AGRICULTURAL INNOVATION SYSTEMS AND VALUE CHAIN DEVELOPMENT APPROACH

Training Report
24th – 29th March 2014
Jacaranda Hotel, Nairobi, Kenya

Compiled by Eric N. Mwaura
Tel: +254 722 900 567
Email: ericmwaura2003@yahoo.com

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1.0 BACKGROUND AND WORKSHOP OBJECTIVES

The approaches to agricultural research for development (AR4D) have evolved over time on the basis of changing implementation paradigms; with the most recent being the Agricultural Innovations System (AIS) and Value Chain Development (VCD) approach. The 2 approaches hinge on interactions among the different R&D actors, which enhance innovation, technology adoption and better markets .A major challenge confronting the AR4D community is the understanding of the two concepts and how to integrate them in the design, implementation and evaluation of AR4D.

ASARECA aims to enhance regional collective action in agricultural research for development, extension, training and education to promote economic growth, fight poverty, eradicate hunger and enhance sustainable use of resources in the ECA. As ASARECA embarks on implementation of its second operation plan (2014- 2018), there are increasing demands for ASARECA and its NARs partners to adopt systems and practices of agricultural research that are responsive to farmers needs and sustainably impact on the lives of the poor. The ILRI BecA Hub is an initiative developed within the frameworks of centers of excellence for science and technology in Africa and aims to provide a common biosciences research platform, research related services and capacity building opportunities for the region.

Recognizing the synergy in their functions, the BecA-ILRI Hub and ASARECA have agreed on collaborative mechanisms for capacity building for the ASARECA less competitive NARS. The focus will be on selected areas such as AIS and Value Chain Development (VCD), proposal writing for resource mobilization, leadership and management and institutional mentoring.

This report is on the first AIS and VCD workshops conducted from 24th – 28th March 2014 at Jacaranda hotel in Nairobi Kenya. The workshop drew participation from a total of 22 participants. The participants comprised of 19 senior research scientists/project managers representing 6 ASARECA countries namely Burundi (6), DRC (3), Madagascar (3), Rwanda (4), S. Sudan (3) and TZ (1) including 2 BeCA fellows and 1 independent participant.

1.1 Objectives of the Training

The 5 days training programme had two objectives:

- To equip researchers with knowledge and skills in application and integration of AIS and VCD approaches in proposal development and in implementation and monitoring of agricultural research programmes and projects.
- To enhance learning and sharing of experiences among research teams in application of AIS and VCD.

1.2 Expected Outcomes

The learning outcomes of the training workshop were:

- A shared understanding of AIS and value chain approaches by research scientists and other stakeholders.
- Enhanced understanding of AIS and VCD approaches and how to integrate them in proposal writing and implementation phases of ASARECA's second operational plan (OP2).

2.0 TRAINING METHODOLOGY

The facilitators used participatory learning process which appreciates and builds on participants' existing knowledge. At the beginning, participants were asked to state their expectations and these were leveled with the course content. Facilitation was highly interactive with the facilitators aiming to link the contents to the researchers' personal experiences and expertise. ."Learning by doing" and "Learning from each other" were the principles underlying the training and learning processes. The basic content of the training was derived from ASARECA'S training manual on AIS and VCD

Overall the workshop employed various participatory approaches to promote maximum participation:

- Brief & interactive presentations by the facilitator to introduce various concepts, principles and approaches in AIS and VCD (questions and discussions encouraged during the presentation)
- Plenary exercises
- Brainstorms
- Group work, followed by presentations and plenary discussions
- 1 day of field visit to KARI Naivasha Center to provide participants with deeper insights on how innovation systems perspective and value chain analysis can be integrated in agricultural research

Participants in Group Discussions

3.0 WORKSHOP INTRODUCTORY SESSIONS

3.1 Welcoming and Opening

The ASARECA Head of Partnerships & Capacity Development Dr. Joseph Methu welcomed the participants and facilitators. He led the participants to introduce themselves by stating their names, country, institution and work area. This was followed by a brief presentation on ASARECA background by Ms Doris Akishule.

Dr. Methu then invited the Team Leader of Capacity Building at BeCA-ILRI Hub Dr. Rob Skilton to address the participants and open the workshop. In his openings remarks, Rob Skilton welcomed the participants and made a presentation on the activities of BeCA-ILRI Hub. He underscored the significance of the AIS and VCD capacity building workshop and wished the participants a fruitful and interactive learning. Dr. Methu subsequently opened the floor for questions from the participants.

Questions from Participants

Question: The ASARECA presentation indicates a lot of emphasis on crops work and less on livestock- is this ASARECA's policy?
Response (Doris): The presentation was just highlights on ASARECA. We have a number of projects on livestock. For example in the last five years, ASARECA had over 50 projects with more than 10 focusing on livestock value chains

Question: Is ASARECA inviting calls for proposals this year?
Response (Dr. Methu): There will be calls for proposals around May this year on:

- Natural Resource Management and Eco-systems Services
- Market, Market Linkages and Trade
- Sustainable Agriculture, Food Security and Nutrition

We encourage you to visit ASARECA website from April for calls for concept notes on these themes.

Question: Congratulation to BeCA for good job with beneficiaries. I have personally learned a lot that I did not know about you. Do you have any strategy to popularize BeCA in other countries?

Response (Rob): That is a good question. Not much is currently being done and there are people still not aware about BeCA. We have had a lot of opportunity to raise awareness. In 2012 for example, we had a strong awareness campaign of BeCA in West Africa and Sudan, which led to a spike in applications to our fellowship program, but we have since 2013 lost momentum as we become focused on other areas. We however need to re-invigorate the awareness campaigns. We expect our fellow trainees to be BeCA ambassadors. We want you to raise awareness of BeCA in your country.

Question: There seems to be many BeCA beneficiaries from East Africa. Is DRC one of the BeCA beneficiaries? Also, is application for fellowship done by an individual or an institution?

Response (Rob): DRC is a beneficiary. We have 6 fellows who have benefited from ABCF. A number of researchers from DRC have also benefited from capacity building through workshops. Through ASARECA, we would like to have more researchers from DRC attending BeCA workshops. On the 2nd question, it is the individual who makes the application to BeCA

but this has to be backed up by a letter from the institution.

3.2 Background to AIS & VC Capacity Building

The facilitator (Dr. Joseph Methu of ASARECA) took the participants through the historical background to AIS covering the various evolutionary stages of research approaches and the influencing factors. He discussed the principles of AIS, the approaches to inculcating AIS and VCD approaches projects and the current level of application of these principles in ASARECA. The session ended with a presentation and discussion on ASARECA calls and award of project grants in the period 2009 – 2012.

Session highlights

- Historical background points out that the investment in research and volumes of research products are available, yet Africa is still straddled with poverty and hunger. There is need for multi-stakeholder participatory approaches to rural innovation based on collective action, integrative learning and institutional change.

- The evolution of program designs has been driven by the increasing recognition and acknowledgement of the role of famers and related institutional arrangements that support better problem identification and solution development where the farmers are involved.

Evolution of ARD approaches

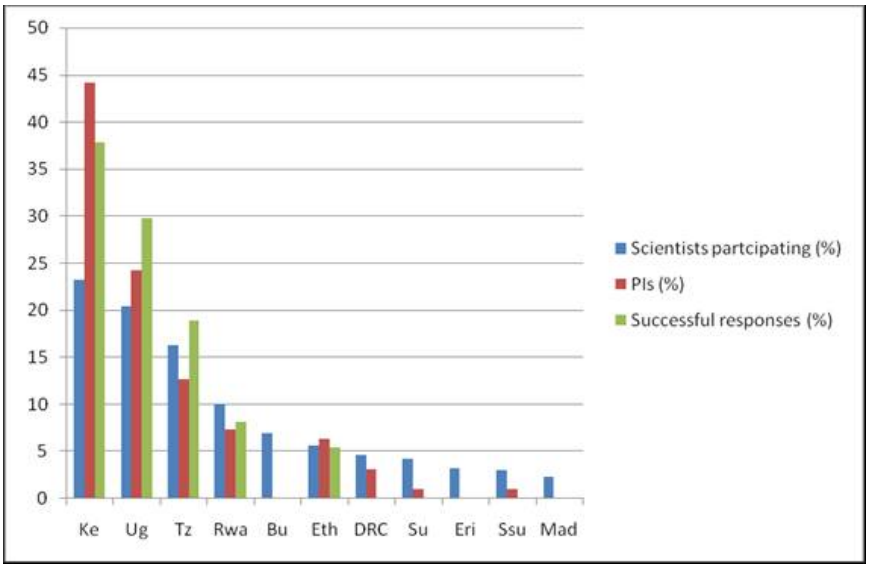
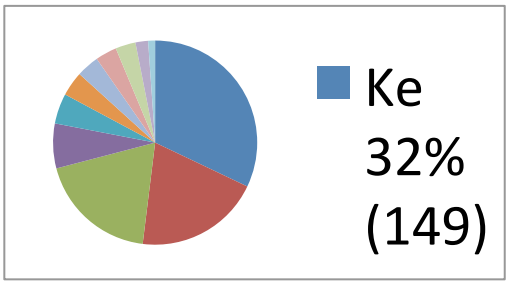
Era	1960 & 70s	1970s and '80s	1990s	Current
ARD Approach	Ministry's research department (Pipeline approach)	Farming Systems Research	Farmer First / Farmer Participatory Research	Interactive Learning for Change/ Innovation Systems/IAR4D
Model of activities	Supply through pipeline	Learn through survey	Collaborate in research	Interact and learn for innovation
Farmers role	Progressive adopters, laggards	'Objects' of study	Colleagues	Key actors among many others

- In the beginning of this century, agricultural innovation system referred in various terminologies but meaning the same thing. Value chain development emerged at the same time with a focus on how the commodity being addressed will contribute to economic development. Emphasis is on increasing demand for multi-stakeholder relationships. In these multi-stakeholder relationships farmers are recognized as crucial actors, part of the complex systems that will deliver innovation. They are now acknowledged as experimenters as well as business oriented entities. To support their innovations, farmers must be involved in related research, extension and production systems.

Principles of AIS

- Integration of technological, organizational, institutional and policy options.
- Inclusive, participatory multi-stakeholder partnerships
- Interdisciplinary functioning teams.
- Knowledge generated by all stakeholders
- Learning-by-doing

- A survey conducted between 2008 and 2010 showed that few ASARECA projects applied all IAR4D1 principles fully. This led to decision by ASARECA to develop capacity related to AIS and VCD. Hence the purpose of this workshop is to arrive at a common and enhanced understanding of AIS and VCD concepts amongst partners working on ASARECA and BeCA-ILRI projects

Response to ASARECA calls and award of grants: 2009 – 2012 37 calls, 95 responses, 564 Scientists participating	ASARECA Grants absorption 2009 – 2012* *Number of PhD on staff in parenthesis
	

Reaction from Participants

Question: Why do some countries have better representation in the ASARECA award than others?

Response (Dr. Methu): The problem to address in the proposal must involve team work/collective actions and the research problem that they indicate they will be addressing has

[1] IAR4D = Integrated Agricultural Research for Development

to be one that is affecting as least 3 ASARECA countries. In most applications the principal investigators were from the more participating countries and hence more successful proposals and better representation in ASARECA funding. In order to ameliorate this, ASARECA has been aggressively encouraging proposals from the less represented countries through actively engaging Director Generals of those countries. One of ASARECA's key tasks is to help link the different countries so that they submit their unified proposal that has a greater chance to succeed.

Question: When the calls for application is open, can one apply for any training area of interest?

Response (Rob Skilton): At the moment BeCA is focusing on fellowship programs and workshops for specific type of training. Due to financial and human resources capacity limitation, we are not able to offer specialized training outside the scope of the fellowship and workshops or to address specific requests from individuals and small groups.

It is also important to bear in mind that when making an application to participate in a BeCA's fellowship programme or workshop, if the letter from the institution you are representing indicates that your work has been peer reviewed or demonstrates team work, you stand a greater chance for being selected to participate in the BeCA fellowship or workshop.

Question: How will ASARECA make the less empowered countries to participate more effectively in responding to calls for proposals?

Response (Dr. Methu): Towards this end, ASARECA will develop the capacity of scientists through;

- Training such as VCD and proposal writing.
- Training potential applicants targeting the upcoming calls for proposals in April on proposal writing skills.

ASARECA will also work with the Director Generals of these countries to identify scientists to respond to the calls for proposals. We will also raise funds to build the capacity of the less empowered countries,

3.3 Participants' Expectations

Each participant was asked to write on manila cards, their expectations for the training which were leveled with the course content. In addition, a pre training test was administered for each participant to determine their confidence levels in various topics. The same test would be administered at the end of the workshop and both results analyzed to establish whether participants' confidence in the topics have improved with the training (see section 5.2: Evaluation of the Workshop)

Participants' Expectations

- To understand how to integrate AIS and Value chains in research
- To learn and appreciate concepts of AIS and value chains to apply the same in my work
- To learn about innovation systems
- Learn how to select and conduct value chain analysis
- Understand Value chain as a concept
- Learn how to form innovation platforms
- Strategies in how to apply value chain approach in our projects
- Value chain linkage with food security
- Better understanding/learn more about value chain
- How to implement value chain strategies
- The role of partners in innovation systems
- To be able to bring stakeholders in research value chains
- To get clarity on the inter-phase between Value chain and research
- Colleagues will enjoy the course and have an interactive learning

3.4 Ground Rules

Ground rules were set by the participants to guide the rest of the training process. They included the following: time keeping, closing computers, switching phones off/ silence mode, active participation, and avoiding disruption. These basic rules formed the learning contract between the facilitators and the participants for the training period.

4.0 SUMMARY OF TRAINING SESSIONS AND DISCUSSIONS

4.1 Defining Innovation and Agricultural Innovation Systems

In this session, the facilitator took participants through the concepts of innovation, innovation systems, Innovation Systems Perspective (ISP) and Agricultural Innovation System (AIS). He outlined the essentials of AIS and led the participants in sharing their own experiences of innovation and related systems

Session highlights

- The simplest definition of innovation is 'anything new introduced into an economic or social process' (OECD 1997). The most useful definition of innovation in the context of R&D is 'the economically successful use of invention '(Bacon and Butler 1998). Here invention is defined 'as a solution to a problem'. The transformation of knowledge into products and processes does not follow a linear path, but rather is characterized by complicated feedback mechanisms and interactive relations involving science, technology, learning, production, policy, and demand. Taking a brilliant idea through, on

an often painful journey to become something which is widely used, involves many more steps and use of resources and problem solving on the way.

- Innovations are not limited to technological (both product and process) innovations only but also include institutional, organizational, managerial and service delivery innovations. This emphasizes the notion that the responsibility of agricultural research organizations does not end with the production of new technology or knowledge only. They can claim success when their inventions are being disseminated, adopted and used.

- The four basic requirements for innovation are that it (1) is something new to the user, (2) is better than what currently exists, (3) is economically viable (and socially desirable), and (4) has a widespread appeal.

Innovation System

- An innovation system is the group of organizations and individuals involved in the generation, diffusion, adaptation and use of new knowledge and the context that governs the way these interactions and processes take place. In its simplest, an innovation system has three elements: the organization and individuals involved in generating, diffusing, adapting and using new knowledge; the interactive learning that occurs when organizations engage in these processes and the way this leads to new products and processes (innovation); and the institutions (rules, norms and conventions, both formal and informal) that govern how these interactions and processes takes place. An innovation system can be defined at different levels: national, sect oral, commodity and intervention based.

Agricultural Innovation System (AIS)

- A collaborative arrangement bringing together several organizations working towards technological, managerial, organizational and institutional change in agriculture can be called 'Agricultural Innovation System'. Such a system may include the traditional sources of innovations (indigenous technical knowledge); modern actors (NARIs, IARCs, advanced research institutions); private sectors including agro-industrial firms and entrepreneurs (local, national and multinationals); civil society organizations (NGOs, farmers and consumer organizations, pressure groups); and those institutions (laws, regulations, beliefs, customs and norms) that affect the process by which innovations are developed and delivered.

Innovation Systems Perspective (ISP)

- An innovation systems perspective (ISP) implies the use of an innovation lens in the design, implementation, and evaluation of the activities of the various actors involved in the innovation process.

Reaction from Participants

Question: If a given community adopts use of a bicycle, can we call this an innovation?

Response: The answer lies in the basics of what an innovation is. An innovation is something new to the user, (2) is better than what currently exists, (3) is economically viable (and socially desirable), and (4) has a widespread appeal. So if the bicycle is new to the community, its better than what currently exist (may be they were walking before and now can even take produce to market!), is economically viable and has appeal, then indeed it is an innovation

Question: So when a village start using a windmill to grind maize and generate electricity its an innovation?

Response: It is an innovation. Remember, innovation also is about introducing an existing technology in a new environment. They had never used the windmill before. Also remember that innovation can be use of existing information, technology in a new combination to solve a need in the society.

Question: Is a clever idea that has never been thought about an innovation?

Response: A clever idea alone is not innovation. A clever idea can be considered as invention but to become innovation it needs to surpass from being just a clever idea and turned into something practical taking into consideration the prevailing circumstances and will need to be driven by the need of the market. Innovation will need to create a commercial value for the end user.

Question: At what point does a research product become innovation? Does it have to be packaged for commercial use before it can be considered innovation?

Response: You are right! Otherwise it remains an invention. The value chain system enables us to diffuse innovation. Using multi-stake holder innovation platforms, involving all the actors/ stake holders the invention is promoted to innovation as a commercial commodity.

4.2 Integrating Value Chain Approach and ISP into AR4D

In this session, the facilitator gave a brief introduction on the value chain concept and outlined the similarities between Value chains and Agriculture Innovation Systems. He explained why value chains, AIS and AR4D concepts are reinforcing and complementary and discussed the challenges involved in embracing these concepts in research institutions. The procedure for integrating and applying these concepts in the real world research processes was discussed and shared with participants. (See annex 6.3 ..Guidelines for Integrating Innovation System and Value Chain Analysis in AR4D)

Session highlights

- The objectives and levels of operation of an agricultural innovation system and value chains can be similar. Value chains and an agricultural innovation system can operate at multiple levels and can pursue various objectives. Common developmental objectives of value chains and agricultural innovation system include poverty alleviation, employment

generation, food security, agricultural and rural development and economic growth.

- Agricultural innovation systems can operate at the individual, farm, community, regional, national, or international levels. Value chain analysis could also identify leverage interventions at similar levels.

- Innovations in a value chain should not be limited to improving the performance of existing chain actors, but also to expand opportunities for the poor smallholders who may otherwise be left out from benefiting as actors in the value chain. In this regard, an ideal innovation or set of innovations in a value chain is one that improves the competitiveness of the chain and ensures fair distribution of returns among chain actors.

- Innovation systems help create knowledge, facilitate access to knowledge and its application to achieve economic, social and environmental gains. Information flow up and down the chain can trigger innovation in a particular stage of the chain, or on the way chain stages are organized and coordinated. In other words, innovations in a value chain can focus at a particular stage of the chain, or span across several or all of the value chain stages in terms of how they coordinate their activities. Innovation capacity of the value chain, the ability of chain actors as a group to innovate and respond to changing consumer demands, is, therefore, a sum total of the individual innovation capacity of the actors in the different stages of the value chain.

- The constellation of value chain actors and the business development services supporting a value chain constitute the innovation system of that particular value chain

- Innovation possibilities in value chains are diverse and can relate to input supply, production technology, production organization, post harvest technology and management, processing, marketing and market functions, the supply of business development services, and policy and regulatory issues. In this regard, the links in the value chain stages provide new possibilities for innovation aimed at improving the performance of the chain. It offers opportunities to select research from several options, with stakeholders input and implementation, and the generation of products and services with immediate value. In practice innovation systems are constructed to solve "local" real world problems using a value chain approach. The diagnostic process allows priority problems to be addressed anywhere along the value chain, and an innovation system can be constructed around these problems.

- Successful dynamic improvement in value chain performance critically depends on the ability of the chain actors to acquire, absorb, disseminate and apply new technological, organizational and institutional inventions in a continuous manner. Hence, the innovation process in value chains should embrace continuous improvements in product design and quality, changes in organization and management of operations, institutional development in input supply and procurement, marketing, and associated business development services, and modifications in the production and post-harvest processes.

- Both value chain analysis and innovation systems perspectives in agricultural R4D are complementary and share a number of key features. These include: value addition (social, economic, and environmental) focus on creation of new knowledge and the novel combination of existing knowledge; emphasize on institutions (both formal and informal), emphasis on partnership, networking and interactive learning; and a need for cultivating wide range of attitude and practices among the R4D practitioners.

- The three key paradigms, integrated agricultural research for development (IAR4D), ISP, and VCA, are impact-oriented and complementary. IAR4D stresses that research is a means to an end, and the end goal is development. VCA on the other hand broadens the scope of research beyond the farm level, indicating that innovation can occur anywhere along the value chain, making the entire process much more effective and competitive. An ISP stresses that, unless knowledge and information are transformed into products and processes and used in socially and economically meaningful ways, it will not become innovation

4.3 Introducing the Value Chain

In this module, the facilitator gave an introduction to the value chain approach. He defined the concept of a value chain, pro-poor development and gender in relation to pro-poor value chain development. He outlined how the value chain approach can contribute to poverty reduction and sustainable development.

Session highlights

- Value chain refers to all the activities and services that bring a product (or a service) from conception to end use in a particular industry—from input supply to production, processing, wholesale and finally, retail. It is referred to as a VC Because value is being added to the product or service at each step.
- Some of the ways in which value can be added to the products include processing (e.g. grading, washing, preparing for the table), certification of organic produce (which sell at premium prices) use of niche market products (exotic fruits, herbs, biomedicines, etc) or the development of a premium and recognizable brand name.
- Enterprises in value chains seek sustainability, lower costs, higher quality, more social responsibility and new ways of coordinating their activities at local, national and international levels.
- The value chain is private sector-driven. It is not a project, but built on private interests and initiatives.
- The chain is demand-driven, and focuses on satisfaction of consumer needs through a process of value-adding.
- Value chains provide profitability to all chain actors (but not equality!).
- Value chains are between preferred business partners (to the exclusion of others!).
- Chain actors perform specialized functions in recognition of mutual interdependence (synergy from specialization). They (the actors) cooperate to achieve the shared interest

– consumer satisfaction at the lowest cost possible). Chain actors may undertake joint activities (innovation, policy dialogue) and maintain a chain governance system

Reaction from Participants

Question: Clarify whether enterprises seek to lower cost or they seek for profitability in a value chain;

Response: There are two ways of increasing the profit margins in a value chain; one is lowering costs on one hand where for example through efficient use of water, better transport system, efficient labor, better sourcing of inputs etc, or the other hand selling at a higher price. In value chains, enterprises seek to increase profitability and to lower their costs – BUT WITHOUT COMPROMISING PRODUCT QUALITY!

Question: Is the value chain you have presented in slide number 7, representative of one value chain or multiple value chains?

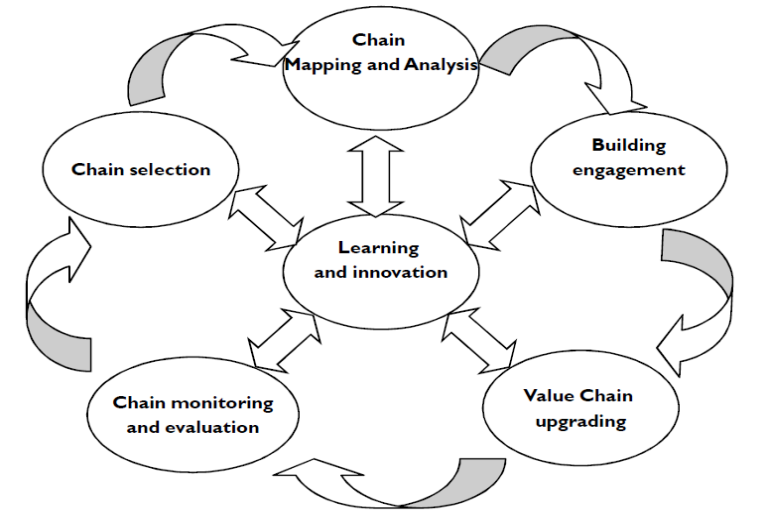
Response: The question is based on distinguishing between the value chain and the market channels. Value chain is defined as a set of interrelated activities that are aimed at converting raw material into a final product that can be consumed by the end customer. Marketing channels are ways and routes of how products get to the final consumer. A good example is from farmer to final consumer or from farmers through traders to final consumer. A value chain is more encompassing; it not only shows the channels but also shows set of activities and the linkages between those activities as well as host of other dynamics and includes relationships among actors in the value chain.

Additional comment from Doris: Chain Mapping helps us to locate the poor but also women and youth. This is particularly important Because of the requirements by donors to integrate of women and youth issues in value chain analysis and interventions

4.4 Value Chain Selection

In this session, the facilitator provided a snapshot of the steps involved in value chain development as shown in the diagram below. He then zoomed into step 1: Selecting the product or market from among the various development options in a community or target area, that is likely to contribute significantly to its development. The step covered how one can identify several potential value chains in their work context, how to develop a criteria and sub-criteria for evaluation of commodity value chains, how to use criteria and sub-criteria in prioritizing between a variety of value chains and how to rank and select value chains for promotion. The session ended with group work on value chain selection using the attractiveness matrix (See group outputs below)

Value Chain Development Process



Session highlights

- Value chain selection is done to prioritize chains with high potential to meet project objectives. It's a participatory process involving farmers, local policy and decision makers, private sector actors, service providers, development organizations and community representatives (M4P, 2008).
- All value chain selection tools are subjective. An attempt is made to add rigor and structure to reduce bias. In pro-poor VC development, market potential /competitiveness and pro-poor impact potential are major criteria that should be used in chain selection.
- In determining how many value chains need to be analyzed for promotion, it's important to consider the time and resources available for comprehensive analysis as well as subsequent implementation.
- While value chain selection must be done at the onset of a new project, it is important to note that selection and analysis may be reviewed at later stages in the project due to a variety of factors such as:
    - incomplete information
    - incorrect assumptions during the initial selection,
    - lack of stakeholder commitment,
    - new end market opportunities and threats,
    - Unanticipated enabling environment constraints

Reaction from Participants

Question: in the value selection process, why ranking necessary, why are there ranks, such that there is number 1, 2, 3 etc?

Response: As already mentioned, value chain selection is a decision-making process to establish and prioritize a short-list of value chains with high potential to meet project objective. This is achieved by scoring the value chains against weighted criteria and ranking of value chains from their mean scores. The value chain (s) with the highest ranks/scores is selected for further analysis and subsequent promotion. You will internalise this process during your group work on value chain selection

Group outputs on chain selection

Group 1: South Sudan & Sudan Group						
Criteria	Sub-criteria	Weight	Sorghum	Maize	Rice	Cassava
Competitiveness - 30	growth potential	6	5	4	2	3
	high market demand	8	8	6	4	7
	proximity to markets	5	3	2	1	2
	potential for value adding	4	3	2	1	3
	unique products	4	4	3	2	3
	lower cost of production	3	3	3	2	2
subtotal		30	26	20	12	20
Propoor impact Potential - 30	# of rural households benefiting	5	5	4	2	4
	Potential for Labour Intensive tech	4	4	2	3	3
	Low risk	5	4	2	2	3
	Promotion of equity	4				
	Low barriers to entry for the poor	5	5	5	2	4
	Employment creation	7	6	5	4	4
subtotal		30	24	18	13	18
Food Security - 25	Availability and access to food	10	9	7	4	8
	Lower food prices	7	6	5	3	5
	Improved nutrition and health	8	6	5	7	5
Subtotal		25	21	17	14	18
Cross- cutting Issues - 15 points	HIV/AIDs mitigation	4	3	3	3	3
	Women's income opportunities	5	5	5	3	4
	Environmental compatibility	6	6	4	4	5
Subtotal		15	14	12	10	12
TOTAL SCORE		100	85	67	49	68
RANK			1	3	4	2

Group 2: DRC						
Criteria	Sub-criteria	Weight	Cassava	Maize	Sweet potato	VC4
Competitiveness - 30	growth potential	6	5	4	3	
	high market demand	8	6	5	4	
	proximity to markets	5	4	4	3	
	potential for value adding	4	3	3	3	
	unique products	4	2	2	2	
	lower cost of production	3	2	2	2	
subtotal		30	22	20	17	0
Propoor impact Potential - 30	# of rural households benefiting	5	4	3	3	
	Potential for Labour Intensive tech	4	1	1	1	
	Low risk	5	3	2	2	
	Promotion of equity	4	2	2	2	
	Low barriers to entry for the poor	5	2	2	2	
	Employment creation	7	5	5	4	
subtotal		30	17	15	14	0
Food Security - 25	Availability and access to food	10	8	8	6	
	Lower food prices	7	3	5	4	
	Improved nutrition and health	8	5	6	6	
Subtotal		25	16	19	16	0
Cross- cutting Issues - 15 points	HIV/AIDs mitigation	4	1	2	2	
	Women's income opportunities	5	4	3	3	
	Environmental compatibility	6	4	4	4	
Subtotal		15	9	9	9	0
TOTAL SCORE		100	64	63	56	0
RANK			1	2	3	

Group3: Tanzania						
Criteria	Sub-criteria	Weight	Cassava	Milk	Maize	Mushroom
Competitiveness - 30	growth potential	6	5	4	6	4
	high market demand	8	8	7	8	4
	proximity to markets	5	5	5	5	3
	potential for value adding	4	4	4	4	4
	unique products	4	2	2	2	4
	lower cost of production	3	3	1	2	1
subtotal		30	27	23	27	20
Propoor impact Potential - 30	# of rural households benefiting	5	4	2	4	2
	Potential for Labour Intensive tech	4	4	4	4	2
	Low risk	5	4	1	4	1
	Promotion of equity	4	2	3	2	2
	Low barriers to entry for the poor	5	4	1	4	1
	Employment creation	7	5	5	5	3
subtotal		30	23	16	23	11
Food Security - 25	Availability and access to food	10	10	5	10	4
	Lower food prices	7	7	3	7	2
	Improved nutrition and health	8	7	8	7	7
Subtotal		25	24	16	24	13
Cross- cutting Issues - 15 points	HIV/AIDs mitigation	4	3	3	3	4
	Women's income opportunities	5	5	3	5	5
	Environmental compatibility	6	5	5	5	6
Subtotal		15	13	11	13	15
TOTAL SCORE		100	87	66	87	59
RANK			1	2	1	3

Group 4: Burundi						
Criteria	Sub-criteria	Weight	Organic tea	Milk	Bread wheat	Brewering banana
Competitiveness - 30	growth potential	6	3	5	4	5
	high market demand	8	7	7	7	8
	proximity to markets	5	2	4	4	5
	potential for value adding	4	4	4	4	3
	unique products	4	4	2	2	2
	lower cost of production	3	2	1	2	3
subtotal		30	22	23	23	26
Propoor impact Potential - 30	# of rural households benefiting	5	3	4	2	4
	Potential for Labour Intensive tech	4	4	3	2	2
	Low risk	5	3	2	4	3
	Promotion of equity	4	4	3	3	3
	Low barriers to entry for the poor	5	3	3	3	3
	Employment creation	7	7	5	3	5
subtotal		30	24	20	17	20
Food Security - 25	Availability and access to food	10	3	8	6	4
	Lower food prices	7	2	5	4	2
	Improved nutrition and health	8	4	7	6	2
Subtotal		25	9	20	16	8
Cross- cutting Issues - 15 points	HIV/AIDs mitigation	4	4	4	4	4
	Women's income opportunities	5	3	3	3	3
	Environmental compatibility	6	5	4	3	4
Subtotal		15	12	11	10	11
TOTAL SCORE		100	67	74	66	65
RANK			2	1	3	4

Group 5: Madagascar						
Criteria	Sub-criteria	Weight	Poulet race local	Produit de rente litchi	Riz	Tilapia
Competitiveness - 30	growth potential	6	6	5	5	4
	high market demand	8	7	3	8	5
	proximity to markets	5	4	2	1	1
	potential for value adding	4	3	3	1	3
	unique products	4	2	3	1	2
	lower cost of production	3	2	3	1	2
subtotal		30	24	19	17	17
Propoor impact Potential - 30	# of rural households benefiting	5	5	5	2	4
	Potential for Labour Intensive tech	4	2	1	3	1
	Low risk	5	3	1	5	2
	Promotion of equity	4	4	2	1	3
	Low barriers to entry for the poor	5	1	1	2	1
	Employment creation	7	6	2	7	2
subtotal		30	21	12	20	13
Food Security - 25	Availability and access to food	10	4	6	9	2
	Lower food prices	7	1	6	6	1
	Improved nutrition and health	8	8	8	6	8
Subtotal		25	13	20	21	11
Cross- cutting Issues - 15 points	HIV/AIDs mitigation	4	2	2	2	2
	Women's income opportunities	5	5	5	5	5
	Environmental compatibility	6	6	6	3	5
Subtotal		15	13	13	10	12
TOTAL SCORE		100	71	64	68	53
RANK			1	3	2	4

Group 6: Rwanda						
Criteria	Sub-criteria	Weight	Orange sweet potato	biofortfied bean	Mushroom	Dairy milk
Competitiveness - 30	growth potential	6	2	3	3	5
	high market demand	8	5	7	5	7
	proximity to markets	5	3	5	3	5
	potential for value adding	4	4	4	4	4
	unique products	4	4	4	4	2
	lower cost of production	3	2	3	2	2
subtotal		30	20	26	21	25
Propoor impact Potential - 30	# of rural households benefiting	5	2	3	2	4
	Potential for Labour Intensive tech	4	2	2	3	4
	Low risk	5	4	5	2	1
	Promotion of equity	4	3	4	2	3
	Low barriers to entry for the poor	5	5	5	3	3
	Employment creation	7	5	4	5	6
subtotal		30	21	23	17	21
Food Security - 25	Availability and access to food	10	5	6	4	7
	Lower food prices	7	5	5	3	4
	Improved nutrition and health	8	5	7	6	7
Subtotal		25	15	18	13	18
Cross- cutting Issues - 15 points	HIV/AIDs mitigation	4	2	4	4	4
	Women's income opportunities	5	5	5	5	3
	Environmental compatibility	6	5	5	2	3
Subtotal		15	12	14	11	10
TOTAL SCORE		100	68	81	62	74
RANK			3	1	4	2

4.5 Value Chain Analysis

The facilitator highlighted the importance of value chain analysis and basic considerations on the methodology of chain analysis. He discussed the main tasks in value chain analysis i.e. mapping the value chain, quantifying and describing value chains in detail; analyzing economic sustainability of value chains, support services, chain relationships & governance, markets and chain context

In order to deepen participants understanding of the concepts, methodologies and application of the tools learned, group works on economic analysis and mapping of the value chains selected in the previous session were organized.

Session highlights

Value Chain Analysis

- Every enterprise or public agency working towards making value chains more competitive has to understand how it functions and learn from its failures.
- Chain analysis provides an overview and a good understanding of the specific economic realities. The results of these analyses are used to prepare decisions on objectives and strategies.
- Based on a shared value chain analysis, enterprises can develop a joint vision of change and determine collaborative upgrading strategies.
- Governments and public agencies use value chain analyses to identify and plan supportive actions as well as to monitor impact.
- Apart from its use in a development context, value chain analyses also help individual enterprises to take business decisions.

Value Chain Mapping

- A value chain map is a visual impression or representation of the structure and organization of a given value chain. It depicts in a visual way the following key features
    - The main functions of a value chain system: Production, processing, marketing and consumption indicating how the product flows.
    - The key value chain actors or operators indicating what they do and how they are related with each other.
    - The various services and service providers to support the chain actors (the meso level)
    - The various Non-chain actors who influence the chain (the macro environment)
- Chain maps are the core of any value chain analysis and are therefore indispensable. They provide a basic overview of the value chain structure to guide any analysis that is going to be undertaken. They help to trace the flow process of a product from the point of production to the end user or market (consumption) to assist in identifying constraints, opportunities and propose possible interventions.
- Maps help establish the interrelations between the system actors and the functions they undertake along the value chain. They help in the determination of business development services required to support the chain and areas where there is higher concentration.
- Value chain maps help in identifying the position and location of the poor in the system and hence how to target them for development.
- If conducted in a participatory fashion, chain mapping is not only an analytical but a communication instrument as well. It demonstrates the interdependency between actors and functions in the value chain, enabling actors to look beyond their own interest and collaborate.
- Collaborative chain mapping helps to build trust between groups of actors, facilitating

client-oriented services and improving the understanding of policy makers or private sector needs.

Economic analysis of Value Chain

- Economic analysis of a value chain enables the value chain facilitator to determine the extent to which the value chains are accessible by the poor (e.g. low income farmers). Studying actual costs and margins should be considered when establishing whether a given function of a value chain is accessible to potential chain actors. The analysis also determines if the value chain is a good source of income for them.
- Knowledge on costs and margins of actors functions in a chain help in identifying how operational and investment costs are distributed amongst the various enterprises. They also help in determining the extent to which operational or investment costs create barriers to participating in the value chains and, hence whether the 'weakest' actors can increase their margins. It helps determine if their position in the chain can be upgraded by making the chain more efficient (decrease costs) and effective (increase value).
- Historic trends of costs and margins, also present what the financial directions have been and whether the chain has potential to grow in the future. Some input costs are highly volatile (e.g. petrol costs); a sector that might seem to be profitable now may not necessarily be profitable later

Reaction from Participants

Question: Is transporter say of milk a chain actor or a chain supporter?
Response: A chain actor owns the product at some point in the chain, whereas a chain supporter provides supportive services to the chain actors. A chain actor could be having own means of transporting the product or could outsource from a chain supporter. For example a milk trader using own transport is a chain actor, whose main function in the value chain is milk trading, not transporting. On the other hand, when the trader outsources transport services, the service provider is called a chain supporter. If a transporter has been hired to transport say milk from point A to B, he is referred to as a chain supporter as he does not own the product.

Question: Is there a standardized way of mapping value chains, like map orientation, use of signs, symbols and certain shapes?
Response: This is a developing area and it is only GIZ through value links that has tried to standardise mapping by introducing symbols and different colours. However, the standard is yet to gain 'wide adoption internationally'.

Question: The function level of your value chain map is confusing Because maize trade is happening before processing, does it mean that it is a local consumption? Or does it mean there are two levels of trading?
Response : (by Participant presenting) after harvesting people store their maize in the stores. So there are those small traders who are coming from far to the village to buy maize and they go to other large scale traders, so it is raw maize before processing.
Comments by Facilitator: Some general rules to guide in mapping is to always start first by identifying who the actors are. Then identify what functions or roles the actors are playing. The

other general rule is the order of functions i.e. start with the input provision, then production, intermediary trade, (remember in Africa, there is a lot of intermediary trade; small, local level traders buy produce from the farmers, aggregate it and deliver it to the processers.), the next generic step after intermediary trade is the processing, the next after processing is retailing and distribution, the next is consumption. Remember also not to overload the map so that a person who was not involved in making it can understand it.

Question: I think among the functions inputs were not supposed to be there, for me i would put just farming and remove inputs.
Response: The generic map that was presented yesterday was missing inputs function, but the practice is to classify input provision as a function

Question: Is it necessary to put arrows in the map?
Response: It is very important to put flows as arrows are about the product flows. They show how the product flows from one actor to another. Arrows are about the nature of relationships between the different actors. Some arrows are doted to show the relationships are weak; arrows which are thick means relationships are very strong. Arrows also shows the flow of embedded services, information sharing etc

Question: The presenter has shown different final products on the bean value chain map. Why
Response: (Participant presenting): They are final products from bean that can be consumed. You can consume beans as greens or as processed.
Comment: (Facilitator). Remember value chains are very product specific, and in this case our product is the beans. What is shown is possibility of other types of products. It depends with the level of focus of your project.

Question: What is the quality criterion of a value chain map?
Response:

- The criterion for a good value chain map is that it should be comprehensible to the enterprises and other actors involved. The aim is to achieve the right degree of detail that delivers sufficient information to be useful, but still remain simple enough to be easily understood.
- Any chain map should fit a single page. Consequently, a small-scale map of an entire sub sector can only show a rough overview. To achieve a more detailed resolution, the analyst has to pick out and enlarge a part of the first map. That part is mapped in greater detail and presented on a separate, second page.
- The direction the map is oriented, either vertically or horizontally, depends on pragmatic considerations of space available. In presentations projected by a beamer or in participatory workshops it is more convenient to use the horizontal direction

Question: In economic analysis, how can we deal with the fact that most farmers don't keep records to be used in the economic analysis?

Response: These analyses are highly challenging everywhere. Hardly any farmer knows his costs of production, nor do the majority of transporters, traders or small-scale enterprises. Empirical research is costly and does not guarantee sufficiently accurate data. In most cases, analysts will have to be content with rough estimates. In view of the fact that economic analyses are used to facilitate business decisions bearing income risks for the operators, it is recommended to have cost calculations and benchmarking done by trained staff. Facilitators have to keep in mind that they are responsible for the quality of their recommendations and the economic data on which they are based.

Group outputs on chain Mapping

Participants Presenting their Group's Value Chain Maps to the Plenary

4.6 Field Visit to Kari

The objective of the field practicum to Kenya Agricultural Research Institute was to provide the researchers an opportunity to experience the different aspects of a functional value chain, the challenges being addressed through research and how the research findings are deployed and their impact to the value chain participants. During the visit, the participants were taken through an overview of KARI by the Centre Director Dr. John Kariuki while Dr. Tobias Onyango and Dr. Ann Wachira made presentations on KARI's dairy and indigenous chicken improvement programme respectively. The Participants later visited some of the chicken farmers that KARI is working with.

Reactions to KARI Presentations

Question: How are livestock diseases being addressed by the EADD project?
Response: With regard to diseases, there are 3 EADD projects focusing on animal health issues

- East Coast Fever project in Kenya and Tanzania)
- Zoonosis diseases project in Kenya Tanzania and Rwanda
- Food and Feed safety project in Kenya Tanzania and Uganda

Question: Who are the stakeholders involved in value chain of indigenous chicken?
Response: Stakeholders of the chicken value chain are input providers like agro vets who supply vaccines, feed etc, and small scale farmers with less than 30 birds, traders (primary, secondary and tertiary). Aggregation of birds by traders is a key activity in the value chain as there are many small holder farmers scattered all over. The few processors in place operate below capacity due to low production. The retailers include the supermarkets that sell the indigenous chicken as an 'organic product'. The price of the local bird is more than two times over that of broilers.

Question: In DRC we have a local chicken with naked neck which is very resistant to diseases. Has the KARI project considered using such in breeding for disease resistance?
Question: There are so many types of local poultry. Have you cross bred various types or its just one?

Response: Yes we have a number of breeds including the naked neck one. We collected many genotypes which are in our store. We are looking for private actors to deal with multiplication of the bird while we focus on breed improvement.

Question: How is the level of chicken management among the farmers you are working with?
Response: The demand for indigenous chicken far outweighs the supply. However chicken mortality rate due to poor management practices is a big problem. To address this problem and increase the supply, KARI has been developing the capacity of service providers on chicken management.

Question: in Kenya is chicken taken as 'a woman's' livestock like in my country?

Response: it is a woman business Because it is a low input livestock. We are trying to attract youth through market oriented production – developing breeds that grow faster and produces more eggs to meet market demand, and hence provide returns. Most chicken traders are men because that where the money is.

Question: Is there a centre of semen collection in Kenya?
Response: The breeding methods used in Kenya are:

- Cattle: Artificial Insemination (AI). There is a national body that controls collection, storage and export of semen.
- Chicken: Natural method. We have tried AI previously
- Pig: Natural method. Now concepting AI
- Small ruminants: Natural method. AI results were disappointing
- Use of hormones: there is a Bio-safety act in Kenya that stringently controls use of GMOs and growth promoters

Question: Your presentation shows that the weighting of bees during the value chain selection was very high. How do people get to know about the high economic potential of the bees or is it a mistake you made during the weighting and selection process?
Response: Variation comes based on method used for chain selection, criteria used and the weight given for each of the criteria. When variations are so big, there is course for concern.

Question: Your presentation shows that KARI ihas achieved good progress in terms of integrating R&D with AIS and value chain development. What are some of the challenged you have encountered in the process and how have you managed to shift the mind of researchers?
Response: KARI has a policy to ensure that all research is Agricultural Product Value Chain (APVC) oriented. Changing mindset of scientists is an uphill task. Any proposal submitted for funding is screened for APVC compliance. One another challenge is that sometimes stakeholders may not be willing to walk together.

Participants listen to a Chicken Farmer Explaining her Group Activities During the Field Visit

4.7 Reporting on Field Visit

The group reports were based on the following assignments:

Group 1:

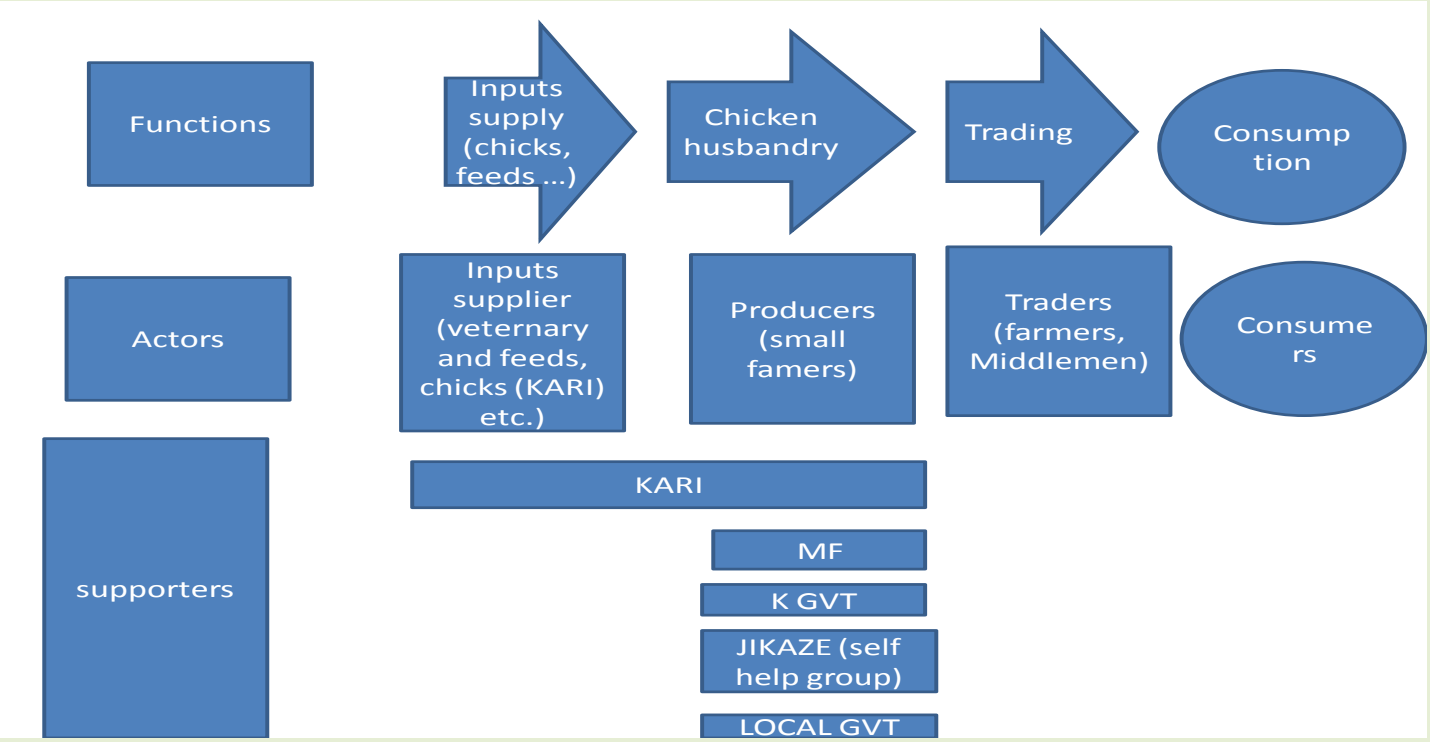
1. Draw a basic map of the indigenous chicken value chain
2. Describe roles and functions of the stakeholders in the chain
3. Identify constrains and opportunities of the actors identified with a focus on producers

Group 2:

1. Recommend a vision and an upgrading strategy for the value chain

Group 1 Output

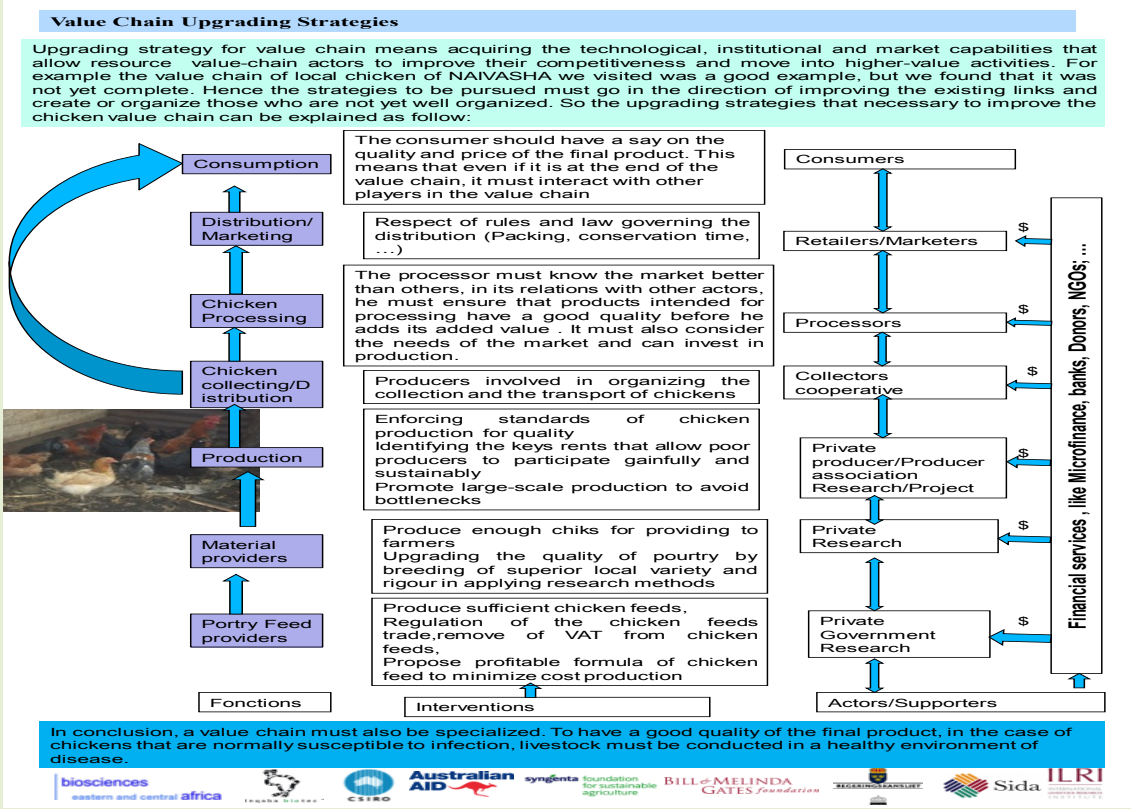
Indigenous Chicken VC Map Naivasha



Constraints

- Low capacity of production
- Small production area (mixture of goat, pigs, ducks, etc.)
- Poor infrastructure
- Low knowledge of the market
- Low education level
- One source of chicks
- No continuation in production

Group 2 Output



Reactions from Participants

Question: The chicken value chain studied and presented by the group looks very short. Is it a value chain really?

Response: Yes it is a value chain. Value chain activities can be contained within one firm (activity integration), in one location, different locations or even countries. In some instances however, short value chains may be a sign of poorly developed chain and minimal value addition.

5.0 WORKSHOP CLOSING SESSIONS

5.1 Action Planning and Follow-up activities

The session was facilitated by Dr. Wellington Ekaya of BeCA who introduced the Participants Action Planning Approach (PAPA)) tool to assist the participants in planning how they would integrate the knowledge and skills learned in their respective work situations. Key highlights of PAPA and next steps:

- BeCA is interested in following up its alumni to ensure that the skills gained from the different trainings including this one are applied. The PAPA tool is the basis for follow-up of trainees
- The PAPA actions constitute an agreement between BeCA-ILRI hub and the participant and their home institution, of any course and/or fellowship
- Activity # 1 in the PAPA (i.e. Presentation to participants institution about BeCA-ILRI Hub, the ABCF Programme, your research work and experience while at BeCA-ILRI Hub) is fixed for all training workshop participants and ABCF fellows
- Participants to consult with their institutions and return completed forms by 4th april 2014 to BeCA and ASARECA. In the meantime:
    - Dr. Ekaya will prepare slides for the BeCA presentation (activity #1) and share with participants. He will also coordinate with ASARECA to do the same.
    - Dr, Ekaya to share with participants a reporting template
- Participants to have completed all actions and reported to BeCA-ILRI Hub and ASARECA in a time period of 3-4 months

5.2 Evaluation of the Workshop

The workshop was evaluated using two methodologies

1. Open ended evaluation questions given to the participants to evaluate 4 workshop variables i.e. course content, training methodology, facilitators and logistics
2. A pre training and post training test administered before and after the training respectively for each participants to establish whether the training has improved their confidence in various topics.

In general, the evaluation showed that the workshop objectives were largely achieved. The participants judged the course as very relevant to their work and their confidence levels in the various topics was enhanced by the course. Specific results of the evaluation are as follows:

Fig 1: Rating the course content

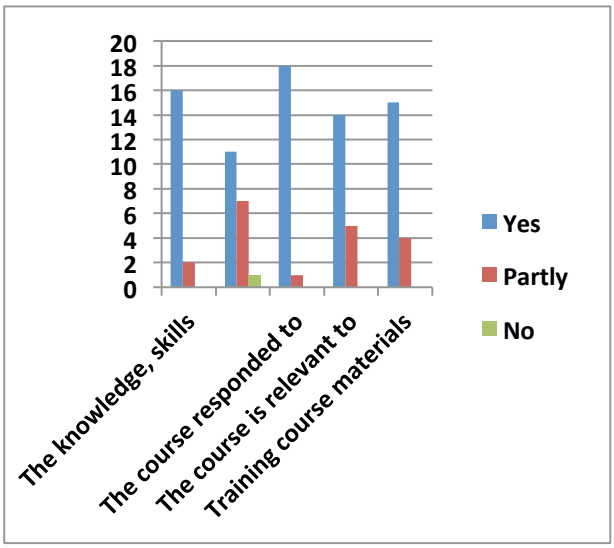


Figure 1 Methodology used in learning

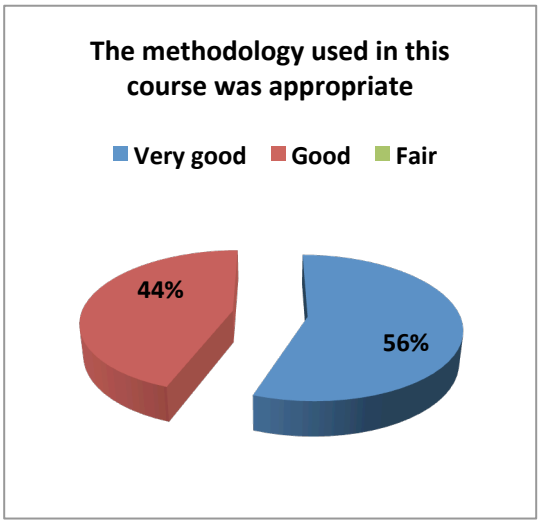


Figure 2 Evaluating facilitators

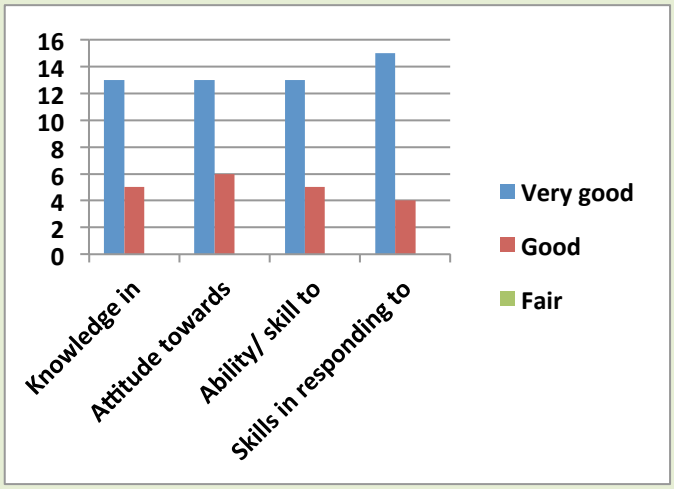


Figure 3: Rating the logistics and venue

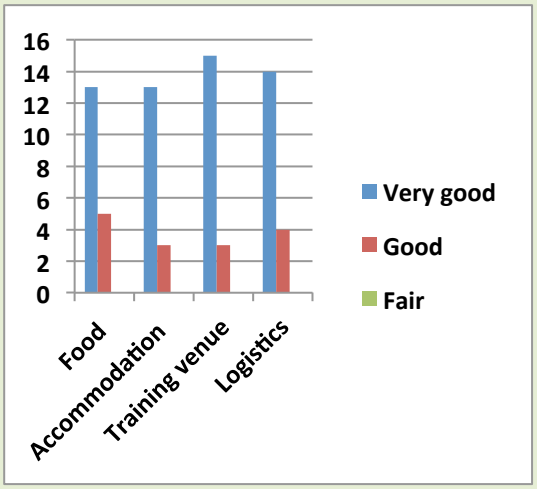


Figure 5: Confidence Level Before Training

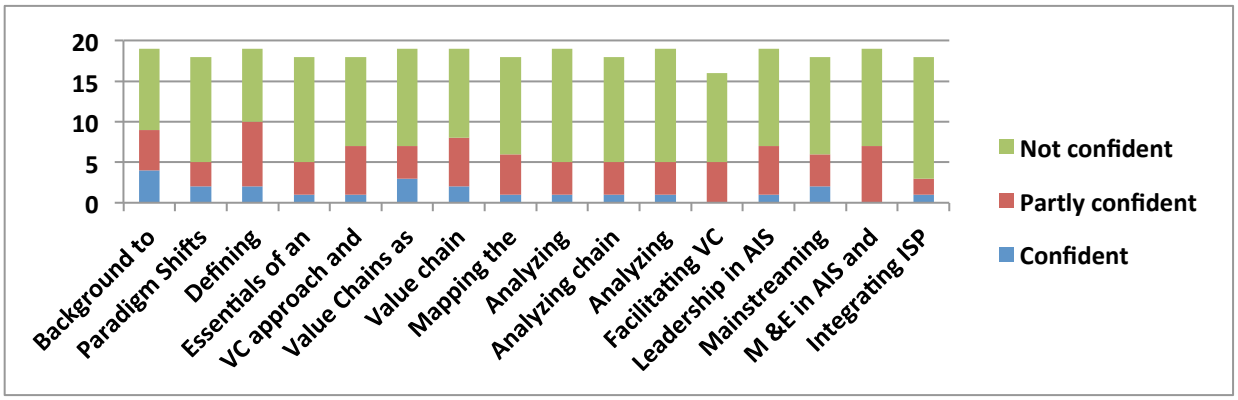
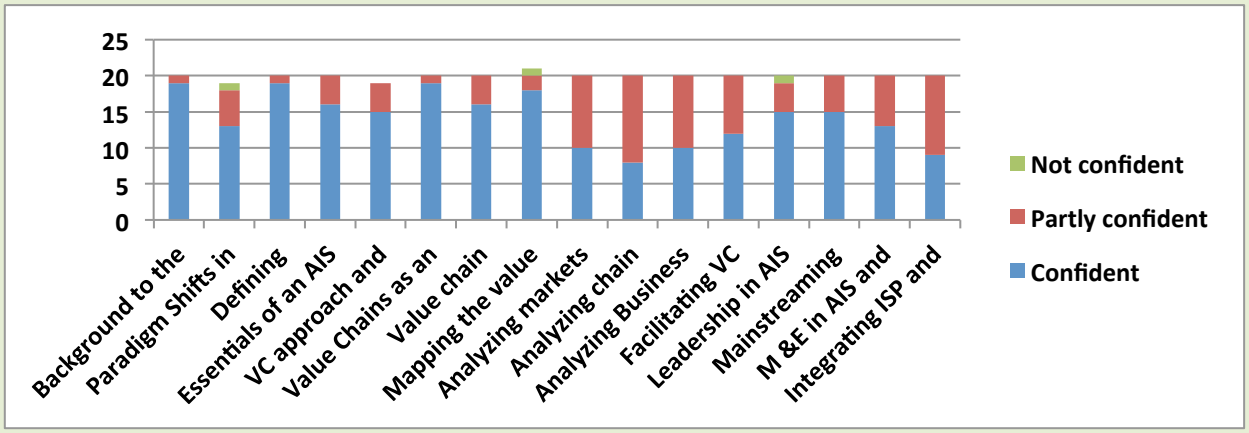


Figure 6: Confidence Level After the Training



Comments from participants

The most useful session/topics were – 5 participants said all topics were useful while another 8 said AIS and value chain analysis which covers most of what was done in the entire course. Below are some responses in verbatim-

- **All topics were well prepared and adequate for my needs as a researcher and extensionist**
- **Introduction of AIS and value chain upgrading**
- **Group works**
- **AIS, involving gender in value chain,**
- **AIS and VCD (very interesting)**
- **Mapping value chain and analysis**
- **Field visits**

Least Useful Sessions – The response was either left blank or N/A or said all topics were useful. 1 person mentioned session market analysis and marketing

Additional Comments

- **Very happy to participate in this training Because as a researcher and extensionist in livestock program, I will do many things.**
- **The training was useful and enabled me to integrate the knowledge of value chain and addition of value**

to agriculture

- This training has helped me understand the topics I had not understood on my first training
- Information given is very valuable although the period was short x3
- I appreciate what ASARECA is doing in the field of capacity building.
- Knowledge and skills shared in this course was adequate
- This training has provided me with a lot of information that will be useful in my institution
- Training was very important to me and would like to ask if possible you help us apply what we have learnt here in our home institutions.
- It is important to focus on the real cases studied so next time take into consideration
- Training materials to be given at the end of the presentation or day for the participants to revise.
- Additional training resources to be sent before arrival of the participants

5.3 Closing Remarks: ASARECA

Professor F. Wachira- Deputy CEO ASARECA started with a brief presentation of the **ASARECA Medium Term Operational Plan 2 (MTOP2)**. As a background to the plan, he highlighted the food security scenario in Africa and hence the need for increased food production in the continent. He observed that the situation is likely to be exacerbated by climate change and if the current situation persists, Africa will be fulfilling only 13% of its food needs by 2050. He underscored the need for new solutions that address productivity, climate change, resilience, ecosystem services, biodiversity, water and nutrients, markets and market linkages i.e. to DO THINGS DIFFERENTLY.

He concluded by thanking the participants for successfully going through the training, the ASARECA team for successfully organizing the workshop, the trainers for facilitating the learning and IRLI BeCA- Hub for financial support. He wished everyone journey mercies and expressed hope that the participants will put into practice what they had learned in the workshop.

Some key highlights of ASARECA MTOP2 include the following:

ASARECA developed a new MTOP to guide its operations during the period 2014-18. This is an implementation plan for last 5-year segment of delivering the current Strategic Plan- 2009-2018

- It addresses issues and opportunities that allow delivery in a new, more effective way
- It incorporates change and IAR4D-based research themes/projects
- It guides ASARECA on how to deliver and forms a framework for future work plans

Why a new Plan Needed?

- OP1 came to an end in 2013-Need to ensure continuity
- The Policy and physical environment has changed
- Priorities have changed-need to focus on up-scaling of TIMPs, Markets and Market linkages
- Need to incorporate lessons learned in OP1
- New focus on transforming agriculture in ECA

- Focus on the role of capacity strengthening and knowledge management- Value chains, AIS

Four Key Areas

- Logframe and logframe statements, Thematic-Programme Approach, Structural and Governance Changes, Budget and Resources

Thematic-Programme Approach has three themes:

- Natural Resource Management and Eco-systems Services
- Market, Market Linkages and Trade
- Sustainable Agriculture, Food Security and Nutrition

Priority of OP2

Sub-themes (Based on Priority Commodity Value Chains e.g. Maize, Cassava, Banana, Sorghum, Millet, Rice, Wheat, Beans, Fruits and Vegetables, Oil crops, Milk, Meat and Fish). Value chains will be anchored into specific agro-ecological zones

- Development and promotion of breeds, varieties and management practices for adaptation to climate change and variability
- Managing of diseases and pests of strategic crops, livestock and fisheries
- Promotion of enabling gender responsive policies and institutions for sustainable agriculture, food and nutrition
- Post-harvest handling and processing of crop, livestock and fisheries resources
- Sustainable intensification of crop, livestock and fisheries systems
- Conservation and utilization of plant, animal and fish genetic resources
- Food and nutrition security for improved health

5.4 Closing Remarks: BeCA-ILRI Hub

The closing remarks from BeCA were given by its Capacity Building Team Leader, Dr. Rob Skilton. He underscored the need for researchers to start doing things differently by focusing their work on end users – farmers and consumers.

He informed the audience that the training is the first BeCA has held with ASARECA and that BeCA will be organizing 5 more workshops this year. He thanked the participants for having gone through the course, ASARECA, the trainers, technicians, Jacaranda hotel staff and the donors (Swedish government, Bill and Merida Gates foundation, Australian government…) for their respective contributions towards the workshop.

He awarded participants with certificates of participation in the workshop and prevailed upon them to complete their action plans as BeCA would like to see the benefits of this training workshop to them. He wished everyone journey mercies