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TO: Dr. Charlotte Neumann

FROM: Anne H. Coulson

RE: Trip Report - Kenya & Egypt

Trip Report - Kenya

I arrived in Kenya on the 8th of February after an overnight flight from Cairo (see Egypt trip report). The objectives of the trip were to meet with the Kenya investigators, and project staff, to visit the study areas, to develop data management plans, staff and resources, to work on specific census and other data collection forms, senior staff to work on specific census and other data collection forms, to acquaint the Kenya investigators and project senior staff with data management concepts, objectives and needs and to assist as possible with project activities. The following report will address each of these activities. The activities were intermingled in time, therefore the report is not structured with respect to days of visit.

Kenya investigators: A number of meetings were held with the Kenya investigators (Drs. Kagia, Jansen, Bwibo, Thairu, Meme, and Were) all together and in smaller groups. Topics of discussion included sample size, collection of various types of data, data management needs and options and the interaction of the investigators with the field teams, particularly with respect to their individual specialty areas.

American staff: Meetings were held with Drs. Carter and Cattle together with, and separately, from the Kenya investigators. Those meetings that were separate concentrated on particular concerns of the UCLA project and on specific field problems such as the development and modification of a screening questionnaire to limit the full census, including anthropometry and food intake, to households of present or potential interest to the study.

Visit to study area: Two days of the Kenya trip were spent in the Embu Area working with the staff and touring the prospective study areas by car and on foot. The area selected for study is near the town of Embu and is an agricultural area. In this area of Kenya, the farm families live on their farm land, rather than in tight villages surrounded by agricultural areas. This means that the definition of a community is rather loose, compared to more defined central villages. Loosely, there are three defined sublocations in the areas described for the study, from Kathanjuri at the highest altitude, with largely cash crop farming, to Kararumu at the lowest altitude, with largely subsistence farming.

Typically, a compound of two or more buildings provides the household's living, cooking, eating and sleeping quarters. The number of buildings and the number with iron roofs seem to be a surrogate for socioeconomic status.

Locating these compounds, set in the middle of farm lands, is difficult. The process has been speeded by aerial photography and the transfer of identified buildings and man-made structures identified in those photographs to large scale maps, with identifying map numbers. Using one of the maps, we walked through an area, identifying the mapped buildings with the real structures. The walk through indicated that existing structures could be correlated with the mapped ones and the associated map numbers used to identify the household.

During my stay Embu, I attended and participated in training sessions of the Kenyan staff who were about to embark on the census of the three sublocations. I also reviewed forms and procedures.

Data Management: Early in my visit I met with Professor Scott at the computing facility at the University of Nairobi. He gave me an overview of the facility, its resources, personnel and responsibilities. The facility serves as a training resource for the computer sciences department, as a research resources for the campus and as an administrative tool for the University for admissions, registration, etc.

The facility includes as its computer an ICL (British) mainframe computer with tape and disk storage and some time sharing. Most work appears to be batch processed. The ICL system is not directly compatible with IBM software, but there does seem to be the capability of reading and writing standard IBM 9-track tapes. We have not as yet fully tested this capability, but find that data can be exchanged between the government computing facility, comprised of an IBM 370, and the University.

Data input at the University facility is key-to-tape using ICL equipment. Data instrument images and prompts are available and can be set up to order by the key operations supervisor (whom I did not meet on any of my trips to the facility). Her supervisor, however, assured me of both her and his skill in this work, and showed me work of this sort in progress on the machines. These machines are not terminals, smart or otherwise, and are not computers, so the editing function, other than rejection of input of too long a field, must be accomplished in the main computer. Provision is made in the ICL equipment for full verification if desired.

The software available on the ICL is limited, with only three or four high level computer languages. Both SPSS and GLIM are available as analytic languages. The SPSS compiler is an old one, two or three versions behind the most recent available here. This is probably in part because of the cost of update, but also seems to be related to the limitations of the particular ICL which is several years old.

The capabilities of the systems programmer, the operations director and the user relations supervisor are good. They have a good grasp of the strengths and weaknesses of their system and equipment and are adept at problem solving.

Erastus Njeru is the graduating computer sciences major recommended to the project by Professor Scott and is presently the key data management individual in Kenya for the project. He is familiar with the University computer facility and has the respect of the senior personnel at the facility. In discussing the project and our needs with these individuals, I found them very willing to

be of assistance to us and to Mr. Njeru in particular. Professor Scott also is interested in the project and will be supportive of Mr. Njeru.

To explore any additional data management resources in Kenya, I visited the Central Bureau of Statistics (CBS) and the government computing facility. The staff at CBS have had extensive experiences in very large scale field surveys and have substantial programming and statistical support. They are interested in the project and willing to assist as we may need. The government computing facility, used by CBS and governmental agencies generally, has had an IBM 370. This is to be exchanged this coming summer for a larger IBM 370 system, through the original machine may be retained to add computing power. The facility supports few compilers and no statistical packages. They are interested in acquiring the BMD-P programs, but do not seem anxious to undertake a commitment to SAS.

To explore the possibilities of the Apple Computer for the Kenyan project, I visited the offices of the Apple dealer in Nairobi. This dealer has undertaken the Apple franchise fairly recently, but has run a service bureau operation for several years. The Apple II E is available, shipped from a London correspondent to which it is shipped from the production facility in Ireland. Warranties and support are available. Because of the inconsistencies of Kenyan electrical current, a power module will be necessary. This module will support continued work for at least an hour without power allowing either a continuation of work (and salvage of memory) over short term outages, or an orderly close down of work in case of longer term disruptions. The company has submitted cost estimates to Dr. Carter and to me. There are about 200 Apple Computers in Kenya, mostly in and around Nairobi, and an active users group, which can offer considerable training programming and user support. The Nairobi dealer has recently given two Apple II E computers to the University facility for student training, which will offer further support to our use of the Apple.

Data forms: Drs. Neumann, and Gorski and I worked on plans for forms for use in data collection especially the morbidity aspects of the data collection. We also revised the census screening forms for the upcoming community census and the census form. As the Kenyan data collectors had already been extensively trained in the use of the census instrument, changes were limited to those essential to the study and were worked into the existing form. The lack of a written form of the major language poses some problems for data collection instrument training and field testing mandatory.

Presention of data management concepts and plans: Near the end of my stay in Kenya, I presented the data management concepts, plans, resourses and needs to the investigators and staff, reviewing the project needs, the Kenyan facilities and resources and possible options for US-Kenyan sharing of the data management responsibilities.

During my Kenyan visit I also met with individual investigators, students and staff on epidemiologic, statistical and data management problems related and unrelated to the project.

The Kenyan visit was successful in terms of the objectives of the trip. Especially important were the opportunity to review the study site and problems first hand, the personal and professional rewards of meeting with our

excellent Kenyan counterpart investigators, and the chance to determine the real strengths and weaknesses of the Kenyan portion of data management. I was able to develop a more realistic framework for future data management planning.

I was in Kenya from February 8 until midnight on February 23rd when I flew to London. After a day stopover in London, I returned to Los Angeles on February 25th.

Trip Report - Egypt

I arrived in Egypt in the early evening on Tuesday, February 1 and remained there through February 6, taking the early morning plane to Nairobi for the Kenya portion of my trip (written up separately.) The primary goals of the trip were threefold: to meet with the Egyptian investigators and senior staff; to assess the data management situation and to offer any assistance at this point in the project; and to visit the data collection site. All three of these objectives were met; the second, on data management, was expanded to include investigation of the availability and suitability of an Apple Computer for use in the project.

Of the six days spent in Egypt, one was spent in visiting the data collection site, Kalama, one in Alexandria visiting Dr. Hussein Khalil at the High School of Public Health where the data entry and management will be performed, and the remainder at the Nutrition Institute.

Kalama

Kalama is a village about 25 kilometers north of Cairo. It is basically an agricultural village a short distance to the east of the Cairo-Alexandria highway. The houses in the village are clustered together with the agricultural lands lying around them. There is a considerable amount of new housing under construction, encroaching on the available agricultural land. The houses are built in row style with no space between them or are, in the newer houses, free standing multi-family structures of two or three stories.

The social workers who accompanied and guided me on my visit appeared to know the village and its inhabitants well and to be very well accepted by the villagers.

There is a large clinic at the entry to the village. It appeared to be busy, though the physician in charge was able to visit with us for a few minutes. A large number of people were in and around the clinic building, primarily mothers with infants and/or small children.

The primary activity in the village the day that I was there was centered around an area near the new construction where mud was being excavated and transported in baskets carried on the heads of workers. There was some agricultural activity, some activity associated with animal care and some transport activity involving camels, water buffalo and donkeys.

There were a number of outdoor markets that appeared to be social centers as well as purveyors of food. Around one meat market, a number of women with

infants and/or small children seemed to be offering small quantities of produce and other food items and some other goods (in the nature of handcrafts, primarily). Other markets offered staples and produce.

There is a large school in the village and most of the boys in the 7-14 age range were in school uniform.

The village has been mapped with all of the housing units designated by numbers. The Nutrition Institute staff has identified each of the housing units on the map and corresponding numbers have been painted on the outside walls of the houses.

Nutrition Institute

The Nutrition Institute is an imposing structure near the Nile in Cario. It was within easy walking distance from Shepheard's and other major hotels. The study offices are located in the Institute along with the offices of Nutrition Institute investigators and staff associated with the project. Dr. Osman and the other investigators are personally and professionally a delight to work with. We discussed a wide range of study problems while I was there -- primarily, of course, in the areas of my own expertise in Epidemiology, Data Management and related topics of census, data collection and forms design and utilization. All of the investigators are experts in their particular fields and bring considerable experience and expertise to this study. The Nutrition Institute staff that I met with included the two senior social workers, Mrs. Susan and Mr. Regae, who accompanied me to the village. They are anticipating a major role in the study as it develops.

The American coordinator, Jane Wolgemuth, has her office and that of her Egyptian secretary in the Institute. Dr. Wolgemuth is somewhat handicapped by her unfamiliarity with Arabic -- the investigators all speak excellent English, but all the Institute staff do not. (Some of the more senior personnel do, but a number do not.) It was my understanding that Dr. Wolgemuth was studying Arabic.

Data management

In company with Drs. Jerome, Wolgemuth and Shaheen, I visited Dr. Hussein at the High School of Public Health in Alexandria. Dr. Hussein has an active computing facility within the School of Public Health.

Dr. Hussein's computer is a Texas Instruments TI6, a large scale mini-computer capable of time sharing and multiple terminal access. Data input is accomplished by cued, interactive terminal input capable of incorporating editing routines as part of the input process. The compatibility of the computer with the mainframe computers and systems in use in Kansas or Berkeley is limited. However, storage from the TI can be converted, externally to the facility, into 9 track IBM readable tapes which can be used by the other facilities. No SAS data management appears possible at this facility at this time (though SAS has just recently announced its newly acquired compatibility with large non-IBM mainframes and minis). Dr. Hussein was negotiating with BMD-P for the acquisition of at least some of the BMD-P programs for use on his TI, which will give him considerable analytic power.

The competence of Dr. Hussein's facility and staff are unquestioned. However, it is a small operation already burdened with the computer work associated with the education and research activities of the School of Public Health. Depending on the volume and extent of the data collected in the field, and the timing of that collection, it may be difficult for the present staff to keep up. The addition of staff and perhaps terminal facilities may be necessary, or it may be desirable to locate "service bureau" types of operations to input the more routine data under the guidance and supervision of Dr. Hussein and his staff. The data management and analytic activities are not in question here, but only what may be an overwhelming burden of data input from field activities.

The second aspect of the data management, which came up unexpectedly, was the possibility of using a micro computer, such as an Apple, for a number of study activities: record keeping and accounting, maintanance and monitoring of field activities and word processing. All of these needs had been perceived for all of the projects, the Egyptian project was particularly anxious for the accounting capability and the word processing.

I visited the company which imports the Apple computers into Egypt and discussed the availability, capabilities and costs of the Apple computers in Cairo. The Apple II Plus and the Apple III are both available. Apple has recently developed a printer -- letter quality -- which prints in Arabic, and the programming to go with it. A power regulator would be necessary even in Cairo, and a power source called "Apple Juice" was recommended as adequate. The price for the Apple II Plus, necessary programming and additional "cards" (such as CPM, 80 col and extra memory), power regulator, scope, disk drives, and Arabic and English printer was quoted in the area of $6000. A firm quote with specifications was to be given to the Egypt project -- subject to the negotiations common in such purchases, the import regulations, etc. (On contacting the Apple dealer in Nairobi, I discovered that the Apple IIE had become available, at lower relative costs; this version of the Apple II incorporates a number of features which must be added to the Apple II Plus, and has essentially replaced the II Plus in the market. It should replace the Apple II Plus in the Egyptian negotiations.)

Adequate systems, programming, consulting and electronic support appear available for the Apple in Cairo.

The Egyptian visit resulted in a learning experience for me, an opportunity to assess the data management activities, potential and possible problems, and an opportunity to be of assistance in various aspects of the planning and conduct of the study. My hosts were most gracious and I appreciated the opportunity to work with them.

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cc: Dr. Judith Balderston