THE POTENTIAL OF SCHOOL GARDENING TO MITIGATE SHORT-TERM HUNGER AND ITS EFFECTS ON SCHOOLING IN UNIVERSAL PRIMARY SCHOOLS IN EASTERN UGANDA

Call ID: RU/CGS/GRG/30/06/09

Project Partners:

1. Primary school in Kamuli district (to be identified at beginning of the project)
2. Primary school in Soroti district (to be identified at beginning of the project)

Project start date: July 2010

Total Budget requested: $ **59,997**

Abstract

The Government of Uganda implemented the Universal Primary Education (UPE), one of the Millennium Development Goals (MDGs) in 1997 as a foundation for improved social wellbeing of the majority of the population especially the poor. The Government meets the tuition and essential scholastic materials while parents are left to while parents are left to cover the cost of uniforms and feeding. But the cost of feeding became prohibitive to enrollment and has been scrapped. In view of societal food shortages especially in Eastern Uganda, it is unlikely that the poor parents can provide food for their children at school. School gardening is a potential solution for sustainable food provision in rural UPE schools but this has not been explored. The purpose of this study is to establish the effects of short-term hunger on schooling in UPE schools and through an action-oriented research demonstrate the potential of school gardening in providing food to the schools in Eastern Uganda. The research seeks to provide evidence for rethinking the policy on UPE and designing a more beneficial integration of productive agricultural skills at the primary level education in Uganda. The study therefore, contributes to two of RUFORUM's thematic areas of engaging with community to strengthen innovation capacity and knowledge generation; and increasing productivity and enhancing sustainable natural resource use and management.

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1.0 Introduction

Education is the society's main instrument for reproducing itself and can be a key ingredient for social change including poverty eradication (Birdsall, et al., 2005). Basic education such as Universal Primary Education (UPE) is therefore an investment in improving the welfare of the poor who would otherwise not afford. Indeed, achieving universal primary education is goal No. 2 of the United Nations Millenium Development Goals (MDGs) (http://www.un.org/millenniumgoals) whose target is to have all children in the world attain a full course of primary education by 2015. In response the MDG targets, the Uganda Government moved fast to implement UPE in 1997 thereby tripling enrollment within the first two years (Ndeezi, 2000). The government pays tuition fees and provides grants to cater for instructional materials, co-curricular activities such as sports, and the management and maintenance of utilities like water and electricity. The parents are left with the responsibility of providing uniforms, scholastic materials and feeding.

Overall, the purpose of UPE is to lay the foundation for improved social wellbeing of the majority of the population through enhanced literacy and numeracy. But Pritchett (2001) cautions that if education systems are weak, more public spending and higher enrollment may not translate into learning and concomitant increase in the human capital. To achieve the UPE benefits, the conditions at school including school feeding for both the teachers and pupils have to be right. Due to high poverty levels especially in the rural communities, the cost of feeding in UPE schools became prohibitive to school enrollment. The response to this has been the scraping of the mandatory feeding program for day scholars in UPE schools with the intention of relieving parents of the cost of feeding. Parents are now expected to pack food for their children to eat at school. In view that many parts in the Eastern region experience unstable food security situation, it is unlikely that most children will have enough food to eat

at their homes but even more critically that they will have any reserved and packed for them to eat while at school.

In a situation where children are not able to feed while at school, they experience short-term hunger. Short-term in a way that they are not able to access food for the time they are at school though they would be able to eat when they get back to their homes. The World Declaration on Education for All identifies poor health and nutrition as one of the crucial underlying factors influencing low enrollment, absenteeism, poor classroom performance and school dropouts in many African countries (UNESCO, 2002; WFP, 2006). Adverse effects on learning due to temporary hunger, common in children who are not fed before going to school are reported in Jamaica (Rosso, 1999) and in Peru Peru, Burkina Faso, Malawi and Niger (Pollitt, *et al*., 1995. Therefore, abolishment of the mandatory school feeding program in day UPE schools poses a challenge on the achievement of pupils from poor families.

In Uganda where the majority of school dropouts resort to farming as a livelihood, hunger can be perpetuated beyond schools to become a societal problem if the young people are not equipped with the knowledge and skills to produce food. Schooling imparts greater openness to new ideas such as new agricultural techniques or improved hygiene and greater capacity to understand and apply them (WFP, 2006). Whereas available literature suggests supplying food by 'eternal agents' as the solution to hunger in schools, little attention has been given to the potential of school gardening in enabling schools to produce their own food. School gardening is both an opportunity for reducing short-term hunger in primary schools and a laboratory for building life skills in agriculture as a future productive career for the pupils. The innovativeness, considerable energies and futuristic vision make young men and women a major resource for sustainable development but this resource needs to be harnessed. School gardening is one way of harnessing such potential for the long-term solution to hunger in society. The Ministry of Education and Sports (MoES) launched volume II of the primary

school curriculum in 2002, emphasizes school gardening as an instrument for developing positive attitudes and building productive skills in agriculture among other things. This intention however is yet to be achieved in practice.

1.1 Problem statement

The Universal Primary Education (UPE) is the public policy that has benefited the largest majority of citizens in Uganda. To-date, Uganda has made significant progress in achievement of Millenium Development Goal (MDG) No. 2 of ensuring that all children attain full course of primary education by 2015. Since its implementation in 1997, enrolment in primary education almost tripled by 1999 (EENET, 2000). The major incentive for this rapid increase in enrolment is the relief from parents to pay school fees, however, parents continue to meet the cost of other amenities such as scholastic materials, uniform and feeding. Later it was realized that the cost of mandatory school feeding program remained a constraint to parents and affected school enrollment and attendance. To this effect, government abolished mandatory school feeding program in day UPE schools to further relieve parents of the lunch fees paid to the schools. As an alternative, parents are required to pack food for their children.

In view of frequent food shortage incidences, particularly in Eastern and Northern Uganda, it is unthinkable that the more vulnerable poor parents can be able to pack food for their children to eat while at school. But many rural schools where the problem of food shortage is more prevalent have substantial land which could be used to produce food for the pupils and teachers. Moreover, agriculture has been introduced in the primary school curriculum to instill life-skills among pupils for agriculture as a productive career. School garden therefore is the laboratory for imparting such skills.

This perspective represents a shift from the reproductive to a productive type of education geared towards a sustainable society. What is not known yet is the perception of

the teachers, pupils and parents to engage in a new paradigm of learning; and the most appropriate ways of engaging in such learning while addressing felt needs of all those involved. Do the teachers, pupils and parents view school gardening as a reliable solution to provision of food in primary schools?

There is evidence for example that children who miss breakfast face significant negative consequences on the cognitive and school performance (Pollitt, 1995). Children in UPE schools especially those from poor rural families do not only miss breakfast but also miss lunch. Even though such children may find food at home, they experience short-term hunger while at school. The impact of short-term hunger on pupils, and teachers in UPE schools is not known in empirical terms. This study therefore seeks to explore two dimensions, one is to establish the perceived effects of short-term hunger on schooling in UPE schools in Eastern Uganda and the other is to explore in an action-oriented manner the potential of school gardening as a laboratory for productive learning that goes beyond academic knowledge to solving food related problems in schools and community at large.

1.2 Objectives

The overall objective is to establish the perceived effects of short-term hunger on schooling in UPE schools and evaluate the potential of school gardening as a feasible and affordable option for dealing with the challenge. The specific research objectives are:

1. Establish the frequency, intervals and characteristic components of meals consumed by pupils in UPE schools
2. Determine the perceived effects of short-term hunger on the concentration, retention and overall achievement of pupils in UPE schools
3. Identify mechanisms for coping with short-term hunger among pupils and teachers in UPE schools.

4. Establish the perceptions about school gardening among the teachers, pupils and parents as a productive skills development laboratory
5. Describe the benefits of school gardening including skills gained and processes of how such benefits are shared within the school and in the community.

1.3 Justification

Eastern Uganda is selected for this study because of its vulnerability to hunger evidenced by recent experiences of unstable food security situation. In addition, Eastern Uganda experiences relatively high levels of poverty which exacerbates the vulnerability to hunger. The Uganda poverty status report (2005) for example alludes to worsening poverty levels in Kamuli, Pallisa and Tororo, all of which are in Eastern Uganda.

The problem of hunger in society is usually seen as incidental crises situations often addressed by food supply from external sources but the long-term solution lies in equipping the future citizens with the right attitude and capabilities to produce food on a sustainable basis. The starting point is the primary schools since of pupils drop-out before completing primary seven and resort to farming as a livelihood. World Bank (2007) & Murphy (2003) put the completion rate for primary level education at 57% and progression to the secondary level at 37.8%. Nonetheless, data from the Ministry of Education and Sports portrays a worse situation. Out of the 2,159,850 pupils enrolled as UPE pioneer intake in 1997, only 22.5% completed primary seven in 2003.

This study contributes to the first two thematic/learning areas of RUFORUM namely; engaging with community to strengthen innovation capacity and knowledge generation; and increasing productivity and enhancing sustainable natural resource use and management. The primary school level is the foundation for interesting future agricultural professionals at higher levels of education who will in a practical way assist in averting the risk of hunger in society. In a nutshell, the study seeks to provide evidence for rethinking the policy on UPE and designing a more beneficial integration of productive agricultural skills at the primary

level education in Uganda. The evidence may also stimulate a new relationship between parents and the schools administration with regard to the school feeding program – and in a way place schools as a nucleus for agricultural innovations in the community.

The research anticipates to generate the following outputs and outcomes:

- **Masters Graduates:** This research will be largely undertaken by two Masters students, one student focusing on objectives 1-3 and the other focusing on objective 4 and 5. .The project will deliberately seek to recruit a female student and if possible both students may be female. Women are known to be the custodians of food security and also carry more responsibility for child rearing, hence the need to enhance capacity for women to influence policy and development change related to primary education and agriculture.
- **Evidence to influence policy:** A policy brief will be developed targeting dissemination of the implications of the findings to the policy makers at the district and national levels.
- **Recognition of school gardening as a solution to school short-term hunger in UPE schools:** A practical demonstration of the potential of school gardening as a source of food and appropriate laboratory for imparting agricultural skills will incite the education managers, teachers, parents and local leaders to work towards sustainable solutions to hunger in society.
- **Scientific knowledge:** This research will generate scientific publications to enrich the body of existing knowledge regarding impact of short-term hunger on schooling and the potential of school gardening.

2.0 Methodology

2.1 Research design

Two districts in Eastern Uganda namely; Kamuli and Soroti will be purposively selected because of their relatively higher vulnerability to hunger incidences and in two different cultural settings. The two districts represent a relatively dry with low population density but also high risk areas in terms of food security which exacerbate impacts on schooling in UPE schools. The recent floods in Soroti and neighboring districts pose another dimension of vulnerability to food shortages.

The research will employ both quantitative and qualitative/interpretivist approaches pursued by two Masters students. Each of the students will integrate the quantitative and qualitative approaches albeit more inclination to either of the approaches. Students' research areas will be delineated as follows:

Student 1

One Masters student will explore perceptions and impact of short-term hunger in UPE primary schools through largely quantitative means as this will require putting together a large volume of data from a large sample. Besides, the issues to be explored are more concrete and can be investigated in a positivist way. The positivist approach here is premised on the ontological view that hunger is real and its impacts can be unraveled and measured.

The specific variables of investigation for his component include: perceptions of pupils, teachers and parents; dietary assessment the pupils in terms of food frequency and food diversity. The 24 hour food frequency scores (FFS) and diet diversity scores (DDS) will be used to measure of the adequacy of meals including the probability of adequate micronutrient intake (see FAO, 2007; Parvin *et al.,* 2004; Gersovitz *et al.,* 1978; Kroke *et al.,* 1999). This component of the research will rely self-administered questionnaires for measuring FFS and DDS; interview guide/checklists and focus group discussions for

measuring perceptions. These instruments comprise of pre-determined and pre-tested questions to the targeted samples namely; pupils, teachers and parents. In addition, the student will also seek to deepen understanding of the non-concrete aspects e.g. perceptions and cultural underpinnings of the impact of school gardening through informal qualitative discussions and observation of pupils and teachers in their natural environment.

In each district, two sub-counties; one urban and the other rural will be selected for this part of the research. The sub-county or municipality where the district headquarters is located will be taken as the urban sub-county. The rural sub-county will be randomly selected from within a radius of 30 Km from the district town. In each of the selected sub-counties, two UPE school will be randomly selected for involvement in the study making a total of 8 schools. Primary 3 to Primary 7 are the candidate classes for pupils and teachers to participate in this study. This is for the reason that these classes study up to evening and do experience more serious effects if they do not eat at school. From each class stratified equal samples of boys and girls will be randomly selected for interviews. The selected pupils from each class shall be more than half the class size. By default, the class teachers of those classes (P.3-P.7) will be involved in the study. Opinions of school administrators will be explored through focus group discussions.

Student 2

The second Masters student will using an action oriented approach engage with the pupils and teachers to demonstrate the use of school gardening as the laboratory for productive learning to impart life skills in agriculture. Life skills should be anchored in skills that bring tangible economic and social benefits as part and parcel of the learning process. In this case, school gardening will focus on pupil managed enterprises from which the students can generate income by selling their products to the school or any other buyers. Establishing agricultural clubs will be the organizing principle for engagement with the pupils and

teachers to set-up priority agricultural enterprise(s). This part of the research targets attitude change, learning processes, skills gained through agricultural clubs, and how school gardening works as strategy for dissemination of agricultural knowledge and technologies in the community.

Without ignoring the quantifiable aspects, the interpretivist view which takes into account the context, mechanisms and outcome is appropriate (Pawson and Tilley, 2006; May, 1997) will be applied. Action oriented research requires deep and continuous engagement, and for this reason, one rural school in each district will be selected primarily on the basis of availability of land to establish some agricultural enterprises. The pupils will be the central actors in the demonstration of practice based learning via agricultural clubs as the organizing principle. The teachers who will be selected as patrons for the agricultural clubs and the researcher (Masters student) will play a facilitative role in establishing and managing the preferred agricultural enterprise(s). As an incentive to learning through engagement, the pupils will control the economic and social benefits from the established enterprise(s). As a laboratory for learning agricultural skills, the clubs will demonstrate to their schools and the community the practices related to their enterprises through field days. The issues to track/measure at the field days include: attendance and composition of the audience, the confidence and content delivered by the participating pupils, the reactions of the audience and their judgment of the field day.

The researcher then will track and document the learning and associated attitudes of the pupils, teachers and the community. The outputs of student 1 will serve as a baseline for measuring change in attitudes and practices that illustrate the potential of school gardening. Overall, the potential of school gardening will be assessed in three dimensions: (1) as a teaching/learning laboratory to impart skills and influence positive attitudes towards

agriculture (2) to demonstrate the production potential (3) as a nucleus for knowledge and technologies to the community.

2.2 Data analysis

Qualitative and quantitative data analysis procedures will be used to generate complementary and meaningful information about the effects of short-term hunger among pupils in UPE schools and the potential of school gardening. Quantitative data will be coded, entered and analyzed using the SPSS (version 15) software package. Descriptive statistics will be used interpret results and to guide drawing of implications and recommendations. The qualitative data from focus group discussions, interviews and observation will be subjected to content analysis (see Silverman, 2001: 123). From this, common themes and patterns will be generated to aid description, explanation and interpretation within the analytical framework of content, mechanism and outcomes.

2.3 Dissemination and communication strategy

The project will undertake the following activities to disseminate the knowledge and experiences generated:

1. Conduct field days to expose more people within participating schools and their surrounding communities to the potential of school gardening. The field days will be managed by the pupils who will explain the different facets of the agricultural enterprise(s). Several field days will be conducted to demonstrate different stages of the enterprises.
2. Conduct a one-day district dissemination workshop where the Masters students will present the key outcomes of the research to representatives of primary schools, district education officers, district local government leaders, and parents. The workshop will also make resolutions on the way forward.

3. Develop and disseminate policy brief to inform policy processes regarding school feeding and school gardening in UPE schools. The briefs will be disseminated at all policy levels, i.e. district, ministry of education and parliament.
4. Scientific publications and students theses. At least two articles will be published in peer reviewed journals.

2.4 Project management and partners

The principal investigator (PI) will be responsible for the overall management and coordination of the project. The participating researchers will assist the PI in supervision of the Masters students while the schools where the action research will be based are key field partners.

Field partner 1: Primary school in Kamuli where the action research described above will be conducted. The partner will be identified at the beginning of the project.

Field partner 2: Primary school in Soroti where the action research described above will be conducted. The partner will be identified at the beginning of the project.

The PI and the participating researchers will monitor the progress of the students through onsite field visits and through academic progress reports written by the students every six months. The field partners will be in charge of the day-to-day supervision of activities of the agricultural clubs. Specifically, the field partners will be responsible for:

1. Establishing and guiding the agricultural clubs
2. Protecting the enterprise(s) established by the agricultural clubs including keeping enterprise records
3. Manage and account for resources disbursed to support agricultural clubs
4. Organize field days
5. Participate in the project monitoring, evaluation and dissemination activities

2.5 Monitoring and evaluation

The proposed research will be monitored and evaluated in a participatory manner in four ways, namely; reflective meetings with the key stakeholders; Documentation and tracking of progress of the MSc students; community feedback on the field days; and dissemination workshops in the two districts. Each of these is briefly explained below but in addition to these, it is anticipated that this project will be subjected to external review by RUFORUM.

(i) **Reflective meetings**. Reflective meetings for purposes of planning and refocusing research will conducted every six months at two levels. First is the engagement of the supervisors and the students to ensure quality of research and delivery of planned outputs as well as anticipated outcomes. Secondly is the engagement with the field partners to ensure relevance of the research to the targeted clients. The intention of these reflective meetings is to make the research a shared learning platform leading to synthesis of major lessons learnt along the research implementation. Outcomes of these critical reflections will be documented and ploughed back into the research design for refinement – a key characteristic of action research.

(ii) **Documentation and tracking progress of the MSc students**. The students will be required to document all processes and outcomes of the research as part of their data collection. Based on the documentation, the students will also prepare progress reports every six months to highlight the major undertaking for that period, outcomes of activities undertaken; lessons learnt to-date and the implications of the lessons for academic and policy actions. This will not only serve the monitoring purposes but it will also train the students to logical and critical in their pursuance of research.

(iii) **Community feedback on the field days**. As explained in the methodology, the schools targeted for school gardening will hold field days where the agricultural clubs demonstrate their activities to the community. Random interviews (by the MSc students) of the people who come to attend the field days will be conducted to get their feedback on what they have seen and heard. This in itself is a community assessment of the relevance of the project to the schools and the community in general.

(iv) **Dissemination workshops**. At the end of the research, dissemination workshops will be held in each district bringing together representatives of the schools, parents, district education officials, district local government administrators, academicians/ researchers and policy makers to share and discuss the implications of the research outputs and agree on the way forward. These workshops are part of the dissemination strategies for the research findings, but they also provide a platform for policy recommendations and action.

The results framework (P.16) presents a monitoring and evaluation framework which further elaborates on the details of the outputs.

3.0 Logical Framework

NARRATIVE	INDICATORS	MEANS OF VERIFICATION	ASSUMPTIONS
Goal: To contribute to sustainable food security in Eastern Uganda through building capacity of future generations to be self-reliant in food production	By 2011, 2 Msc students with competence and experience in supporting school agricultural production programmes graduate By 2011, 2 primary schools in Uganda demonstrate the potential of school gardening for sustainable food production	Academic records and project documents Project and media reports	The universal primary education policy implementers are committed to developing agricultural production skills among the future generation
Purpose Empirical evidence on the effects of short-term hunger on schooling and the potential of school gardening in sustainable food security generated	By 2011, policy dialogue on mainstreaming school gardening in UPE schools initiated By 2011, best practices in using school gardening to influence positive attitudes and impart agricultural production skills documented and disseminated By 2011, the primary schools demonstrating the potential of school gardening also become nodes for knowledge and technology dissemination in community	Project and media reports Policy briefs Testimonies by the participating schools, and communities Media Reports	There will be stability of the teachers supporting the agricultural clubs
Expected Results 1. Partnerships between the Faculty of Agriculture and two primary schools in Kamuli and Soroti established	Joint activities between the Faculty of Agriculture and the selected primary schools	Project documents	
2. 2 MSc students graduate at least one being female	MSc degree award letters	Academic records	
3. Knowledge and best practices in re-orienting agricultural education in UPE schools generated	Publication of project outcomes and experiences	Google search Project documents	
4. Dialogue on policy processes for reviewing school feeding programmes in UPE schools initiated	Platforms for policy dialogues	Project and media reports	
Activities 1. Project inception planning 2. Recruitment of students 3. Procurement of equipment and supplies 4. Conduct training of the students (course work) 5. Identification of field partners and establishment of partnerships with clearly agreed roles and responsibilities	***Input Resources*** Meetings of the PI and the collaborating researchers **$ 3,600** Internal advertising and direct soliciting Training equipment and materials **$ 4,055** Admission and registration of selected candidates **$ 30,600** Field visits of the PI, collaborating researchers and selected students **$ 3,350**		

6. Design and conduct the exploratory research	Refined methodology and research instruments		
7. Agree on the joint research activities and set-up participatory monitoring and evaluation mechanisms for the action research	Meeting of the PI, collaborating researchers and field partners		
8. Establish agricultural clubs in selected partner schools	Functional agricultural clubs in the two field partner schools		
9. Select and establish preferred agricultural enterprises in partner schools	Agricultural enterprises managed by the agricultural clubs **$ 2,000**		
10. Gather data for the action research	Data sets **$ 9,750**		
11. Conduct field days for the selected agricultural enterprises	School open day organized by the agricultural clubs		
12. Develop and disseminate policy briefs	Policy briefs and participation in conferences **$ 4,600**		
13. Conduct district based dissemination workshops	One day district seminars **$ 2,400**		
14. Student thesis defense	Letters of thesis submission **$ 300**		

4.0 Results framework

PROJECT NAME: THE POTENTIAL OF SCHOOL GARDENING TO MITIGATE SHORT-TERM HUNGER AND ITS EFFECTS ON SCHOOLING IN UNIVERSAL PRIMARY SCHOOLS IN EASTERN UGANDA								
Expected Output: Partnerships between the Faculty of Agriculture and two primary schools in Kamuli and Soroti established								
Output Indicator	**Activity to deliver output**	**Time frame**	**Milestone/Target for activity**	**Who is responsible for this activity?**	**Who will participate in this activity?**	**Means of verification**	**Inputs**	**Cost Estimate for Activity**
Two partner schools, one in Kamuli and another in Soroti districts identified	15. Project inception and follow-up planning meetings	Month 1	Invitations for the inception meetings	PI and the co-investigators	The PI and co-investigators & partners	Minutes of meetings	Venue, transport Refreshments	$ 1,800
	16. Initial field visit by the PI, co-investigators and identified students	Month 2-4	Appointments for the field visits	PI and the co-investigators	The PI and co-investigators, District education officer, MSc students	Field Reports Project documents	Perdiem for PI and co-investigators Transport (vehicle & fuel)	$ 3,825
	17. Identification of field partners with the assistance of district education officers	Month 2-4	Criteria for selection of the field partners Consent of the field partners	PI and the co-investigators, district education officer	The PI and co-investigators, District education officer, MSc students	Field Reports Names of partner schools identified	Discussions between the research team and district education officer	Linked to No.2
Expectations, roles and responsibilities of the partners clarified	18. Meeting with the identified schools' administrators 19. Documentation of agreed expectations, roles and responsibilities of the partners	Month 2-4	Identification of the partner schools Appointment for meeting with the identified partner schools	PI and co-investigators	PI and co-investigators, MSc students, administrators of partner schools, agriculture teachers	Field Reports	Perdiem for PI and co-investigators Transport (vehicle & fuel	Linked to No.2
Schedule of activities agreed	20. Jointly developing generic calendar of activities	Month 2-4	Appointment for meeting with the identified partner schools and agenda	PI, co-investigators and administrators of partner schools	PI and co-investigators, MSc students, administrators of partner schools, agriculture teachers	Field Reports	Perdiem for PI and co-investigators Transport (vehicle & fuel	Linked to No.2
Agricultural clubs and school	21. Plan and strategy for establishment of	Month 5-24	Purpose and procedures for	Agriculture teachers and the	Agriculture teachers, pupils,	Project documents/	Recruitment and orientation of the	$ 6,600

gardens established	agricultural clubs 22. Recruitment of agricultural club members 23. Identify preferred enterprises for the agricultural clubs 24. Establish club enterprises		establishment of the agricultural clubs and school gardens Enterprise management responsibilities	MSc student	school administrators, MSc students	reports Enterprise records	club members Inputs for the selected agricultural enterprises	
Expected Output: Two MSc students graduate at least one being female								
Output Indicator	**Activity to deliver output**	**Time frame**	**Milestone/Target for activity**	**Who is responsible for this activity?**	**Who will participate in this activity?**	**Means of verification**	**Inputs**	**Cost Estimate for Activity**
MSc degree award letters	25. Recruitment of students	Month 1-2	Advertisement for MSc student position Admission and registration of successful candidates	PI and co-investigators	PI, co-investigators and shortlisted candidates	Project documents/ reports	Refreshments for the meeting Applications for admission Tuition fees and other university dues	Linked to No.1 plus $ 3,600 $ 21,700
	26. Procurement of equipment and supplies	Month 3-4	Local purchase order	PI	PI and procurement unit	Receipts Project equipment and supplies	Funds	$ 3,640
	27. Conduct training of the students (course work)	Month 1-12	Completion of course work in first year	MSc students	MSc students	Student progress reports	Tuition	Linked to No. 11
	28. Conducting the research	Month 12-24	Completion of research in second year			Theses	Tuition for second year and Research funds	Linked to No.11 plus $ 2,800
Expected Output: Knowledge and best practices in re-orienting agricultural education in UPE schools generated								
Output Indicator	**Activity to deliver output**	**Time frame**	**Milestone/Target for activity**	**Who is responsible for this activity?**	**Who will participate in this activity?**	**Means of verification**	**Inputs**	**Cost Estimate for Activity**

Publication of project outcomes and experiences	29. Synthesis of the research results for publication	Month 20-24	Number and type of publications	MSc students, PI and co-investigators	MSc students, PI and co-investigators	Data summaries	Data	Linked to No. 14
	30. Writing manuscripts and policy briefs	Month 20-24	Journals and other publications targeted	MSc students, PI and co-investigators	MSc students, PI and co-investigators	Draft manuscripts and policy briefs	Stationery	
	31. Publish and dissemination of the research results	Month 20-24	Journals and other publications targeted	MSc students, PI and co-investigators	MSc students, PI and co-investigators	Google search Copies of publications	Workshops, seminars and conferences	Linked to No. 18 Plus $ 450
Expected Output: Dialogue on policy processes for reviewing school feeding programmes in UPE schools initiated								
Output Indicator	**Activity to deliver output**	**Time frame**	**Milestone/Target for activity**	**Who is responsible for this activity?**	**Who will participate in this activity?**	**Means of verification**	**Inputs**	**Cost Estimate for Activity**
Platforms for dissemination and policy dialogues	32. District dissemination workshops	Month 20-24	Schedule and invitations to the workshops	District education officer	District education officer, schools administrators, parents, district local government, PI and co-investigators, MSc students, parents.	Workshop reports	Funds	$ 6,600
	33. Seminars/ conferences	Month 18-24	Conferences targeted	PI and MSc students	MSc students	Workshop/ conference proceedings	Funds (travel and perdiem)	$ 4,000

5.0 Budget

ITEM/ ACTIVITY	Budget ($)		
	Year 1	Year 2	Total
A) Graduate Students			
1) Tuition and registration fees ($ 2,000 per student per year)	4,000	4,000	8,000
2) Stipend ($200 per student per month for 18 months)	2,400	4,800	7,200
3) Supervision ($1200 per year per student)	2,400	2,400	4,800
4) Thesis writing and publication		700	700
5) Book allowance at $ 200 per student per year	400	0	400
6) Medical allowance ($150 per student per year)	300	300	600
SUB-TOTAL	**9,500**	**12,200**	**21,700**
B) Research costs (include travel and other related research costs)			
1) Public transport for students at $20 per day per student	800	2,000	2,800
2) Perdiem for the PI and co-investigators at $ 40 per day per person	1,200	1,200	2,400
3) Perdiem for driver at $ 25 per day for 30 days	375	375	750
4) Support to 2 partner schools to establish agricultural clubs and school gardening	1,000	2,000	3,000
5) Communication (telephone, postage, e-mail) at $ 50 per month	500	500	1,000
SUB-TOTAL	**3,875**	**6,075**	**9,950**
C) Equipment and supplies			
1) Student laptops (2 laptops) at $ 1,300 each	2,600	0	2,600
2) Colour Printer (1)	600		600
3) Cartridges (3 sets) each set at $ 150	150	300	450
4) Printing paper at $ 7 per realm for 35 realms	105	140	245
SUB-TOTAL	**3,200**	**440**	**3,640**
D) Travel and Conferences			
1) Travel (Local and International costs for RUFORUM conferences)	0	4,000	4,000
2) Transport (vehicle hire including fuel) for field work at $ 150 per day for 30 days	2,250	2,250	4,500
SUB-TOTAL	**2,250**	**6,250**	**8,500**
E) Coordination			
1) Collaborators (Total $200 per month for 18 months)	1,200	2,400	3,600
2) Coordination costs (coordination fee at $ 150 per month)	1,800	1,800	3,600
3) Incentive for graduating students within 30 months ($1000 per student)	0	2,000	2,000
4) Contribution to national forums	500	0	500
5) Planning meetings at $ 400 per year	400	400	800
SUB-TOTAL	**3,900**	**6,600**	**10,500**
F) Publicity and dissemination			
1) Printing policy briefs	0	450	450
2) District dissemination workshops at $1,200 x 2 districts	0	2,400	2,400
SUB-TOTAL		**2,850**	**2,850**
TOTAL	**22,725**	**34,415**	**57,140**
ADMINSTRATIVE COSTS (Maximum 5%)	1,136	1,721	2,857
GRAND TOTAL	**23,861**	**36,136**	**59,997**

Budget Notes:

A2 The students will get stipend for 18 months, 6 months in first year and 12 months in second year

B1 Public transport for students: In the first year each student will spend 20 days in the field (20 x 20 x 2) and 50 days in the second year (50x20x2)

B2 Perdiem for PI and co-investigators: The PI and the two co-investigators will together spend 30 (10 days per

person x 3 persons) days each year)
B4: Each partner school is allocated a $ 800 in the first year and $ 1,000 in the second year for facilitating agricultural clubs and purchase of materials for school gardening
C4 15 realms will be used in the first year and 20 realms will be used in second year
E1 the collaborators will be paid for 18 months, six months in first year and 12 months in second year

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7.0 Annexes: Summary Curriculum Vitae

6.1 Summary curriculum vitae for the principal investigator