

Annual Report
Harvard School of Public Health
Year 1(2010/2011)
Nutrition CRSP - Africa

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Introduction/Overview of Work plan rationale/objectives

Section I: Research Activities

Our first objective in Year 1 was to build our existing collaboration with Makerere University School of Public Health (MakSPH) and other Ugandan partners. We have done so, working with Dr. Henry Wamani and Dr. David Guwatudde, planning field research in southwestern Uganda under the CRSP, and submitting a proposal in response to the RFA issued by the CRSP in Uganda. We have also developed links with CRSP leaders and researchers at Tufts University and visited the Department of Community Health at Mbarara University of Science and Technology (MUST) to explore interest in possible future collaboration.

With our colleagues at MakSPH and Tufts, we have developed objectives and plans for research and training in Uganda, which we are now implementing. In June-July 2011, our research team met with partners at Makerere University in Kampala, attended the first CRSP workshop in Uganda in June 2011, and made a field visit to southwestern Uganda. We have also sought to increase expertise in agriculture and food science on our team, seeking the involvement of Dr. Bernard Bashaasha from the School of Agricultural Sciences and Dr. Joyce Kikafunda from the Department of Food Science and Technology at Makerere University.

Our main research objective in Year 1 was to conduct a preliminary survey on agriculture, nutrition, and health among nutritionally vulnerable groups in a rural district

of Uganda. We originally planned to conduct this survey in Iganga and Mayuge Districts in eastern Uganda, where Makerere University has established a demographic surveillance system and where members of our research team have conducted past research in agriculture and nutrition. However, as CRSP and USAID expressed interest in conducting such an assessment in either southwestern or northern Uganda, we worked to identify a suitable new study area in the southwest, gather background information, develop contacts with district-level officials, and prepare logistics to conduct research activities there.

Concurrent with the issue of the Community Connector RFA, the focus areas in the southwest have been decided to be in districts that we have not chosen for our planned assessment. We are therefore evaluating with our Ugandan colleagues another change in study location. Selection of a study site given the evolving focus of the larger CRSP and preparations needed to begin research in a new geographical area are challenges we hope to address in the first part of Year 2.

The goal of the assessment is to provide a baseline for evaluating interventions that integrate agriculture, nutrition, and health. It will involve randomly sampled children under two years of age and their mothers or primary caregivers and will assess agricultural activities, food security, diet, feeding practices, health, and nutritional status using anthropometry and biochemical indicators in these nutritionally vulnerable groups. One objective is to identify household agricultural activities, practices, and technologies that are associated with better household food security, quality of diets, health, or nutritional status. If possible, we will examine changes across seasons, issues of gender, and access to health care. The findings will be used to identify integrated interventions that could have a nutritional or health impact in these populations. We have developed aspects of the protocol and sampling plan, and the work will continue in Year 2.

Section II: Capacity Building Activities

One of our objectives in Year 1 was to identify, together with our partners in Uganda, Nutrition CRSP, and USAID, the needs and opportunities for capacity building. We are exploring roles in CRSP research activities for a PhD student or junior faculty at Makerere University. Among candidates we have identified from the School of Public Health, we are working on selection, logistics, and budget for one person to attend courses and conduct collaborative research at Harvard School of Public Health during the spring 2012 term. Course taken could include nutritional epidemiology, nutritional problems in less-developed countries, or biostatistics, and ultimately depend on the individual's and MakSPH's interests and long-term goals. It is anticipated that this individual, who will be a PhD student or faculty member, will subsequently be prepared to develop a similar course(s) that will build the relevant curriculum at Makerere.

Training at the Bangalore Boston Nutrition Collaborative may be another option. We also seek to engage Masters Students and staff in the field research.

Outputs

While our workplan had not explicitly outlined outputs, we had described a number of goals in the narrative of the workplan and have addressed the status of these goals at the close of year 1 as outlined below:

- 1. To conduct a baseline survey that will (a) assess nutritional status and food security among nutritionally vulnerable groups in a rural area of Uganda, (b) examine the relationship between agricultural activities and production and the food security and nutritional status of these groups across seasons, and (c) identify, jointly with Ugandan partners, the Nutrition CRSP, and USAID, priorities for future collaborative research.**

The efforts towards this objective have been aligned with the RFA awarded to MakSPH in collaboration with HSPH. Year 1 funds are supporting planning and preparations for the larger survey under the RFA award. We are initiating this baseline survey in close collaboration with colleagues at MakSPH and Tufts to ensure relevance of this activity to the Community Connector.

- 2. To strengthen our existing collaboration with Ugandan partners.**

This has been achieved and will continue in Year 2, while new linkages have been developed with the School of Agricultural Sciences and the Department of Food Science and Technology at Makerere University.

- 3. To address capacity building needs by (a) identifying, jointly with Ugandan partners, the Nutrition CRSP, and USAID, opportunities for capacity building that are relevant to Uganda, (b) creating training opportunities through implementation of the baseline survey, and (c) identifying at least one individual to come to Boston for short-term training in nutritional epidemiology or other relevant topic(s).**

Training at HSPH in Boston is planned for 2012 to coincide with the schedules of eligible MakSPH students/faculty. We additionally will have involvement of MakSPH personnel as the baseline survey commences in Year 2.

Vignettes

Dr. Nilupa Gunaratna from HSPH and Dr. Henry Wamani from MakSPH traveled to southwestern Uganda on June 30-July 1, 2011, visiting rural areas around Mbarara and Bushenyi. Meetings with health and district-level officials, as well as discussions with colleagues in the Department of Community Health at MUST helped to identify several agricultural, health, and nutritional issues in this region that could be investigated further in a baseline assessment.

As has been discussed at various CRSP meetings, the southwest is an area of relatively high agricultural productivity. Bananas (matooke) are the major crop, along with cereals including maize and other coarse grains. There is also some cash crop production (tea and coffee), and the region is a traditional cattle area (Ankole Sub-region). Challenges identified by district agricultural officials include banana wilt for matooke production, *Striga* for cereal production, tsetse fly for livestock, and declining soil fertility for all crops.

Child undernutrition, particularly stunting, is high in this region. Medical staff at local health centers cite poor quality of diets, particularly of complementary foods, and tightly spaced pregnancies, which affect maternal nutritional status before and during pregnancy and lactation, as possible contributing causes. Health centers receive cases of severe malnutrition year round, and while those cases are referred to the hospital in Mbarara, children may not be taken there due to prohibitive transportation costs.

Annual Report
Purdue University
Year 1 (2010/2011)
Nutrition CRSP - Africa

Principal Investigator: Gerald Shively, Purdue University

Overall objective (as stated in Year 1 work plan):

The primary year 1 objective is to initiate research planning and establish research partnerships. The goal of this work plan is to work closely with the ME and project partners to initiate new collaborations and strengthen existing collaborations with Ugandan partners around the topic of agriculture and nutrition. We will work to identify local needs and opportunities for research and capacity building.

Some progress achieved, as detailed below.

Specific objectives (as stated in Year 1 work plan): research

We will work closely with the ME and project partners to identify the current state of knowledge and research gaps, in anticipation of launching research on nutrition interventions.

Progress achieved, as detailed below.

Specific objectives (as stated in Year 1 work plan): education

We will work closely with the ME and project partners to (i) assess potential for recruiting students to a variety of appropriate academic programs (assisting in identification of potential student pools and recruitment), and (ii) help in assessing what curricula exist (and upgrades are needed) in-country and in the immediate region relating to agriculture and economics. We will collaborate with (and guide) in-country partners and consultants undertaking stocktaking of curriculum gaps and needed course-work and/or degree programs.

Progress achieved, but key impediments encountered, as detailed below.

Introduction/Overview of Work plan rationale/objectives

The primary year 1 objective was to initiate research planning and establish research partnerships. The overall goal of the effort was to work closely with the ME and project partners to identify topical areas for focus, collect background information and data, and establish new collaborations around the topic of agriculture and nutrition. The specific research objective was to identify the current state of knowledge and research gaps, in anticipation of launching research on nutrition interventions. The specific education objectives were to (i) assess potential for recruiting Ugandan students into a graduate degree training program in Agricultural Economics at Purdue University and (ii) help in assessing what curricula exist (and what upgrades might be needed) in Uganda.

Section I: Research Activities

Focal area: Identification of priority research areas

Activity 1: We proposed to initiate a review of the literature on nutrition, agriculture and relevant topics for Uganda, including published (peer reviewed) literature and unpublished (gray cover) documents. Work on this review has been initiated but not completed. We anticipate that a paper entitled “A Review of Food Security and Human Nutrition Issues in Uganda”) will be submitted for review and eventually posted as a Global Nutrition CRSP project working paper, once that series has been established.

Focal area: Synthesis of existing programs and projects

Activity 2: We planned to review existing socioeconomic datasets for Uganda, including datasets with possible nutrition components for subsequent analysis or follow-on data collection. We also intended to examine the feasibility of using existing data to derive appropriate USAID indicators for Uganda. During the year we made substantial progress in cataloging two large country-wide datasets available for Uganda (the Demographic and Health Surveys (DHS) and the Uganda National Household Survey (UNHS)). DHS survey data are available for 1988, 1995, 2001, 2006, and the most recent round, conducted in 2009. Several rounds are geo-referenced and are publicly available. Characteristics of the sample include data covering abortion history, anemia and anemia testing, anthropometry, birth registration, cause of death, early childhood education, HIV knowledge and testing, malaria, micronutrient intakes, reproductive calendar, TB, tobacco use, vitamin A, and maternal mortality. The UNHS datasets were collected in 1992, 1996, 1999, 2002 and 2006 and include a partial panel data component. The UNHS includes information on a range of household welfare indicators, including income, consumption, housing, labor market participation, education and health. We have secured access to these datasets and anticipate analyzing the data in subsequent years of the project.

Focal area: *Discrete socio-economic analysis*

Activity 3: Although it was not part of the original work plan, we capitalized on an opportunity to undertake data collection in Uganda in the summer of 2011, in conjunction with (and funded by) the AMA BASIS CRSP. For this effort we are working in collaboration with Dr. Pam Jagger (UNC-Chapel Hill). We collected data in 6 villages in western Uganda, repeating a sample of 175 households that had been visited in 2003 and 2007. We developed a new section for the questionnaire focusing on fuel prices, fuel use, cooking technologies, meal response and health impacts (using questions patterned on the Uganda DHS survey). We anticipate that this effort will provide evidence regarding potential health and nutrition impacts from changes in fuel prices through food choices, meals and air quality. Based on initial results, we may expand the scope of this research in subsequent years, perhaps focusing on USAID community connector pilot districts.

Lessons learned and challenges in implementing proposed activities

Delays in initial approval and launch of the project created impediments to project start-up, but no further complications are anticipated. Scheduling travel during the academic calendar to coincide with availability of partners is will likely be an on-going challenge.

Solutions/resolutions applied or to be applied

Travel and in-country meetings will be planned in advance and allow for contingencies.

Section II: Capacity Building Activities

Focal area: *Degree training*

Activities: Our specific education objectives were to (i) assess potential for recruiting Ugandan students into a graduate degree training program in Agricultural Economics at Purdue University and (ii) help in assessing what curricula exist (and what upgrades might be needed) in Uganda. Activity 4: We have expanded our initial set of collaborators at Makerere University in Uganda and will be partnering with Drs. Dick Sserunkuuma and Bernard Bashaasha. Dr. Bashaasha has not indicated interest or need for curriculum review at Makerere. To date, one Ph.D. student in the Department of Agricultural Economics at Purdue University received partial support from NCRSP for degree. Patrick Ward completed his Ph.D. degree in October 2011, and will be joining the staff of IFPRI in New Delhi (providing potential synergy for NCRSP work plan activities in Nepal). Considerable effort has been devoted to identifying a student from Uganda for degree training at Purdue. At the time of writing, several Ugandan students were considering applications but questions remain regarding their preparation and suitability for graduate study in the U.S. Provided admission can be obtained, it is

anticipated that the first graduate student will begin M.S. training at Purdue in January 2012. However, in the absence of qualified students from Uganda, it will be necessary to support non-Ugandan students to achieve project goals. When appropriate and feasible, preference will be given to African students.

Lessons learned and challenges in implementing proposed activities

Identifying well-prepared Ugandan students for graduate degree training in the U.S. is a significant challenge and is likely to remain so.

Solutions/resolutions applied or to be applied

Efforts and networking continue.

Outputs

Ward, P. and Shively, G. 2011. "Migration and Land Rental as Risk Response in Rural China." West Lafayette, IN: Department of Agricultural Economics.

Ward, P. and Florax, R. 2011. "Agricultural Productivity and Anticipated Climate Change in Sub-Saharan Africa: A Spatial Sample Selection Model." West Lafayette, IN: Department of Agricultural Economics.

Vignettes

At Makerere University several M.S. students are being provided with research support by Tufts. In consultation with Dr. Bernard Bashaasha, Dr. Shively will be participating as a committee member for several of these students. We hope to showcase students' NCRSP-supported research in a one-day workshop at Makerere University in 2012.

**Annual Report
DAI
Year 1 (2010/2011)
Nutrition CRSP Africa
November 21, 2011**

Principal Investigator: Kathleen Kurz
Team members: Cheryl Doty
Barbara Seligman

Introduction/Overview of Workplan Rationale/Objectives

Moderate malnutrition in the first 1000 days of a child's life is a huge problem in the developing world affecting up to half of children under 2 years old, including Uganda, with long term consequences in educability, adult work productivity, and ultimately income and national capacity. While best programming methods have been identified for many of the essential nutrition actions – e.g., breastfeeding, micronutrient tablet provision – the way forward to recommend improving complementary feeding practices is much less clear. Behavior change for complementary feeding within households has been difficult to achieve at scale, as has been the development and production of commercial products affordable to resource-poor families who need it most.

The objective of the proposed work is to build the capacity of individuals currently or potentially working in agribusiness as employees, managers or entrepreneurs to produce and market nutrient-rich complementary foods with a focus on promoting foods that rely on local agriculturally-based products. As a first step in Yr 1, we described the context of complementary feeding in Uganda, as described below.

John Bowman led the DAI portion of the Nutrition CRSP project at its inception. When he left DAI, Barbara Seligman picked up the reins until Kathleen Kurz joined DAI as nutritionist. DAI sought to staff the project with a nutrition-agriculture duo, and in June Cheryl Doty joined the project as the agriculturist with a speciality in agribusiness and public-private partnerships. Seligman continued to support the project.

Section I: Research Activities

After preparation, Kathleen Kurz and Cheryl Doty went to Uganda in June 2011 to investigate firsthand the demand and supply factors of fortified complementary foods. We had meetings with industry, university, NGOs, government, and UN players. We also attended the Nutr CRSP stakeholders workshop in Kampala organized by Tufts University June 28-29, 2011.

We learned there that a somewhat broader focus would be needed to take into account a policy environment that did not yet allow the full development of a

market for fortified complementary foods that could be affordable to resource-poor families whose children need it most. For example, the notion of what constitutes an adequate composition of complementary foods was not clear to industry, nor the process by which commercial products should be certified. Certification was further confused by the WHO International Code of Breastmilk Substitutes banning the advertisement of foods complementary to breastfeeding. In addition, public awareness in Uganda about complementary foods and feeding does not seem high enough to build a platform for commercial complementary food products.

Hence, we decided to compile what was known about complementary feeding and foods from key informants like those we interviewed in June and from documented sources into a situation analysis. An analysis of gaps, challenges, and opportunities regarding complementary feeding and foods in Uganda would help identify the niche DAI would fill on this topic in Year 2 of the project and beyond. We fully expect that the planned market analysis of commercial complementary foods will be a feature of our Year 2 work, including investigation of the demand for complementary foods. In addition, we will complete the situation analysis of complementary foods and seek the input of key Ugandan nutrition specialists, especially as it relates to Uganda’s recently completed Mother , Infant and Young Child Nutrition (MIYCN) strategy. The first draft of the situation analysis will be prepared by DAI by the 1st quarter of Year 2 .

Section II. Capacity Building Activities

DAI did not conduct capacity building activities in Year 1. We anticipate capacity building activities in the subsequent years as the complementary feeding component of Nutrition CRSP develops.

Year 1 Objectives per Year 1 Workplan

As indicated below, most objectives were begun, but not completed.

Objectives	Activities begun in Yr 1
Develop an inventory of commercially available nutrient dense products/complementary foods in the marketplace that are attractive to rural households	X
Analyze existing sources of data regarding affordability of nutrient dense/complementary foods	X
Identify educational institutions and private-sector based trade associations interested in partnering to develop or upgrade agribusiness curricula and knowledge/skill base.	X
Promote ownership of program concept and process by holding workshop with partners to review results and recommendations	
Plan cases studies intended to augment and enhance instructional materials used by key agribusiness training institutions	
Identify key relevant constraints to increasing competitiveness, marketability, and scale in the production of nutrient-dense foods.	X

Outputs

Draft of the situation analysis on complementary feeding and foods in Uganda will be completed in the 1st quarter of FY12. The Year 2 workplan will also be completed.

Vignette

One of our observations is that there is a tremendous amount of capacity in nutrition and related fields in Uganda, and an ever-strengthening government structure to continue to overcome the remaining hurdles. It would seem that the Nutrition CRSP could make a difference by analyzing the landscape for key gaps in knowledge, policy, practice and key bottlenecks in progress, and seek to fill the gaps and assist our Uganda colleagues to free the bottlenecks.