Bringing evidence to bear on negotiating ecosystem service and livelihood trade-offs in sustainable agricultural intensification in Tanzania, Ethiopia and Zambia as part of the SAIRLA program

Dar Es Salaam, Tanzania National SHARED Workshop, May 04th – 05th 2017

Workshop Report

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The Sustainable Intensification of Agricultural Research and Learning in Africa (**SAIRLA**) Programme is a UK Department for International Development-funded initiative that seeks to address one of the most intractable problems facing small-holder farmers in Africa - how to engage in the market economy and to deliver sustainable intensification of agriculture, that is, which avoids negative impacts on the environment. SAIRLA will generate new evidence to help women and poor African smallholder farmers develop environmentally and financially sustainable enterprises and boost productivity. The research will focus non-exclusively on 6 countries (Burkina Faso, Ethiopia, Ghana, Malawi, Tanzania and Zambia), thus complementing other research efforts in these regions.

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1. Introduction

1.1. Opening

The workshop was opened by Madam Natai, a project member represent the Ministry of Agriculture, Livestock and Fisheries (MALF). She welcomed all the participants, and thanked them for their attendance.

Madam Natai then invited Dr. Boniface Massawe, a project member from Sokoine University of Agriculture (SUA) to lead the introduction of participants. The introduction was done following major groups of stakeholders invited. The categories were:

- National Government
- Regional and District Level Government
- Bilateral Donor/Partner
- CBO/NGO/INGO or Project Representative
- Intergovernmental Organization/International Financial Organizations
- Research or Academia
- Private sector
- Other

Self-introduction was done where participants mentioned their names and their affiliations (*see Appendix 1 for the participants' information*).

While we expected the guest of honour to give his speech after the introductions, he proposed through that he would like to first hear about the project and give his speech at a later stage.

1.2. Workshop objectives and flow

Dr. Constance Neely from ICRAF Nairobi then took over. She started by asking participants to suggest ground rules for the workshop. These rules were suggested:

- Phones should be in silence mode
- Honouring everyone opinion
- Active participation
- Effective use of time

She thereafter explained the objectives of the national SHARED workshop to the participants. The objectives were mentioned as to:

a. engage country stakeholders using the SHARED methodology to reflect on current

Sustainable Agricultural Intensification (SAI)-relevant interventions, scaling mechanisms and indicators including evidence and gaps.

b. capture and discuss current and potential policy and investment decision making approaches to enhance scaling of SAI-relevant interventions in Tanzania.
c. reflect on important trade-offs themes and indicators for SAI interventions in Tanzania.
d. Discuss the SAI dashboard.

She went on discussing the flow of workshop for the two days as presented in the figure below:

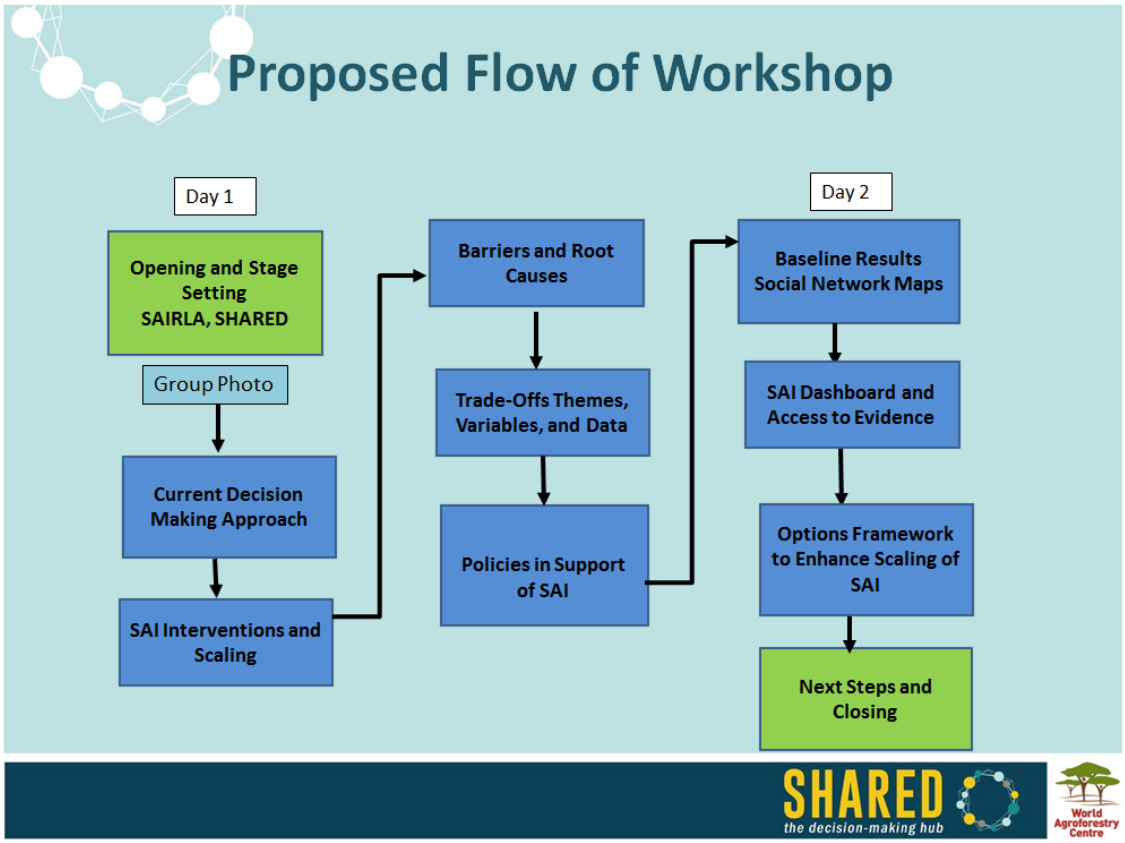

Figure 1: Flow of the workshop.

1.3. Introduction to the Project in Tanzania

Dr. Leigh Winowiecki, the Principal Investigator (PI) of this project from ICRAF Nairobi did the introduction to the project in Tanzania.

She started by highlighting that the concept of SAI developed in response to the need for approaches that increase food production in response to the demand of a growing population while conserving critical ecosystem services.

She reiterated the aim of the project which is to build an interdisciplinary research programme to increase the uptake of context-appropriate SAI innovations in East and southern Africa through evidence generation, data analytics and the development of innovative tools for stakeholder engagement with evidence.

She mentioned that this project is funded by UK's Department for International Development (DFID) and is managed by WYG and the University of Greenwich. The project works in Tanzania (Mbarali District), Zambia and Ethiopia.

Dr. Winowiecki discussed the five main activities of the project which are:

i. Conducting the baseline assessment, including use of and existing evidence on the effectiveness of SAI
ii. Engaging stakeholder groups using the SHARED approach to reflect on SAI-relevant policies & interventions
iii. Assessing multi-scale, socio-ecological trade-off analysis conducted on promising SAI interventions and results communicated and assessed with stakeholders using the SHARED approach.
iv. Facilitating piloting of promising, innovative SAI interventions, using mixed methods to assess their cost-effectiveness
v. Developing an interactive, open access platform—'SAI Dashboard'— for project action sites to support the engagement of decision makers to interact with evidence.

She also explained the conceptual framework of the project as shown on the Figure below, and that the project is working across multiple scales (house hold, farm, village, district, national/international) to incorporate spatially explicit analyses of indicators of land and soil health as well as human well-being, and that the co-production of socio-ecological datasets will be used to conduct multi-scale trade-off analysis to inform and prioritize SAI interventions.

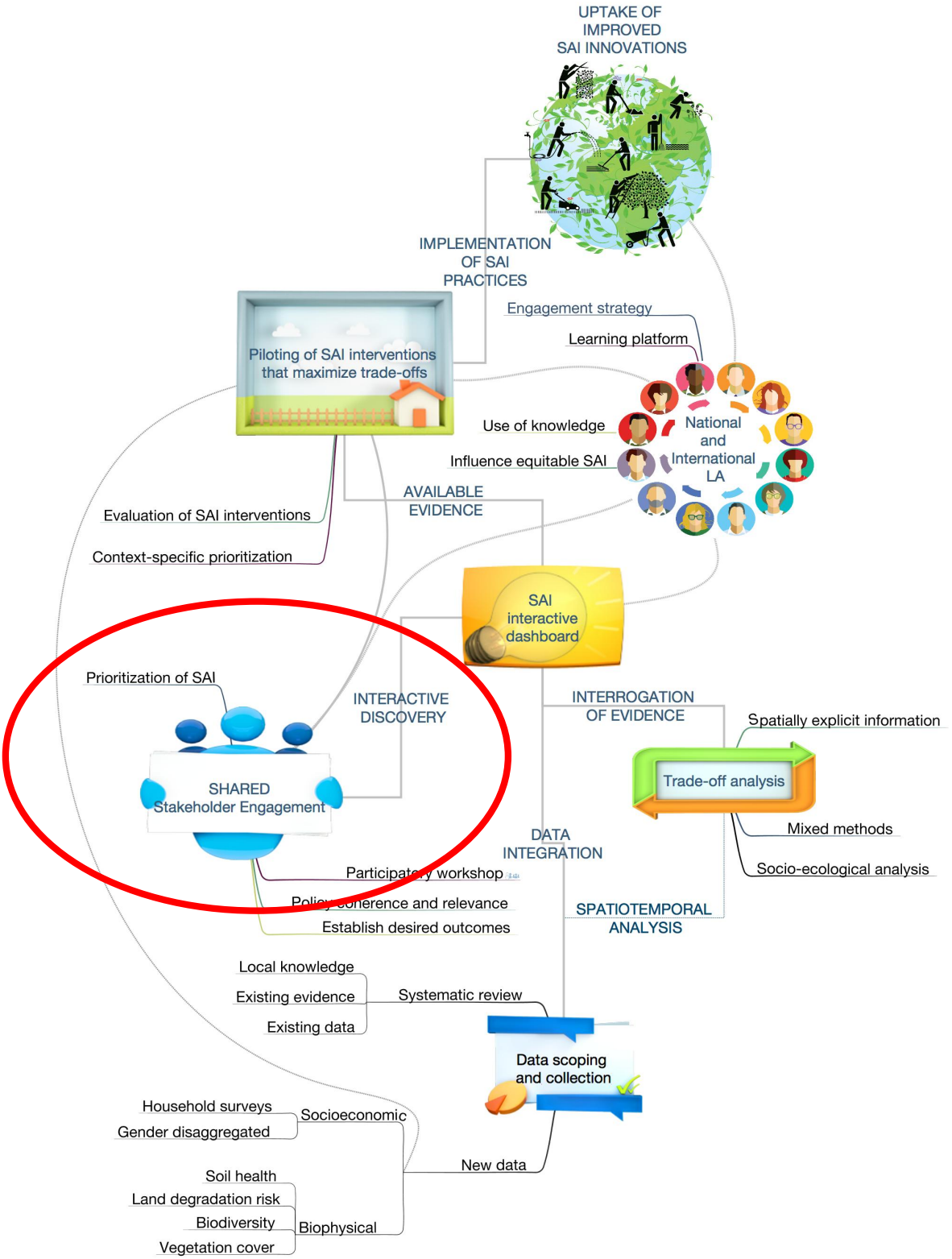

Figure 2:Conceptual Framework for the project with the stage of the Stakeholder Engagement highlighted.

1.4. Project activities done to date

Dr. Boniface Massawe presented what have been done so far on the project implementations. The following are the main activities done so far:

a. Stakeholders mapping. The mapping has been done in all three project countries (Tanzania, Zambia and Ethiopia). In this exercise; a Stakeholder Mapping Guide using SHARED approach was developed, together with identifying gaps and opportunities for SAI at multiple scales (district, regional, national)
b. Social network analysis has been done. The analysis identified the actors in SAI, the connectivity and how is SAI information disseminated
c. Baseline data collection and analysis. The collection and analysis involved - Who are using evidence in decision-making? What kind of evidence? Where is it from?
d. Conducted participatory farmer prioritization workshops, where a list of SAI practices prioritized by farmers gender-wise on lowland and upland agroecological zones was prepared.

2.0. Official opening

After the above presentations the guest of honour (Dr Mansour) representing the Permanent Secretary of the Ministry of Agriculture, Livestock and Fisheries (MALF) was welcomed by Madam Natai for official opening of the national SHARED workshop.

He started by acknowledging the honour given to him to officiate the workshop. He mentioned that the Permanent Secretary of MALF apologized for not coming himself due to other national commitments.

He appreciate the project to be engaging stakeholders on understanding the risks involved through research findings in order to be smart in decision making. He explained his hope that the workshop will be a starting point in engaging stakeholders to scale out promising Sustainable Agricultural Intensification Innovations in Tanzania.

He went on to insist that agricultural intensification should not be looked only on increasing yields per unit area, or increasing cropping intensity per unit of land, or changing land use from low value crops/commodities to those that receive higher market prices; but should take.

a broader view to include both productivity and environmental outcomes. He mentioned the increased populations, food insecurities and climate change as challenges which can be partly tackled through SAI

He said that MALF has developed a road map to transform the agricultural sector into a modernized, commercial, and highly productive sector, which utilizes natural resources in a sustainable manner. The details of this road map are provided in the National Agricultural Policy (2013) as well as in the Agricultural Sector Development Program phase 2 (ASDP-2). By the definition of SAI provided by the facilitators, he found that the project on Sustainable Agricultural Intensification addresses most of those priority areas. Thus, he was confident that outcomes of the workshop will be highly relevant in transforming the agricultural sector towards making Tanzania an industrialized and a medium income nation.

He ended by asking every participant to be active throughout the workshop and share whatever he/she have as the participants comes from different angles of agricultural industry.

Photo: The Guest of Honor, Dr. Mansour from MALF delivering his speech.

3.0. Gathering Perspectives

The session was led by Dr. Constance Neely. She asked participants to stand on cards representing their response to given statements. The objective of the session is the start the discussion on key themes for the workshop.

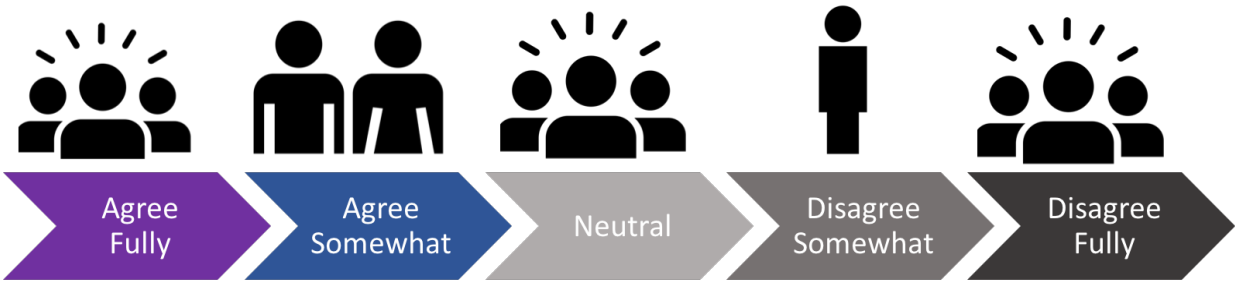

Figure 3: Illustration of the gathering perspective activity.

Statement 1: Sustainable Agricultural Intensification involves trade-offs across economic, social and environmental dimensions**.**

The following were the number of the participants per response and reasons for choosing the response:

i. Strongly agree – 8 participants

Their reasons were;

- In order to implement SAI practices there is a need to assess trade-offs.
- Social livelihoods are important to consider.
- Any activity done on the land has economic and social implications.
- SAI covers the three pillars of sustainability – economic, social and environmental.

ii. Agree somewhat - 8 participants

Their reasons were;

- Most of the farmers practice SAI through these dimensions but without acknowledging them .
- There are some trade-offs on the three dimensions, and what is happening in agriculture has direct bearing on the society.

iii. Neutral - 1 participant

Reason was;

- Where is the enabling environment? It should be included as another dimension.

Photo: Dr. Constance Neely leading 'gathering perspective session.

Statement 2: Sustainable Agricultural Intensification is building upon what is already being practiced in the country.

i. Strongly agree – 4 participants

Reasons were;

- Tanzanian smallholder farmers have been practicing SAI traditionally, for example farmers are doing mixed farming.
- SAI builds on existing projects. For example sustainable rice intensification (SRI), agroforestry and climate-smart agriculture (CSA).
- Farmers are currently practicing SAI – for example fertilizers use, etc.

ii. Agree somewhat – 8 participants

Their reasons were;

- Yes, SAI is being practiced e.g. mixed cropping and livestock keeping.
- Some SAI practices are being applied, some are not being practiced. An example was

given from Songea, Iringa, and Mbeya for promoting Soil Water Management practices in areas with Miombo, where forests are protected but issues of nutritions are not addressed.

iii. Neutral – 4 participants

Their reasons were;

- There is a need to understand what is really being practiced with regard to SAI in our areas.
- More information is needed to inform planning – do all farmers know about SAI – there is a shifting environment
- There are opportunities to build on existing efforts. We need to improve these technologies and out scale them.

Statement 3: Sustainable Agricultural Intensification has not been adopted widely due to a lack of information and evidence

i. Strongly agree – 3 participants

Their reason was;

- Lack of available extension officers – not enough to guide the farmers.

ii. Agree somewhat – 11 participants

Their reasons were;

- Information is lacking and evidence has not been shared, findings have not been documented and shared adequately.
- It is not the complete lack of information, but rather inadequate information and evidence. Most of the information is in the research institutes, and this is not communicated with farmers. There are gaps in research-extension-farmers chain.

iii. Neutral – 0 participant

iv. Disagree somewhat – 4 participants

Their reasons were;

- SAI is just a new name. People are practicing it already using local knowledge (e.g. maize under acacia in Mbarali district). They may not call it SAI- currently we are improving what is already there.
- The missing links is to have interventions that are area specific- there are many practices – but there are not locally agreed according to the farmers. An example from Mbeya- practicing CA, improved varieties for the adaption of the climate was given.
- There is a problem of misinformation. Example given: During UJAMAA- agriculture system was distorted, such as Chagga home gardens, sustainable home garden but the practices were distracted by the way information was disseminated. In Lushoto Highlands – terracing, introduction of the vegetables, and improved equipment for minimum tillage adopted the local knowledge. They are not new initiatives.
- Information exists, perhaps we are not sharing it, not interpreting it- local knowledge needs to be valued and incorporated.
- Not only information and evidence- but also people's participation is important.
- Strengthen local innovation systems, work with communities and bring together different stakeholders.

4.0. Introduction to the SHARED methodology

Dr. Constance Neely started by explaining SHARED, Stakeholder Approach to Risk Informed and Evidence Based Decision Making; and added that the methodology is a tailored process that builds interaction between people and accessible evidence for decisions that yield sustainable impact.

Evidence is different knowledge systems including local and traditional knowledge as well as scientific data and results.

The SHARED approach

- Is a demand driven engagement structure for co-learning and co-negotiation of actions to achieve mutually agreed upon development outcomes.
- Supports that decision-making must be inclusive, embrace complexity, inform risk and identify investment priorities through evidence and effectively track progress.
- Supports decision making by convening and facilitating the integration of diverse

knowledge systems, sectors and institutions.

Why do we need it?

- For solving complex and inter-related problems.
- Prioritizing investments will accelerate impacts.
- For a structured process that focuses on co-learning and co-negotiation enhances agreement and ownership of actions to achieve long term outcomes.

She highlighted that the SHARED approach is unique because:

- Decisions can be tested toward long term outcomes and impacts
- Emphasis is placed on scientific and experience based evidence
- Complexity of decision making is embraced to explore diverse development trajectories.

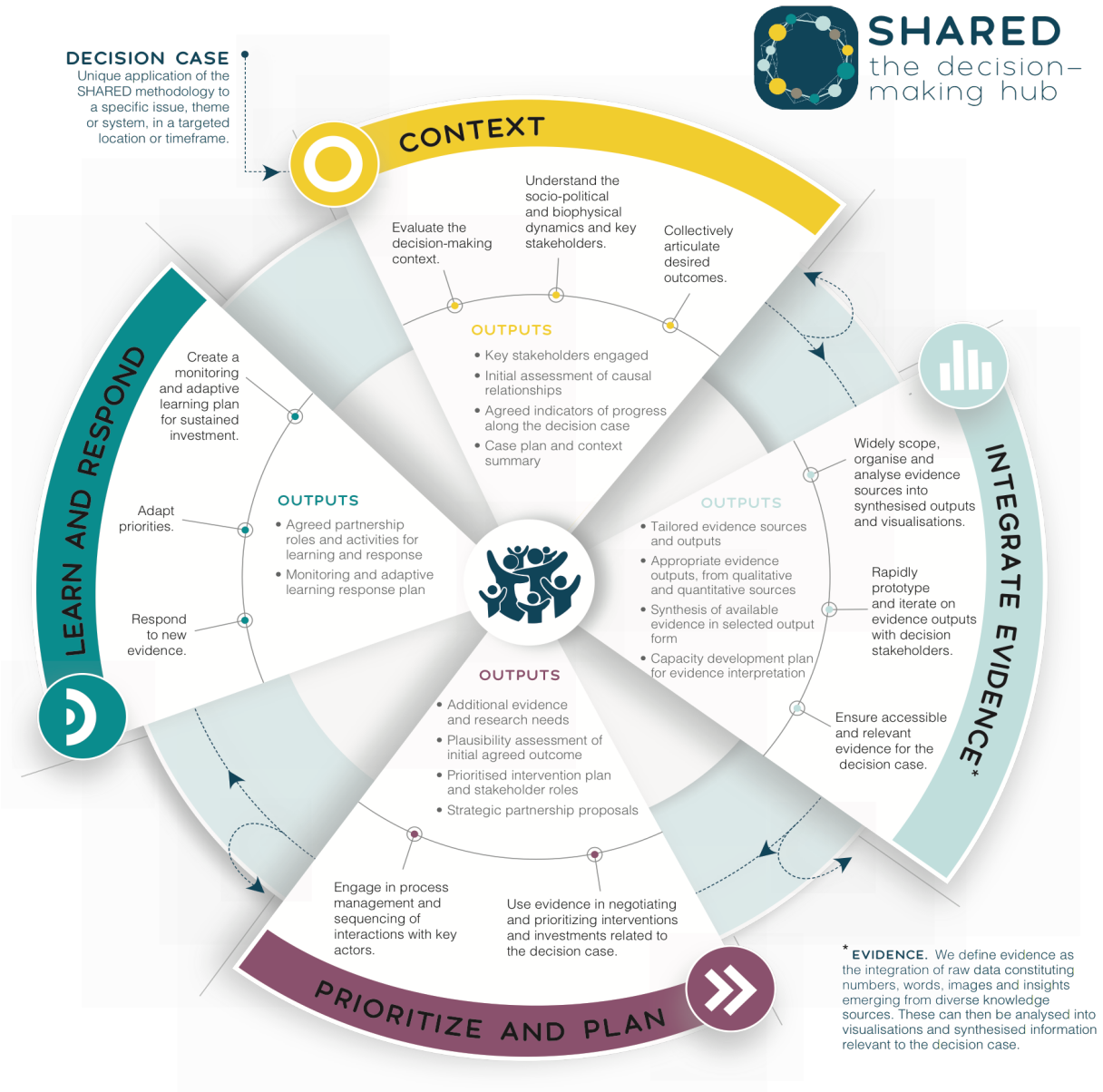

Figure 4: The SHARED methodology.

Dr. Neely shared an example of Turkana County in Kenya and the development of the dashboard to enhance decision making. More information about SHARED can be accessed at: http://landscapeportal.org/sharedApp/.

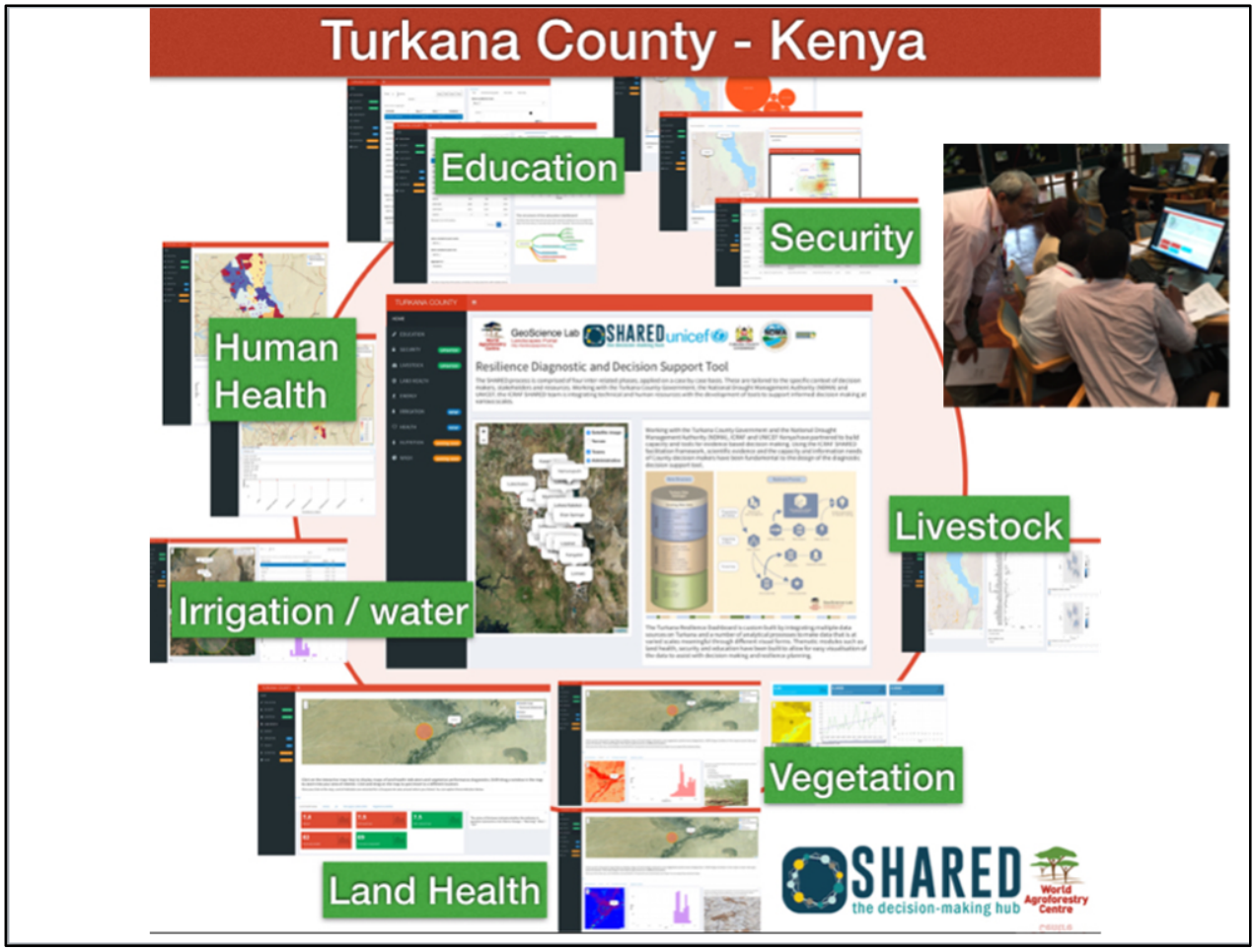

Figure 5: Example of the SHARED in Turkana County – Kenya.

5.0. Process for Developing Policies and Investment Decisions related to SAI

This session was done using groups discussions: Participants were organized into four groups:

i. Participants from Research and Academia
ii. Participants from National level
iii. Participants from NGOs and Regional/district level
iv. Donor group

Each group was asked to have a conversation based on their experience of policy development, planning or investment decisions and answer the following questions:

- How are objectives or goals decided?
- Who is involved the process?
- What evidence is used in your decision making process?

The following were the responses.

Research and Academia group

How are the objectives and goals decided on?

- The objectives and goals are based on the research that is being done. Most of the research is donor driven (follows donors agenda e.g. climate change etc)
- Policy recommendations are based on the research findings
- The procedure for policy development involves stakeholder engagement, but for how much? It depends with the researchers and type of research. Likewise - how much of the information is gathered from the stakeholder?
- Initially the policy makers did not consult universities for example, but it is now done, depending on the area of specialization

Investment Decision:

The ideas are initiated by the funders and the government in most cases. Local information may not be included to a large extent to influence objectives and activities due to lack of funding.

Who is involved in the process?

- Government
- Political push
- Private sector
- Minimal involvement of end users- farmers – in the development of policy

What evidence goes into the SAI policy?

- Evidence goes into the SAI policy, but easier when the evidence is likely to support/protect the politicians position
- The evidence goes after feedback mechanisms and consultations on the evidence
- Most of the evidence so far have influenced the policy that focused most on productivity. Now evidence and policy need to look beyond productivity e.g. ASDP II including gender and nutrition, with the awareness of Climate Change

When is evidence used – at what stage of the policy process?

- During prioritization of implementations?
- During the process of policy development researchers can be consulted
- During the process of policy review researchers can be consulted
- Researchers are often asked to engage in consultation after the policy has been launched.

National Level Group

How are objectives or goals decided?

- There must be a challenge
- The planners or technocrats in the prospective ministry- prepare a draft that addresses the challenge
- Draft is presented to management for approval
- Then taken to the stakeholders for consultation
- Views are incorporated
- Draft is revised

- Taken back to the stakeholders for validation
- Management for approval
- Discussed in Ministers council
- Parliament- endorsement
- Gazette
- Issuing seculars

What evidence is used in your decision making process?

- It is realized in the stakeholder consultations, best practices, ideas, and opinions.

NGO/Regional Level Group

How are objectives or goals decided?

The process involves:

- Situation analysis
- Stakeholder meeting
- Local approaches- opportunities and obstacles to development – O&ODs
    - Meet with the community to plan and discuss challenges
- Vision, aspiration of national institutes
- Need to get approval
    - RCC, DCC,FCC, Management meetings

Who is involved the process?

- Communities
- Beneficiaries
- Experts (government, researchers, etc)
- Development partners
- Counsellors/influential people
- Influential people – not formal, but maybe village chief

What evidence is used in your decision making process?

- Evidence should be verified and genuine
- Avoid misleading evidence

- Failures and successes should be included for better planning and learning

Donor Perspective Group

How are objectives or goals decided?

- USAID-Feed the Future programme fits well with the priorities of Tanzania. Works with local government and NGOs, National Research Institutes, and Research Organizations
- FAO- Works on global initiatives, for example SDGs- play the roles that supports the goals of the Government of Tanzania and use different funds to support the government with financial and technical support under different themes, e.g. Resilience

Overall: Disconnect

- Work is often donor driven- but are the donors using evidence?

6.0. National Priorities for Sustainable Agricultural Intensification

6.1. Prelude from Works in Mbarali

Prior to breaking into groups Nicholaus highlighted on the findings from Mbarali smallholder farmers SAI practices prioritization list. He highlighted that there was group disaggregation based on agro-ecological zones and gender. Participants were then given an opportunity to discuss the results.

The following were comments of participants on Prioritization List:

Participants were interested on the way fertilizers application was ranked higher in the highlands than the lowlands. It was reported that no probing was done on this during the prioritization workshop in Mbarali. But, based on landscape position, there was a common agreement in the meeting that lowlands are generally of higher fertility than the uplands because of depositions of eroded surface soils of uplands. Thus, it was more important to supplement soil fertility in the uplands due to the depletion.

Another observation was non-appearance of some SAI practices in the list which the participants of this meeting considered important, such as agroforestry. The facilitators of the Mbarali prioritization of SAI practices workshop explained that there was a longer list from

which the highly ranked 6 practices were extracted by the participants, and that the facilitators did not influence the selection and prioritization. It will be of interest to compare prioritization of SAI practices from Mbarali district to that of national workshop.

Photo: Nicolaus Johannes highlighting project findings from Mbarali.

6.2. Dimensions of SAI

This session was conducted using group discussions and presentations. The participants were organized into three groups and each asked to discuss on of the topic below:

- Identify measurable indicators that will let us know scaling of SAI has taken place.
- SAI Practices. Add to existing set to build out national priorities and group if appropriate.
- Identify the mechanisms that can accelerate scaling of SAI.

Group responses:

6.2.1. Mechanisms for scaling

The mechanisms for scaling were presented by group I as follows:

- Involvement of private sector
- Strengthening grass root and farmer organization
- Engaging across multiple levels, scales
- Strengthening Agricultural Extension Services
- Stakeholder Learning Platforms across levels, national and district learning alliances
- Best forum to showcase the best-fit practices
    - For example, lead farmers
    - Farmer field schools, field days
    - Demonstration plots
- Enhancing Coordination across Institutions
    - National CSA Alliance
    - Strengthen research and farmer sharing
    - Include all stakeholders
    - Reduce repetition, duplication of efforts
    - Mobilize funds
    - Distribution of roles
    - Prioritise activities
    - Equal, active members
- Strengthening Information Centres – for example at the ward level, the Ministry of Agriculture has constructed Ward Information Centres, to be used at district level to work with farmers and extension- for information and demonstration!
    - Sharing of information/ evidence/report
    - Strengthening ICT efforts
- On-farm research – to work with many farmers
- Support farmers to improve SAI
- Merge indigenous and scientific knowledge
- Strengthen collaboration
- Gender issues
    - Access to resources
    - Gender responsiveness - women, youth
- Incentives for adopting farmers

    - Subsidize inputs
    - Provide inputs
- Encouraging business mind-set for Agri-business
    - Income generation
    - District and regional level mandate to train farmers

6.2.2. Indicators of Success of Scaling

The indicators of success were presented by group II as follows:

- Increased adaptation
- Increased Productivity
- Increased acreage
    - Improved income
- Sustained and improved environmental health
    - Avoiding degradation
    - Improved land and soil health (biodiversity, moisture, fertility)
- Improved Social Welfare
    - Nutrition
    - Socio-economic
    - Better health
    - Better education
- Improved infrastructure
    - Roads
    - Markets
    - Financial institutions
    - services
- Improved Land use Planning
    - Reduced conflicts (note that conflict can still be there)
- Available Land use Plans
- Equity (how will this be measured – Is number of men and women adoption)
    - Gender-wise
    - Age

    - Disability
- Increased Number of Farmers who are adopting SAI
    - Type of practices

Photo: Dr Boniface Massawe presenting indicators of success of SAI scaling.

6.2.3. SAI Practices

This was presented by group III. The group added to the SAI intervention options from Mbarali district and grouped the interventions into crop management (timely planting, spacing, weeding, timely harvest); livestock management (fisheries, use of draft animal, use of farm yard manure); farming practices (agro-forest, conservation agriculture, conservation farming using ridges); biodiversity (NTFP, Bee keeping, home gardens); water use efficiency (Irrigation farming); IPM (Crop rotation, use of insecticides).

Table 1: List of SAI practises prioritized in Mbarali district.

SAI practices prioritised by men and women in lowland and upland areas of Mbarali District. A group of men and women at each site ranked the practices from 1-6 with 1 being the highest priority.

SAI practices (identified at District level)	Females Uplands	Males Uplands	Females Lowlands	Males Lowlands
Early land preparation	1		2	1
Use of industrial fertilizer	2		3	4
Selection of quality seeds	3			
Use of pesticides	4		5	6
Irrigation farming	5	2	6	3
Conservation agriculture	6			
Use of improved seeds		1	1	2
Adherence to recommended spacing			4	
Usage of farm yard manure (FYM)		3		
Mixed cropping		4		
Crop rotation		5		
Conservation farming using ridges		6		
Use of draft animals				5
Agroforestry				
Water usage				

SHARED the decision-making hub

World Agroforestry Centre

Photo: Dr Anthony Kimaro of ICRAF presenting on behalf of his group.

7.0. Root cause analysis of key barriers to scaling SAI practices

7.1. Key barriers to scaling SAI practices

The following were identified key barriers to Scaling of SAI as per discussion held per table;

- Inadequate on-farm research
- Under-involvement of women and youth in decision-making
- Lack of proper coordination among stakeholders
- Insufficient evidence of SAI technologies
- High cost of SAI (inputs, knowledge etc)
- Changing mind-sets and culture
    - Local seeds vs improved seeds
- Gender issues
    - Women have unequal access to resources
    - Decision- making
- Limited access to Inputs

    - Issues of finance and income
    - High costs
- Lack of Knowledge of the SAI practices
- Lack of Motivation
    - Of farmers due to market access
    - Of extension officers due to in-adequate tools
- Linkage between farmers, extension and research
    - Information sharing etc.
    -

7.2. Root Cause Analysis

The root cause analysis was done using group discussion. Each group was asked to choose one key barrier to adoption of SAI practices and perform root cause analysis considering environmental, economic, political and social aspects. The route cause analyses are summarized in the diagrams below:

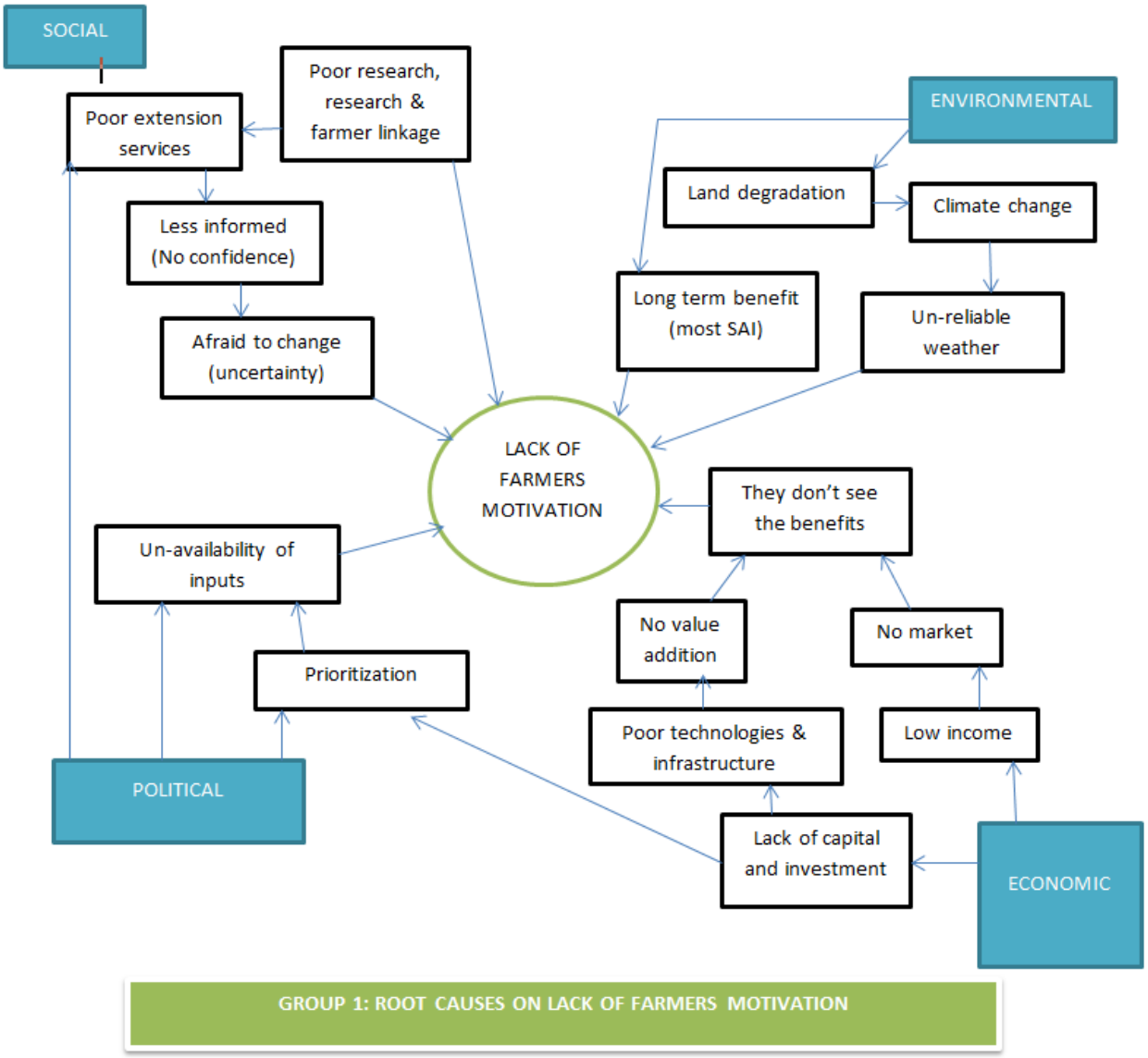

Figure 6: Root causes on lack of farmers motivations.

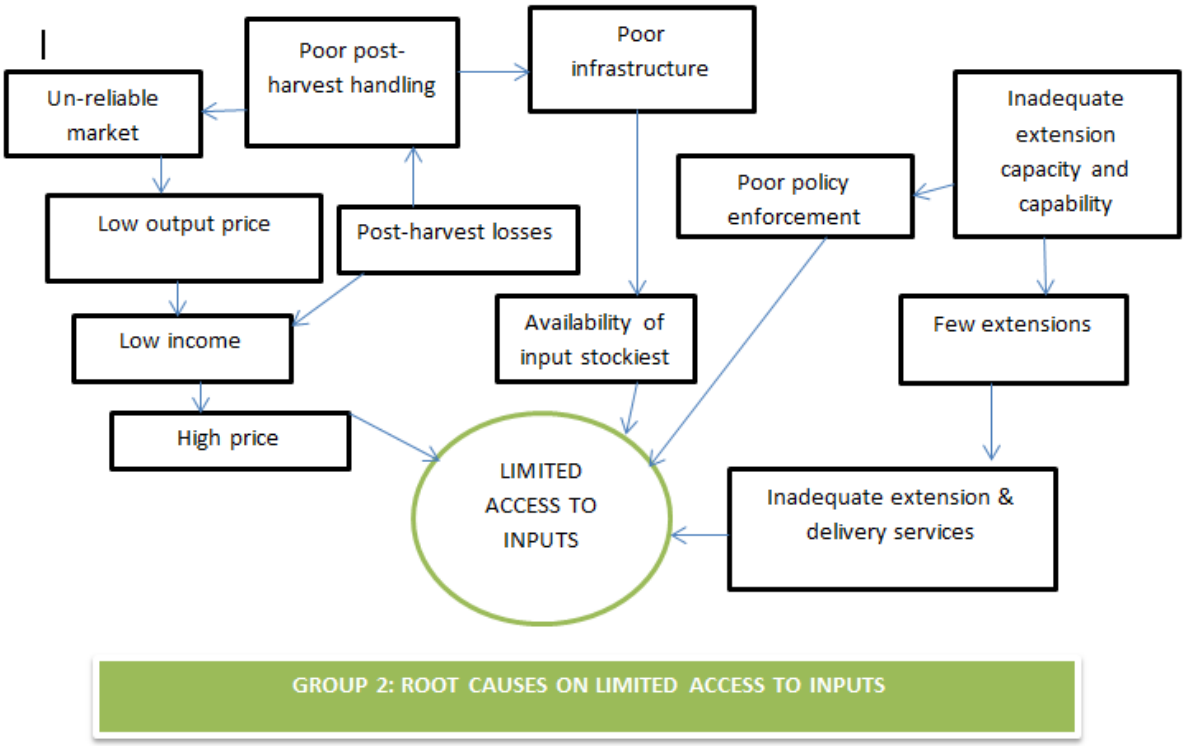

Figure 7: Root cause on limited access to inputs.

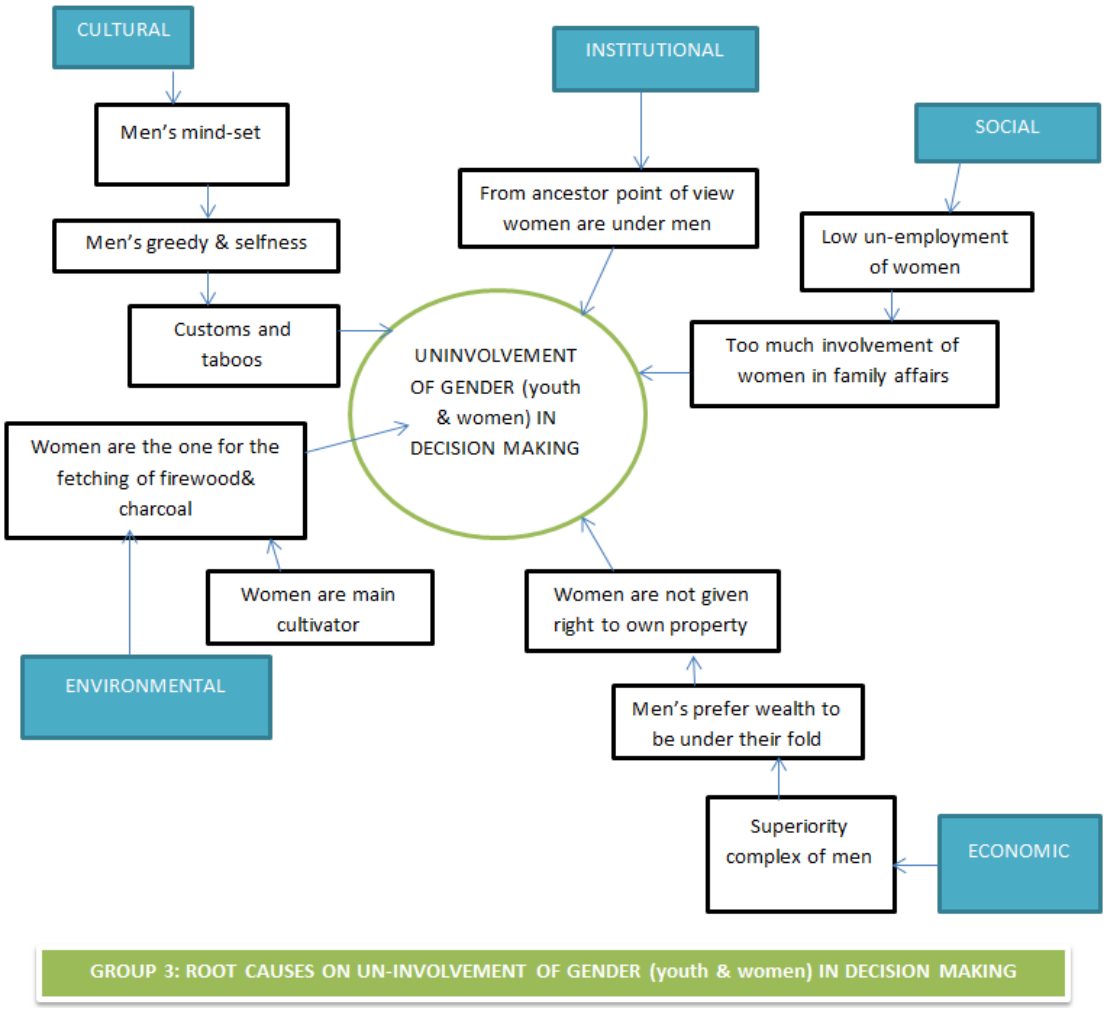

Figure 8: Root cause on un-involvement of gender in decision making.

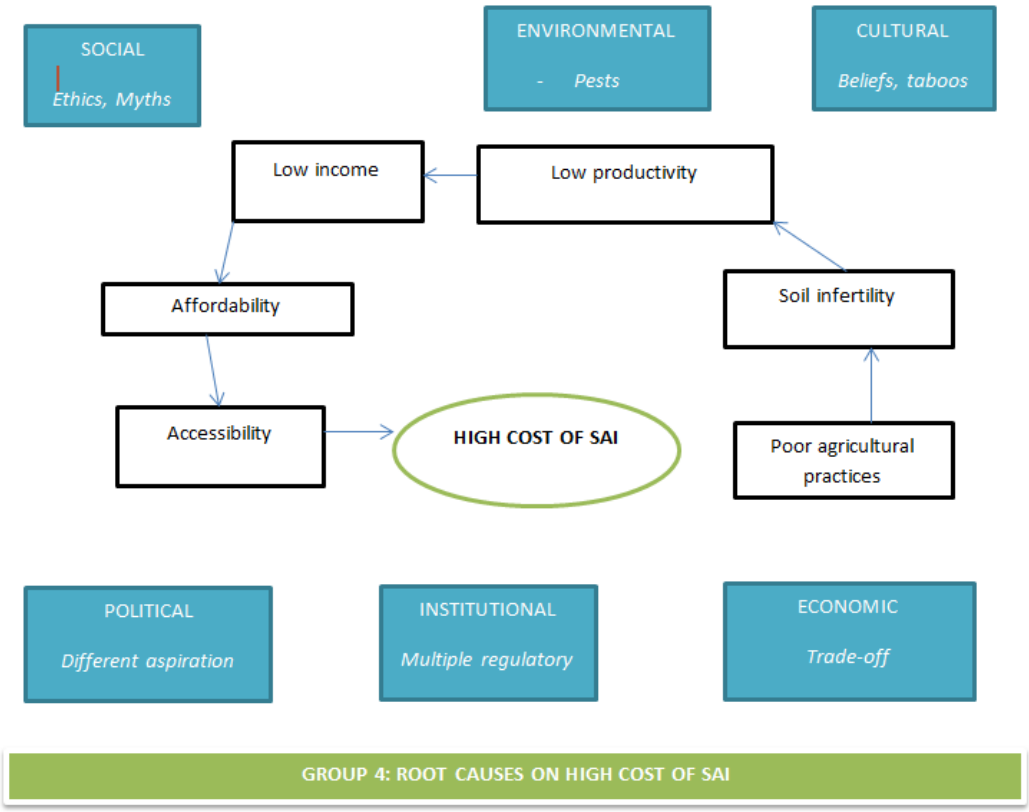

Figure 9: Root cause of the high cost of SAI.

7.3. Potential Areas/ Priority for Intervention

Priority for intervention was done by providing each participant with five stickers and asking him/her to put the sticker(s) on an activity(ies) they consider as a priority for intervention in this project. The results are tabulated hereby below:

Table 2:Potential areas for intervention – voting.

SN.	Potential area/priority for intervention	Number of votes
01.	Poor agronomic practices	07
02.	Climate change	06
03.	Land degradation	05
04.	Soil infertility	04
05.	In-adequate extension & delivery services (poor extension services)	04
06.	Customs and taboos	03
07.	Un-availability of input stockiest	03
08.	Un-reliable market (No market)	03
09.	No value addition	03
10.	Low knowledge of women	02
11.	Un-availability of inputs	02
12.	Environmental	01
13.	Women are the main cultivator	01
14.	Un-reliable weather	01
15.	Lack of capital and investment	01

8.0. Trade- offs analysis, Themes and Indicators

8.1. Proposed themes

The facilitator (Dr. Constance Neely) started by explaining the concept of trade-off on SAI intervention. She stated that, the concept of SAI, which aims to increase agricultural production in an environmentally sustainable way, implicitly involves trade-offs. Understanding the social, economic and environmental trade-offs of SAI is inherently complex, especially across diverse agro-ecological landscapes and over time and it is focus on spatially explicit interdisciplinary trade-off assessments - incorporate space and time elements as well as interdisciplinary datasets, including gender preferences and equity, to conduct socio-ecological trade-off analysis.

Then the participants were divided into groups and tasked to go through the presented themes (in the Figure below), and make any suggestions/additions.

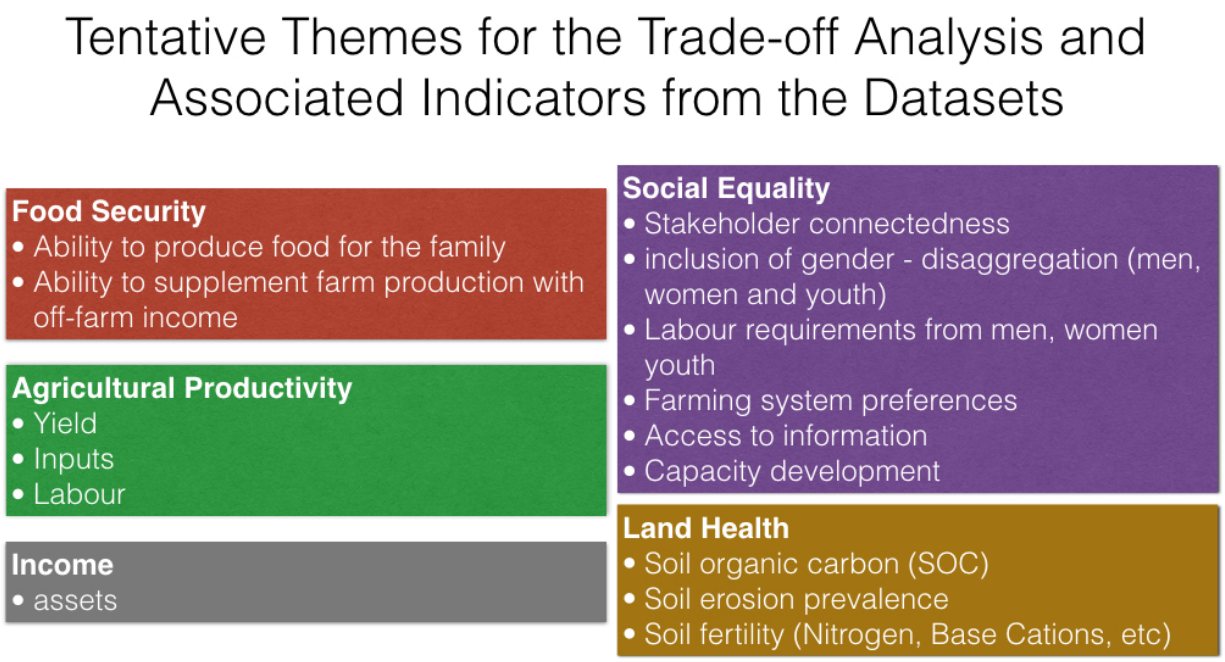

Figure 10: Proposed themes for the trade-off analysis.

8.2 Proposed changes to trade-off themes and associated variables

I. 'Food Security' should read 'Food and Nutritional Security'

- Move ability to produce for the family and put under Agricultural Productivity
- Ability to reduce malnutrition
- Food self-sufficiency, how much the family can sustain themselves
- Food nutrition
    - Diversity of diet/ dietary diversity
- Value Addition of the products
- Markets

II. **Social Equity**

- Access

- Gender-balanced
- Markets – under income maybe?

III. Agricultural Productivity and Profitability

- Yield
- Inputs – cost, availability, quality, seeds, mechanization
- Labour
- Technologies – which technologies – value addition
- Expertise Available-Access to to extension services on that particular technologies
- ability to produce for the family and put under Agricultural Productivity
- Mechanisms – increased utilization of agricultural mechanism
- Farm Budget – investment being made and the returns
    - Can have maize- yields can be high but what are the costs of inputs etc.
    - Assets
- Savings
- Financial services (access to services, loans) and availability
- Livelihood – labour and employment (where they are working, percent of income from farm vs off-farm)
- Markets – access to markets and available of markets

IV. Resilience to Climate Change

- Sustained productivity regardless of drought
- Biodiversity-
    - tree species, flora and fauna
- Water-use efficiency

V. Soil and Plant Health

- SOC
- Soil erosion
- Soil fertility

- Pest prevalence
- ISFM
- Siltation
- Salinity
- Soil acidity
- Pollution
- Compaction, bulk density
- Porosity

VI. Enabling Environment

- Policy

9. The SAI interactive dashboard

9.1. Introducing SAI dashboard

This session was introduced by Dr. Leigh Winowiecki. She mentioned that the project is intending to develop a SAI interactive Dashboard for Mbarali district to allow users to interact with data in a meaningful way. The dashboard will be used:

- as a data-driven platform
- to integrate existing and new data and
- to provide robust data management and graphical tools

She also pointed that the dashboard will contain both social and ecological datasets and it will use a combination of both spatial (maps) and non-spatial data analytics and graphics.

Thereafter participants were grouped to work on the themes that they think are very important to appear in the expected Mbarali Dashboard. The following were the suggested additional themes for the Dashboard:

- Crop productivity
- Livestock productivity
- Energy access
- Climate change resilience
- Institutions (CBOs, farmer groups, NGOs, etc)

- Food and nutrition section security
- Soil health
- Water resources and Irrigation
- Market (value addition, access and price)
- Climate
    - Local
    - Global
- Education
- Land health
- Livelihood and social inclusion
- Education

The following participants volunteered to form the working group to be a party of Mbarali district dash board preparation: Amos, Jamson, Austin, Natai, Kivuyo, Boniface, Nicholaus, Martha, Savior, Anthony, Nyasebwa and Chimagu. The means of communication was proposed to be by emails, skype and Webex.

9.2. Data Availability for the Dashboard

Discussions around the types of data that are either being collected by various stakeholders or that would be nice to include in a dashboard highlighted several opportunities. Table 3 summarizes these discussions.

Table 3: Types of data being collected by various stakeholders..

Themes and Variable	Type of Data	Scale of Data	Who has it
Food and Nutrition - Dietary diversity	-HH Survey every 4 years NASC -Annual Agricultural Sample Survey pf Ag-Extension services	HH	-Tanzania bureau of statistics -National Agricultural Survey Census (NASC) - Tanzania food and nutrition centre (FFNC)
Production Data	Area of production; tonnage (yield)	-every village (10 farmers are selected)	District Council - Mbarali

		and their area and productivity are measured	
Production	Agriculture, livestock, fisheries, cooperatives	Across the country, monthly, quarterly, annual survey conducted by extension services	ARDS- Agriculture Routine Data System District Council
Gender	Studies	HH-level	Ministry of Community Development now under the ministry of Health- TZ Gender Network
Income/crop prices	Small market surveys by the extension services- to get the market prices for different crops	Monthly small market assessment	DED
Budget, HH Income	HH survey		National Bureau of Statistics, Ministry of State Presidents' Office of Planning -ILO.ORG (Micro Reporting)
Livestock (goats, chickens, cows, pigs)	Each hamlet (the smallest administrative level within the village) in collaboration with livestock officers	District- HH?	District Level DED In the process of making a website
Climate Data	Rainfall, temperature, wind, solar radiation	National and Regional Mbarali has 5 rain gauges	MET Database Not freely available
Biodiversity	Trees planted Wildlife /management		-SUA -University of Dar es Salaam -TZ Ministry of Natural Resources and Tourism -TAFORI
Water	-Number of intakes, points from the river; boreholes -Irrigation and	Surveys, studies	Ministry of Water and Irrigation -DED

	domestic use		
Soil Health	Surveys, soil type, fertility	National- TANSIS	Research Institutes Universities TANSIS
Plant Health	Surveys	National, regional, district	MALF Research Institutes Universities
Land and Soil Health	-Soil type maps, -Soil characteristics -AEZ -Soil pH (1:@M) -Land use/cover -Farming system map -SOC Map Soil pH *SAGCOT Centre)	National	MALF, National Carbon Monitoring Centre, Tanzania Forest Service, SUA, TANSIS, University of Dar Es Salaam,
Food Security and Income	Livelihood zones	National	Tanzania Resilience Map _IRA
Productivity Mechanization	Surveys of types of agricultural equipment Status of Mechanisms	National report Njombe	SUA MALF SAGCOT Centre
Productivity	Yield data Potato VS Mutanga, AGRA	SAGCOT	MALF, SAGCOT Centre
Food Security - Dietary diversity	-Types of food in a meal -Number of meals	In a day/ in aweek	TASAF MALF TFNC LGA
Income Asset	-Type and number -Value of the asset	In a year	TASAF NBS LGA
Agricultural Productivity - Efficiency	-Ratio (Value) -Input/output	Season	LGA ICRAF ARI

10. Policies in support of scaling SAI

10.1. Existing policies

Mama Natai from MALF took a lead in this section by explaining the general overview of Tanzanian agriculture, definition of SAI, concept of SAI, government initiatives on SAI, what are the key ingredients and barriers to scale out SAI?, TCSAA Composition and Structure, inclusive & Sustainable Agri-business in SAGCOT Region and the SDGs involved.

She explained that, at the national level, there have been various efforts to address desertification, land degradation and drought. Tanzania government has put in place policies, programs, plans and guidelines to support SAI up-scaling as follows;

1. Tanzania National Agriculture Policy, 2013 – ***Promotes agric. practices that sustain the environment through up-scaling of SAI***
2. ASDP II - ***Sustainable integrated land and water resources use and management and increased resilience***
3. Tanzania Agriculture Climate Resilience Plan (ACRP, 2014 – 2019) - ***Up-scaling Climate Smart Agriculture (SAI)***
4. Tanzania CSA Programme (2015 – 2025) **– with the vision of having an agricultural sector that sustainably increases productivity, enhances climate resilience and food security for the national economic development in line with TDV 2025**
5. Climate Smart Agriculture Guidelines (2017) - ***Identification of key requirements, suitable technologies and practices for successful implementation of CSA/SAI***
6. **National Environmental Policy (NEP,1997 – under review) -** *Aims at ensuring sustainable and equitable use of resources for meeting basic needs, preventing and controlling degradation of land, water, vegetation and air, and improving the condition and productivity of degraded rural and urban areas*
7. **National Strategy for Growth and Reduction of Poverty (NSGRP) - phases I (2005 -2010) and phase II (2010-2015) -** *fertilizer subsidy and improved seed through NAIVS that has improved yield in many parts of the country especially of maize in the SHZ regions (Mbeya, Rukwa, Iringa, Ruvuma) as well Morogoro and Kigoma where climatic*

conditions are conducive

8. **Fishery Sector Development Program (FSDP) -** *Designed to take on board interventions that are geared towards ensuring sustainable fisheries resources management, development, conservation and utilization that will be implemented at national and local levels as well as by the public and the private sector*

9. **National Land policy 1997**

   Aims to promote and ensure land tenure system, to encourage the optimal use of land resources, and to facilitate broad-based social and economic development without upsetting or endangering the ecological balance of the environment.

   Provides a framework for sustainable land utilization in the country by among others providing positions to guide land protection, allocation, ownership and use, as well as resolving recurring land conflict problems in the country.

10. **The National livestock policy 2007** – aims t*o ensure that livestock resource is developed and managed sustainably for economic growth and improved human livelihoods. Hence, management of livestock sustainably necessitates the adoption of SAI especially in the context of land and sol fertility management*

11. **The Livestock Sector Development Program (LSDP, 2011)**

    Roadmap to implement the National Livestock Policy (NLP) of 2007, Key strategic areas include: - (i) Sustainable use of land, water, pastures and rangelands; (ii) Public/Private sector investments and financing for improvement of livestock value chain productivity and efficiency (production, marketing and processing); (iii) Control of livestock diseases leading to reduced high calf and local chicken mortality in the traditional sectors

12. **12. National Water Policy (2002) -** *It establishes a comprehensive framework for sustainable development and management of water resources and for participatory agreements on the allocation of water for different uses.*

13. **13. The National Irrigation Policy 2010 -** main objective is to ensure sustainable availability of irrigation water and its efficient use for enhanced crop production, productivity and profitability that will contribute to food security and poverty reduction

Apart from the described above policies, she also mentioned other policies, programs, plans and guidelines to support SAI up scaling such as;

i. Tanzania Development Vision 2025;

ii. The Five Year Development Plan - FYDP 2011/2012 –2015/2016);
iii. The National Climate Change Strategy of 2013;
iv. National REDD+ Strategy of 2013;
v. National Environmental Action Plan 2013 -2018;
vi. Big Results Now Programme (2014);
vii. The Strategy for Urgent Action on Land Degradation and Protection of Water Catchment (2006);
viii. The National Land use Planning Framework (2010);
ix. National Action Plan to Combat desertification (2014);
x. Agriculture Sector Environmental Action Plan (2012-2017);
xi. Partnership Approach for Quick Wins – SAGCOT Approach of Inclusiveness

10.2. Policy Discussion – Plenary

After her presentation there was discussion among participants on the presented policies. Most of participants said the policy are good but they are not fully implemented, some policies are not well known, some policies need to be reviewed (some are out-dated), and that there is a need of some awareness rising on the policies.

Each sector is in charge of reviewing their sector policy; MALF can improve communication across the sectors now that MALF is together with the three major divisions (agriculture, livestock and fishery) each had to learn about each other and collaboration.

It was also mentioned that it's the Central Government which set the policies but most of implementation is done by the Local Government. The local government uses by – laws, hence;

- Need to improve the by-laws
- Support by-laws

11. Concluding the Workshop

11.1. Next steps after the workshop

Dr. Constance provided the next steps after the workshop to the participants: They included:

- Trade-off analysis into the dashboard
- There will be the first form of the dashboard for Mbarali by end of year
- Demonstrations and interventions of community prioritized practices in Mbarali District
- Communications among those involved in the dashboard development

The organizers promised to share the report to all who have provided an email address within 2 weeks. The report will include annexes of the data presented

A question was posed to participants: '*What will you do differently after this workshop?*'

- ANSAF will follow-up on Policy Analysis once we outline the gaps and bring these to the decision and policy makers
- SAGCOT centre stated that their next cluster is Mbarali they a looking to identifying partners and areas of collaborations.

11.2. Workshop evaluation

Each participant was asked to share, on a card, their rating score from 1 (lowest) to 5 (highest) for each of these categories:

- Content
- Objectives
- Facilitation
- Time Management
- Representatives and participation
- Logistics

11.3. Closing remarks

Mr. Nyasebwa from RAS-Mbeya office made closing remarks first by congratulating participants on their active participation throughout workshop, he also acknowledge the way facilitators has organize themselves to engage participants effectively.

He went further saying how grateful he was after learning a lot in the workshop and due to on-going climate change the selection of Mbarali district as the area of implementation was perfect, the project team has to bear in mind that during the implementation they will encounter with un-reliable rainfall that might lead to low productivity but he is sure that the SAI will be solution of the climate change if it well adopted.

He was optimistic that the findings from the Mbarali district where SAIRLA project is implemented will be used for scaling up into other areas of Mbeya region as the government and region has committed to make this project to attain it is objectives.

Regards to the NGOs that want to work in Mbeya he welcomed the advising them to follow proper channel before starting implementing their projects. He said this will help to check that farmers are not misled and that there is no duplication of interventions.

He reported that, in order to enhance proper coordination, Mbeya Regional Commissioner wants to conduct a regional forum that will be held in Mbeya were all actors in the region comes together and know each other and find the areas where they can synergise.

Finally, he argued to everyone to be committed in the implementation of the project activities and wished everyone a nice journey on their way back to their respectively areas.

Annex 1: List of Participants

Registration for the Tanzania SHARED Workshop at White Sands Hotel

4th May 2017

Bringing evidence to bear on negotiating ecosystem service and livelihood trade-offs in sustainable agricultural intensification in Tanzania, Ethiopia and Zambia as part of the SAIRLA program

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