



# Scaling Up Livelihood Impacts through Farmers Organisations and Access to Markets

FINAL TECHNICAL REPORT

March 2011

By

Dr. Eliud Birachi and Amos Owamani (CIAT)

Collaborators

Fred Musisi Kabuye, John Ereng (A2N)

Rita Laker Ojok, Julian Ochieng, Kate Namboze (AT(U))

Dr Kayuki Kaizzi (NARO)

Project Supported by Kilimo Trust

Start date 1<sup>st</sup> February 2010

End date 31<sup>st</sup> January 2011

International Centre for Tropical Agriculture, CIAT. A.A. 6713, Cali, Colombia

(CIAT Africa address: P.O. Box 6247, Kampala - Uganda)

### Project Completion Summary

Project Title:	<b>Scaling up livelihood impacts through farmers organisations and access to markets</b>	
Grant Number	KT0607	
Lead Organization:	International Centre for Tropical Agriculture, CIAT A.A. 6713, Cali, Colombia (Local contacts: P.O. Box 6247, Kampala - Uganda)	
Project Leader:	Dr. Eliud Birachi	
Partner Organizations & names of key staff from each	Organization	Name
	African 2000 Network - Uganda P.O. Box 21990, Kampala, Uganda	Fred Musisi Kabuye
	Applied Technology Uganda Ltd P. O. Box 8830, Kampala-Uganda	Rita Laker - Ojok
	NARO, P.O. Box 7065, Kampala, Uganda	Dr. Kayuki C. Kaizzi
Project Purpose	Communities and their service providers in Eastern Uganda are using available technologies for increased production, profitability and sustainability of competitive agro-enterprises	
Location	Country & Districts	Sub-Counties/Divisions
	Uganda: Tororo and Busia Districts	Busia (Birimbi, Masafu and Masaba). Tororo (Osukulu, Molo, Kisoko, Nagongera and Mella)
Start Date	1st Feb 2010	
End Date	31 <sup>st</sup> January 2011	
Kilimo Trust financial contribution	USD90,000	
Other donor financial contribution (specify donors and amount of funds)	-	
Total Project cost	USD90,000	

## **ACKNOWLEDGEMENT**

We owe great thanks to many people and organizations who helped and supported the implementation of this project from the beginning up to the end.

Our deepest thanks go to the various staff members from partners organizations; CIAT, A2N, AT (Uganda), NARO and the Local district Governments who made the implementation of the project a success. We also recognize the private sector partners especially AgriNet Uganda Ltd and the Busia Produce Market for being able to buy farmers produce.

We express our thanks to the small holder farmers in the communities where we worked in Busia and Tororo for being cooperative especially during the period of experimentation and testing of new technologies and approaches. We look forward to project results being scaled out to other farmers outside the project.

Our deep gratitude go to our project donor; The KILIMO Trust without whom this project would have been possible. The interactions with the donor were very fruitful and we look forward to more collaboration for the improvement of the welfare of the citizens of East Africa.

## Table of contents

ACKNOWLEDGEMENT .....	3
List of figures and tables .....	6
Acronyms .....	7
1. Executive Summary .....	8
2. Back ground .....	10
2.1 Goal/Purpose .....	12
2.1.1 Specific objectives .....	12
2.2 Outputs of the project .....	12
3 Methodology .....	13
4. Findings .....	16
4.1 Achievement of Output 1 .....	16
4.1.1 Prioritized agro-enterprises .....	16
4.1.2 Market identification and collective marketing .....	17
4.1.3 Commodity sales .....	18
4.1.4 Information and Knowledge sharing .....	19
4.2 Achievement of Output two .....	20
4.2.1 Adoption of sustainable production technologies .....	21
4.2.2 Production and marketing plans .....	23
4.2.3 Post harvest handling .....	24
4.3 Achievements on output three .....	25
5 Conclusion and Recommendations .....	26
5.1.1 General .....	30
5.1.2 Partnership and Collaboration .....	31

5.1.3 Economic Impact .....	33
5.1.4 Environmental Impact .....	33
5.1.5 Stakeholders .....	33
5.1.6 Social Equity .....	34
5.1.7 Sustainability .....	34
6. Financial Annual Report - Summary .....	35
7. Annexes .....	36

## List of figures and tables

### List of figures

Figure 1: Model used to reach out targeted households .....	15
Figure 2. collective sales of the enterpries by farmers .....	17
Figure 3. Different information sharing mechanisms used by farmers .....	19
Figure 4. Percentage of farmers using technologies in the project area .....	21
Figure 5. Amount of chemical (ltrs) used in post harvest insect control .....	24
Figure 6. Farmers bulking soybean in Bulumbi network store .....	25

### List of tables

Table1. Identified markets .....	18
Table 2: Model Garden Yield Assessments .....	22
Table 3. A summarized production plan for the 8 networks for three seasons .....	23

## **Acronyms**

A2N: African 200 Network

AT (U): Appropriate Technologies, Uganda Ltd

BDS: Business Development Services

CIAT: Centro Internacional de Agricultura Tropical (CIAT (International Center for Tropical Agriculture)

FA: Farmer Association

FG: Farmer group

FFS: Farmer Field School

FG: Farmer Group

INSPIRE: Integrated Soil Productivity Initiative in Research and Education

KT: The KILIMO Trust

NAADS: National Agriculture Advisory Services

NARO: National Agriculture Research Organization

NGO: Non Governmental Organisation

NPK: Nitrogen Phosphorous Potassium

## **1. Executive Summary**

### **Aims of the Project**

The aim of this project of this project was to contribute towards poverty alleviation, food security, improved nutrition and better resource management in eastern Uganda through enabling communities and their service providers to develop strategies for increased production, profitability and sustainability of competitive agro-enterprises at higher levels of organization and at sufficient scale. To achieve the set goals, farmer school (FFS) approach and the NAADS agro enterprise model was used where a total of 1500 farmers were organized in farmer field schools and later aggregated into higher level organizations referred to as networks. The project had three major objectives to deliver: to promote approaches for market-opportunity-identification and agro-enterprise development; to promote integrated technologies for improving productivity and profitability of agro-enterprises, and; to document lessons learnt on use of farmer field schools network for collective marketing.

### **Methodology used**

The project was implemented in Eastern Uganda in 8 sub-counties, 5 in Tororo and 3 in Busia. Project activities were implemented by the INSPIRE consortium members of CIAT, A2N, AT (U) and NARO in collaboration with the private sector. The FFS methodology was used to build farmers and extension service providers technological capacities, increase farm production and farmer coherence, and organization capability to address community issues. INSPIRE purposed to build on these approaches while evaluating their effectiveness and efficiencies in overcoming constraints to access information on input and output markets, supportive linkages and networks in the context of farmers' diversity to achieve scale, INSPIRE created strong linkages with NAADS and others, exchange and share information and knowledge on the best practices to a wider development arena. The project focused on strengthening the groups by facilitating federations at sub-county that ultimately federated to form tertiary district and regional associations that

undertook larger scale issues in, for example, accessing input and output markets, accessing rural finance through the revolving fund management and linkages with micro-finance institutions,

### **Key findings and outcomes**

Two selected enterprises, maize and soybean were successfully implemented by 1500 farmers in 8 networks. The enterprises were collectively marketed. Results from surveys conducted show that farmers under INSPIRE project were able to collectively sell their produce compared to farmers who did not participate in INSPIRE project. Farmers are also able to identify and negotiate with potential buyers in the markets. They were able to sell products worth more than USD 20,000 per season in 2010. The prices received were relatively higher than the previous periods. The networks also have an operational mobile market information system at their networks. Over 70% of the target farmers have adopted productivity enhancing technologies such as organic fertilizers, conservation agriculture, mulching, cover cropping among others. 16 learning sites are functional as well as manuals and leaflets, to sustain the use of the new technologies. In soybean there was a 67% increase in productivity while maize had a 27% increase as a result of using the improved technologies. Survey results also indicate that farmers under INSPIRE are able to control for post-harvest pests better than non-INSPIRE farmers, an indication that the impact of the project among the farmers is being achieved. Overall, the farmers are receiving better prices for their produce through identifying and negotiating with potential buyers; they are able to sustain informal contracts and are able to use planning tools (production and marketing plans) to sustain their commercial farming activities for soybean and maize.

### **Conclusions including lessons and significant implications for future activities or policy.**

There have been positive results in the project during the period. There have also been challenges that may still require attention in future interventions.

- Technology promotions need to be accompanied with interventions that can allow the target groups to acquire and use the technologies (e.g. better seeds and fertilizers). Thus financial interventions would play a vital role in this regard.

- In addition, financial support is needed to make bulking of products achievable since the present need of farmers does not allow them to hold products for long after harvest. Warrantage/warehousing arrangements would be beneficial in this regard.
- Dependence on rain-fed agriculture continues to pose a challenge in Eastern Uganda. Future interventions should consider water harvesting and irrigation in order to realize the benefits of improved technologies to both farmers and other stakeholders.
- A Seed multiplication strategy as a way to fast track seed availability needs to be considered especially for crops that are not yet well established in the region such as soybean.

## **2. Back ground**

This proposal was built on various projects funded through the Integrated Soil Productivity Initiative in Research and Education (INSPIRE) consortium over the last three years. Each of these projects invested in understanding one component of the system, from soil fertility management and Farmer Field Schools (FFS), to input/output markets and linking farmers to markets. Whilst each has been successful in its own right, each identified linkages to other projects results and conclusions as essential, to development of coordinated and coherent approach to enabling farmers to access information and technologies and make better/informed decisions to improve their livelihoods.

Over the last four years INSPIRE project was able to expand from two pilot districts of Busia and Tororo to three other districts (Mbale, Pallisa and Budaka). In total 250 FFS (approximately 8,000 farmers) have been established. The farmer field schools have also been organized into district FFS networks in Tororo and Busia, and 20 FFS networks operating at sub-county level have been established across the five districts. These FFS networks provide business support services that enhance farmer productivity, nutritional and market value of subsistence crops, increase livelihoods of low-income households in environmentally sustainable ways and provide financial services.

A number of technologies have been tested and validated through a process of farmer experimentation with technical support from research. Integrated soil fertility management has

been accomplished by applying technologies like Legume Cover Crops, manure and soil and water conservation technologies. High yielding crop varieties of Soybean and Maize varieties were introduced.

The collaboration brought on board new partners: Child Fund (supporting the scaling up and out of the FFS approach), Family Planning Association of Uganda (FPAU), sustainable livelihoods, safe motherhood, food security and Aids Support Organization (TASO), nutrition for People Living with HIV/AIDS.

Some of the lessons learnt from the previous INSPIRE phases include:

- Investing in individual communities was successful and initial lessons with the Farmer Field School networks showed that these lessons can be scaled up to many more groups. FFS is a catalytic development strategy which sparks off wide scale adoption with minimal investments.
- FFS have potential to develop farmers' analytical and organizational capabilities, but the approach cannot reach out to many farmers in a short term. Future focus needs to move to the second level of Farmer Field School Networks and other Second Order Farmer Associations to achieve economies of scale in product bulking and input supply, access to markets and negotiation of higher prices
- While the consortium was successful in technology testing and validation, issues of adoption and consequently productivity increases, have were not adequately addressed to support efforts in market linkages
- Participatory monitoring and evaluation at both the consortium and FFS network level was not very strong

Diverse approaches in scaling up and out were used for INSPIRE to have an impact in the region. The FFS methodology has largely proven to build farmers' and extension service providers' technological capacities, increase farm production and farmer coherence, and organization capability to address community issues. The market-led enterprise model of NAADS and others have been successful in accessing markets for a small number of groups and also in stimulating demand for production inputs by

farmers. INSPIRE built on these approaches by enhancing productivity to support market efforts by working within 8 FFS and two value chains.

## **2.1 Goal/Purpose**

The goal/purpose of this project was to contribute towards poverty alleviation, food security, improved nutrition and better resource management in eastern Uganda through enabling communities and their service providers to develop strategies for increased production, profitability and sustainability of competitive agro-enterprises at higher levels of organization and at sufficient scale.

### **2.1.1 Specific objectives**

- Increased incomes from Maize and Soybean production for 1,500 households resulting from higher productivity, higher prices and more stable markets.
- Productivity of maize and soybean value chains increased among 1,500 HHs
- Increased bulking and collective marketing by 8 FFS networks
- Enhanced storage and quality standards among 1,500HH
- Operational contracts between networks and bulk buyers
- Key stakeholders learn lessons from past project activities for sustainability of their agro enterprises

## **2.2 Outputs of the project**

**Output 1:** Territorial-based approaches to market-opportunity-identification and agro-enterprise development, promoted

- Networks producing maize and soybean were re-assessed to identify gaps in their capacity to undertake production and marketing. Training and mentoring were undertaken to fill the gaps identified. Linkages with private sector actors were established to access regional and international markets and establish a market information system. All 8 networks were able develop/implement a successful production and marketing plan for 2010.

**Output 2:** Integrated technologies for improving productivity and profitability of agro-enterprises promoted

- The partners promoted adoption of productivity enhancing technologies by network members through on farm trials, field days, Village information Centres and radio talk shows. Access to inputs will be enhanced by forging links with identified agro-input dealers, or encouraging establishment of input shops at network level. These input dealers were linked with sources of supply and finance, and trained on recommended technologies so they can advise the farmers.

**Output 3:** Lessons learnt on use of farmer field schools network for collective marketing documented

- Based on the assessments and evaluations of previous phases of the project, stakeholders were able to learn lessons for sustainability of their enterprises. Through PM&E and field assessments, a core “minimum data set” of both indicators were tracked throughout the project and developed. The PM&E tracked number of farmers that were reached; adoption rates of different technology options, sources of market information, nature of collective marketing linkages, and volume of sales. All these indicators were regularly monitored and documented using both qualitative and quantitative methods. At the end of the project, a detailed impact assessment was conducted to document the impact of the project on all stakeholders.

### **3 Methodology**

The project was implemented in Eastern Uganda in the districts of Tororo and Busia. It was in the Sub - Counties of Molo, Mella, Osukuru, Kisoko and Nagongera in Tororo, Bulumbi, Masaba and Masafu in Busia. The direct beneficiaries of the project were 1,505; (704M, 801F) smallholder crop and livestock farmers of eastern Uganda who were organized in groups and associations for easy outreach, local resource mobilization, unified strong voice, amongst other benefits and leverage points. The implementation of the project depended on the diversity of stakeholders in the project area who constitute the INSPIRE consortium. They included: Research institutions, NGOs, Higher Learning Institutions and the Local Government which collectively

formed the execution group<sup>1</sup> of the project. The up scaling was both horizontal (farmer to farmer, group to group and farmer networks and associations) and vertical through partnerships with the National Agriculture Advisory Services (NAADS) and INSPIRE member organizations.

Diverse approaches in scaling up and out were used by INSPIRE to have an impact in the region. The FFS methodology was used to build farmers and extension service providers technological capacities, increase farm production and farmer coherence, and organization capability to address community issues. The market led enterprise model of NAADS was applied successfully in accessing markets and also in stimulating demand for production inputs by farmers. INSPIRE purposes to build on these approaches while evaluating their effectiveness and efficiencies in overcoming constraints to access to information on input and output markets, supportive linkages and networks in the context of farmers’ diversity to achieve scale, INSPIRE created strong linkages with NAADS and others, exchange and share information and knowledge on the best practices to a wider development arena

INSPIRE had previously concentrated their efforts on working with farmer groups and farmer field schools, that is groups of about 15 to 30 farmers in size. However in order to achieve wider scale impact, we focused on FFS networks and larger farmer associations. This required the testing of different approaches for working with these second level associations in terms of farmer experimentations and marketing.

The project took on lessons with particular focus on the methodological and institutional approaches on scaling up and out. The project focused on four key components or areas namely:

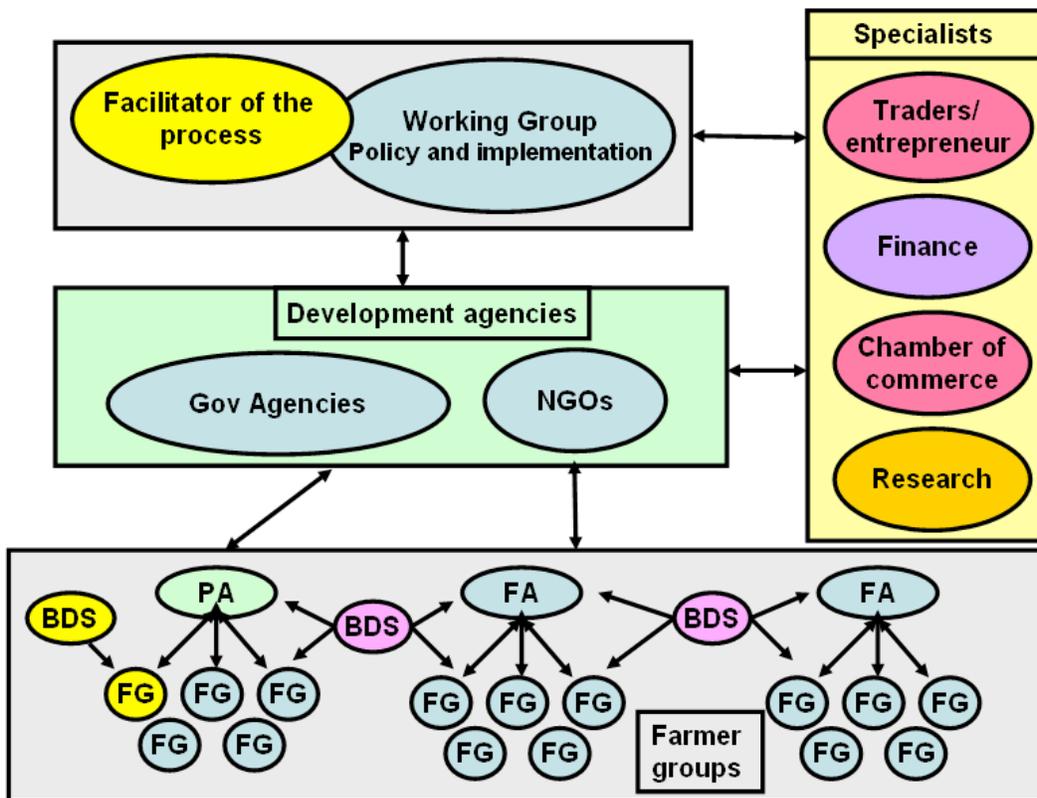
1. Marketing interventions/access to market
2. Extension methodology for working with farmer groups and Farmer Field Schools (FFS)
3. Strengthening second order farmer association organization
4. Institutionalizing P M and E

This was implemented through a staged process of initially organizing FFS and other farmer groups, structuring and building the skills of these groups to form enterprise marketing networks,

and then building their capacities to identify, access and profit from market opportunities. The project used this approach for two enterprises: Maize and Soybean value chains.

This project focused on strengthening the groups by facilitating federations at sub-county that ultimately federated to form tertiary district and regional associations that undertook larger scale issues in, for example, accessing input and output markets, accessing rural finance through the revolving fund management and linkages with micro-finance institutions, as outlined in Figure 1 below.

Figure 1: Model used to reach out targeted households



## 4. Findings

### 4.1 Achievement of Output 1

<p><b>Output 1.</b> Territorial-based approaches to market-opportunity-identification and agro-enterprise development, evaluated and promoted</p>	<ul style="list-style-type: none"><li>• Two prioritized agro-enterprises (maize and soybean) are developed and farmers are collectively marketing them to identified markets</li><li>• At least 1500 members from the registered associations (5 networks for maize, 3 networks for Soybean) competitively marketing maize and soybeans by 2010</li><li>• At least 100 MT of maize and 20 MT of soybeans sold by the networks per season in 2010</li><li>• At least 5 networks have established mechanisms for information and knowledge sharing on profitability for collective marketing by 2010</li></ul>
---	--

#### 4.1.1 Prioritized agro-enterprises

The project promoted the production and marketing of maize and soybean<sup>2</sup> using the value chain approach. These enterprises were selected based on their profitability and adaptability to the local

---

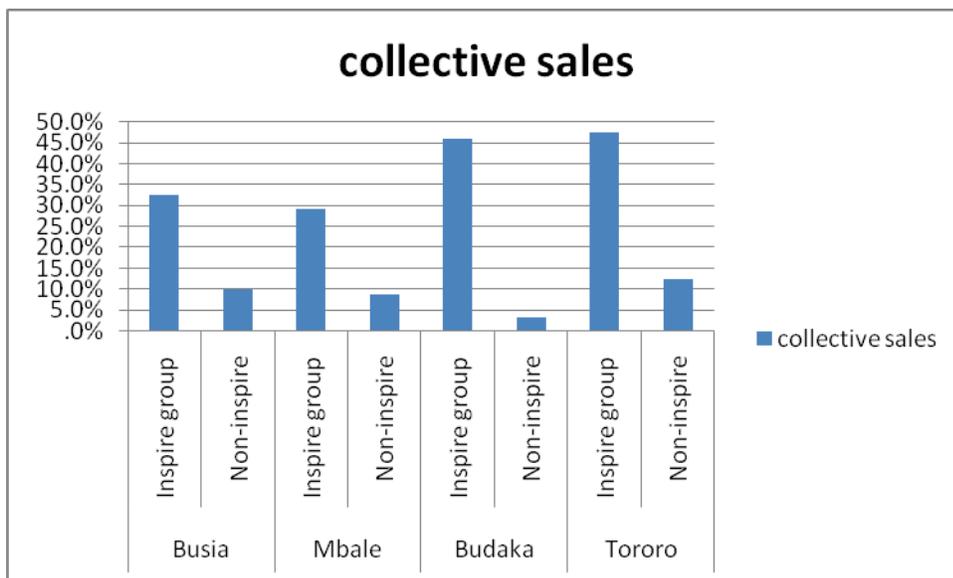
<sup>2</sup> Mac Soy 1N variety was promoted; this variety is quick maturing and performs well in areas with a short rainfall periods

conditions. Results From the impact survey carried out in the third quarter 2010, found that more INSPIRE farmers were producing maize and soybean than non-INSPIRE farmers in the two project districts. Production of the two enterprises was higher in Busia than in Tororo. Overall, a total of 1505 farmers from the two districts organized in eight farmer field school networks participated in producing the two value chains.

#### 4.1.2 Market identification and collective marketing

Farmer’s capacities were developed to identify markets and negotiate prices with bulk buyers. Four bulk buyers of maize and soybean have been identified by farmers in Busia produce market, in addition to the other buyers have been engaging with like AgriNet. As a result of this, farmers can now sell their produce to traders offering them favorable terms, such as offering fairly higher prices, or offering them with deposits even before their deliver their produce to the buyer. Results from the ISNPIRE project evaluation were involved in collective sales of enterprise compared to non-INSPIRE farmers (see figure 2 below).

Figure 2. Collective sales of the enterprires by farmers



The networks marketed their enterprises mainly to two bulk buyers; Agrinet and bulk traders from Busia produce<sup>3</sup> market. The two were selected from a set of buyers that farmers had identified earlier on through market research. The selected buyers are shown in table 1 below.

**Table 1. Identified markets for farmers in Tororo and Busia districts**

<b>Market</b>	<b>Product</b>	<b>Volume of produce required per season (tones)</b>	<b>Form of contract used</b>
AgriNet Uganda Ltd	Soybean	20	Formal
Seba Foods	Soybean	-	Informal <sup>4</sup>
Busia produce market	Soybean & maize	80-250	Informal
Mt. Meru millers	Soybean	15000	Informal

### 4.1.3 Commodity sales

Farmers from the two districts produced maize and soybean for two seasons in 2010. For season A 116MT of maize were sold collectively to bulk buyers in Busia produce market at 300Ush/Kg. Farmers were able to earn a total of Ushs 34.8M (USD15,130), while 14.5MT of soybean were sold collectively to AgriNet Uganda Limited at 850Ushs/Kg. A total of Ushs.12.325M (USD5359) was earned. About 5 tons were kept for seed. For season B 2010, 175MT of maize were sold to Busia produce buyers at 320 Ushs/Kg. A total of Ushs 56M (USD24, 348). Soybean sales for season B amounted to 48MT that earned farmers Ushs 48M (USD20, 869.6).

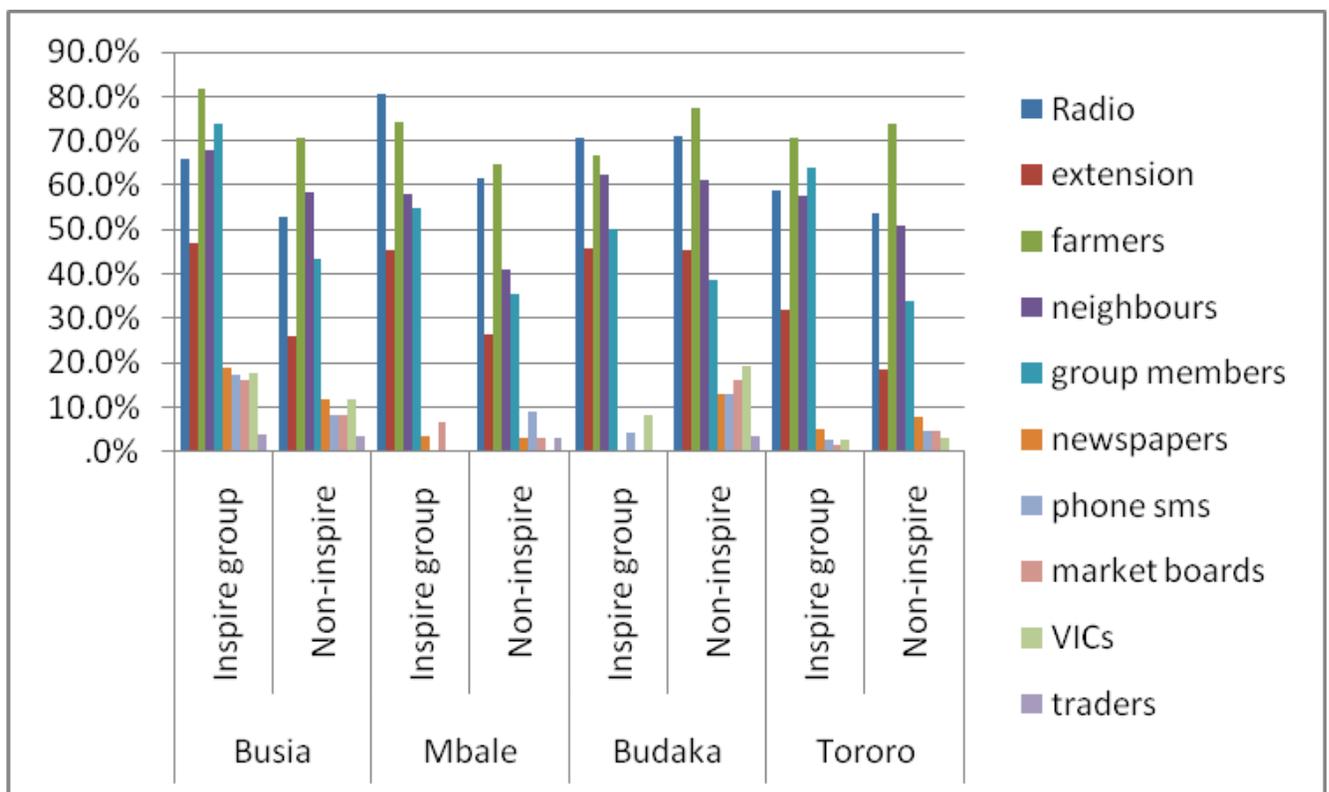
<sup>3</sup> Busia produce market is the largest grain market in Uganda and serves mainly the Kenyan market

<sup>4</sup> This buyer and others procure produce from farmers at the ongoing market price and as such do not enter contracts

#### 4.1.4 Information and Knowledge sharing

Village information centers were established in each the eight networks to supplement the other mechanisms for information and knowledge sharing on profitability for collective marketing such as radio, mobile phone sort message service (SMS) and newspapers, among others (see figure 3). These information centers were equipped with information boards operated by one of the members of the farmers’ networks as a facilitator. AgriNet Uganda Ltd, a private sector partner in INSPIRE, is offering market information (prices and trade alerts) to the information centers. The trained local Information Facilitators from the 8 networks share with other farmers this information, which they use to guide their price negotiations with bulk buyers, as well as identify market opportunities, besides advertising the products they also have for sell.

Figure 3. Different information sharing mechanisms used by farmers



## 4.2 Achievement of Output two

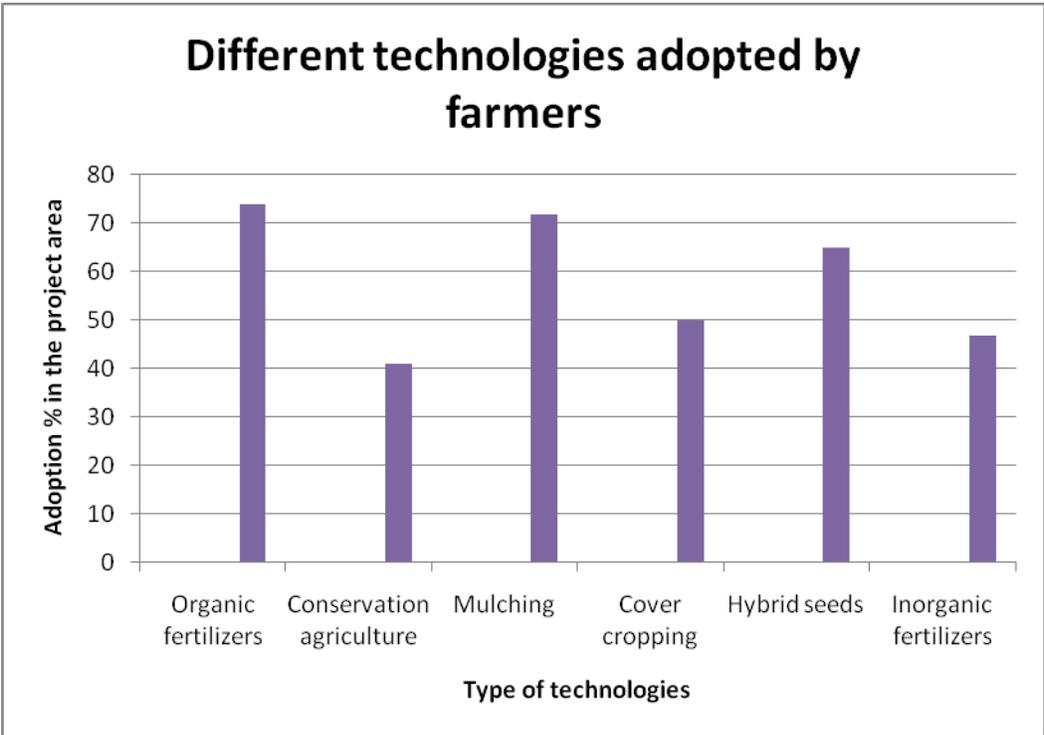
<p><b>Output 2:</b> Integrated technologies (germplasm, ISFM, IPDM, water use, processing and value addition) for improving productivity and profitability of agro-enterprises promoted</p>	<ul style="list-style-type: none"> <li>• At least 750 of participating farmers are practicing at least three sustainable production technologies (conservation agriculture, organic and inorganic fertilizers to increase productivity up to at least 3 tons/ha for maize (from the current level of less than 2 tons/ha) and 2 tons/ha for soybean (from the current level of 1.5 tons/ha)</li> <li>• At least 900 farmers in the selected Farmer Field Schools have improved the productivity of maize and soybeans by end of 2010 by 1 ton for maize and by 0.5 tons for soybeans per ha (on farm optimal yield for maize is 3 ton/ha and 2 tons /ha for soybean)</li> <li>• 8 Participating Farmer Field School Networks have developed &amp; implemented production and marketing plans by the end of 2010.</li> <li>• As a result of training 1500 farmers are using improved storage, quality control and post</li> </ul>
---	--

	harvest handling.
--	-------------------

**4.2.1 Adoption of sustainable production technologies**

Farmers’ capacity was built to enhance improved productivity of soybean and maize. Two learning sites per farmer field school network were established to enable adoption of improved technologies in agriculture. An evaluation of the project indicated that the proportion of farmers practicing conservation agriculture are 615, organic fertilizers are 1110, inorganic fertilizer 705, mulching 1080, cover cropping 750, hybrid seeds 975 among other technologies. An overall average of 930 farmers were using these productivity enhancing technologies and practices.

**Figure 4. Percentage of farmers using technologies in the project area**



According to figure 4, a majority of farmers (above 70%) have adopted the use of organic fertilizers like compost, farm yard manure, green manure among others and use of mulches partly because these are readily available to farmers. Improved seed have been greatly adopted (above 64%) partly because of the high yields and acceptability by the market. Also due to the established input distribution shops that are close to farmers, they can easily access these seeds without moving longer distances. Despite the relatively higher prices of inorganic fertilizers, more than 45% of the total farmers in the project area are using inorganic fertilizers.

To promote adoption on the technology options to enhance crop productivity, 16 learning sites (2 per network) were established by INSPIRE, where technologies for use of rhizobia in legumes especially soybean and DAP for maize were demonstrated/disseminated. The demonstrations are showed positive results to rhizobia and DAP treatments according to records from the model farmers.

Table 2 below provides a summary of the model garden performance. The soybean yields increased by an average of 67% when using high input interventions than when only rhizobia was used. Maize yields increased by only 29% partly due to effects of a mix of too much rain and drought conditions.

**Table 2: Model Garden Yield Assessments**

Network	Soybean		Maize	
	High Input (kg/acre)	Low input (kg/acre)	High Input (kg/acre)	Low input (kg/acre)
Masafu	200	-	400	300
Masaba	180	80	1246	1096
Bulumbi Network	474	200	-	-
Mella Network	300	100	600	400
Osukuru	560	396	500	700
Kisoko	120	140	1000	400
Nagongera	-	-	-	-

Molo	-	-	-	-
<b>Average</b>	<b>306</b>	<b>183</b>	<b>749</b>	<b>579</b>
<b>% change in yield</b>	<b>67</b>		<b>29</b>	

At farmer level, the yields for soybeans ranged between 100kg/acre to 240kg/acre for the local variety; while improved variety yielded between 100 and 560kg/acre. Out of the 57 soybean farmers assessed, 38 had planted the improved variety (67%) and over 90% had used Rhizobia. For maize, out of 107 farmers assessed, 48 had planted hybrids/improved maize varieties (45%). Yield levels ranged between 300-2500kg/acre for DH and DK series; 150-1500 for local varieties and 335-1600 for the long series; averaging at 1111, 515 and 755kg/acre, respectively.

The stockist network was strengthened through trainings in business management, customer care, safe use and handling of agro inputs to ensure that quality improved inputs are sold to farmers. 12 stockists were trained.

#### 4.2.2 Production and marketing plans

All 8 FFS were trained in production and marketing planning; farmers are now able to plan on their own by developing business plans. For the last three months, this has been closely monitored as indicated in table three below.

**Table3. A summarized production plan for the 8 networks for three seasons**

<b>Season</b>	<b>Soybean (Acres)</b>	<b>Maize (Acres)</b>
2011A	1254	206
2010B	165	419.5
2010A	49	567
<b>Average acreage</b>	<b>489.33</b>	<b>397.5</b>

According to table 3 above, acreage of Soybean enterprise has been increasing per planning season; this has partly been so due to profitability and improved access to markets. On the other hand, the

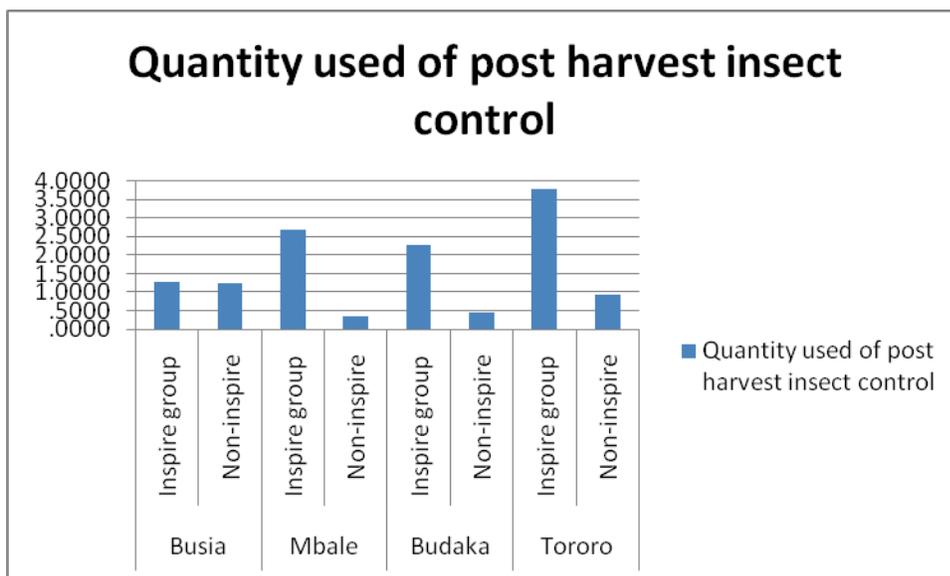
acreage of maize has declining due to major declines in maize prices. At the end of the three seasons, the average acreage under soybean had surpassed that under maize.

In addition, a total of 4,000 production guides for soybean and maize, manuals on integrated soil fertility management, were distributed to farmers across the 8 networks. Posters and charts about fertilizer use, pest and disease control, etc have also been availed and displayed in the 9 VICs. Field days have also been held in all 8 networks, during which farmers appreciated the benefits from fertilizer and rhizobia use. As a result of these activities, farmers’ awareness of certain technologies like rhizobia, and the benefits derived from using them increased, and as result, there was an increase in demand for rhizobia. For example, 210 farmers who produced Mac soy 1N (improved soybean variety) during the 2010A season (April-June) used rhizobia to enhance nitrogen fixation. In addition, 12 agro-input stockists were linked to AGRA funded agro-dealer strengthening program. This will go a long way in ensuring that farmers have access to quality inputs. Farmers are currently obtaining their inputs such as seed and fertilizer from Network stockist on credit and cash.

### 4.2.3 Post harvest handling

INSPIRE farmers generally used more post-harvest insect control, than the non-INSPIRE farmers. The largest quantity of post harvest insect control is used by farmers in Tororo, followed by Mbale, then Budaka, and lastly, Busia (see figure 5).

Figure 5. Amount of chemical (ltrs) used in post harvest insect control



### Produce storage and bulking

Stores where farmers can store, sort and bulk their produce in readiness were identified at Sub-County and district level. However, the main challenge was that these stores were located far away from farmers locality. This hampered storage as transport became expensive. Also management of the produce in the store was also highlighted as one of the draw-backs for collective marketing.

Figure 6. Farmers bulking soybean in Bulumbi network store



### 4.3 Achievements on output three

<b>Output 3:</b> Lessons learnt on use of farmer field schools network for collective marketing documented	<ul style="list-style-type: none"><li>• 8 FFS networks actively engage and negotiate contracts with bulk buyers</li><li>• At least 5 FFS networks sustain contracts with bulk buyers</li></ul>
--	--

	<ul style="list-style-type: none"> <li>• FFS continue to use business plans for production and marketing of products</li> </ul>
--	---

Informal contracts were made between farmer representatives and 4 bulk buyers from Busia produce market to buy the maize and soybean available among the networks. The price per kg of clean and sorted soybean was agreed at 1,000/= on delivery to the market. Maize was agreed at 300/= per kg, also on delivery at the market. The networks now have the ability to search and engage major buyers and negotiate favourable terms for their products.

All 8 networks were willing to sell their produce to bulk buyers for season A 2011 because they are offering better prices for soybean and maize compared to AgriNet (that had been contracted in seasons). In order to meet the requested tonnage, farmers increased their acreage of soybean and maize (see table 3 above).

This will continue to happen and is being taken care of by the FFS monitoring committees. Already committees helped come up with production plans for season A 2011 (see table 3 above). Production plans are being prepared on seasonal basis and have been incorporated into their regular activities. These activities for season A 2011 have been prepared by the networks with minimal support from the project.

## 5 Conclusion and Recommendations

### A. Assessment of Progress towards Impact:

- i. Engagement of the key actors (individuals, organizations and institutions) who must take action to turn the project's outputs into outcomes and then impacts. *(Provide evidence of agreements, contracts etc as annexes that proves that the right actors have been engaged by the project)*
  - Key partners in INSPIRE were A2N, AT (Uganda), NARO, district governments and NAADS programme, private sector buyers (Agrinet) and

CIAT. Letters of agreement and work plans and budgets for A2N and AT were used to commit partners to the project implementation. Contracts, both formal and informal have been used to bind private sector buyers to outputs from the project activities.

ii. Promotion of the project and its results to the right actors. *Describe the products produced for the specific actors (individuals, organizations and institutions)*

- Through meetings with stakeholders and networks, the project was brought to the right stakeholders. The stakeholders were identified as having direct impact on the project activities. For farmers, new technologies were promoted to them to improve productivity and access markets through manuals, brochures and information leaflets. Input stockists also received trainings on how to link up with both suppliers and buyers through manuals and information leaflets. Network facilitators received training to support the farmers. Outputs of the enterprises (maize and soybean) were made available to key buyers through formal and informal contracts. Meetings and workshops were conducted to share lessons learnt from interactions within the project.

iii. Monitoring and Evaluating General Outcomes. *(Describe the data and evidence collected by the project to verify that changes such as in the behavior, relationships, practices, actions or performance of the main target actors, took place).*

Two types of data were collected in the project to show evidence of project progress: continuous monitoring on seasonal basis and end of project survey that conducted towards the end of the project. Monitoring and evaluation forms were designed to collect information on continuous basis by both project staff and network officials/facilitators. Continuous data collected included information such as on farm production, usage of inputs and technologies, extent of involvement of farmers and networks in collective activities among others.

iv. Monitoring and Evaluation of specific Outcomes related to business development and investments. *(Describe and provide Evidence of commercial business and investments which have resulted from project's work)*

- Village information centers and network stockists were developed through project interventions. 8 village information centers are operational on a self-sustaining basis. Network stockists stock farm inputs such as seeds and fertilizers as a business, selling for cash and/or credit to farmers. The network stockists were linked to input distributors and credit providers to develop their businesses.
- v. Impact Assessment. *(Describe the data and evidence kept by the project to assess if developmental impact is being attained by a specific group of the target stakeholders).*

Through project evaluation data, the project has been able to assess project impacts by comparing project sites and non-project sites (that is, INSPIRE versus Non-INSPIRE farmers). These results are available as an appendix to this report. Additional empirical analyses will be carried out to determine the statistical significance of the project interventions and determinants of observed behavior and impacts at the farm level. This will form the basis of future follow up activities and interventions.

B. Indicate how the key findings contribute the Kilimo Trust mission in relation to the priority themes listed below.

i. Promotion of efficient value chains

- This project supported two value chains; maize and soybean in Tororo and Busia districts. The basis of selection was potential for higher returns through increased productivity. This was achieved value chain analyses that formed the basis of determining which value chains are more profitable (efficient) relative to the available enterprises in the project areas. Networks involved in these value chains are producing for defined markets through collective marketing. Networks were trained and mentored to be able to search for markets and engage with potential buyers through contract negotiations. Input suppliers were also empowered to serve producers better and closer to them at the network levels. Credit arrangements were also facilitated between producers and input stockists as well as between input stockists and input distributors.

- ii. Support technical and institutional innovations
  - The project supported innovations at farmer, group and network and market levels. Using productivity and natural resource management technologies, farmers were supported to participate in experimentation and innovate on their farms. They were also supported to develop organizational and management skills to be able to manage their groups and networks. The **INSPIRE** consortium is an innovation that holistically addresses issues relating to productivity and marketing of farmer's products, including provision of support services such as information and credit.
- iii. Engage the private sector in dealing with subsector wide constraints limiting the exploitation of business opportunities
  - The private sector has been engaged with networks to access markets for outputs and inputs as well as credit. The private sector participation targets to sustain farmers' agricultural enterprises, post project. These include Agrinet, Seba Foods, Mt. Meru Millers, Centenary Bank, private bulk buyers at district levels as well as engagement with micro-financial institutions in the project areas.
- iv. Facilitate policy dialogue
  - There were policy discussions and sensitizations at the district level with regard to key constraints affecting the development of the selected value chains. Policy discussions with local government in Tororo led to the adoption of Striga weed management at the district government level. The district government set aside funds to implement striga management initiatives as a result.
- v. Create economies of scale in production systems
  - The project sought to achieve economies in collective marketing of farmer produce through bulking activities. Storage facilities were identified and are available at the district levels. Networks are using the stores to bulk their produce to await the buyer. Focus was also put on entire networks undertaking one or two common enterprises that created sufficient volumes to attract key buyers. The project focused on maize and soybean enterprises.
- vi. Mainstreaming environmental sustainability

- NRM practices were key components of the project: conservation agriculture, soil fertility management through use of inorganic and organic fertilizers. Soil erosion control was also applied through practices such as cover cropping, terracing among others.

C. Where possible, indicate any follow up activities planned either by your organization or others that will address the issues raised during the implementation

Potential issues that require follow up include storage and bulking centres that still require strengthening among the networks. Additional efforts will be required for these facilities which require substantial investments to make them available. Interest is also placed on the sustainability of the project interventions and there is need to establish the extent to which networks are able to continue with the adopted technologies through follow up studies as well as occasional backstopping.

### 5.1.1 General

- Summarise what went well, what did not, and how difficulties were overcome.

#### **What went well:**

- Wide scale adoption of the use of Mac Soy 1N soybean seed and hybrid maize among the farmers.
- Adoption of use of agro chemicals especially bull dock for control of maize stock borer.
- Adoption of soil fertility enhancement technologies especially use of rhizobia
- Adoption of marketing and production planning methodology for agro enterprise development. This has helped to focus farmers on what to produce for the market especially meeting quantity and quality requirements.
- Implementation of the different roles by the key consortium partners under the redesigned project
- Working with few value chains made the farmers more focused

#### **What did not go well**

- Limited time for project implementation; one year couldn't allow enough time to prepare farmers especially activities related to further scaling out. Thus the

possibilities of scaling out were not properly explored. Furthermore, it takes some to demonstrate to farmers what is the optimal enterprise in terms of profitability and marketability. These two issues were overcome through an aggressive programme to mentor the farmers on the potential profitability of the enterprises.

- There were some weaknesses in the facilitation skills of some field staff. Additional support was provided to reduce the impacts of these weaknesses on the project. For a number of seasons, the weather was not favourable, thus impacting negatively on the expected results. Crop stress management was included in the strategies to cope with poor weather conditions such as using adaptable varieties and water conservation measures.
- Summarise lessons for implementation of similar projects in the East African region and beyond for promotion of Broad-based wealth creation through Agriculture and Agri-business.
  - It's more effective to work with fewer value chains that cut across a bigger area
  - Farmers prefer not to have contracts with buyers but a wide spectrum of buyers where they can choose from depending on demand forces. An alternative is contracts based on volume deliveries rather than based on prices.
  - Additional interventions such as storage and warehousing need to be included in future project interventions.
  - Financing and credit is also mandatory if the promoted technologies are to be effectively adopted by farmers. Credit is required to acquire better seeds and other inputs as well as to support bulking and collective marketing efforts.

### **5.1.2 Partnership and Collaboration**

- Summary of partnership/participation arrangement with partner institutions/organizations including farmers, farmer institutions, external service providers and other project users.

The project was implemented under the **INSPIRE** consortium that comprises a diversity of stakeholders in the project area and country; they included research institutions, NGOs, higher learning institutions and the local government which collectively form the execution group of the project. The consortium also includes farmers through the networks and associations as well as the private sector players such as financial institutions and traders.

- Comment on the partnership and collaboration arrangements for the project (i.e. Memorandum of Understanding, Articles of Association, Verbal Agreement with community groups, local leaders, individuals etc)

a) **With farmers and farmer institutions;**

- The arrangement was by verbal agreements through-out all the phases of the project. The work plans that the communities developed and submitted were used as commitment to their participation in the project.

b) **With project partners** (in terms of the original roles and responsibilities indicated in the project proposal)

- There were letters of agreement with different implementing partners clearly spelling out the roles and responsibilities the partners will carry out and budgets necessary to accomplish the roles.

c) **With your host organization and other concerned organizations;**

- Letter of agreements and work plans and budgets for A2N and AT Uganda were used to commit partners to the project implementation.

d) **With the Kilimo Trust.** What went well, what difficulties were faced and how were these overcome?

The financial arrangements between Kilimo Trust and the lead institution that involved reimbursement of funds meant that activities planned were not delayed because of delays in releasing funds. The reporting framework though took some time to become fully operational was innovative and related outcomes very well to the activities and outputs of the project.

### **5.1.3 Economic Impact**

What has been or shall be the expected effect of the project on beneficiaries' economic well being.

- The overall incomes have improved as a result of improved access to technologies and big market. Farmers' incomes and livelihoods have gone up. A large number of farmers participating in the project have taken a commercial orientation in their cropping activities (they are able to trade off some crops for those that are likely to bring in more incomes e.g. soybean relative to maize). Most of the earnings from maize and soybean were previously not available to the farmers.

### **5.1.4 Environmental Impact**

Briefly describe any environmental impact/likely future impact of the project (positive or negative). If there are any negative effects, what steps do you propose to mitigate this?

- Through the adoption of conservation agriculture practices as well as the use of organic fertilizers, cover cropping and mulching among others, farmers are beginning to conserve their natural resource base and restore degraded soils. However, with increased commercialization of agriculture, it is necessary to, in future, evaluate the impact of commercialization on the natural soil resource base of the soils. It is not clear whether farmers will continue to invest in soil fertility and conservation at the same rate at which they are extracting the resources.

### **5.1.5 Stakeholders**

Briefly describe the primary and secondary stakeholders with whom you have worked, and the project impact/ likely future impact upon them.

CIAT the project leader (an international research institution)

A2N role was farmer mobilization and group strengthening and providing support to researchers from the national research institute and CIAT

AT (Uganda) was involved in capacity building for farmers and input dealers; creating and strengthening linkages between input dealers and farmers.

Other stakeholders included NARO (national agricultural research organization) of Uganda that was involved in technology testing and adaptation. Additional stakeholders included Centenary Bank, Equity Bank, Agrinet (U) Ltd.

#### **5.1.6 Social Equity** (gender roles, disadvantaged groups, access to resources)

Briefly describe the project's effects on different social groups. If the project successfully produced the stated outputs, how have these affected different sectors of the community? Indicate any special benefit that you think the project brought to disadvantaged groups.

- The project helped to establish village information centers and input shops close to farmers. This favors mostly female farmers who are incapacitated in many ways to move long distances in search for such services. However, they can easily access market and production related information in addition to improved inputs within their reach. The project also provided the women with chance to generate revenues from small scale growing of soybean that is collectively marketed at the network level. The project also established gender balancing as a project policy to ensure full participation of both men and women in project activities.

#### **5.1.7 Sustainability**

Describe how the changes brought about by the project will continue in the long term

- Building the capacity of farmer field schools to start input business has improved access to quality inputs by farmers and this will continue supporting farmers in production. The input shops are run on business basis and their closeness to farmers makes fertilizer and other input supplies to be sustained over time.
- Through market research, farmers can now identify bulk buyers on their own to buy their produce; this will certainly continue to sustain their agro enterprises. In the final days of the project, networks have been able to engage market players through negotiations to sale their products. this was possible through mentorship programs in the project.

## 6. Financial Annual Report - Summary

### **Analysis of actual against budgeted expenditure during the project period.**

*In less than 250 words, give the summary of actual expenses against budget for the project cycle, pay particular attention to linking expenditure to the actual work that was done. In case of divergence from the budget attach detailed schedule and notes to explain material divergences. Attach certified copies of vouchers and receipts.*

### **Analysis of actual against budgeted incomes during the project period:**

*In less than 200 words, give the summary of major highlights or material differences in actual against budgeted incomes for the reporting year. (Attach as an Annex the detailed schedule and notes)*

### **Details of capital expenditures during the project period:**

*Please provide details of any capital expenditures and the identification marks for capital equipment bought by the project funds*

### **Financial statements:**

- 1. There is need to provide 2 copies of a standard set of the project annual financial report as at the end of the year together with comparatives for the last two years certified by the Accounting Officer of the Organization (normally the CEO).*
- 2. The financial statements should be accompanied by an opinion or comments from the auditors of the Grantee Organization, regarding the particular project funds utilization.*
- 3. Copies of any annual returns submitted to respective authorities if any e.g. company annual return and NGO registration renewals.*

**\* Financial statements should be audited.**

## 7. Annexes

- i. Lit of internal reports and dates produced
  - A2N July-Sept. Quarterly report - 30<sup>th</sup> Sept. 2010
  - Furnishing village information centers- 29<sup>th</sup> Sept. 2010
  - Impact survey report Jan 2011
  - INSPIRE annual progress report
  - INSPIRE annual report -31 Jan 2010
  - INSPIRE Quarterly report April - June. 2010
  - INSPIRE Quarterly report Jan - March. 2010
  - INSPIRE Quarterly report July - Sept. 2010
  - INSPIRE Quarterly report Oct - Dec. 2010
  - INSPIRE stakeholders' seasonal review and planning meeting - 21st Sept. 2010.
  - Report on the inspire consortium's participation in the economic empowerment week for small and medium enterprises in eastern Uganda- 13th Oct. 2010
  - Soybean and Maize value chain analyses- Sept. 2010
- ii. List of information materials obtained from other sources and provided to farmers.
  - Collective marketing guidelines
  - Crop guides
  - Farming as a business guidelines
  - Fertilizer literature
  - Principles of maize and soybean agronomy guidelines
- iii. Information or publication materials produced for farmers and other stakeholders (including videos, cassettes and other non-print media, and scripts of any drama /songs developed.
- iv. Publications in conference proceedings, referred journals or book chapters
- v. Memorandum of Understanding and contracts with partner organizations