BERKELEY: SCHOOL OF PUBLIC HEALTH
DEPARTMENT OF SOCIAL AND
ADMINISTRATIVE HEALTH SCIENCES

November 11, 1983

PD-AAN-629

Memorandum

TO: Charlotte Neumann, M.D., Principal Investigator

FROM: Robin Gorsky, Ph.D., Co-Principal Investigator

RE: Trip Report, Nutrition CRSP - Kenya Project, August - October 1983

I spent from Friday 5 August through Monday 12 September and Wednesday 28 September through Thursday 27 October inclusive in Kenya. In brief, I worked on the following areas (approximate days).

- Activity and Mother-Child Interaction (16)
- Reproduction (4)
- Socioeconomic and Case Studies (2)
- Food Intake (2)
- Psychological Testing (8)
- Sampling, Data Management (2)
- Translation of Forms (1)
- Scheduling, Logistics, Household Burden, Household Entry (4)
- Meetings (4)
- Policies and Procedures (3)
- Office and Project Management (16).

The following pages describe these areas in more detail. Appendices are attached as noted in text.

RDG/gg

Activity and Mother-Child Interaction

When I first arrived, I observed our enumerators in the field and discussed the procedures and the problems they had encountered. Because observations entail so much writing, I revised the activity coding to combine certain movements and incorporate a series of activities into one category. I spent time in class with the enumerators, role-playing and discussing the new activity categories. The enumerators then went back to the field under supervision, to use the new categories (Appendix A).

When Marion Sigman arrived, we discussed the requirements of the cognitive function core. She incorporated the toddler activity observation into the mother-child interaction core measurement and wrote out descriptions of play behavior for the enumerators to use. I subsequently trained our enumerators in the Kenya Project adaptation of the Wachs Observation Manual and prepared the guidelines and forms for these core measures (Appendix B).

I also discussed with Cattle and Carter the non-core Activity Observations. We agreed that the Case Studies would incorporate activity observation and, in particular, would determine the importance of activity types and the appropriate person to perform activity types. Subsequent to the Case Studies, activity observation would begin on a subset of study households, incorporating activity categories developed from the Case Studies. I developed guidelines and forms for these measures (Appendix C).

Reproduction

The forms for the reproduction core measures needed revision and updating according to the Management Entity Variable List and from the results of the pilots. I revised these forms and prepared the final forms to go to the printer. The Kenya Project encountered some problems in the coding since not all answers are possible in our study area and too many of our choices are "other".

Socioeconomics

After several discussions with Alfred Neumann and rereadings of the core design, I developed an SES survey which incorporated the concept of net worth. Since we are attempting to quantify our variables, we must convert all variables into one unit. If we consider a household as an economic entity, that household has a stock of assets and a flow of income and expenditures. Thus, a household can be valued as

NET WORTH = ASSETS + INCOME - EXPENDITURE.

My SES survey had three parts: assets, asking about acreage, cattle, equipment, businesses, furnishings, electronics, and so on; income, asking about crops and products sold, items rented, business income, salaried employment, gifts, etc.; and expenditures, such as acreage or animals or equipment rented, labor paid for, loan payments, school fees, special feasts or ceremonies, food purchased, medical care and transportation paid

for, etc. Each of the above would be assigned a monetary value which would be used by the computer to calculate net worth as follows:

(units of asset)(value/unit) +
(units of income)(value/unit) -
(units of expenditure)(value/unit).

Households could easily be ranked on net worth and a correlation calculated between net worth and food intake or any other variable. (Draft form attached, Appendix D).

After receiving the M.E. variable list, the Kenya Project abandoned this concept with regret. Again, the Kenya Project encountered problems with the SES variable list: in quite a few cases, none of the codes applied and all our responses would be "other".

Case Studies

I developed a case study write-up (Appendix E) from my interpretation of the M.E. design. This was modified by Cattle upon clarifications from M.E.

Food Intake

I discussed with Weinberg form format, scheduling of enumerators, and the problems of differing recipes for staple foods. We developed a scheduling scheme and calculated the appropriate numbers of enumerators to cover the study households. She, in consultation with Coulson and Carber, resolved the recipe problem. We also resolved, as a group, the final food intake forms.

Psychological Testing

While Sigman was in Kenya, I observed the Uzguris - Hunt and Bayley testing of toddlers in the household situation. I participated in the training of our two enumerators and reinforced the training after Sigman had gone. I also observed and reviewed with the enumerators the Ravens Matrices and WISC tests for school-age children. I developed a first draft of computer-coded forms for use in the main study.

Sampling and Data Management

I spent several days with Coulson discussing the household selection and flow of data from household to computer data entry. Since the Kenya Project has no leeway in household selection due to the small number of eligible potential-pregnancy households (306), we cannot sample. Because of the dispersion of households over 60 square kilometers, we have divided the area into four clusters to facilitate scheduling of measures and transport logistics, as well as to keep tighter control on the data. Each of the four clusters has a duka (field office) where all blank forms will be kept by household number and where all completed forms will be brought by each enumerator, checked by each supervisor, and filed by household number. A duka supervisor will be in charge of this process. Completed forms will be picked up from the dukas weekly for data entry.

Translation

I spent some time with our calculators and university students on form translation. One group would translate a form from English to Kiembu; the other group would translate the Kiembu into English. The groups would compare the results and work together until the Kiembu sense and the English meaning were the same.

Scheduling, Logistics, Household Burden, Household Entry

I did many calculations (and alterations of calculations) on scheduling of household measures. Because most functional areas will be measured six days/week (and food intake seven days/week), there are six different measurement sched- ules and six different household entry schedules. These were charted and delineated. All monthly measures will begin at household entry; all 3-month measures will begin January 1, 1984, to ensure comparable measurements across households. Household burden is calculated at 36 hours/month (about 12 days of each month, a household will be visited).

Meetings

Formal meetings in which I participated were as follows:

10 August: C. Neumann, A. Neumann, N. Bwibo.
Discussion of project hierarchy and needs for additional staff.

25 August: C. Neumann, J. Kagia, N. Bwibo, G. Gardner, D. Cattle, S. Weinberg, A. Coulson, plus all field staff.
Overview of project, importance of data collection, overview of hypotheses; questions from field staff.

29 August: C. Neumann, E. Carter.
Discussion of policies, procedures, calculations, transport, data flow, further meetings, additional staff, project hierarchy, and U.S. staff perks.

31 August: C. Neumann, E. Carter, D. Cattle.
Phase II design, publications agreement, timetable until main study.

31 August: C. Neumann, E. Carter, D. Cattle, S. Weinberg.
Areas of responsibility of senior staff, hierarchy, staff policies and procedures.

1 September: C. Neumann, J. Kagia, S. Kinoti, E. Carter, D. Cattle, S. Weinberg, K. Wottom, G. Gardner, Ben Muriria, Meke.
Design overview, results of pilots (food intake, morbidity, reproduction, immunology, sanitation and hygiene, activity, toddler observation, ethnomorbidity, heart rates), household selection, data management, timetable to main study, core measures (food intake, anthropometry, reproduction, RMR, sanitation and hygiene, morbidity, immunology, cognitive, socioeconomic, case studies, census update), non-core studies, logistics, and integration.

1 September: C. Neumann, E. Carter, D. Cattle, S. Weinberg, K. Wotton.

Calculation of enumerator needs in main study

Food Intake = 50	Socioeconomic	
Morbidity = 20	Sanitation/Hygiene	= 5
Cognition = 2	Census update	
Reproduction = 3	Community environment	
RMR/HR = 3	Mother-Child Interactions = 20	
Anthropometry = 21	Case Studies = 8	

Total = 132 plus drivers, office staff, watchmen

5 September: E. Carter, D. Cattle, S. Weinberg plus all field staff.
Discussion and signing of employment contracts.

9 September: Thairu, Gardner, Meke, Julius.
Discussion of RMR procedures, supplies, and equipment, delineation of responsibility.

10 October: E. Carter, D. Cattle, S. Weinberg, Waswa, Ben, Benjamin.
Discussion of fieldworkers' performances and our expectations, relationship with households, final household selection and recruitment.

12 October: E. Carter, D. Cattle, S. Weinberg, Ben, Duncan, Benjamin.
Division of households into the four clusters.

17 October: E. Carter, D. Cattle, S. Weinberg plus all field supervisors.
Contracts, taxes, social security, payroll, standard of behavior, cluster assignments.

18 October: E. Carter, D. Cattle, S. Weinberg plus all field staff.
Cluster assignments, payroll, tax forms.

27 October: E. Carter, J. Kagia, Thairu, Jansen, Bowry, Kinoti, Meme, Waswa, Duncan, D. Cattle, S. Weinberg.
Recruitment status, logistics for main study, completed work, still-to-be-completed work, sample size, data entry.

27 October: E. Carter, D. Cattle, S. Weinberg, W. Martin.
Retreat of senior staff, discussion of policies.

In addition, meetings were held with:
Rose Britanak, USAID/Nairobi
candidates for project administrator
candidates for project accountant
candidates for key entry personnel.

Policies and Procedures

I wrote policies and procedures on the following, for use of senior staff:

- auto responsibility and use
- computer use
- data access, data flow
- equipment
- filing, forms
- hierarchy
- hours of work, housing allowance
- payroll
- per diems
- petty cash reimbursement, postage, purchasing
- publications policy
- reports from senior staff to principal investigators
- scientific meeting attendance
- trip reports
- vacations
- weekend field policy.

Office and Project Management

Since this project was lacking both a project administrator and an accountant, I acted as both during the time I was in Kenya. I prepared the payroll for over 130 people for two months; I reconciled expenditures with the University of Nairobi advance; I reconciled expenditures with the University of California (UC) advance; I developed the budget for the next advance from UC; I developed items for consideration by the Field Director; I wrote job descriptions and guidelines; I trained and supervised the new accountant; I wrote an employment examination; I explained and formed a consensus on senior staff policies and perks; I calculated enumerator needs, timing of measures, and household strategies; I developed timetables for tasks to prepare for the main study; I presented payroll, tax, and social security to fieldworkers; I visited the Government of Kenya Tax Department and implemented income tax procedures; I facilitated field work.

R. Gorsky

Appendix 4

August 1983
Toddler Observation
Revision of Codes

Activity Categories

A emotional expressions and actions
B verbal expressions and actions
C eating, drinking
D food preparation and water tasks
E farming and animal tasks
F other HH and work tasks
G imitating
H play with some thing
I play with animal
J play with person
K running, jumping, climbing
L other playing
M being cared for
N own personal care
O movement with purpose
P resting, sleeping, leaning, inactive
Q other physical activities

R. Gorsky

August 1983
Toddler Observation
Revision of Codes

Body Position Codes

0 recline, lean back (feet up)
1 sit or kneel (back straight)
2 stand or stoop (feet down)
3 stop and start (change frequently)
4 up and down (change frequently)
5 walk (deliberate movement forward)
6 run (" " ")
7 jump, climb, other movements

Interactions Codes

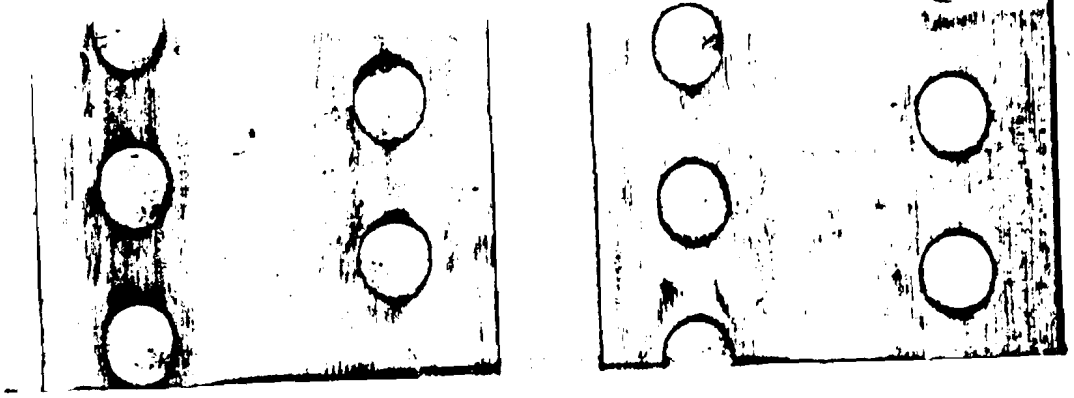
Persons	Actions		
0 alone	0	carried	
1 mother	1	face to face	: verbal
2 father	2	"	: touching
3 brother, sister	3	indirect	: verbal
4 other person (1)	4	"	: watching
5 other persons (2+)			

Notes

If body position changes more frequently than once per minute, use code 3 or 4.

If child is alone (code 0) there can be no action code.

If child is with several persons (code 5), there will be



NUTRITION CRSP - KENYA PROJECT: TODDLER OBSERVATION PILOT (AUGUST 1983)

PAGE ____ OF ____
ENUMERATOR _____
DATE ___/___/___
DAY OF WEEK _____

OBSERVATION START _____
OBSERVATION END _____

HOUSEHOLD NO. _____
RESPONDENT _____ SEX ____ AGE ____
(BIRTHDATE: ___/___/___ CONFIRMED? _____)

TIME START	BODY POSITION		ACTIVITY DESCRIPTION	PLACE	INTER-ACTION(S)	IMMEDIATE	COMMENTS

APPENDIX B

MOTHER-CHILD INTERACTION

Protocol

October 1983

Nutrition CRSP - Kenya Project

Robin Gorsky, Ph.D.
School of Public Health
University of California, Berkeley

MOTHER-CHILD INTERACTION PROTOCOL

Hypothesis

Food intake of mother and/or child affects how mothers and children interact, delegation of caregiving, amount of physical contact, vocalizations to child, and child's development with respect to play.

Methodology

Infants and toddlers will be observed each month for a continuous two-hour period. The Wachs Observation Manual and Sigman notes will be used, as modified for the Kenyan environment.

See guidelines for details and forms.

Personnel

2 hours/observation --- 3 obs/day/enumerator.
Each household has at most 2 individuals to observe.
Must observe 300 HH x 2 individuals once/month = 600 obs/mo.
Assuming 20 working days/mo and 3 obs/day/enum (60 obs/mo/enum) we need 10 enums.
With 4 clusters of HH, need 3 enums/cluster + 1 supervisor/cluster = 15 people.

Note: Be sure in scheduling observation periods that the same child is not always observed at the same time of day; rotate times each month. Also, observations must not be at a time when others are in the household (e.g., food intake).

GUIDELINES

Instructions for Enumerators

(1) Greet household and explain project.
(2) Follow child wherever he/she goes.
(3) Do not interact with child or others in household.
(4) Fill out "Initiation and Conclusion" form, initiation part.
(5) Record events as they occur using "Observation" form(s).
(6) Fill out "Initiation and Conclusion" form, conclusion part.
(7) Thank household and leave for next household.

Initiation of Observation Period

(1) Record location of child when arrive.
(2) Record person responsible for child when arrive.
(3) Record state of child when arrive.
(4) Record physical condition of child when arrive.

These give a baseline upon which to build with continuous observations. Location is where child is physically. Person responsible is the one who is watching or caring for the child. State is the emotional condition of the child. Physical condition notes any significant/obvious illness or injury which could affect the child's activities.

Observation Period

(1) See Wach's Observation Manual (behaviors coded) for overview.
(2) Record, for each activity of the child:
    (a) time activity starts.
    (b) good description of activity so that calculators can accurately code, especially play behavior.
    (c) interaction of child with person (see Other Codes):
        who - is the child doing something with someone else, or is he/she alone?
        what or how - in what manner is the child interacting with the other person (being carried, close to, or distant from the other person)?
    (d) location of child and of mother - where is the child with respect to the mother? (see Other Codes).
    (e) vocalization by child, by another - is anyone responding to the child's distress? does anyone spontaneously address the child? who? (see Other Codes.)

Conclusion of Observation Period

(1) Record location of child.
(2) Record person responsible for child.
(3) Record state of child.
(4) Record ratings of child behavior, i.e., how the enumerator feels the child has behaved during the 2 hours he/she has observed the child (see Ratings for Interaction Enumerators):
    (a) responsiveness to the mother - has the child been avoiding the mother, been withdrawn, or has the child been with the mother all the time, demanding her attention?
    (b) happiness - has the child been always unhappy or always happy during the last two hours?
    (c) Attention span - does the child have fleeting attention to objects or is the child totally absorbed (very long attention) with objects?

Wach's Observation Manual (Summary)

Behaviors to be Coded

(1) Amount of physical contact with child - child picked up, held, or carried by adult or older child (does not include touch or tickle).
(2) Duration of contact.
(3) Physical contact will differentiate between only carrying child and doing other kinds of tasks.
(4) Number of spontaneous vocalizations to child (person has to look directly at infant).
(5) Responses to child's vocalizations (must code "no response" if no one responds within five seconds).

(6) Response to distress (person must go over to child and do something directly; response is effective if child stops crying for one minute and does not cry again for one minute).

Play Categories

(1) Simple manipulation. Placing an object in the mouth, throwing it, or waving it in the air, banging a single object against the floor, or exploring an object against the floor, or exploring an object with the fingers. Exploring an object with the fingers includes behaviors like poking fingers in holes, turning an object over and over in the hands while looking at it, and any extensive manipulation of an object while looking at it. If two objects are banged together, this is considered relational play rather than simple manipulation play.

(2) Relational play. Any non-functional association of two or more objects. The important criterion is that at least two objects must be brought into contact with each other. Included in this category are touching one object against another object, banging two objects together, stacking one object on top of another object, or using one object as a container to hold another object. Functional associations of objects are not included in this category. For example, placing a spoon in a cup would be considered a functional association of the objects rather than simply relational play. However, if the spoon was placed in the cup with the handle inside the cup and the bowl of the spoon protruding, this would not be considered a functional association of the objects and would be scored as relational play. Likewise, if a child pushed a chair in to fit with a table, this would be considered a functional association of the objects. However, if the chair was placed on top of the table, this would be considered relational play.

(3) Functional play. Any functionally appropriate use of an object or conventional association of two or more objects. A functional use is defined as the primary way adults in a society make use of an object. For example, the primary, functionally appropriate use for a cup is as a container for drinking. Using a cup to bang on a pot to make noise is a potential use of the object, but it would not be considered its functionally appropriate use. Most objects have only one functionally appropriate use, although some objects like spoons, may have more than one functional use. For example, a spoon can be used as an eating utensil and as a cooking utensil for stirring or spooning something from one container to another. Examples of conventional associations of objects are placing a cup on a saucer, a top on a pot, a spoon into a cup, a telephone receiver on its base, or a truck into a garage.

Functional acts may be directed toward the self (e.g., feeding oneself with a bottle), toward other people (e.g., combing the mother's hair), toward dolls (e.g., sitting a doll in a chair), or involved objects (e.g., placing a block in the back of a dump truck or putting the top on a pot.

Examples of functional acts we have seen in Kenya are:

(a) put spoon in bowl
(b) put spoon in cup
(c) put necklace on neck
(d) put necklace on mother
(e) cover doll with cloth
(f) wipe doll's face
(g) feed doll
(h) put necklace on doll.

(4) Symbolic play. Includes three kinds of acts: (a) using one object as if it were another different object (e.g., a teacup as a telephone receiver or a piece of sponge as a cookie); (b) using a doll as an independent agent of action (e.g., placing a brush in a doll's hands as if it could brush its own hair or placing a doll in the driver's seat of a truck as if it could drive); and (c) creating imaginary objects with no physical referent (e.g., talking to imaginary people on the telephone, pretending to pour tea by making pouring sounds as a pot is poured to a cup, saying "Here's coffee" as an empty cup is handed to the mother.

Activity Categories

CODE	ACTIVITY
01	Emotional expressions and actions
02	Verbal expression and actions
03	Eating, drinking, breastfeeding
04	Body movements without purpose
05	Movement with purpose
06	Household tasks
07	Being cared for or touched
08	Own personal care
09	Resting, sleeping, leaning, inactive
10	Play: simple manipulation of objects
11	Play: relational use of objects
12	Play: functional use of objects
13	Play: symbolic use of objects
14	Other _____

Other Codes

CODE	STATE OF CHILD
01	Withdrawn, apathetic
02	Calm
03	Emotional
04	Hyperactive

CODE	PHYSICAL CONDITION OF CHILD
01	Normal
02	Illness
03	Injury

CODE	VOCALIZATION
01	Vocalization
02	None

CODE	VOCALIZATION TYPE
01	Spontaneous
02	Response to verbal
03	Response to distress
04	No response

CODE	LOCATION
01	Sleeping room
02	Table room
03	Kitchen
04	Other inside
05	Outside house
06	Outside kitchen
07	Compound yard
08	Shamba
09	Other outside

CODE	PERSON RESPONSIBLE AND WHO WITH
01	No one or alone
02	Mother
03	Father
04	Older sister
05	Older brother
06	Grandparent
07	Other person
08	More than one other

CODE	INTERACTION TYPE
01	Carried on back
02	Carried in arms
03	Close verbal
04	Close touching
05	Distant verbal
06	Distant watching

RATING FOR INTERACTION ENUMERATORS

(1) Responsiveness to the Mother 1____2____3____4____5
withdrawn demanding

1 - Avoiding or withdrawn
2 - Hesitant
3 - Accepting
4 - Friendly
5 - Demanding

(2) General emotional state - Degree of happiness 1____2____3____4____5
always unhappy always happy

1 - Child seems unhappy throughout the observation period
2 - At times rather unhappy, but may respond happily to interesting events
3 - Moderately happy or content; may become upset, but recovers fairly easily
4 - Generally appears to be in a happy state of well-being
5 - Actively happy; nothing is upsetting

(3) Attention span 1____2____3____4____5
short long

1 - Short attention to any activity
2 - Pays attention to an object, task, or person, briefly, but is easily distracted
3 - Moderate attention to any object, person, or situation; soon ready for another
4 - Continues interest in persons, tasks or objects for long periods
5 - Very long continued absorption in and concentration on an activity or person

APPENDIX C

ACTIVITY

Protocol

October 1983

Nutrition CRSP - Kenya Project

Robin Gorsky, Ph.D.
School of Public Health
University of California, Berkeley

ACTIVITY PROTOCOL

Hypothesis

Food intake of target individual affects the activities that individual performs. Obligatory activities are affected less than discretionary activities, this definition to be determined by case studies. (Obligatory activities are high-priority activities, survival activities. Discretionary activites are of lower priority to the individual.)

Methodology

Target individuals will be observed 2 days/month for a continuous 12-hour period, according to guidelines developed by Gorsky and Cattle.

Personnel

6 hours/enumerator/day x 2 enums = 12 hrs observation/day.
Each household has Target Male and Target Female = 2 individuals/HH.
To observe 50 HH x 2 indivs/HH = 100 obs/mo = 200 enum days/mo.
At 20 working days/mo/enum, we need 10 enums.

Note: These guidelines could also be used to monitor Gardner's subjects, who are wearing heart rate monitors (HRM). This would ensure a match between HR and activity.

GUIDELINES

Instructions for Enumerators

(1) Greet household and explain project; let household observe you.
(2) Follow target individual wherever he/she goes.
(3) Do not interact with target individual or others in household.
(4) Record activities as they occur using observation form.
(5) Thank household when observation is completed.

Observation Period

Record, for each discrete activity performed by the individual:
(1) Time activity starts.
(2) Description of activity.
(3) Body position/effort level of activity.
(4) Who activity is being performed with.
(5) Location of activity.
(6) Item being carried while performing activity.

Calculators

At the conclusion of the observation period, when the observation forms are complete, the calculators will code the activity descriptions using categories developed by Gorsky and Cattle from the case studies. Tentative categories are attached.

Activity Description Codes

These categories/codes are to be developed from the case studies to indicate the obligatory/discretionary nature of the activities performed by target males and target females. A tentative list is as follows:

CODE	DESCRIPTION	
01	Sleep, rest	
02	Personal care	
03	Eat, drink	
04	Inactive discretionary (read, radio, talk, drink beer, knit...)	
05	Active discretionary (dancing, soccor...)	
06	Religious ceremonies, meetings, classes (community activities)	
07	Household tasks	- cooking, preparing food, fetching water, building fire
08		- washing clothes, dishes, cleaning house, compound
09		- making and mending clothes
10		- childcare, childrearing
11		- shopping
12		- building thatch house; making, repairing furniture
13		- chopping wood
14	Shamba	- planting
15		- weeding, pruning
16		- harvesting
17		- digging, clearing, plowing, preparing soil
18	Animals	- gathering feeds
19		- slaughtering
20		- herding
21	Cash	- income-generating activities: duka, job, laboring
22		- selling vegetables, fruits
23		- selling nonfood items

CODE	EFFORT LEVEL
01	Recline
02	Sit
03	Stand
04	Stop/start
05	Walk: flat, downhill
06	Walk: uphill
07	Heavy upper body (planting, gathering, working without load)
08	Heavy upper and lower body (cutting grass, digging, running, working with load)
09	extra heavy effort (chopping firewood)

CODE	WHO WITH
01	Alone
02	Adult target
03	Other adult
04	Child target
05	Other child
06	More than one

CODE	LOCATION
01	Sleeping room
02	Table room
03	Kitchen
04	Other inside
05	Outside house
06	Outside kitchen
07	Compound yard
08	Shamba
09	Other outside

CODE	ITEM CARRIED
01	Nothing
02	Child
03	Animal
04	Item 2kg (estimate)
05	Item 2-5 kg (estimate)
06	Item 5 kg (estimate)

(1)

Appendix D

Nutrition CRSP
9/83 rdg
Draft two

HH No. ____

Socioeconomics

1. Ask the respondent whether the HH, compared to 3 months ago, is ☐ better off ☐ The same ☐ worse off. ☐ don't know

2. Why does he/she feel that way?

INCOME 3. Total acreage rented to another in last 3 mo. ____ acres

4. Acreage ~~devoted to~~ planted in nonfood cash crops sold for cash in last 3 mo.

coffee	☐	____	stem
tobacco	☐	____	acres
cotton	☐	____	
other _____	☐	____	acres

5. Other major crops sold for cash in last 3 mo.

			unit
maize	☐	____	☐
beans	☐	____	☐
bananas	☐	____	☐
English potatos	☐	____	☐
cowpeas	☐	____	☐
other _____	☐	____	☐

1 bags
2 debe
3 Kimbo
4 number
5 kg
6 liter
7 other

6. Other products made at home and sold for cash in last 3 mo. (such as baskets, rope, cooked food, honey).

			unit
baskets	☐	____	☐
~~rope~~	☐	____	☐
honey	☐	____	☐
cooked food	☐	____	☐
other _____	☐	____	☐

7. Items rented to another in last 3 mo.

plough	☐	Ksh ____
~~sprayer~~	☐	Ksh ____
other _____	☐	Ksh ____

(2)

Nutrition CRSP
9/83 rdg
Draft 2/SES

8. Services performed for cash in last 3 mo.
   - midwifery ☐ |_|_|_| days
   - ~~sewing at home~~ ☐ |_|_|_| days
   - other _____ ☐ |_|_|_| days

8. Does HH own any business ☐ yes ☐ no

If yes 9. Does the Business provide income to the HH in last 3 mo.

☐ yes ☐ no

10. Salaried employment off-shamba in last 3 mo.

		Ksh total
laboring on another farm	☐	
cooperative society, non-manual	☐	
teaching, government	☐	
private sector employment in town	☐	
other non-farm jobs	☐	
other _____	☐	

11. Gifts, ~~cash remittances~~, loans, and hire-purchases received in last 3 mo. Ksh |_|_|_|_|_|

EXPENDITURES

12. Total acreage rented from another |_|_|_|_|_| acres

13. Farm inputs ~~Fertilizer, insecticides~~ bought in last 3 mo

			units
fertilizer	☐	|_|_|_|	kg ☐
insecticide	☐	|_|_|_|	kg ☐
animal feeds	☐	|_|_|_|	kg ☐

~~14. Animal feeds or salts bought in last 3 mo~~

animal salts	☐	|_|_|_|	kg ☐
seeds	☐	|_|_|_|	kg ☐
other _____	☐	|_|_|_|	kg ☐

15. Farm or HH labor paid for in last 3 mo. Ksh |_|_|_|_|

16. Payments on loans and hire-purchases in last 3 mo. Ksh |_|_|_|_|

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③

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17. School expenses in last 3 months Ksh ____

18. Amount spent on Special feasts or ceremonies in last 3 months? Ksh ____

19. Any persons outside the HH being supported by cash in last 3 months? ☐ yes ☐ no

If yes, how much in total? Ksh ____

20. Major Foods ~~or assets~~ bought in last 3 months.

			unit
maize	☐	____	kg ☐
beans	☐	____	kg ☐
cooking fat	☐	____	kg ☐
cows milk	☐	____	liter ☐
baby foods	☐	____	kg ☐
sugar	☐	____	kg ☐
other _____	☐	____	☐

21. Medical ~~pa~~ care paid for in last 3 mo Ksh ____

22. Transportation paid for in last 3 mo. Ksh ____

ASSETS

23. Have HH ~~[illegible]~~ acreage, livestock, or equipment changed in last 3 months? ☐ yes ☐ no

24. Total acreage owned by HH ____ acres

25. Number of acres owned in own sublocation ____ acres

26. Total acreage cultivated by HH ____ acres

27. Number of cattle owned by HH ____

28. Number of goats owned by HH ____

29. Number of sheep owned by HH ____

30. Number of other farm animals owned by HH

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chickens ☐ ☐☐☐

rabbits ☐ ☐☐☐

other _____ ☐ ☐☐☐

31. What farm equipment is owned or hire-purchased by HH

plough ☐ number ☐☐

sprayer ☐ number ☐☐

animal-drawn cart ☐ number ☐☐

wheelbarrow ☐ number ☐☐

other _____ ☐ number ☐☐

32. Businesses owned by the HH 1=yes 2=no

retail duka ☐
matatu _____ ☐
mill ☐
canteen _____ ☐
other _____ ☐

33. Furnishings currently owned and were purchased by HH?

sofa set ☐ 1=yes 2=no

cupboard ☐

glass paraffin lamp ☐

other _____ ☐

34. Which of the following currently owned and purchased by HH?

radio or record player ☐ 1=yes 2=no

bicycle ☐

motor vehicle ☐

35. What materials have been purchased for the construction: 1=yes 2=no

roof ☐ milled timber ☐

nails ☐

cement floor ☐ fencing ☐

wall stone ☐ other _____ ☐

(5)

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SOCIAL

36. What level has the oldest child reached in school?

[ ] 1=standard 2=form 3=university 4=other

[ ] level

Is he or she still in school? ☐ yes ☐ no

37. What was the highest level of schooling completed by the lead M

[ ] [ ] (same coding as 36)

38. What was the highest level of schooling completed by the lead F

[ ] [ ] (same coding as 36)

39. How often does the lead M or F read a newspaper?

[ ][ ] times per month

40. How often does the lead M or F listen to the news on a radio?

[ ][ ] times per month

41. How often does the lead M or F go to market?

[ ][ ] times per month

42. Has the lead M or F been to Embu town? 1=yes 2=no [ ] yes [ ] no

If yes, how many times? [ ][ ]

43. Has the lead M or F been to Nairobi? [ ] yes [ ] no

If yes, how many times? [ ][ ]

44. Is anyone in the HH an official in any of the following 1=yes 2=no

rural self help organization [ ]

educational institution [ ]

cooperative society [ ]

social club [ ]

local government [ ]

religious organization [ ]

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~~bank~~
~~mail~~
~~telephone~~
~~meeting attendance~~
~~visit govt office~~
~~artificial insemination~~

45. How many meetings has LH or LF attended in last 3 mo

46. ~~Have you~~ Has the LH or LF used any of the following in last 3 mo 1 = yes 2 = no

bank ☐ telephone ☐

received or sent mail ☐

47. Has anyone in the HH visited an agricultural office or had an agricultural officer visit them in the last 3 mo? ☐ yes no

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Appendix C

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Kenya Project

Case Studies

Hypothesis Intensive observation of HH can elicit relationships among core variables, give meaning to main study results, determine individuals most at risk from nutritional and morbidity insults, clarify decision-making, and determine the path of food through the HH.

Questions

(1) How does HH accomodate deprivation of food or other resources; what is the human cost.

(2) What are the mechanisms and impacts among the functions, especially activity as an explanatory or intermediate variable.

Areas to investigate

(1) dynamics of daily life in HH

(2) time allocation of all HH members
(2a) intensity of obligatory tasks
(3) role adjustments in HH

(4) linkages between food intake, time allocation, living conditions

(5) importance of activities in HH for HH functioning and individual development

(6) activities most affected by intake

(7) food pathways from production/acquisition to individual consumption

(8) regular study (core) protocols

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Case Studies - 2

Variables

(1) activity types by age, sex, disease & reproductive state

(2) time allocated to each activity type by all HH member

(2a) time allocated to hygiene, sanitation, etc and types of these activities

(3) type of interactions among HH members

(verbal, face-to-face, indirect, caregiving, social, etc)

(4) time allocated to interaction types by HH members

(5) rank of tasks & interactions by importance

to HH function, individual development

(6) locations and pathway of food through HH

(7) living conditions of HH

(type of structure, construction, water supply, food supply, land ownership, amount of land, # children in school, medical expenses, cash income, bought items, etc ... SES ...)

Methodologies

I. Activity patterns

For each age, sex, morbidity and reproductive state of individual in the HH, continuous observations using time allocation form will be performed. From at least one set of observations (all individuals ($\mu = 8/HH$) x 20 HH), a set of activity categories (types) specific to these individuals [infant, toddler, preschooler ♂♀, schooler ♂♀, adolescent ♂♀, adult ♂♀] can be developed. Using these categories (see adult activity protocol and toddler revision for examples), activity durations and an activity pattern can be developed.

II. Special activity observations

For interactions, hygiene, caregiving, social activity types, specific observations to note only those activities can be performed. See hygiene protocol for example. Particular interactions are important for cognitive development. See cognitive protocol.

III. Importance of tasks, expected roles by age groups, sexes, sick individuals, reproductive states

These will be determined by lengthy free-form interviews with appropriate HH members. See anthropologist.

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IV. Taboos, changing roles, changing tasks, changing foods for morbidity and reproductive states

To be determined as in III.

V. Food flow

Food production, acquisition, storage, allocation to seed or consumption, allocation among HH members etc will be determined by interview and by observation of food pathway. From the ground to the mouth...

VI. Living Conditions

By observation, questionnaire, and interview, using SES protocol plus other more intensive questions. See anthropologist.

VII. Regular Study Protocols

See core protocols.

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Personnel

(1) Anthropologist (half-time): to conduct interviews and observations re food flows, taboos, foods appropriate to different ages, sexes, morbidity & reproductive states.

(2) Anthropologist (full-time): to conduct interviews and observations re importance of tasks, roles by age, sex, morbidity & reproductive state, changes in tasks for sickness and reproductive states

(3) Social scientist (full-time): to implement & supervise surveys on living conditions, regular protocols, continuous activity observations and special activity observations.

(4) Enumerators (# = # case study HH): to do continuous activity observations and special activity observations.

Calculation: μ = 8 indiv/HH.

If observe 4 hrs/week/indiv × 8 indiv = 32 hrs/wk.

Special activity observations = 8-12 hrs/wk

Total $\boxed{40\text{-}44 \text{ hrs/wk}}$ per HH

Equipment

Digital watches, clipboards, pencils, erasers for enumerators.

Notebooks and/or tape recorders for anthropologists.