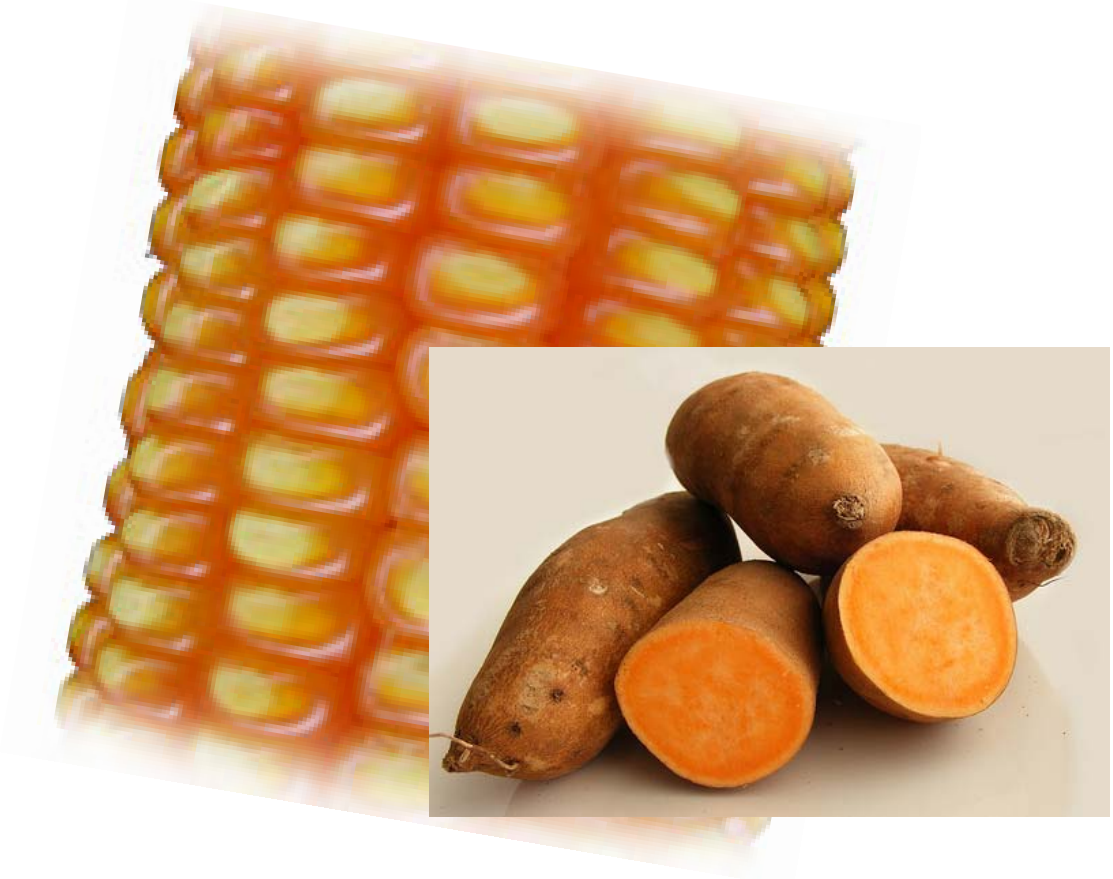
ASARECA
Transforming Agriculture for Improved Livelihoods

DONATA
Dissemination of New Agricultural Technologies in Africa

ILRI
INTERNATIONAL LIVESTOCK RESEARCH INSTITUTE

Agricultural Innovation Systems

A report of the training workshops for DONATA Innovation Platforms



Training workshops held at the Silver Springs Hotel, Nairobi

March 21st to 25th and June 13th to 17th, 2011

Figure 1. Participants of the June 2011 DONATA AIS Training Workshop pose for a picture

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Executive Summary

The Knowledge Management & Up-scaling Program (KMUS) of ASARECA assigned ILRI to conduct a training on Agricultural Innovation Systems (AIS) for the 'Dissemination of New Agricultural Technologies in Africa (DONATA) program. The aim was to guide DONATA project's staff and partners in understanding applying the concepts through their Innovation Platforms for Technologies in Agriculture (IPTAs). The projects were the *Transfer and dissemination of proven and emerging technologies in orange-fleshed sweet potatoes (OFSP)* and the *Transfer and dissemination of proven and emerging technologies in quality protein maize (QPM)*. During the training, a team from Promotion of Science and Technology for Agricultural Development in Africa (PSTAD) also led the project teams through the Monitoring and Evaluation Framework adopted for DONATA.

The training was conducted through two phases (5-day sessions in March and in June, 2011) with an application period between the two phases. In both workshop sessions the training was attended by 40 – 50 participants from the six countries covered (the Democratic Republic of Congo (DRC), Ethiopia, Kenya, Rwanda, Tanzania and Uganda). The training was implemented using a combination of presentations and discussions of concepts and case examples where actual application of innovation system concepts was explored. During the practice period participating projects were to implement the course concepts and then report back during the second training session held in June, 2011 to identify areas that required re-view.

Participants were introduced to the concepts of 'innovation' and how AIS is a result of the evolution of paradigms guiding agricultural R & D strategies and activities that has resulted in continuous and collaborative information-sharing among actors. Hence the value and wide-spreading application of innovation and value chain systems. Innovation was defined (the process of creating and putting into use combinations of knowledge from many different sources or the use of new ideas, technologies or ways of doing things) and its essential elements explained (the individuals and organizations involved , interactive learning processes leading to new products and the institutional relationships that govern how these interactions and processes take place). During the second phase, participants were presented levels (hierarchies) at which innovation takes place – product, process, system and transition innovation.
The course also covered the concept and application of value chains (VCs) as innovation systems serving a particular function – the delivery of a product from use of raw materials for its production to final consumption in a market. From the DONATA IPTAs VC- thinking and organization would help to support the projects' dissemination of knowledge and technologies through informed choice of actors and roles.

AIS and VC functioning and success require leadership in visioning, strategy, coordination, supporting or engaging relevant actors in business relations. Communication should exploit formats that can appeal to

diverse stakeholders in order to promote the systems internally and externally. Coordination is also an important leadership function because it entails effective serving of demand and supply points.

The workshop also covered DONATA's M & E strategy, plans and frameworks. The contextual challenges were presented, including, the varied levels of application, the inadequacy of data and the need to build on what has been started. In the second phase, the teams discussed the M & E indicators and made suggestions on what was to be done to improve their application. The participants were introduced to Outcome Mapping – one of the approaches that could be used to track behavioural and social transformation. A framework that integrates both LFA and OM was presented so that the Platforms could use a combination of parameters they found appropriate. Case reports should be developed to explain what and how innovation took place. Participants were shown how to develop these case reports using specific topic items – background (or context), the challenge faced, the intervention (or innovation that took place), the effect of the innovation and lessons for future and related development.

Generally the participants were satisfied with the course process and how it achieved its objectives, scoring an average 7.0 out of a maximum of 10 points. Individual evaluation reports indicate that the course coverage – on innovation, innovations systems strategies and value chain development – was comprehensive, the content flow very good and satisfactory. During the second phase, platform members benefitted from the importance of detailed system description and how SWOTs could then be used to identify intervention. The participants were the shown how monitor and report on progress made. Most valuable lesson reported was using a combination of quantitative and qualitative changes to develop progress reports accompanied by rich and detailed innovation case studies.

Specific requirements were the need to develop clearer course content and as well as more effective beyond-training planning to ensure application beyond the workshop.

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Key Messages from the Training

The following observations and lessons have been made based on experiences and feedback during the training. They could be used to guide the development of future trainings for ASARECA and DONATA-like programs.

1. Greater focus on specific innovation and value chain systems

a. Assuming a generic state of affairs and progress for all participants and their cases does not address what the innovation training is supposed to serve. While the introductory content covered in the Phase One training was very valuable, the next course should be designed to start developing the contexts and specific challenges each particular case presents or faces.

   i. For example while some platforms were well established and possibly addressing greater collaboration, others were barely formed and participants were still grappling with what really is an innovation platform, who to engage and how. This is a skill in itself that could require development.

   ii. Addition from Dr Kimenye: The mix of participants at varying levels of IP development and operational experience will provide a rich learning base that re-enforces learning between the advanced and the less so. The main challenge would be how to structure the sharing/group work to optimize on the learning and minimize on the experience gap challenge.

   iii. For the platforms that are already established a lot of progress was already taking place as a result of innovation but the participants were not well equipped in reporting the innovation development. There was plenty of voiced development but inadequate recording and reporting. This needs to be developed as a skill during the training.

   iv. Addition from Dr Kimenye: Reflection and documentation of the innovation processes requires a certain passion for it and obtaining the skills to do it. Most of the participants in the IPTA focus on implementation. It may take an external observer or facilitator to capture the innovation processes or induce the members to reflect and document the lessons. This can be done during the platforms' periodic reviews and planning events and the information incorporated in their progress reports.

b. When cases are presented by various platforms during training, there is hardly any time to explore the detailed make-up of each system and unique features about their members that can be supported to develop innovation. Highlighting specific challenges for innovation platforms and innovation experiences at an early stage ensures all participants – who are already familiar with most R & D approaches and requirements – use the training session to focus on what is more pertinent to their own cases.

c. It would then be easier to develop specific take-away assignments for the groups so that when they report back in the second training session, all presentations serve to boost better understanding on how innovation applies at all stages of project development among all participants.

d. However, this would require effective representation of participants at the initial training and a well planned development of their cases prior and/or during the training. And it could present a course design challenge.

e. What is innovation for each platform? What will be the innovation products? This is very important. Innovation is supposed to generate fresh and effective ways of achieving results. Actors going about the same way they have been doing things before or interacting in similar ways does not describe an innovation process. It would make lots of sense to try and probe the new and interesting approaches that actors – individually, in groups, or as a network – try new things. And the results of these new processes. The training should support how to identify and describe these innovations and their products.

2. More follow-up

a. In line with the above suggestion, the innovation cases presented require greater interaction with the trainer(s) following all training sessions (both the first and the second one). This is to support the understanding and application of the course content as per specific case context.

b. The follow-up also helps to extend the course objective, content and implementation plans to members of the innovation platforms who were not able to attend the training.

c. The follow-up will also serve an even bigger function: monitoring and evaluation of progress. While all the projects have capable M & E skills, follow up by the trainer would support development and use of adequate data, its analysis and reporting as a result of un-folding innovation.

d. The results of the above point can then be packaged as lessons for future training and innovation support across all ASARECA programs.

e. The challenges in the suggested follow-up support would be in time (for the trainer) and the method (distant communication or site visits) and resources (who will fund? – ASARECA or individual program cases (from their allocations?).

1. Background and workshop objectives

The Knowledge Management & Up-scaling Program (KMUS) of the Association for Strengthening Agricultural Research in Eastern and Central Africa (ASARECA) made a call in November 2010 to train projects related to the AfDB-funded 'Dissemination of New Agricultural Technologies in Africa (DONATA) program on Innovation Systems. The aim was to guide the programs' staff and partners in understanding Agricultural Innovation Systems (AIS) and its application through its Innovation Platforms for Technologies in Agriculture (IPTAs). We (the International Livestock Research Institute (ILRI)) responded by organizing a short term training for DONATA.

The aim of the training was to support DONATA's two projects' dissemination and adoption of proven agricultural technologies in Africa. The projects are:

(i) *Transfer and dissemination of proven and emerging technologies in orange-fleshed sweet potatoes (OFSP)* and
(ii) *Transfer and dissemination of proven and emerging technologies in quality protein maize (QPM)*.

The objective of the course was therefore to enhance the participants' skills and competencies in AIS so that they could facilitate appropriate functioning of the innovation platforms. The training was conducted through two phases (sessions in March and in June, 2011) with an application period between the two phases.

2. The training process

In both workshop sessions the training was attended by 40 – 50 participants of OFSP and QPM researchers and partners from the countries where they are operating, namely the Democratic Republic of Congo (DRC), Ethiopia, Kenya, Rwanda, Tanzania and Uganda. The complete list of participants is given in Appendix 6.1.

During the training, the participants were introduced to the Monitoring and Evaluation Framework adopted for DONATA that would be used to follow and assess the project's performance. This was led by a team from Promotion of Science and Technology for Agricultural Development in Africa (PSTAD; Dr Barry Pound and Dr Esther Posthumus).

The training was implemented using a combination of plenary presentations and discussions (plenary and group) of concepts and project case examples where actual application of innovation system

concepts was explored. A folder with the trainer's and participants' presentations has been shared with all participants through a Dropbox™ link. A comprehensive reference for further reading and support is provided in Chapter 6. All the presentations, the workshop group write ups and listed reference materials are provided in a CD accompanying this report.

Figure 2. Participants used both group discussions and presentations to share information and experiences

3. Phase One Training Session

As stated earlier the main objective was therefore to train the workshop participants in agricultural innovation systems and enhance their skills and competencies to facilitate appropriate functioning of the IPTAs as innovation platforms.

3.1 Objectives of Phase One Training Workshop

Specific objectives of this session were:

1. To present and discuss the theory and principles of agricultural innovation systems (AIS) and contribute to developing models for putting AIS into practice
2. To identify actual and potential constraints to the effective operation of knowledge flow and innovation platform
3. To learn and develop leadership, coordination and communication systems for the platforms
4. To identify interdisciplinary approaches and methods for up-scaling technologies in the existing platforms (or any that may have to be developed during the workshop)
5. To present and discuss how activities will be developed and implemented, resource mobilization, as well as …
6. … To develop monitoring and evaluation tools for the platforms as innovation systems, including outcome mapping

3.2 Training Content

The content for this training session was presented over the 5-day table as follows:

Day One Objective:

To provide background to the training (why) and the AIS and VCA frameworks (evolution of R & D paradigms leading to their current acceptance and application)

Topics presented:

- Evolution of paradigms used to implement agricultural R & D. Linking IAR4D to AIS and VCA.
- The definitions of Innovation and Innovation Systems. The essentials of AIS.
- Value Chains as Innovation Systems serving a particular objective (linking production to marketing)
- Innovation Systems that are not Value Chains – case example analysis

Highlights

Factors that drive the evolution of paradigms that influence the structure and operations of Agricultural R & D programs include development policies and institutional contexts, structure and authorities of governments, the global economy, the entry and roles of "third parties" and eased cross-sectoral linkages. This has changed how agricultural research and extension systems operate, especially the organizational and management structures, field operations, and relationships with other sectors.

Innovation has been defined in various ways. In a broad sense, it is the process of creating and putting into use combinations of knowledge from many different sources or the use of new ideas, technologies or ways of doing things. Innovations should essentially have economic significance; the production and application of new knowledge and/or new combination of existing knowledge for economic benefit.

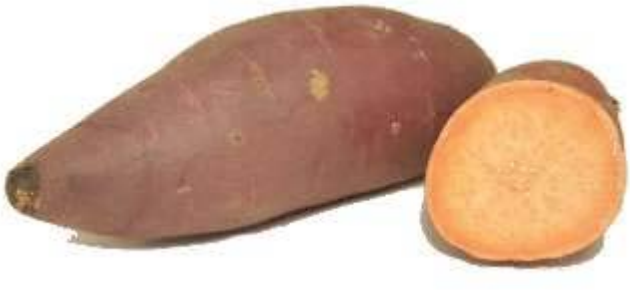
Why do we need to innovate? Investments in R&D, extension and education remain important, BUT today's challenges and rapidly changing contexts require a more flexible approach that fits into changing conditions and enables all related actors to generate, use and apply knowledge in evolving contexts. Effective innovation is when old and new knowledge is generated, shared and applied during the interactions by the different entities (individuals, organizations, institutions).

This leads to the definition of an innovation system: a collection of related elements that must function in concert to continually improve performance. An innovation system will contain feedback loops crucial to the system behaviour and which permits the system to function in a self-managed, self-sustained way and inform on what needs to be improved upon.

There are three key elements of an Innovation System. They include the individuals and organizations involved in generating, diffusing, adapting and using new knowledge; an interactive learning that occurs when the organizations engage in these processes and the way this leads to new products and processes (innovation); and finally the institutional relationships (rules, norms and conventions, both formal and informal) that govern how these interactions and processes take place.

Using an innovation systems perspective (ISP) one can examine knowledge generation and its use to recognize an innovation system. ISP looks at not only an understanding of how individual institutions (firms, research institutes, universities etc.) perform in isolation, but also how they interact with each other as elements of a collective system, and how that interaction positively and negatively affects the system's objectives and goals.

Issues, Questions arising



- When developing Vision and Objective statements, where and how do you use the term and concept of 'Innovation'? Can one use innovation in a vision statement?
- Response: The vision is supposed to be the result of working through innovative ways. Unless one indicates that the stakeholders will continually pursue creative ways of managing emerging constraints and opportunities.
- An example is when you link project and pilot innovation systems to a national innovation system and vice versa.

Day Two objective

To introduce participants to VC concepts and frameworks

Topics presented:

- Value Chain Development (VCD) approach
- Value Chain Analysis: defining the chain, actors (+ stakeholder analysis), opportunities, challenges, gaps and weaknesses
- Facilitating a VCD programme

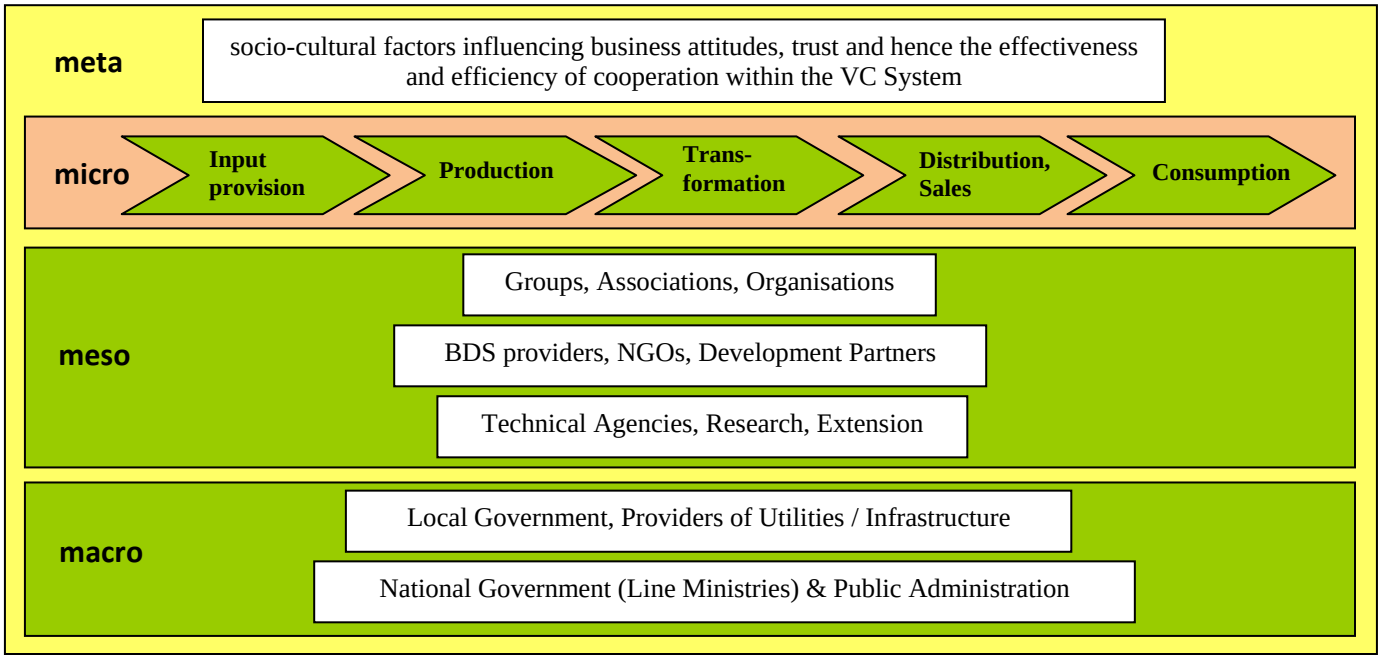
Highlights

Borrowing from the GTZ ValueLinks manual, presentations started with how the value chain concept has been adopted to address the participation by poor actors in production and marketing. There was further elaboration in why and how value chains are being promoted, forces contributing to this approach and opportunities to be exploited to make VCs pro-poor vehicles for supporting poverty alleviation.

The involvement of all actors in establishing and supporting effective value chains is an innovation system in its own right, albeit with a specific goal: the delivery of a product from use of raw materials for its production to final consumption in a market. A generic Value Chain is presented in Figure 4 demonstrates the positions and roles of actors in a generic value chain structure.

Innovation is then driven by how all related actors ensure optimum production and delivery to as wide a market held as captive as possible. All knowledge generation and its application to ensure that this occurs as effectively and efficiently as possible drives the innovation process.

Figure 3. Positions and roles of actors in a generic value chain structure



The objectives of Value Chain Development approaches are to make markets efficient by overcoming fragmented relations, improve access to services, information and inputs. Value chain development also aims at balancing asymmetric distribution of information and power to support the development of trust among Value Chain stakeholders and improving competitiveness.

From the DONATA platforms point of view Value Chains will help to support the dissemination of knowledge and technologies through the roles of system actors and their relationships. The Platforms can use the VCs to build a joint vision of the future and upgrading strategies.

Issues, Questions arising

- Is the involvement of men in value chains initially intended for women threaten balanced gender benefits?
    - Consensus response: Proper system analysis should include gender involvement and returns and impacts of any innovation intervention on the gender involvement. In that way, if an evolving innovation system is analyzed to assess impacts on gender engagement and what should be done to address any imbalances.

Day Three Objective

To show how IS and VC arrangements are set up and managed as R & D programs. This was accompanied by leadership and management roles the participants were expected to apply

Topics presented:

- Some leadership roles for establishing, managing and maintaining an AIS (platform) or Value Chain (VC)
  - System definition
  - Visioning and Strategy development
  - Facilitation and Coordination
  - Mediation and conflict-resolution
  - Communication to promote the System (or VC)

Highlights

To establish, support or strengthen the functioning of VCs, the facilitators (in this case DONATA's IPTAs) should demonstrate leadership in coordination, supporting or engaging relevant actors in new business relations, and promote/ organizing VC evolution.

Quantification is vital, because it enables one to see the extent of stakeholder engagement and impacts of system or VC management on production, distribution and net returns.

Communication entails adequate data collection and analysis for presentation. This means packaging the innovation process and results in diverse forms and formats that appeal to different stakeholders to promote the system internally and externally. Case examples to demonstrate success with innovation processes should be used.

Coordination is an important leadership function in innovation systems. It entails knowledge of and effective serving of demand and supply points. For example effective coordination ensures the supply of seed and fertilizer when most needed, the harvesting and delivery of the right quantity and quality of produce from one actor to another.

In summary, leadership in innovation system or platform covers the following functions:

- Communicating the System's vision and strategy
- Identifying missing capacities and gaps followed by establishing, maintaining and managing stakeholder links and mutually beneficial relationships
- Sharing innovation cases internally to entice more committed participation and externally to entice and invite support

- Conflict and resolution
- Developing succession strategies and plans beyond any external support

Points of discussion

- On stakeholder engagement
  - The aim is to have the right combination of partners relating with each other for well-managed mutual benefit.
  - Efforts should be made to bring partners on board and how to engage them long enough to achieve the system's goal.
  - Note that AIS are not always for farmers but to serve the interests of all stakeholders involved.

- Expansion to IPTA pilot activities to other sites, communities and provinces is a positive spill-over that should be supported by project teams.

- Farmers are sometimes members of credit institutions but these institutions are often not exposed to the other chain or network interactions so that they appreciate their role and ultimate impact on system performance

Day Four Objective

To introduce participants to M & E approaches that can be used to follow and report on progress while developing lessons for subsequent adjustments or for sharing. How to package Innovation System case stories

Topics presented:

- PSTAD presentation of DONATA's M & E Strategy, log frame indicators and data sources
- Brief discussion on Outcome Mapping

Highlights

The presentation on the strategy drawn by PSATD[1] for DONATA was made by Dr Barry Pound on behalf of a consultant team from the Regional Agricultural Information and Learning System of the Natural Resources Institute. The team's terms of reference included

- Developing framework for M&E of implementation and outcomes
- Monitoring and assessing:
  - project implementation

[1] PSTAD = Promotion of Science and Technology for Agricultural Development in Africa

- involvement of NARS actors
- the effectiveness and efficiency of use of resources

- Conducting an outcome and where possible, impact evaluation of the project
  - And to provide technical backstopping for M&E implementation

M & E contextual challenges were presented, including, the varied levels of application, the inadequacy of data and the need to build on what has been started. The team will complete DONATA's log-frame (outputs, indicators and targets) for presentation to program teams to discuss and agree on appropriate implementation.

Introduction to Outcome Mapping

The participants were introduced to Outcome Mapping – one of the approaches that could be used to track behavioural and social progress. It is a methodology to project planning, monitoring and evaluation that focuses on behavioral and social changes supported by projects; changes which are meant to influence the eventual development of desired impacts.

The project's intentions are explained (in form of vision and mission) and the outcomes to be observed in individuals, groups, institutions or organizations (boundary partners) it can support to achieve the intention. Outcome mapping enables the extraction of progressive results (outcomes) immediately they start to unfold. Secondly, outcome mapping provides a space for continual learning and change so that meaningful progress is made. A framework that integrates both LFA and OM (Figure 5) was presented so that the Platforms could use as they found appropriate.

Figure 4. A framework that integrates Log-frame |Analysis and Outcome Mapping

OM Vision, LFA/RBM Goal	**Verifiable indicators:**	**Means of verification:**	**Assumptions, Risks:**	
Narrative: ……. …….	…… ……	…… ……	…… ……	
LFA/RBM Purpose (Why) **Outcomes**[2]	Verifiable indicators:	Means of verification:	Assumptions, Risks:	
Narrative: ……. …….	…… ……	…… ……	…… ……	
Boundary Partners, BPs (Who)	**BP One: ……**	**BP Two: ……**	**BP Three: ……**	
BPs' Outcome Challenge[3] LFA Intermediate outcomes[4]	…… ……	…… ……	…… ……	External and un-foreseen BP- and project – related developments affecting BP progress and program strategies
BPs' Progress markers (progress indicators)	…… …… …… ……	…… …… …… ……	…… …… …… ……	
LFA/RBM Outputs (What) **OUTPUTS**	…… ……	…… ……	…… ……	
LFA Activities/OM Strategies (How … … the project will support the BPs *(use matrix to determine intervention)*	…… …… …… …… …… ……	…… …… …… …… …… ……	…… …… …… …… …… ……	

- **<u>Issues, Questions arising</u>**
  - None.

[2] LFA/RBM outcomes are quantitative measures, e.g. yields increased by 50%, or diseases reduced by 25%
[3] OM Outcome challenges are what various stakeholders (BPs) will be doing to support the quantified LFA/RBM outcome, e.g. input suppliers giving credit to farmers or veterinary authorities instituting vaccination regimes
[4] The BPs outcome challenges are sometimes used to develop the project's Intermediate Outcomes

Day Five Objective

- To re-cap the lessons covered in the previous 4 days of training
- To prepare the participants for the 3-month practice and what they were to present in the refresher session following the practical session. This was accompanied by in-house discussions on resulting adjustments in work-plans and budget matters

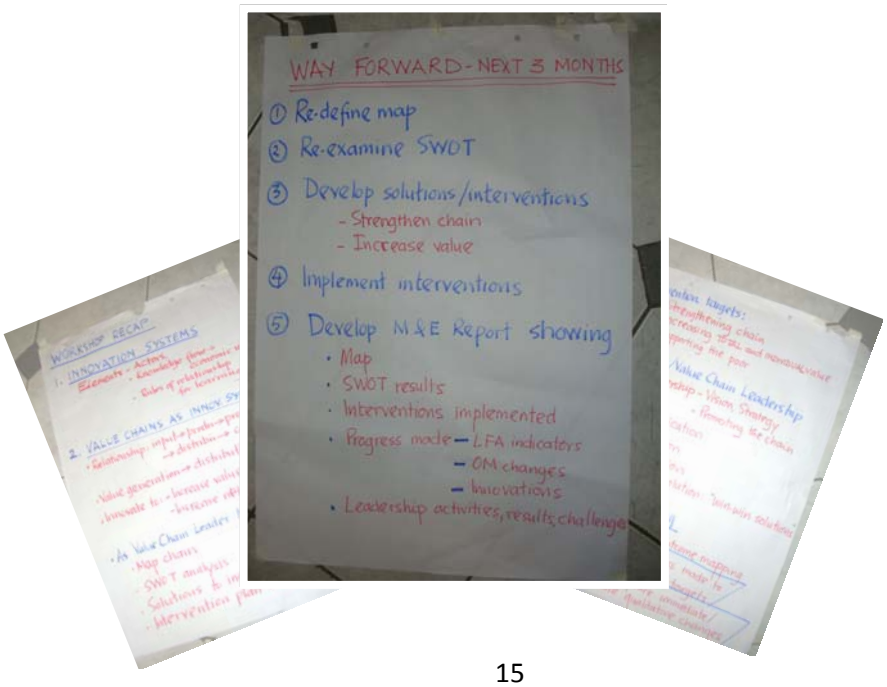
Highlights

The participating teams were asked to implement the Innovation and Value Chain Systems concepts taught during this first phase and then report back during the second training session that was held 3 months afterwards (in June, 2011).

The teams were to provide the following experiences and results (Figure 6):

1. Develop the systems that the Platforms were supporting (maps of actors and relationships)
2. Carry out system and actor SWOTS to identify entry points to strengthen and upgrade them
3. Develop suitable interventions to utilize information coming from the SWOT analysis.
4. Develop and M & E report for presentation, showing:
    a. The system map – actors and relationships
    b. SWOT results
    c. Interventions undertaken to manage the SWOTs
    d. Progress made using the integrated OM and LFA framework

Figure 5. The three-month assignment for the teams



4. Phase Two Training Session

4.1 Objectives of the session

The broad objective was still to train participants in agricultural innovation systems to enhance their skills and competencies so that they can facilitate appropriate functioning of the innovation platforms; and enable participants to reach consensus on monitoring of IPTA processes and capturing their contribution to up-scaling technologies.

Specific objectives of this second session were:

1. To present and discuss experiences of applying innovation system and value chain frameworks in specific projects
2. To identify gaps and challenges on the application of AIS and structure the week's program to enhance participants' skills.
3. To go in-depth on M & E processes that can be used to apply and learn from AIS and VCA development

4.2 Training Content

The content for this training session was presented over the 5-day table as follows:

Day One Objective

- Introductions, setting the scene, and re-capping Phase ONE lessons, assignments

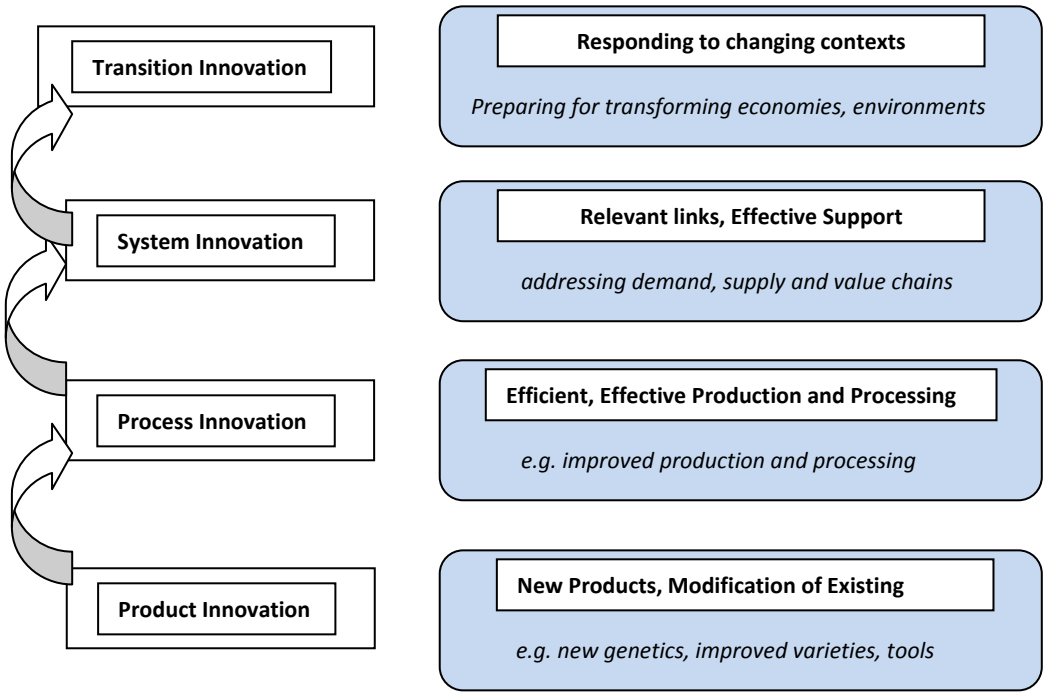
Topics presented:

- Re-capping Phase One training + Levels of innovation (product/technology innovation; process innovation; system innovation; transition innovation)[1]
- Presentation of IPTA case experiences

Highlights

In addition to what was presented in the first training the following aspect of Innovation systems was made. Innovation ideally takes place at four hierarchies – product, process, system and transition innovation, as shown in Figure 1.

Figure 6. Categories of innovation presented as Innovation Hierarchies



Participants were given examples of how past agricultural projects and stakeholders had innovated along the four levels with earlier emphasis being on product and process innovation and more recent developments focussing on system and transition innovation. This was the reason why AIS and value chain analysis were emerging as popular frameworks for supporting agricultural R & D.

Issues, Discussion Points

a) The difference between 'innovation' and 'invention' in agriculture

An 'invention' is a new and original technological product that has not existed before. An 'innovation' is a new and original way of using information and technology. Thus an 'invention' is a part of innovation with specific reference to a tangible product.

b) When 'an agricultural innovation system' it's not a value chain

There are instances when agricultural innovation systems are NOT value chains. These are systems of actors linked to exchange information that may not necessarily or specifically serve a value chain objective. For example a an ecosystem management forum brings together farmers, extension agents and administrators to ensure there is adequate production to serve individual households and local needs without affecting environmental integrity. The National Agricultural Innovation System is a collaborative arrangement bringing together several institutions to address technological, managerial, organizational objectives of realizing a country's agricultural potential. In such an innovation system

information is generated, exchanged and used to serve various purposes and value chain relationships are only found within as one of the functions.

c) When a value chain that is not an innovation system

This is observed when there is a value chain actor relationship but there are no efforts to generate exchange and use information to make the system more efficient and effective.

d) Multi-stakeholder platforms as innovation systems

Multi-stakeholder platforms can be innovation systems since such systems conceptually link actors who generate, share and use information. The set of actors engage to share their diverse interests and needs through multi-stakeholder forums or platforms. Regulated interactions (e.g. through planned meetings) is a multi-stakeholder platform that easily offers itself to the development and use of an innovation system.

Day Two Objective

- The objective was to hear from the project teams their application experiences and progress results in order to identify gaps and weaknesses in AIS and VCA thinking and application.

Topics presented:

- Presentation of IPTA case experiences and addressing
  - The adequacy of system analysis (system and actor SWOTS) applied to identify gaps, challenges and opportunities
  - Visioning of goals that the teams sought to support
  - The adequacy of the implementation strategies that were applied to achieve the goals
  - Developing innovation case studies and reports

System Analysis entailed describing the system (either as an AIS or VC), by identifying the actors and/or other stakeholders, and quantifying – either the entire system or sections where this is possible. In SWOT analysis, the project should consider both the System's as we all each individual partner's related features.

System innovation will thus entail the introduction of new actors or new roles and capacities and facilitation that results in more effective relationships. As an example, the introduction of a credit supplier ADEGOR to the DRC QPM project case should have impacted on production costs and net returns. If the quantification had been done (data collection and analysis) the team should be able to demonstrate the effect of this system innovation. Another example is the introduction of packaging and

labeling of seed for input suppliers and farmers. However, there was no actor brought in to provide seed quality control. The Uganda radio communication innovation presents an example where schools start using agriculture as part of their engagement in the innovation platforms. Students begin to view as a productive pastime rather than a punishment. Participants were challenged to see this is a way of changing community mindsets around agriculture.

4.3 The DONATA Innovation Platforms

Note that the main objective of the DONATA QPM project was to enhance the uptake and adoption of orange-fleshed sweet potatoes (OFSP) and proven quality protein (QPM) technologies using an innovative framework, i.e. the innovation platforms for technology adoption (IPTA).

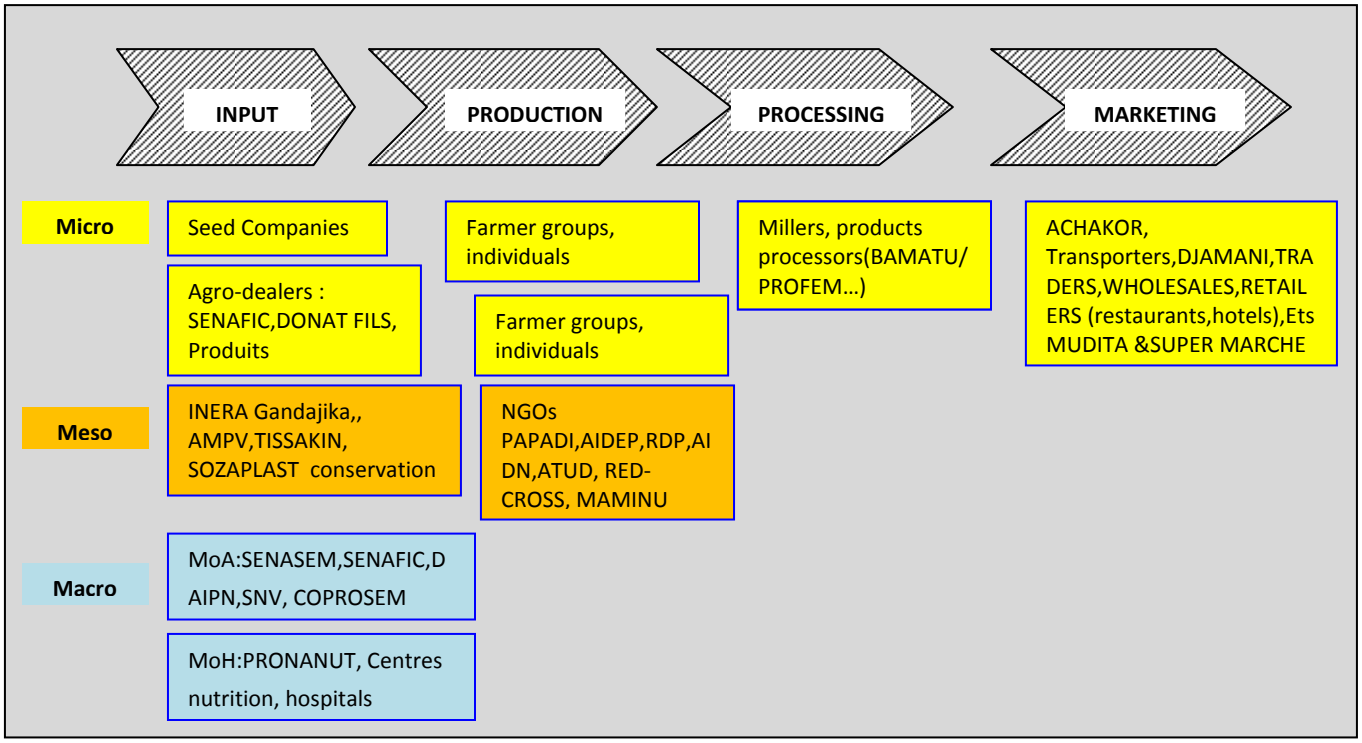
There were nine cases as shown in Table 1 below:

Table 1. Cases presented at the training workshop

Country	Quality Protein maize (QPM)	Orange-fleshed sweet potatoes (OFSP)
Democratic Republic of Congo (DRC)	√	
Kenya	√	√
Ethiopia		√
Rwanda		√
Tanzania	√	√
Uganda	√	√

1. DRC QPM Platform

The System

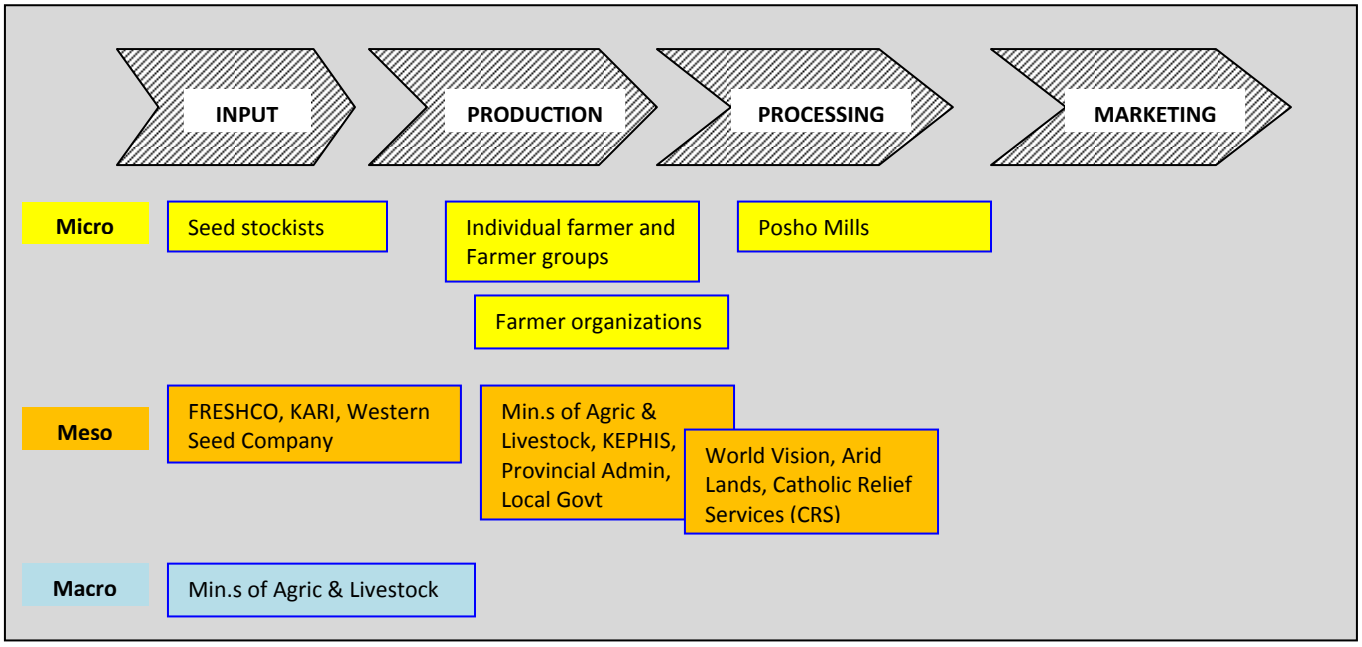


Some of the SWOT Results and Innovation Responses (Current and Suggested)

- Opportunity: QPM strong market demand from QPM benefits evidence in malnutrition
  - Innovation: Exploit big demand by increase production using *Mucuna* in rotation where low soil fertility is low.
  - Increase production in 'distant' (remote) locations by mobilizing farmers as production groups ("paysannats"). In this case fields should be prepared mechanically with CARG support) to combat climate change.
  - If production is high, hire unused COTONIERE facilities to handle the large quantities produced
- Weakness: The QPM varieties have conservation problems (Early QPM seed/grain stored insects infestation)
  - Innovation: Postharvest handling /processing should be done immediately to avoid pest infestation OR to use metal silos for more effective conservation
- Weakness: Inadequate capital and/or engagement of capital providers in the system.
  - Innovation: Bring on board (into the Platform) ADEKOR to provide credit for purchasing appropriate packing materials and fertilizers from TISSAKIN & PLASTICA companies which have specific features and code to avoid imitation.

2. Kenya QPM Platform

The System



Strengths:

Good platform governance using CBOs

Very experienced farmers

Opportunities:

- High demand
- The presence and support of other projects and program, creating synergy
- The presence of Karatina – the largest open air food market in the region
- The development of metal silos that can preserve the grain for longer period

Weakness:

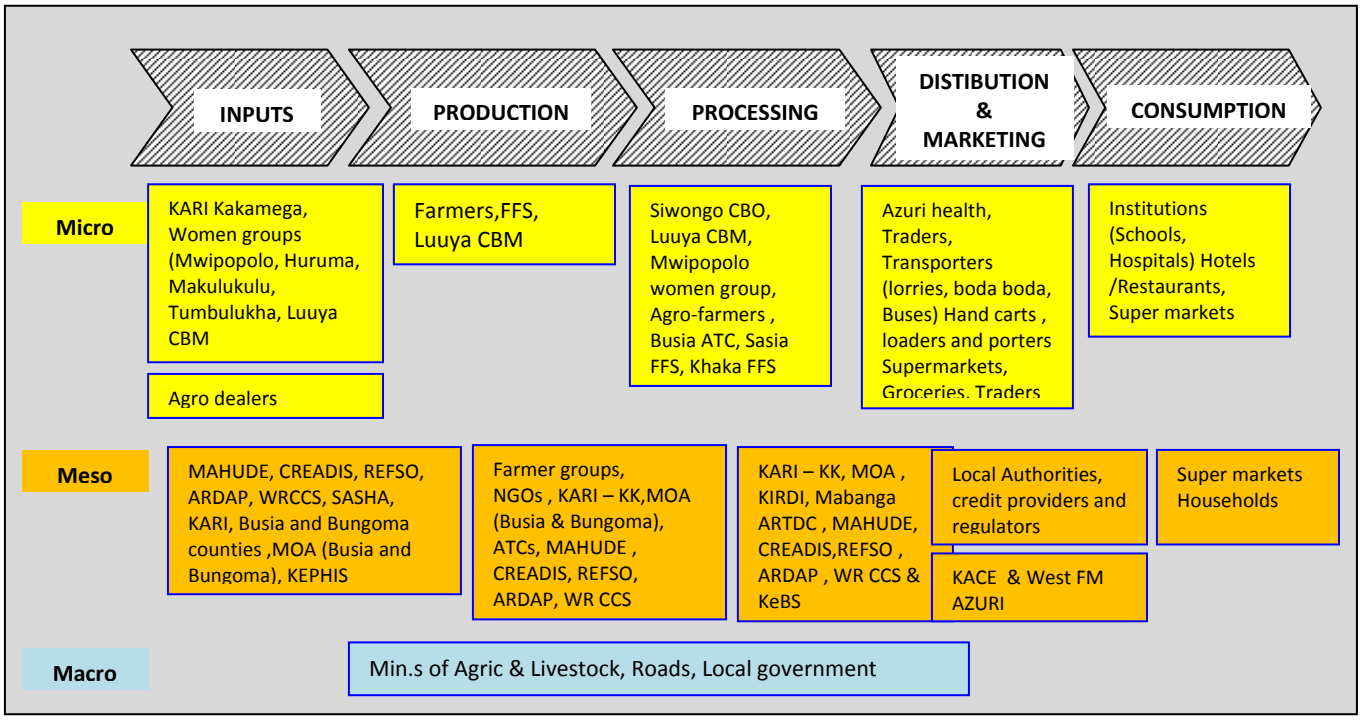
- Inadequate seed production by the seed companies
- Small land sizes
- Breeding – very few varieties of QPM
- Quality of QPM after re-cycling (planting own seed?)

Threat:

- Perception of QPM as a GMO
- The presence of fake seed
- Climate change affecting production
- Pests

3. Kenya OFSP Platform

<u>The System, value chain mapped</u>



<u>Some of the SWOT Results and Innovation Responses (current and suggested)</u>

Strengths: Use expertise on OFSB is available and the platform's technology support facilities – land, screen houses, TC lab. …

Weakness: OFSP products not meeting KEBs standards with limited control on quality of planting material

Innovation:

Establish efficient clean seed conservation structure (e.g. using horticultural fleece nets)

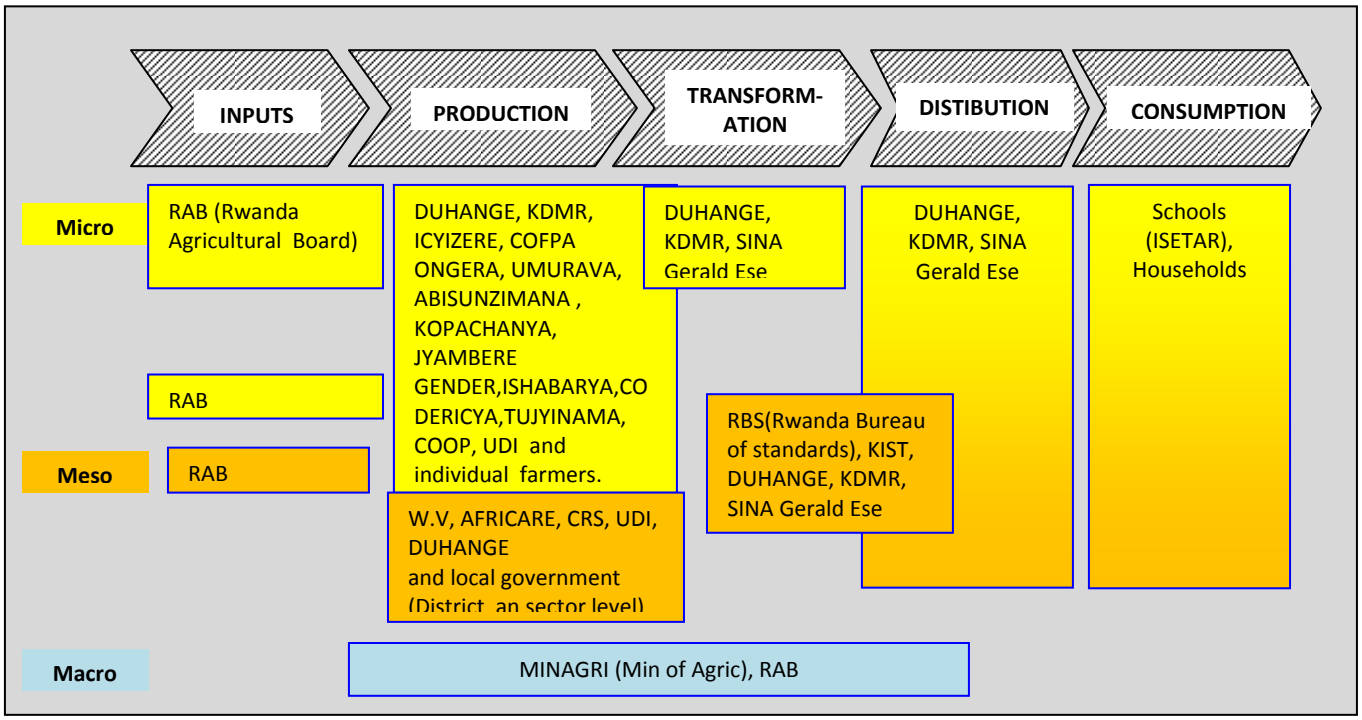
Develop systems for quality control of planting material & products

Opportunity: For export markets

Innovation: Have well structured commercial villages to take care of demand from potential export markets

4. Rwanda OFSP Platform

The System, value chain mapped



Some of the SWOT Results and Innovation Responses (current and suggested)

Strengths:

Local government involved

Availability of equipments (slicer, chipper, oven and peelers)

Weaknesses:

Insufficient of cleaned materials

Innovation:

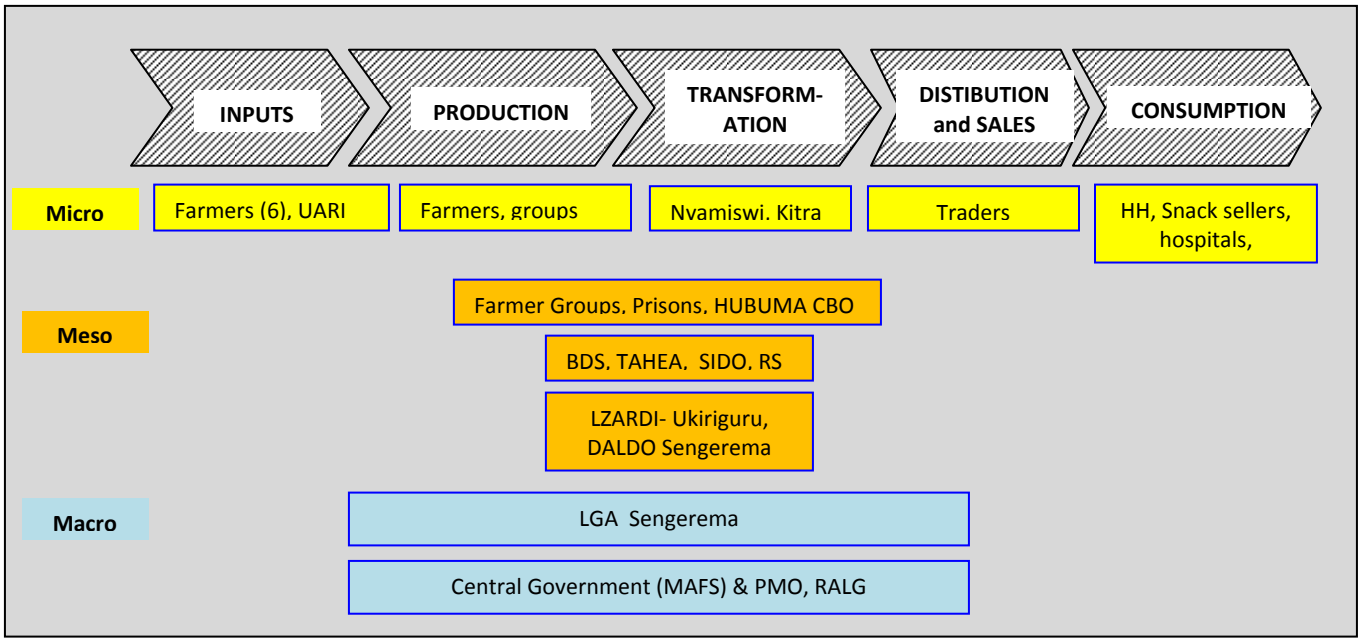
Tissue culture of OFSP material at RAB level and

Use of rapid multiplication in order to have sufficient materials at partners level

Initiate of model farmers and increase farmer field schools

5. Tanzania OFSP Platform

The System, value chain mapped



Opportunities:

- Support from LGA, LZARDI, NGOs- TAHEA, BDS, Donor
- Availability of extension staff both from Gvt & NGOs
- Sweet potato can do better with shortage of rains
- Group approach for learning and planning
- Availability of land to grow OFSP
- Proximity to the Lake shores for vines pdn
- Demand (VAD, schools, snack sellers)

Threats:

- Diseases (SP virus)
- Competition with other food materials e.g. maize, cassava
- Small number of extension staff at ward and village levels
- Inadequate funds to fully support the program
- Recurrent drought

Implementation Plans:

- Follow ups and farm visits
- Meetings with farmer groups
- Publications prepared (leaflets, posters)
- Reporting and feedback
- Monitoring and reporting on project activities on quarterly basis

Radio programs (Radio Sengerama)

Acquire solar drier

Support to partners:

Farmers plant vines near water sources i.e. Lake shores, dams

Use of group approach to disseminate technologies

Educate and ensure presence of demo plots (Farmers, Extension officers)

Use revolving funds to generate capital (SILC, SACCAS, SACCOS)

Strengthening OFSP processing plant

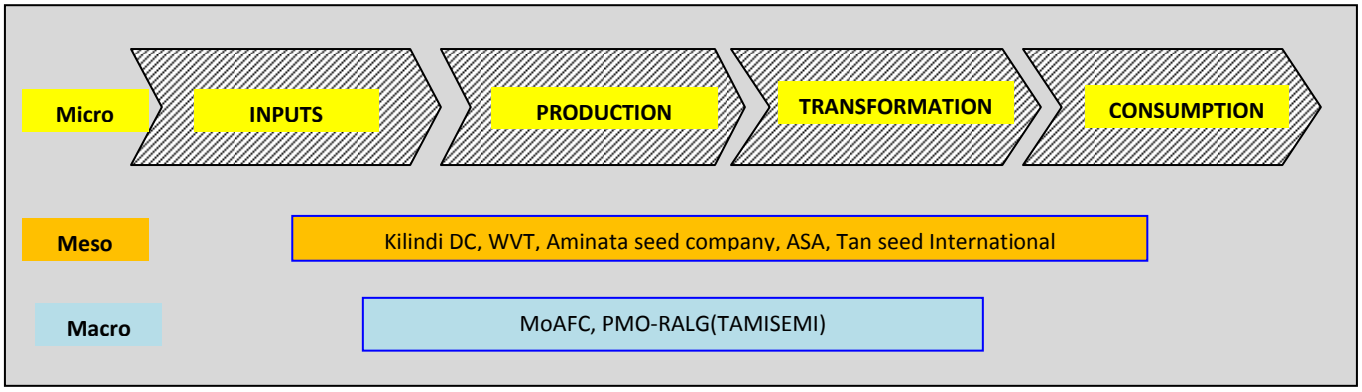
Training on post-harvest technologies (F2F),

Distribution of leaflets & posters

Maintenance of water pumps, fuel supply

6. Tanzania QPM Platform

The System, value chain mapped



Strength	Opportunities	Weakness	Threat
Good and enough land Wide range of delicious product, Attractive name (QPM), and the product is known Stress resistance Accepted by key stakeholders Quality QPM is competitive in many aspects (products made from wheat flour are expensive) and Ugali is staple (in most cases "no food means no maize grain") SGR Strategic Grain Reserve	Scope of advertising Scope of investment more (land) Scope of internal regulation/organization Could expand range of products (porridge-bambiko;ndwadwa, Ugali –gogogo/gogomola; bundebunde (corn starch, Corn bread-kimanda, a Vegetable) Enough land for demo plots	Seed disbursement (Late) Lack of advertisement Lack of Agro dealer Lack of demo plots Lack of committed leaders Lack of strong regulations Lack of commitment among key actors	Widespread of new competition Uncertain government (LGA-Kilindi DC) environment Lack of transport and other working facilities Lack of fund, No office Climatic change Roads are impassable during rainy season Internet connection difficulties.

Innovation implementation plans

Regular meetings to exchange ideas and technology

Communication through sms and voice calls

Publications

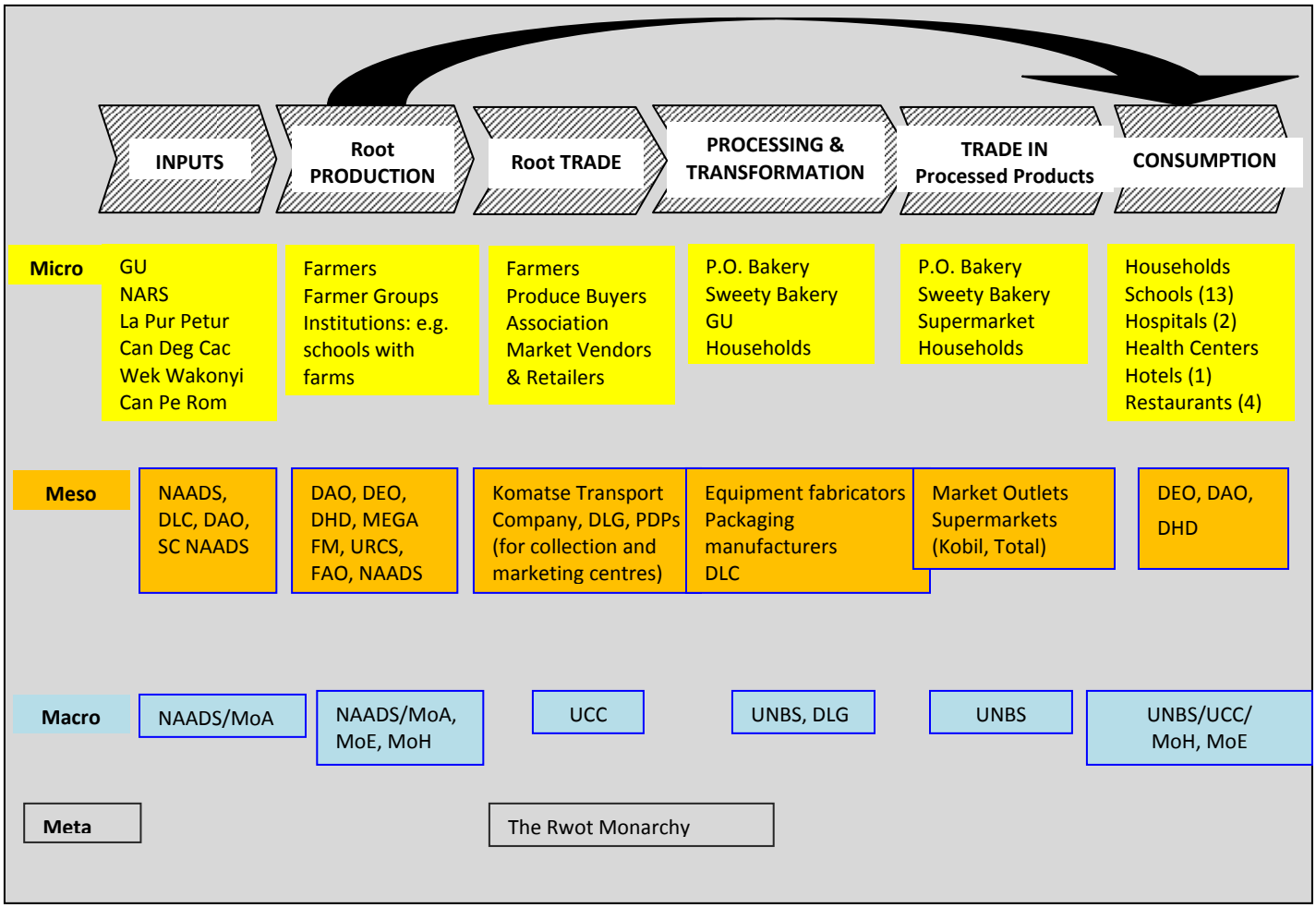
Farm visits for advice, knowledge/technology exchange and comparison

QPM actors forum

Farmers join national farmers' network-MVIWATA

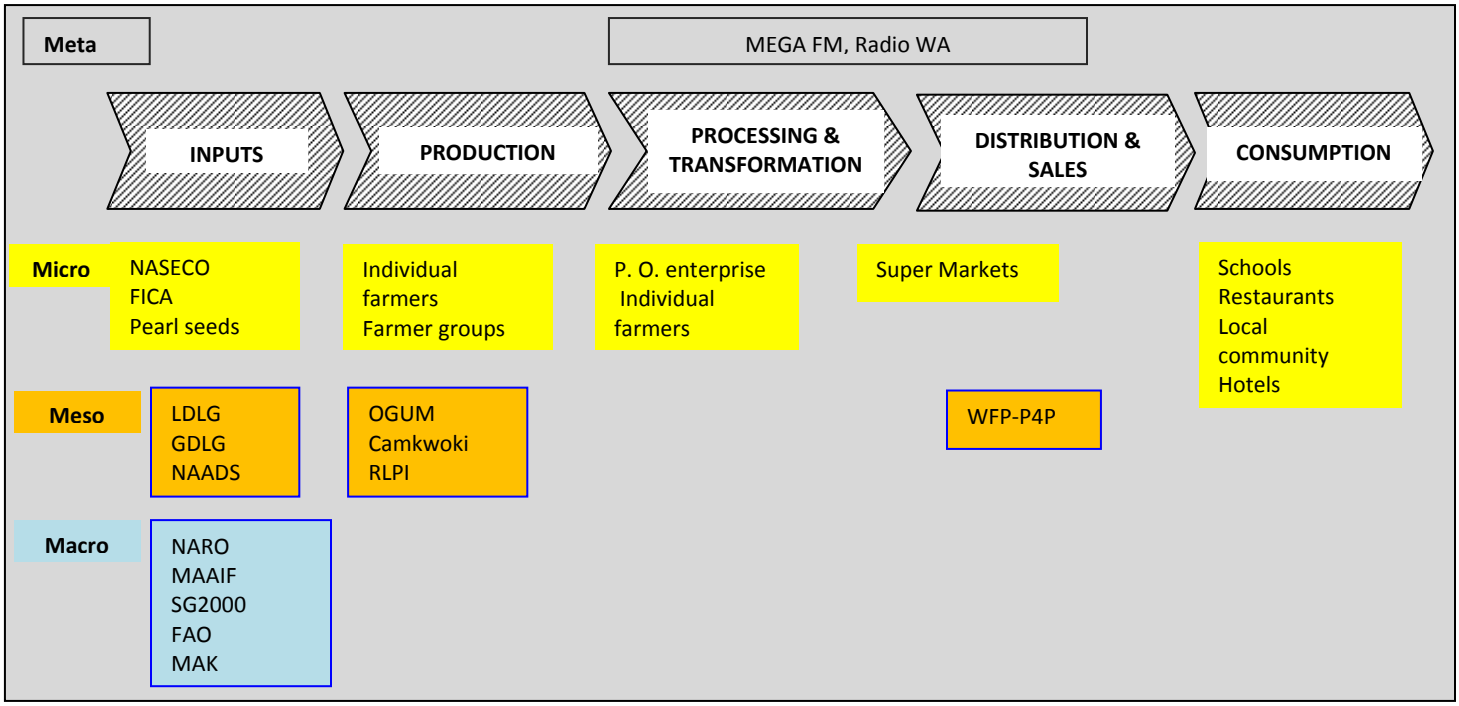
7. Uganda OFSP Platform

The System, value chain mapped



8. Uganda QPM Platform

The System, value chain mapped



Strengths	Opportunities	Weaknesses	Threats
At least areas along the value chain have been addressed Existence of proper seed systems	Room for improvement More seed companies	Microfinance institution involvement Agro dealers Market survey Cost benefit analysis Storage Value addition	Farmer exploitation Quality of products

Take home/next step Tasks

Redefine/Describe the system

- Identify the actors
- Define relationship (contracts/agreements) between the actors
- Roles i.e. who is the producer-volumes, revenue, net values (cost of production, revenue

SWOT-Constraint analysis/opportunity analysis

Areas to improve on the objectives

- Which actors are going to participate

Implementation plan

M&E reports

Day Three Objective

- Objective is to revisit the strategies and activities the Project teams undertook to support the innovation platform initiatives.

Topics presented:

- The importance of appropriate system development and description, especially quantification.
- Discussions were then held on how to present innovation progress as case studies
- The project teams were asked to develop innovation cases experienced in their projects

Highlights

System definition, i.e. re-describing the innovation and value chain system using quantified parameters. This was followed by Group work which developed innovation case studies using the topic sequence given below.

Writing or presenting an innovation case report

1. Background/Context

This is a description of the system and being comprehensive by identifying and quantifying actors and products.

2. Challenge

This usually coming from system and/or individual actor SWOT analysis. A strength or opportunity to be exploited or weakness or threat to be managed to strengthen the individual or up-grade the system performance.

3. Innovation /Interventions

This refers to the particular support that the platform undertook to address the challenge. Teams could use the four levels of innovation (Figure 7) to identify where and which intervention the platform undertook.

4. Result

This is the result of the intervention: progress made using both qualitative and quantitative perspectives

- Qualitative progress would include:
    - Socio-cultural changes in support of the platform objectives; attitudes and relationships

- National, local and/or institutional policies, regulations and ways of working in support of platform objectives

- Quantitative
  - Adoption rates (proportions of communities changing (e.g. farmers, processors, traders, etc.) areas of crop land, yields and volumes of products produced and delivered, etc.
  - Effects on production and transaction costs, revenues and net returns
  - Effects on household nutrition and health

5. Lessons learnt and recommendation for subsequent strategy and plans
  - What the team has learn about the process that can be improved upon in subsequent plans.
  - What team would like to share with others address similar contexts and challenges

Issues, Questions arising

- Project IPTAs should see development of similar structures at national or regional level as a way of
  - Addressing sustainability (beyond the project)
  - Expanding platform benefits to non-project sites and communities.

Day Four Objective

- Objective is to revisit M & E plans and activities used to analyze and report on progress and learning.
-

Topics presented:

- Presentation of DONATA's M & E Strategy, log frame indicators and data sources
- Discussions on the adequacy of the monitoring indicators and what needs to be done to improve their utilization

Highlights

On Indicator 2.1.1: Number of farmers and other stakeholders having access to proven technologies

- Role of focal person and Monitoring Group in coordinating recruitment and engagement with the IPTAs

On Indicator 2.1.2. IPTAs established and operating by the end of the project.

- What exactly was meant by an IPTA
  - The definition or description has budgetary indications
  - It differed by what is meant by ASARECA, CORAF, SADC

- Action point: Barry, Zubeda and Margaret to consult current IPTA platforms, the other programs (ASARECA, CORAF, SADC) and FAR/DONATA and agree on a standard definition
    - Consider number of people in the IPTA
    - Geographical spread of the IPTA
    - Age, period of existence of the IPTA

Addition by Dr Kimenye: There has been debate about what an IPLA means or describes. A team from FARA, SARECA (DONATA) and NARS implementing the OFSP and QPM projects (Dr McEwan, Dr Zubeda and Dr Kimenye) have prepared a draft paper on regional perspectives of the IPTA institutional arrangements, processes and preliminary outcomes. At best, it appears as though there cannot be a definition that fits all platforms. The team developed some key elements that can be used to define an IPT. This is still work in progress and efforts will be made to refine the working definition at least in respect to DONATA ECA.

On Indicator 2.1.3. Functional multi-stakeholder partnerships established around IPTAs.

Several factors were discussed, including:

- Frequency of reporting from the IPTA as well as within itself: monthly is possible because it helps to capture emerging issues within short intervals
- Frequency of meetings and associated challenges of funding
- What should the rules of an IPTA be and what makes IPTAs functional:
    - Having a constitution - IPTA in Gulu has a constitution, that clearly states rules roles and guides the IPTA,
    - Rwanda IPTA has performance contracts, offices, meeting schedule, norms and rules for mutual understanding
- Sustainability: definition and related boundaries of IPTAs?
    - Sustainability implies an exit strategy for an external organizer and entails strategies to mobilize resources to enable the IPTAs to function.
    - Institutional mechanisms being used can sustain the IPTAs, e.g. having it housed by a local organization or institution.
    - Even sustainability should involve being innovative about institutional arrangements and resource mobilization
    - When farmers are empowered they can sustain themselves (Bakusekamaja women's group in Iganga district in Uganda have continued with their IPTA even without the support of NARO.

On Indicator 2.1.4. Productivity of targeted crops and technologies among participant and non participants

- Standardizing units for measuring produce

- For example, OFSP in Tanzania and Kenya is measured in 90-kg bags while in Uganda it is in 130-kg bas

- On reporting on quantity
  - How many or what qty was planted
  - What is the convenience unit/each geographical location?
  - Analysis of database prices. Is it applicable?
- Comments
  - There was need to re-adjust the targets
  - Confirming the baseline values
  - Re adjusting the % increase
  - Validate the current yields

On Indicator 2.1.5: Level of stakeholder satisfaction with the technologies and innovations

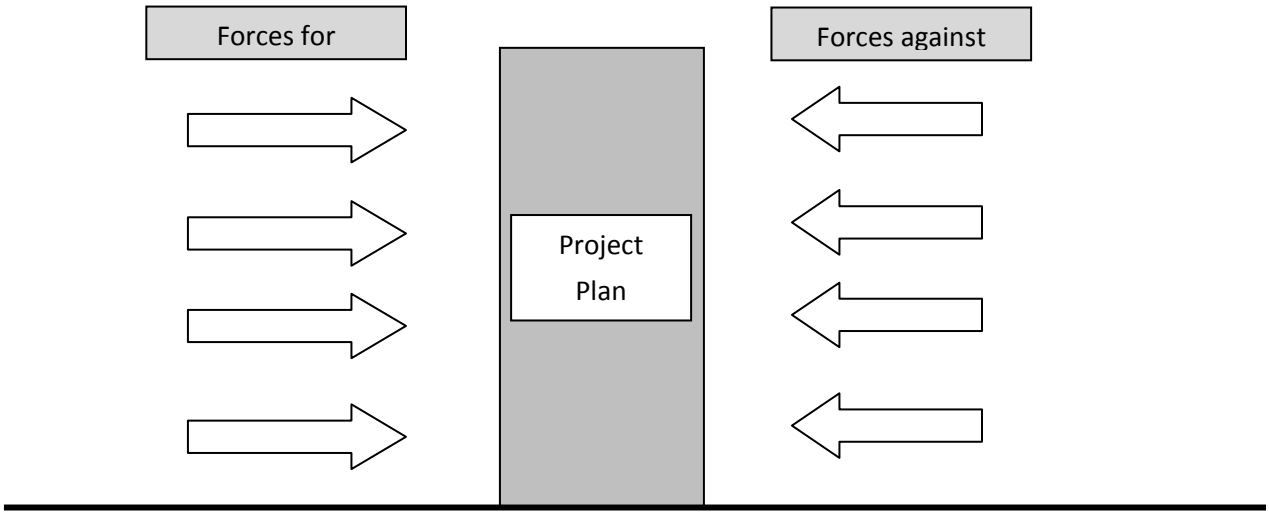
- What will be the unit of measurement? And how will it be assessed?
- How do the platforms measure levels of lifestyles satisfaction?

Issues, Questions arising

Participants wanted an explanation on the Participatory force-field analysis. It is a technique that analyses the 'forces for' and the 'forces against' a project's initiative in order to assess its viability and success. It is a specialized method of weighing pros and cons. By carrying out force field analysis one can arrange to strengthen the forces supporting a decision, and/or reduce the impact of opposition to it.

To carry out a force field analysis, one describe the plan or initiative for change then lists all forces for change in one column, and all forces against change in another column, as shown in Figure 8.

Figure 7. Framework for conducting Force-Field Analysis



Analyzing the strength of the 'forces for and 'forces against' the project's initiative should lead to adequate arrangements for managing them in order to more effectively achieve your objective. This analysis provides data for qualitative developments in a progressive report.

Day Four Objective

To evaluate the course and develop and refine plans for beyond the workshop

Topics

- Course evaluation
- Plans for practical application of course content

Highlights

The course evaluation details are given in the next chapter.

The teams spent the rest of the day working out how to integrate AIS and VC support activities in their work-plans and associated logistics.

5. Conclusion

An innovation system is a principle of operation rather than a tangible relationship. The principle of the system is how actors acquire and use knowledge and information to continually achieve their objectives. Value chain frameworks like the DONATA Platforms lend themselves well to an innovation system since they describe relationships among actors relying on each other for the flow of information and product for their function(s) and performance. An actor within the chain can use the information and product from his or her network to innovate and enjoy individually greater returns. For example a farmer using emerging market demands to take on a value addition function. Or (at the meso-level) a micro-finance company using the value chain relationships to develop a new credit scheme and capture a market for it. The chain can and should also operate as an entity where all members work together to improve the system's performance with the expectation that benefits will trickle down to each individual actor. An example of a whole system innovation is identification of or expansion into a better market that requires different coordination in production, transportation and processing of particular quantities and qualities of the chain's product.

The broad objective of DONATA – dissemination of the OFSP and QPM – follows a production and supply chain framework that is easily seen as a value chain. It became easy during the training to use the expected and existing value chains of the DONATA platforms to demonstrate what innovation is and how it can be applied. Participants could see the essential contribution of actor relationships in generating, sharing and using knowledge and information to support innovation at individual level as well as for the whole system to improve performance and benefits. However, the success of the Platform value chain as an entity depends on how the relationship structure is established and managed. Some of the Platforms (Kenya QPM, Uganda OFSP and QPM) were well defined and many of the actors know each other. They have regular forums where they share their different information and product needs leading to greater collaboration and creating opportunity for innovation. Others (Ethiopia OFSP) were barely formed and participants were still exploring the kind of form and relationship process their innovation platform should take. Across the board, participants recognized the absence or inadequate engagement with some crucial actors, especially at processing and marketing functions, as well as how to engage and get adequate meso-and macro-level; support. The training process dealt with the different levels of operation in the same sessions explaining the innovation principle while bringing in the need for build skills in network facilitation and coordination. Future course events might be required to in more depth on these facilitation, coordination and leadership skills.

Using the DONATA Platforms during the training may give the impression that value chains are the only innovation systems in existence. Unless the trainer is well prepared with clear and easy to demonstrate

examples – course participants may not get to understand how a non-value chain innovation system exists and works. Indeed a question was posed to show an example or how such a system would work. The case example used during the training was a natural resources program where ecosystem custodians (farmers, pastoralists) had interacted with distantly placed users (water companies in a city, tourism companies and tourists) in ways that allowed all communities involved to benefit. However, it was difficult to demonstrate the actual innovation processes and results of these examples. There is need to examine the functioning of such innovation systems and develop clear examples for future training.

In both innovation scenarios (value chain and non-value chain) developing lessons on how innovation takes place and the resulting effects is crucial. Participants appreciated the importance of detailed system description using both quantitative and qualitative parameters to enable them demonstrate and follow (as members and network or platform facilitators) the effects of any innovation and, hence, the value of the relationship. Reports before and during the training indicated that – apart from the production and supply of the OFSP and QPM products - innovation was already taking place in many other ways (ways of actor mobilization and the development of new networks, product value addition, new markets, creative dissemination or promotion campaigns) but there was inadequate documentation of the process and results. DONATA has a solid Monitoring and Evaluation strategy (led by PSTAD) that should enable participants to demonstrate these developments but the log frame indicators used appear limited to the OFSP and QPM technologies with much focus on production and distribution parameters. During the training participants were shown how to isolate and use case studies of individual, group, organization or institutional actors to demonstrate how innovation was taking place in the entire system and resulting benefits to the actors and the platform as a whole. More examples of such innovation processes and their results need to be developed used in the future training events.

Identifying and describing un-folding innovation requires comprehensive monitoring processes. This is because innovation processes can be casual and informal or a major undertaking involving resource mobilization, deliberate documentation of procedures and results. Monitoring skills for such processes may call for continued mentoring support beyond an initial one or two-week training event. This is especially so for actors new to the innovation thinking perspective. Both the DONATA Managing team and the participants appreciate this requirement and recommended greater trainer- interaction following the class course event. The idea is to provide a more hands-on, context related orientation in the innovation already taking place in the field so that participants can better support, record and share results of the process. This should start by better development of the systems (or platforms) the participants represent before and during the training followed by more directed case-support after the

training. A connected challenges would be for how long such support would have to continue and who would meet the costs of such support beyond the training.

In connection with that, it would be useful to train partners for each platform on the essence of innovation: what is innovation for each platform? What will be the innovation products? This is very important. Innovation is supposed to generate fresh and effective ways of achieving results. Actors going about the same way they have been doing things before or interacting in similar ways does not describe an innovation process. It would make lots of sense to try and probe the new and interesting approaches that actors – individually, in groups, or as a network – try new things. And the results of these new processes. The training should support how to identify and describe these innovations and their products.

Given these observations, the following recommendations are suggested for future trainings

a. Assuming a generic state of affairs and progress for all participants and their cases does not address what the innovation training is supposed to serve. While the introductory content covered in the Phase One training was very valuable, the next course should be designed to start developing the contexts and specific challenges each particular case presents or faces.
   i. Addition from Dr Kimenye: The mix of participants at varying levels of IP development and operational experience will provide a rich learning base that re-enforces learning between the advanced and the less so. The main challenge would be how to structure the sharing/group work to optimize on the learning and minimize on the experience gap challenge.
   ii. For the platforms that are already established a lot of progress was already taking place as a result of innovation but the participants were not well equipped in reporting the innovation development. There was plenty of voiced development but inadequate recording and reporting. This needs to be developed as a skill during the training.
   iii. Addition from Dr Kimenye: Reflection and documentation of the innovation processes requires a certain passion for it and obtaining the skills to do it. Most of the participants in the IPTA focus on implementation. It may take an external observer or facilitator to capture the innovation processes or induce the members to reflect and document the lessons. This can be done during the platforms' periodic reviews and planning events and the information incorporated in their progress reports.

b. When cases are presented by various platforms during training, there is hardly any time to explore the detailed make-up of each and unique features of their members that can be supported to develop innovation. Highlighting specific challenges for innovation platforms and innovation experiences at an early stage ensures all participants – who are already familiar with most R & D

approaches and requirements – use the training session to focus on what is more pertinent to their own cases.

c. It would then be easier to develop specific take-away assignments for the groups so that when they report back in the second training session, all presentations serve to boost better understanding on how innovation takes place at all stages of project development among all participants.

d. However, this would require effective representation of participants at the initial training and a well planned development of their cases prior and/or during the training. And it could present a course design challenge.

2. More after-training follow-up

a. In line with the above suggestion, the innovation cases presented require greater interaction with the trainer(s) following all training sessions (both the first and the second one). This is to support the understanding and application of the course content as per specific case context.

b. The follow-up also helps to extend the course objective, content and implementation plans to members of the innovation platforms who were not able to attend the training.

c. The follow-up will also serve an even bigger function: monitoring and evaluation of progress. While all the projects have capable M & E skills, follow up by the trainer would support development and use of adequate data, its analysis and reporting as a result of un-folding innovation.

d. The results of the above point can then be packaged as lessons for future training and innovation support across all ASARECA programs.

e. The challenges in the suggested follow-up support would be in time (for the trainer) and the method (distant communication or site visits) and resources (who will fund? – ASARECA or individual program cases (from their allocations?).

****

6. Workshop evaluation and recommendations

Evaluation was conducted by way a score chart (Figure 9), use of a questionnaire distributed at the end of first training session, and collection of comments at the end of the second training session.

The score chart and questionnaire covered four broad training areas:

1. Design, activities and timing of the training program
2. Course content coverage and clarity leading to understanding
3. Participation, i.e. individual engagement and sharing of experiences
4. Way forward, planning implementation beyond the training

Figure 8. Score chart showing the participants' assessment of various aspects of the course

Using the open scoring chart gave participants a chance to see how the whole class generally felt the course had been conducted. Points for the four aspects of the training course were analyzed and are shown in Table 2.

Table 2. Scores for various aspects of the course event

Aspect	Score 1 = poor or very low to 10 = very good, excellent
Design, training activities, timing	**7.2**
Content coverage leading to understanding	**6.6**
Participation, sharing of experiences and examples	**7.6**
Way forward, planning beyond the workshop	**6.6**
Overall	**7.0**

Although there was a general high score for the whole course (7.0 out of 10). The scores show that there is a need to develop clearer course content and as well as more effective planning as to how the content would be applied beyond the workshop

The following comments were gathered from the participants:

Workshop evaluation comments

General comments and recommendations
- Bravo!! This work was well accomplished. Great improvement from the previous course in all fields. Bravo brother! - Everything was good, thanks very much and God bless all the team - The workshop was excellent in all aspects - This was a huge improvement – keep it up - We have done well - Better late than never - Would have been good to have gone home with a CD of all presentations. - IRR and cost benefit data un-available and difficult to collect from farmers and un-trained

Aspect		**Comments and recommendations**
1	Workshop design, activities and timing	- Good - Timing was very good - Support: was fair - Timing/flow: very good - Venue great - Timing: it was well arranged - Timing and flow: kept well to time and had good forward momentum - Timing: Good. More time required - General organization: best - Timing: Good; corresponded with sessions needs - Timing: late but still applicable beyond project life
2	Clarity of content (explanation of concepts, examples), leading to understanding	- Comprehensive - Content and flow of was good - Presentations: Elaborate and to the required approach but need to give time for more interaction - Content: satisfactory - Content very very good - Content: Good

Aspect		Comments and recommendations
		- Content: fully arranged and valid - Content: interesting, relevant. Might have concentrated more on tangible outcomes. Quite conceptual. - Content: excellent, including reading material - The methodologies used ... simplified. Understood the content.
3	Full participation and sharing of experiences	- Facilitation to encourage participation and sharing is ... extremely good - Facilitator was excellent - Group discussions were great - Facilitation: was good and productive - Facilitation/participation: excellent facilitation – one of the best. And very good participation - Facilitating: the best - Facilitation: lively. Active participation, experience sharing etc. - Facilitation: excellent
4	Ways forward: planning and implementation beyond the workshop	- This was very good - Satisfactory - I think more time should have been devoted to this - Well articulated follow-up required
5	Travel and Hotel logistics; Welfare	- Accommodation/meals good. How come rate reduced? - This needs to be improved. It was lacking in many areas - Very good - Wonderful - Fair - Well arranged - Well arranged. Good location and food/snacks - Good - Good - Satisfactory

7. Appendices

7.1 Workshop participants

1.	Mr. Habumuremyi Jean Vienney Chairman Duhange Duhange Cooperative Kigali, Rwanda Tel: + 250 788742333 Email: jmvianny@yahoo.fr zacmanirarora@yahoo.com	2.	Dr. Zubeda Mduruma Regional Coordinator, QPM, CIMMYT Ministry of Agriculture, Food Security & Cooperatives P.O Box 6115, Tanga Tel:+255 782853342 Email:zubedamduruma@yahoo.co.uk
3.	Mr. Mbuya Kankolongo Scientist DONATA QPM Focal point – DRC INERA 13, Avenue des Cliniques. Kinshasa – Gombe B.P 2037, Kishasa 1, Dem. Rep. of Congo Tel: +243 812927957 Email: sgramer2003@yahoo.fr	4.	Mr. Beya Mutombo Solomon NGO Representative A.I.D (Farmers Integrated Action for DVPT 13, Avenue des Cliniques. Kinshasa – Gombe B.P 2037, Kishasa 1, Dem. Rep. of Congo Tel: 243 812445795, 243 997612894 Email:musabeya@yahoo.fr
5.	Mr. Grace Amito Journalist (Producer of the Program) 102 Mega FM Radio Gulu - UGANDA Tel: +256 77 2 911717 Email: graceamito@yahoo.co.uk	6.	Ms. Margaret McEwan DONATA Research Coordinator (OFSP) International Potato Centre (CIP) P.O Box 25171, Nairobi Kenya Tel: +254 20 4223611 Mob +256 733 681155 Fax +254 20 422 3600/001 Email: m.mcewan@cgiar.org
7.	Ms Rose Matiko Ubwe Agricultural Research Officer Farming Systems Research & Social-economics (FSR/SE) Selian Agricultural Research Institute P.O BOx 6024, Arusha, Tanzania Mobile: + 255 – 754-929689 Email:roseubwe@yahoo.com, rosematiko@gmail.com	8.	Mr. Amir Abdura Kiroboto Muheza IPTA Chair person P/S Sector P.O Box 20, Muheza, Tanzania Mobile: +255-784-977948/712-783335 Email:mtumbimohamed@yahoo.com

9.	Ms. Kankundiye Lydie Research / Focal Point of DONATA Project ISAR, Rwanda Tel: +250 788763258 Email: lydie120@yahoo.fr	10.	Mr. Oremo Moses Programme Assistant, KMUS P O Box 765 Plot 5 Mpigi Road, Entebbe, Uganda Tel: +256 41 4320556 Fax: +256 41 4322593 Email: m.oremo@asareca.org
11.	Dr. Lydia Kimenye Head, Knowledge Management and Upscaling ASARECA P O Box 765 Plot 5 Mpigi Road, Entebbe, Uganda	12.	Ms. Munganyika Edith Nutritionist AFRICARE, Rwanda Email: edith2munga@yahoo.com

	Tel: +256 414 322594 Fax: +256 41 4322593 Email: l.kimenye@asareca.org		
13.	Ms. Victoria Nagitta Administrative Assistant/Secretary ASARECA P O Box 765 Plot 5 Mpigi Road, Entebbe, Uganda Tel: +256 41 4320556, Mobile: +256 772 609202 Fax: +256 41 4322593 Email:v.nagitta@asareca.org	14.	Mr. Richard Mannasseh Lecturer Gulu University P.O Box 166, Gulu Tel: +256 772 658696 Email:ra_manners@yahoo.co.uk, rmanasser2708@gmail.com
15	Mr. Tiras Githaigah IPTA Development Coordinator Catholic Diocese of Muranga P.O Box 734 – 10200, Muranga, Kenya Tel: 254 722477265 Email:Githaigah@yahoo.com, cdmdevelopment@yahoo.com	16	Ms. Adventina Babu Senior Agricultural Research Officer ARI Ukiriguru Mobile: +255 754 430117 Email:adiventinababu@yahoo.com
17.	Mr.Makokha Shitabule Patrick OFSP Farmer Representative SIWONGO CBO P.O Box 522, Busia, Kenya Mobile: +254722290424 Email:patrickmakokha28@yahoo.com	18.	Mr. Ndolo Philip Head Sweet potato Program Coordinator KARI – Kakamega, Kenya P.O Box 169, 50100, Kakamega, Kenya Tel: +254 722227456 Fax + 254 5630039 Email: ndolophilip@yahoo.com
19.	Mr. Zeleke Borsamo Aagronomist Hawula Tuna Agricultural & Rural Dep't Office P.O Box 85, Hawula Tabora Mobile: +251 9116861331 Email:borsamozeleke@yahoo.com	20	Mr. Stephen Kazungu Walela Agronomist MAHUNDE (NGO) P.O Box 885-50250, Bungoma, Kenya Tel:+ 254 73-836982 Email:mahudewestern@yahoo.com
21.	Mr. Charles Bett DONATA QPM Project Focal Person KARI, Katumani P.O Box 340-90-100, Machakos, Kenya Tel:+254 713241421 Telefax: +254-44-21122 Email:cbet_chembett@yahoo.co.uk	22.	Mr.Odongo Albino Project Manager Red Cross, Uganda P.O Box 517, Gulu Mobile:+256-772614330 Email:albinoodongo@yahoo.com
23.	Ms. Dorcas Alum Agricultural Officer Lira District Government P.O Box 49, Lira Tel: + 256 772578193 Email:okello.dorcas@yahoo.com	24.	Mr. Myinga Fred Tanseed International Ltd P.O Box 1756, Morogoro, Tanzania + 256 767699502 Email:myingaf@yahoo.com
25	Mr.Rugema Semaana Hiraly National Coordinator Crop Productivity Improvement and Extension P.O Box 6987, Kampala, Uganda. Tel: + 256 772504722 / 031264180	26	Mr. Sserumaga Julius Research Officer 11 (Plant Pathologist) National Agricultural Research Organisation (NARO) P.O Box 7084, Kampala, Uganda

	Fax 256 (0) 312261180 Email: h.rugema@yahoo.com		Tel:+ 256 774873595 / +256 70 4 434828 Email: j.serumaga@nacrri.go.ug, j.serumaga@gmail.com,
27	Ms. Serah Wahito Farmer Catholic Diocese of Muranga P.O Box 607 Marunga Tel: 254 726169479 Email: cdmdevelopment@yahoo.com	28	Mr. Sadik Muzamil Researcher Southern Agricultural Research Institute Centre AREKA Agricultural Centre P.O Box 79, Areka, Ethiopia Tel: + 251 912147253 Fax: 251 465520502 Email: mik_mub@yahoo.com
29	Mr. Gizachew Aschalew Manager – EZERA PLC P.O Box 53, A.WA 55A, Ethiopia Tel: 251 0916825671 Fax: 251 0462211132 Email:Mik_mub@yahoo.com	30	Mr.Vitaline Mashind Na Ngoy Farmer Tel: 243815259465
31	Mr. Ganza Serge Chairman UDI (Union Pour Development Intergral) Tel: +250 788408269 Email: serge.ganza@gmail.com, sergeganza@yahoo.fr	32	Mr. Joseph Simeon Shigulu Business Development Service Provider (AGRI – Business) Sengerema Informal Sector Centre Tanzania P.O Box 270 Tel: +255 754567661 / +255 786567661 Email: shigulujoe@yahoo.com, shigulujoe@gmail.com
33	Mr. Godfrey Kubengu Mudilamika Farmer 13,Aavenue Des Cliniques Kinshasa Gombe B.P 2037, Kinshasa Tel: + 245066842 Email: godfreykumu@yahoo.fr	34	Mr. Cuthbert Ernest Agricultural Extension Liason Officer Local Government (District Council) P.O Box 164, .. Tanzania Tel: +255 783245552 Fax: + 255 2623380 Email: cmilaho2004@yahoo.com
35	Mr. Godwin Ukumbusha Wolfgang Agricultural Officer Kilindi District Council (KDC) P.O Box 18, Songe – Kilindi – Tanzani Tel: +255 786169683 Email: godwinwolfgang@yahoo.com	36	Ms. Serah Mwingi Project Research Assistant Catholic Church of Embu P.O Box 884 – 60100, Embu 068 – 30415, 077 4 481520 Tel: smwingi@yahoo.com
38	Ms. Rhoda N. Kuisa Principle Agricultural Officer Ministry Of Agriculture – DAO Kathonzweni P.O Box 186 Kathonzweni Kenya Tel: 072 5064433 Email: daokathonzweni@yahoo.com	39	Mulamba Nkombe Researcher INERA – (Institut National Por La Rocherche Agr). 13, Avenue Des Cliniques B.P 2037 Kinshasa 1 DR CONGO Tel:243810371376 Email: Olivier.mulamba@yahoo.fr
40	Mr. Lawrence Gege Business Development Service Provider	41	Mr. Komakech Charles Focal Person

	Mid – North Private Sector Dev't Co Ltd Lira P.O Box 300 Lira – Uganda Tel: +256 772 582778 Email: lawrencegege@yahoo.com		DONATA QPM HARO Gulu – IPTA P.O Box 764 Gulu, Uganda Tel: 256 (0) 774 377429 Email:charleskomakech68@yahoo.com
42	Mr. Kennedy Otieno Ogola District Crops Development Officer Ministry Of Agriculture P.O Box 28 Busia, Kenya Tel: +254 0721765748 Email: ogollaotieno@yahoo.com	43	Mr. Obong Yuventino IPTA Coordinator NARO P.O Box 52 Lira – Uganda Tel: +256 772381369, +256702381369 Email:yobong2003@yahoo.com
44	Ms. Gertrude Ngeleshi Administrative Assistant International Livestock Research Institute (ILRI) P.O Box 30709, Nairobi, Kenya Fax: +254 20 4223001 Email: g.ngeleshi@cgiar.org	45	Mr. Julius Nyangaga Research Associate International Livestock Research Institute (ILRI) P.O Box 30709, Nairobi, Kenya Fax: +254 20 4223001 Email: j.nyangaga@cgiar.org
46	Ms. Sarah Christine Komuhangi Accountant P O Box 765, Plot 5 Mpigi Road Entebbe, Uganda Tel: +256 41 4320556 Fax: +256 41 4322593 Email: s.komuhangi@asareca.org	47	Dr Barry Pound M & E Advisor, Consultant Natural Resources Institute (NRI) Calendra Farm, Veryan Truro TR2 5PR, United Kingdom Tel: +44 (0) 1872 501182 Fax: +44 (0) 1872 501818 Email: p.pound@gre.ac.uk
48	Helena Posthumus Email: H.Posthumus@greenwich.ac.uk	49	Ms. Arodia Kakwenzi – Female Agricultural Extension Officer, Bukoba District P O Box 127, Maruku Tel: +255 71 4 855537

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7.2 The trainer's CVs

NAME: JULIUS NYABUTO NYANGAGA,

PERSONAL DETAILS

MSc, BSc, Dip.
Nationality: Kenyan
Languages: Fluent in English and Kiswahili. Basic French.

Current Address:
c/o International Livestock Research Institute (ILRI)
P. O. Box 30 709
NAIROBI 00100, KENYA
Email: julesnyangaga@yahoo.co.uk

PROFESSIONAL EXPERIENCE

In Summary

Agricultural Production and Management, Extension Education and Innovation Processes: Specific training in livestock health, nutrition and general production management. More than 6 years of experience in livestock production extension education. Worked for 4 years as a Research Associate in ILRI's Innovation Systems studies, approaches and processes.

Research: Specific training and experience in nutrition and feed research and analysis. Experience in rural agricultural socio-economics, with a wide exposure to the subject continuum: from production to marketing and consumption.

I have been working with various cross-cutting initiatives that guide researchers and partnering stakeholders in linking knowledge with poverty-alleviation strategies. I am currently a student in Business Management (Nairobi University) and using my experience and knowledge to study the establishment and management of value chains in the dairy sub-sector. I am also the Cpapcity Development Officer at the International Livestock Research Institute (ILRI). Before working as a Research Associate in ILRI's I had worked for more than ten years as an extension official at various levels of the Ministries of Agriculture and Livestock, Kenya.

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