. There was a problem in misclassifying some supplies that went into remodeling and enlarging some office space which was desperately needed. The auditors also suggested a double system of signatures on checks and purchase orders as safeguards. This will be put into effect immediately. The vehicle fleet, despite heavy usage, is managing pretty well with about two vehicles out of commission at any one time.

Dr. Eric Carter is writing a final report on his thoughts about the projects and any helpful information he can pass along. This should be a very valuable document.

Recruitment of Kenyan Staff. Dr. Bwibo and Dr. Neumann spent considerable amounts of time interviewing for a Kenyan field director. An ad was placed in newspapers six months ago and more recently. The hope was that a Kenyan field director would replace Dr. Eric Carter. Because time was quickly passing and there was no progress in this area, the agreement was that UCLA would also recruit. Whoever identified the more appropriate person for the position would designate that person as the field director and the other person as the assistant field director.

The Kenyan recruitment effort over six months yielded six applicants; three were suitable and two actually appeared for interviews. One was inappropriate and one person was identified as a candidate. The Kenyan candidate holds a Ph.D. from the London School of Economics with experience in other parts of Africa working on food and agriculture related research, policy oriented. He was not as experienced as Dr. Michael Baksh in field work and by unanimous agreement he was offered the assistant field director post. References were being checked and he was firmly offered the job as assistant field director with set responsibilities dealing with local ministries and liaison to government groups and information transfer as well as field responsibilities. We were awaiting his response.

There has been an acute shortage of Kenyan physicians to join the project although we will now have the part-time services of Dr. Waswa who was formerly with the project. We finally decided to recruit a clinical officer, a person with three years of preventive and curative training with a focus on primary health care and maternal/child health. They will run the health centers and are extremely useful for routine physical exams and treatment of illness. They will work under the supervision of the physician and work closely with the community nurses in field supervision.

I mentioned the statistician/epidemiologist from the department of community health that will now hopefully work with the project. Mrs. Coulson, a research epidemiologist, was favorably impressed with his knowledge and training.

Quality Control. Quality control procedures both for field work in all the functional areas and laboratory were reviewed and formally codified. The new field director, Dr. Michael Baksh will make a major effort to be sure that quality control is strictly implemented in all research areas. This document will be completed shortly. The procedures consist of interview, although all manuals have quality control sections, reinterview, simultaneous observations where necessary, and repeat measurement by the supervisors and standardization and validation tests.

Teaching Contribution to the University of Nairobi School of Medicine. Mrs. Anne Coulson gave an epidemiology lecture to the MPH students in the Department of Community Health. Dr. Charlotte Neumann gave a lecture to the postgraduate physicians specializing in pediatrics who wished to learn about the Nutrition CRSP Project and discuss other nutritional topics.

Summary. Overall this has been one of the most eventful three weeks in any of my trips to Kenya. I feel that the project has made good progress in becoming known to the groups in Kenya that could most benefit from the information being derived. Many of the groups present at the Review Meeting were concerned with planning and policy and hopefully intervention and ongoing research.

Community cooperation and spirit of collaboration have never been greater and the project now enjoys the trust and support of the community. The district development committee has invited the field director be part of their development group which is a great honor. The challenge will be to bring some suitable intervention to the area and to make maximum use of the excellent field staff that been trained. Already some have left the project because they have been given places in schools of nursing and the University. Some have gone on to senior teaching jobs. Now that we are faced with letting some of the staff go, a summary of the training they received, a job description and letter of recommendation will be furnished to them. Their names and type of training they received will be sent to groups in Kenya (CBS, KMRI, etc.) that might use their skills. Hopefully, some type of ongoing activity will require some of these staff. The community was never promised ongoing jobs and the project is doing its best to try and find ways of utilizing this valuable group of people. It is unlikely that the women will leave their families to work elsewhere in Kenya.

*Charlotte J. Neumann*

# NUTRITION CRSP—KENYA PROJECT

College of Health Sciences, Nairobi,  
University of California, Los Angeles/Berkeley,  
P.O. Box 1002, Embu, Kenya  
Tel: (0161) 20376.

Functional Effects of Mild/Moderate Malnutrition  
Research Permit No. OP/13/001/12C78/91

## ANNUAL REVIEW MEETING JANUARY 28, 1985

You are cordially invited to attend the first annual review meeting of the Nutrition CRSP - Kenya Project to be held on Monday January 28, 1985 at the Isaak Walton Inn, Embu (R.S.V.P. - regrets only).

### Objectives of the Meeting:

The Nutrition CRSP - Kenya Project is a collaborative research project between the University of Nairobi Faculty of Medicine and the University of California, School of Public Health at Los Angeles.

The research, being carried out in rural Embu District, is investigating how moderate food deprivation affects the ability of children and adults to carry out essential or desirable functions such as: 1) resisting diseases and acquiring adequate protection from immunization; 2) bearing and rearing healthy children; 3) working efficiently and productively; 4) making the best use of schooling and other learning experiences; 5) dealing effectively with every-day challenges within the community and making the best use of available resources and opportunities. The findings will, in part, be used to guide appropriate interventions which can be tested in the field. This, together with other findings, will assist local and national Government as well as non-Government organizations to formulate appropriate policies and programmes for improving the nutrition and well-being of the people of Kenya.

Two other Nutrition CRSP projects, one in Egypt and the other in Mexico, are also collecting similar information. This replication across countries is in the interest of obtaining findings that are generalizable to less-developed countries as a whole.

Data has been collected on three-hundred households in one location of Embu District since January, 1984 and this is scheduled to continue until December, 1985. We are now at the half-way stage and it is an appropriate time to review the programme, to disseminate some of the information collected to date and to expose the project's progress and objectives to a wide audience.

The purpose is to increase awareness of the type of information the project is collecting and to initiate discussion as to the best ways that this information can be utilized to improve the effectiveness of the development process.

We therefore, extend an invitation to you to attend this review meeting. We would like to emphasize that although some findings will be presented we are not yet in a position to draw firm conclusions regarding the functional consequences of mild/moderate malnutrition. The aim of this meeting, as stated above, is to alert interested parties of the project's potential role as a source of knowledge essential to development planning and programming in the areas of health and nutrition.

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# NUTRITION CRSP—KENYA PROJECT

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Functional Effects of Mild/Moderate Malnutrition  
Research Permit No. OP/13/001/12C78(19)

## 1st ANNUAL REVIEW MEETING

JAN. 28, 1985

### Programme

8:15 - 9:00	Registration/coffee/tea	
9:00 - 9:30	Welcome by Chairman	- Prof. N.O. Bwibo
	Introduction of Project Investigators	- Bwibo, Neumann
	Objectives of the meeting	
9:30 - 10:00	Summary of research design & objectives	- Neumann, Carter,
	description of the study area	Ngare.
10:00 - 10:30	Food Intake	- Weinberg, Njiru
10:30 - 11:00	Coffee/tea break	
11:00 - 11:30	Nutritional status/Reproduction outcome	- Jansen, Carter.
11:30 - 12:15	Morbidity/immunology/Sanitation & hygiene-	- Khelghati, Mugisha
		Koech, Neumann.
12:15 - 12:30	Metabolic studies	- Mugambi, Carter,
		Gardner.
12:30 - 2:00 pm	Lunch	
<u>Afternoon Session</u>		
2:00 - 2:30	Cognition/activity	- D'Souza, Cattle.
2:30 - 3:00	Socio-economics/agriculture	- Ngare, Cattle
3:00 - 3:30	Data management/analysis	- Njeru, Coulson.
3:30 - 4:00	Tea break	
4:00 - 5:00 pm	Future interventions; utilization of	- Bwibo, Kagia
	findings; summary of meeting	Neumann, Kagia
5:30	Bus leaves for Nairobi	

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Organizations Represented  
at Nutrition CRSP Kenya Project

(1-2 Representatives)

Institute of Development Studies (IDS)  
Institute of African Studies  
Faculty of Medicine, University of Nairobi  
    Department of Community Health  
    Pediatrics  
    Physiology  
    Immunology  
Ministry of Health Government of Kenya  
Ministry of Financy and Planning  
    1. Central Bureau of Statistics  
    2. Food and Nutrition Planning Unit  
Office of the President  
    Task Force on Food  
Kenyatta University College  
    Department Home Economics  
Bureau of Educational Research  
    USAID\*  
Eastern Province  
    Principal Medical Officer  
    Provincial Director of Agriculture  
Embu District  
    District Commissioner  
    Medical Office of Health  
    District Nutrition Office  
    District Officer  
    District Agricultural Office  
    District Development Office  
Kyeni South Location  
    Chief  
    Director-Karurumo Health Center  
Others  
    Harvard University Technical Assistance Pool  
    FAO  
    UNICEF  
    Swedish Water Project - Eastern Province  
    Kyeni Consolate Hospital  
    AMREF  
    CARE  
    OxFam

Nairobi Daily Nation  
JAN. 25. 1975

# Town to host nutrition study

Nation  
Kenya  
Jan. 25. 75

## Research aims at helping nutrition

RESEARCH currently being carried out in Kyeni location of Embu district is expected to help government and non-government organisations to formulate policies and programmes for improving nutrition, the principal investigator, Prof. Nimrod Bwibo said yesterday.

Professor Bwibo was addressing the researchers and people from other allied organisations in an annual review meeting held at an Embu hotel.

The research programme is a collaborative effort between the College of Health Sciences of the University of Nairobi and the School of Public Health, University of California, Los Angeles.

The researchers are investigating how moderate food deprivation affects the ability of children and adults to carry out essential body functions such as resisting diseases, bearing and rearing of healthy children and making use of the available resources. They also want to find out how children can make the best use of their education.

According to Prof. Bwibo, the research is particularly significant to Kenya because it relates to the well-being and economic performance of a large number of individuals and to the country as a whole.

Embu will be the venue of the first annual review meeting of a research programme on nutrition. It is being conducted jointly by the Faculty of Medicine at the University of Nairobi and the School of Public Health at the University of California at Los Angeles in the United States.

According to a press release from the Nutrition Collaborative Research Support Programme based at Embu, the meeting, which would be chaired by Professor Neumann Bwibo of the

University of Nairobi, would be held on Monday.

The research, to be carried out in rural Embu District is to investigate how moderate food deprivation affects the ability of both children and adults to carry out essential body functions such as resisting diseases and acquiring adequate protection from immunisation.

The research also seeks to find out how food deprivation affects bearing and rearing of healthy children and the effects it has on work productivity.

The research findings, according to the release, will also reveal how to make the best use of schooling and other learning experiences.

The findings would then be used to guide appropriate interventions which can be tested in the field to assist the Government as well as non-governmental organisations, formulate appropriate policies and programmes for improving the nutrition and well-being of wananchi, the release said.

Already, data had been collected on 300 households in one location of Embu District, by January, last year and this is scheduled to continue. (KNA)

M E M O

TO: All Staff REF: AD/OFF/FIELD ✓  
FROM: Field Director DATE: 30/1/85  
SUBJECT: Data Presentations Meeting

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On Saturday (2/2/85) at 11 am at Kathanjura Social Hall, the Senior Staff will be presenting to the Field Staff some of the results presented at the annual review meeting held recently.

The programme will be as follows:

11:00 - 11:05	Introduction	Neumann
11:05 - 11:15	Food Intake	Weinberg/Njiru
11:15 - 11:20	Anthropometry/Reproduction	Carter
11:20 - 11:30	Morbidity/Laboratory/SAHY	Khelghati/Mugisha/Cattle
11:30 - 11:35	RMR	Gardner
11:35 - 11:40	Cognition/Activity	D'Souza/Cattle
11:40 - 11:45	SES/Agriculture	Ngara
11:45 - 11:50	Data Management	Njeru
11:50 - 12:00	Discussion	

The objective is to present data in a brief and general manner so that we can all get a glimpse of what each function has collected to date.

- Assume that an overhead projector will be available.
- Transport officer will arrange transport for C3 & C4 staff.

cc: Transport Officer

EC/ga.

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TO: Senior Staff/Visitors

REF: AD/OFF/FIELD

FROM: Field Director *K. L. L.*

DATE: 17/1/85

SUBJECT: Invitation

We have been invited by the people of Kathunguri sub-location on Saturday 19/1/85 at 3 pm to a ceremony to thank us for the assistance the project has been able to bring to the community during the current drought.

The people of Kasafari would like to express their gratitude in a similar manner on Saturday January 26, 1985 at 3 pm.

Please try to attend both these functions.

From: sub chiefs - Kasafari 20 Jan. 85

DR. E. CARTERS VISIT TO KASAFARI SUB-LOCATION:

Programme.

- 2.00 pm - Arrival
- 2.05 pm - Welcome by women groups.
- 2:15 pm - Assistant chief's introduction to sub-locality Famine Relief and Development Committee.
- 2.20 pm - Prayers
- 2.25 pm - Choirs entertain visitors
- 3:25 pm - Ass chief invite Senior Chief - Fred Nthamburi to give presents to our guests.
- 3.35 pm - Reading of Memorandum
- 3.40 pm - Ass chief's speech
- 3.45 pm - Senior chief's speech and to invite the guest of Honour.
- 4.00 pm - Closing of Honorary Speeches
- 4.30 pm - Lunch
- Any time - Departure.