FEED THE FUTURE
The U.S. Government's Global Hunger & Food Security Initiative

Innovation Lab for Nutrition- Africa

Makerere University Annual Report

October 1st, 2014- September 30th, 2015

Lessons learned from programs in Uganda that integrate agriculture and nutrition actions

Award #AID-OAA-L-10-00006

Feed the Future Innovation Lab for Nutrition-Africa

U.S. Government Partners

USAID FROM THE AMERICAN PEOPLE

MILLENNIUM CHALLENGE CORPORATION UNITED STATES OF AMERICA

USDA

OPIC

DEPARTMENT OF STATE UNITED STATES OF AMERICA

USGS science for a changing world

DEPARTMENT OF COMMERCE UNITED STATES OF AMERICA

EXECUTIVE OFFICE OF THE PRESIDENT OF THE UNITED STATES OFFICE OF SCIENCE AND TECHNOLOGY POLICY

PEACE CORPS

THE DEPARTMENT OF THE TREASURY 1789

UNITED STATES AFRICAN DEVELOPMENT FOUNDATION

Partners in Uganda

Tufts UNIVERSITY Friedman School of Nutrition Science and Policy

WE BUILD FOR THE FUTURE

UNIVERSITY FOR COMMUNITY TRANSFORMATION

KYAMBOGO UNIVERSITY KNOWLEDGE AND SKILLS FOR SERVICE

MBARARA UNIVERSITY OF SCIENCE AND TECHNOLOGY SUCCEED WE MUST

PURDUE UNIVERSITY

VE RI TAS HARVARD UNIVERSITY

UNIVERSITAS TUSKEGEENSIS TUSKEGEE UNIVERSITY

NASA

FOR GOD AND MY COUNTRY

fhi 360 THE SCIENCE OF IMPROVING LIVES

HEIFER INTERNATIONAL

Feed the Future Innovation Lab
For Collaborative Research on Nutrition – Africa
Makerere University
Annual Report – Year 5

Management Entity Information

Principal Investigators:
Prof. Bernard Bashaasha
College of Agricultural and Environmental Sciences,
Makerere University, Kampala.
Email: bashaasha@caes.maka.ac.ug

Other team Members
Florence M. Turyashemererwa (PhD)
Nassul Kabunga (PhD)
Annet Kawuma (Msc)
Agaba Edgar (Msc)

Technical and/or Advisory Committee Information

Shibani Ghosh (PhD)

Jeffrey Griffiths (MD, PhD)

Map or List of Countries Where Work

Uganda

List of Program Partners[1]

Friedman School of Nutrition, Tufts University, Boston USA
Harvard School of Public Health, Boston USA

International Food Policy Research Institute (IFPRI)
Gulu University

Local government administrations
Uganda Chartered Health-Net (UCH)

[1]U.S. universities and international partners by country.

Acronyms

IFPRI	International Food Policy Research Institute (IFPRI)
UCH	Uganda Chartered Health-Net (UCH)

Table of Contents

I) Executive Summary

Makerere University, in collaboration with Tufts University and Harvard School of Public Health, implemented the birth cohort in year 5 with recruitment begining in October 2014. The birth cohort, where pregnant women are followed from the second trimester until their children make two years of age, is an evaluation of USAID's Uganda Community Connector Project. The birth cohort complements the Panel survey that was launched in 2012 and repeated in 2014. The aim is to assess the effectiveness of integrated actions in agriculture, nutrition and health on the maternal and child nutrition and health status.

Capacity building in the form of training of enumerators to implement the cohort was done. These included 10 males and 26 females representing the North and South Western Uganda where the birth cohort is being implemented. The total number of phlebotomists whose skill-set to draw blood from the cohort of mothers and children was 27. Only one of these was female. Selected hospitals laboratories were supported with equipment to process and analyze blood samples.

A total of 5,044 mothers (98% of the target) have been enrolled and so far 3,815 infants (76%) have been born. Followed up over nine time point period, the cohort has so far reached time point 5 where most infants are just under nine months of age. Drawn over three different time points to understand the changes in selected biomarkers of nutritional status, 4745; 3722 and 605 mothers have had their first, second and third blood draws, respectively. Children have their first blood draw over four time points, the first being at visit 5 when they are 6 months of age. Only 485 children have so far had their first blood draw.

Dissemination of preliminary findings from the birth cohort was done in different districts across the North and South Western regions of the country.

Aside the birth cohort, the Nutrition Innovation Lab also conducted a cross sectional midline nutrition, health, and agriculture assessment in six Uganda Community Connector Project districts (3,600 households).

II) Program Activities and Highlights[2]

In year 5, capacity building for enumerators to collect data for the birth cohort study was done. The birth cohort study is following 5,044 mother-child pairs to understand the linkages between agriculture, nutrition and health. The trainings

[2]Summary of program activities for the year, no more than one page in length.

were focused on the linkages between agriculture, nutrition, health and other key areas that are integral to these linkages including but not limited to water sanitation and hygiene; infant and young child feeding practices and nutritional status.

The training for the enumerators happened in the North and South Western Uganda, representing the two regions where the birth cohort is implemented. In addition, training across the two regions was also given to phlebotomists that are involved in blood sample collection for the birth cohort. The training for this group, in addition to the above, focused on improving the skill set to use modern techniques and equipment for blood draw. For example use of vacutainer and butterfly needles was not a common practice before. Moreover, most of the group were also not conversant in drawing blood from infants and young children.

A total of 37 enumerators and 26 phlebotomists were trained and deployed across the 16 sub-counties where the birth cohort is implemented. The birth cohort study has enrolled and is following up 5, 044 pregnant women (98% of the target) and their children in 12 districts across 16 sub-counties in the North and South Western Uganda. The visits for the cohort are over a nine time point period that covers a period from the second trimester of a woman's pregnancy to a time when her child is two years of age. So far time points one to four have been completed fully and the data are uploaded. The number of babies born so far total up to 3,815.

In order to understand the biochemical changes in selected biomarkers of nutritional status that take place at the different time points, 4745; 3722 and 605 mothers have had their first, second and third blood draws, respectively. Blood for mothers is drawn over three time points. Of the 3, 815 children only 485 have so far had their first blood draw. Children have their blood draw over four time points, the first being at visit 5 when they are 6 months of age.

In order to support districts to use data from the birth cohort study for programming and decision making, preliminary findings have been disseminated with some of the district administrations. The dissemination meetings involved all district leadership including technical and administrative staff including representatives from the sub-counties.

As a requirement, annual renewal from the institutional board for both the birth cohort and panel surveys was obtained. The material transfer agreement has also been approved by the Uganda National Council of Science and Technology.

Key Accomplishments[3]

Key accomplishments include training of 36 field enumerators for the birth cohort. Of these, 10 were male and 26 are females. Of the phlebotomists trained, 26 were male and only one is female.

A total of 5,044 mothers have been enrolled. Of these, 3, 185 babies have been born. In order to understand the changes in biochemical markers of nutrition and aflatoxin status at different levels of gestation and child growth, 4745; 3722 and 605 mothers have had their first, second and third blood draws, respectively. Only 485 children have had their first blood draw.

Across the entire nine time point visits, so far four visits have been done to completion.

The panel midline survey conducted interviews on 3600 households. The data have been cleaned and analysis is on-going.

III) Research Program Overview and Structure

The year 5 research program is an evaluation of the effectiveness of the integrated livelihood and nutrition interventions to improve maternal and child nutrition and health in rural Uganda. This work is an evaluation of the Uganda USAID Community Connector Project that implements these integrated activities. This evaluation takes on the form of a birth cohort and panel survey.

IV) Research Project Reports[4]

a) Theme A

Project I: The Birth Cohort Study

The birth cohort study looks at the effectiveness of the integrated livelihood and nutrition interventions to improve maternal and child nutrition and health in rural Uganda, activities implemented by the USAID Community Connector project. The study assesses the effectiveness of integration and or collation of interventions, aflatoxin exposure and environmental enteropathy and coverage, uptake and adherence to intervention messages and activities and how these impact on the maternal and child health and nutritional status. The cohort is implemented in both USAID Community Connector Intervention and non intervention districts; that are serving as controls.

[3]Concise statement of achievements, limited to one page in length that focuses on outputs, not process, such as Feed the Future indicators and distillation of program achievements across all program activities. Reporting on numbers of project meetings is not an output.

[4]Summaries of project activities, highlights and outcomes, not scientific reports or long detailed research papers, no more than one page per project.

Project 2:The Panel Study

The panel study aims to evaluate the effectiveness of the USAID Community Connector interventions on household livelihoods. Contrary to the birth cohort, the panel survey is cross-sectional and collects data from a representation of randomly selected households in selected districts. Some key findings from the panel survey include a high association between malaria and livestock ownership; and drivers of child malnutrition differing by poverty categories.

V) Name of Mission and Award Number

USAID Washington, award number AID-OAA-L-10-00006; CFDA number 98.0001

VI) Human and Institutional Capacity Development[5]

a) Training by Country

i) **Short-Term**

None for this year

ii) **Long -Term**

None for this year.

b) **Institutional Development**

Training on agriculture, nutrition, and health linkages as well as key related areas including but not limited to sanitation, water and hygiene, infant and young child feeding practices, and intra-household decision making on aspects of agriculture, nutrition, and health linkages was given to 36 field enumerators for the birth cohort (10 males and 26females). Of the phlebotomists trained, 26 were male and only one is female. The number of phlebotomists whose skill-set to use modern blood drawing equipment and techniques was 27. Only one of these was female.

VII) Technology Transfer and Scaling Partnerships

We concluded 7 memorandum of understandings with seven Regional Hospitals. We moblised, activated and recruited village Health Teams to actively participate in the birth cohort as 'foot soldiers' on the ground. We also facilitate district medical staff as study focal persons.

VIII) Governance and Management Entity Activity

Prof. Bernard Bashaasha continued to serve in his role as the Principal Investigator at Makerere. Dr. Florence M. Turyashemererwa serves as the Project Coordinator;

[5] This section is to serve as a compilation of all program training activities and not meant to duplicate the Capacity Building section under individual Research Project Reports. It can be in chart format.

Ms. Annet Kawuma as a Research Specialist while Dr. Nassul Kabunga is a post doctoral fellow. Ms. Miriam Nakyambadde is the project administrator. Dr. Shibani Ghosh and Prof. Jeffrey Griffiths, based at Tufts University, are the associate director and director, respectively. Dr. Chris Duggan and Wafai Fawzie are counterpart principal investigators based at the Harvard School of Public Health.

IX) Other Topics[6]

We have introduced water quality testing to the districts for the first time in Uganda.

X) Issues[7]

Challenges

-So far we have lost 296 children born to women in the birth cohort

-Most sub-counties where the birth cohort is implemented have power problems.

-In addition the~~y~~ subcounties are extremely very remote making transport a challenge in most cases.

XI) **Future Directions**

Makerere University will continue with the birth cohort implementation and panel surveys to evaluate the effectiveness of integrated agriculture, nutrition, and health linkages in year 6. While the panel survey is bi-annual, the birth cohort is multiyear to allow a detailed investigation of the integrated nature of agriculture, health and nutrition interventions on maternal and child health and nutrition outcomes. Manuscript/ dissemination from both the cohort and panel data will be intensified in Year 6.

[6] Such as Regional Centers of Excellence, impact assessment, gender initiatives

[7] Such as financial, management, regulatory