



## **SIMLESA II Launch and Planning Meeting: Eastern Africa (Kenya and Tanzania)**

**14-17 October 2014**

**Kibo Hotel, Arusha, Tanzania**

**Meeting Report**

## Executive Summary

This report summarizes SIMLESA 2 launch and planning meeting held in Arusha, Tanzania, to launch and plan SIMLESA 2 for Kenya and Tanzania.

Representatives from the Australian Center for International Agricultural Research (ACIAR), Queensland Alliance for Agricultural and Food Innovation (QAAFI), the International Center for Tropical Agriculture (CIAT), the national agricultural research systems (NARS) of Kenya and Tanzania, and CIMMYT scientists from Ethiopia, Kenya and Zimbabwe met between 14-17 October in Arusha, Tanzania, to finalize activities to meet the objectives of the second phase of CIMMYT's Sustainable Intensification of Maize-Legume Cropping Systems for Food Security in Eastern and Southern Africa (SIMLESA) project.

The joint meeting for the Kenya and Tanzania country teams was the third and last launch and planning meeting. It was also a follow-up of two previous operational meetings held in Lilongwe, Malawi, and Hawassa, Ethiopia.

The first phase of SIMLESA, funded by ACIAR, ended in April. The second phase, which ACIAR is also funding, was launched in Addis Ababa, Ethiopia in July. The major objective of the Tanzania meeting was to produce country-specific operational plans for Kenya and Tanzania. This involved realigning the two countries' activities to the overall SIMLESA II program plan.

SIMLESA was established in 2010 to improve the livelihoods of smallholder farming communities in Africa through productive and sustainable maize-legume systems and risk management strategies that conserve natural resources. It is managed by CIMMYT and implemented by NARS partners in five target countries of Ethiopia, Kenya, Malawi, Mozambique and Tanzania. With lessons from these core countries, the program is also implemented in the "spill-over" countries of Botswana, Rwanda and Uganda

Dr. Fidelis Myaka, director of research and development with the Tanzanian Ministry of Agriculture, Food Security and Cooperatives and guest of honor at the meeting, said SIMLESA was one of the pathways for Tanzania to meet its nutritional requirements and achieve food security for its population by 2050. Myaka, who is also a SIMLESA Project Steering Committee member, added that the project's first phase focused on various technologies and improved the yield and productivity of smallholder farmers through sustainable maize-legume systems in the five core countries.

"Now, we need to upscale all these good experiences and the second phase is not an opportunity to be missed. The implementation of SIMLESA II will give all of us an opportunity to work with farmers to increase their production for sustainable food security and income," Myaka told the 42 meeting participants.

George Mburathi, ACIAR consultant, said SIMLESA had a role to play in telling its own story to the outside world. "SIMLESA should proactively develop content for its publications to give smallholder farmers a voice. This way, you will help to involve various stakeholders by communicating for impact and influence."

SIMLESA coordinator Dr. Mekuria Mulugetta, who was represented at the meeting by Dr. Isaiah Nyagumbo, reminded the participants that SIMLESA II seeks to increase productivity by 30 percent, reduce downside risk by 30 percent and extend conservation agriculture-based sustainable intensification maize-legume technologies to 650, 000 farmers by 2023. The presentation also highlighted the major changes in the structural framework of SIMLESA in its second phase. The national coordinators from the two countries gave an overview of SIMLESA I products. Leaders of each of the four objectives highlighted the major changes to each objective in SIMLESA II. Cross-

cutting areas such as gender mainstreaming and development communications were also highlighted as crucial to the success and impact for SIMLESA II. Participants developed work plans aligned to country priorities, which were linked to country financial budgets. These will be finalized in the next two weeks. This last planning meeting means that SIMLESA will now go “full throttle” to implement its second phase.

## **DAY ONE: 14 OCTOBER 2014**

### **SESSION ONE: OPENING REMARKS**

**Facilitator: Dr Peter Setimela**

#### **1.1 Dr Isaiah Nyagumbo, CIMMYT**

Dr Nyagumbo, who was representing Dr Mulugetta Mekuria, the SIMLESA program coordinator, first welcomed the meeting participants warmly. He then elaborated on the multiple benefits of sustainable intensification of maize-legume cropping systems in Eastern and Southern Africa. He also said since SIMLESA I had been concluded, this was the opportune time to plan for the activities of SIMLESA 2. He said CIMMYT and national agricultural research systems (NARS) of Ethiopia, Kenya, Malawi, Tanzania and Mozambique are research partners in sustainable intensification of maize-legume cropping systems for food security in Eastern and Southern Africa project (SIMLESA). The ACIAR – funded project, whose focus is on improving sustainable productivity in farming systems and enhancing livelihoods through adoption of various technologies in the targeted countries will strengthen the existing research activities in these countries.

#### **1.2 OFFICIAL OPENING – Dr Fidelis Myaka, director, Department of Research and Development, Ministry of Agriculture, Food Security and Cooperatives, Tanzania**

Dr Myaka noted that in Tanzania, increasing agricultural productivity is critical to meeting food security and economic development in the face of rapid population increase. Currently, he said, the agricultural sector supports over 80 percent of the population. In addition, agricultural sector is the main source of food in the country - accounting for over 95 percent of the total supplies. The sector also accounts for nearly 25 percent of the Gross Domestic Product (GDP) and 30 percent of foreign exchange earnings. He said his country’s challenge is to keep the pace for food production to increase by 70 percent by the year 2050 to meet the nutritional requirements of the growing population. Sustainable intensification of agriculture is expected to be one of Tanzania’s path toward achieving this.

From 2010 to 2014, Dr Myaka said, Tanzania had been implementing the Sustainable Intensification of Maize – Legume Cropping Systems for Food Security in Eastern and Southern Africa (SIMLESA I). The pilot districts and the main thrust of the strategies of the project during phase I in Tanzania included: Participatory Variety Selection (PVS), Mother Baby trials and on farm exploratory trials containing maize and pigeon pea intercropping using conservation agriculture (CA).

He said the involvement of stakeholders and use of the value chain approach, indicated that SIMLESA was in line with Tanzania’s National Agricultural Policy.

Dr Myaka noted that during phase one of SIMLESA, various technologies were released, increased yields in farmers' fields was evident, capacities of farmers and researchers were improved and there is evidence of adoption of some of these technologies. "For Tanzania, we are satisfied with the work done by SIMLESA phase I.

"Now we need to upscale all these good experiences and phase 2 is an opportunity not be missed. SIMLESA 2 implementation will once again give all of us an opportunity to work with farmers to increase their production for sustainable food security, and income."

Dr Myaka appreciated the work of the Australian Center for International Agricultural Research (ACIAR) in improving the livelihoods of people in developing countries through international collaboration in agricultural research. He thanked the Australian government, through ACIAR, for funding SIMLESA.

### **1.3 Highlights of SIMLESA I in Tanzania: Dr Lucas Mugendi**

Mugendi presented Tanzania's achievements under separate objectives, as follows:

Objective I: To understand farmers' maize and legume production constraints, opportunities, crop-livestock interaction, resource use, technology preferences and market access.

#### Objective I Achievements

Baseline household surveys were completed in 2010 in four districts: Mbulu and Karatu in the northern and Kilosa and Mvomero in the eastern zone. The survey covered 700 farm households.

Participatory evaluation of varieties and management technologies were undertaken. Objective I provided guidance in data collection for economic analysis. SIMLESA also implemented a maize-legume input and output value chain analysis.

Seven hundred farmers (300 in Eastern zone and 400 in Northern zone) adopted improved OPVs and hybrid maize seeds through partnership. Three-hundred and sixty-five farmers adopted CA technology through SIMLESA partners. In total 2,379 farmers have adopted improved technologies (either varieties or management technologies or both).

Linkages with objective 2 and 3:

- Provide information on selection of villages for expansion
- Information on farmers' preferences on management practices and variables
- Provided guidance in participatory evaluation and data collection for economic analysis.

Objective 2 focused on developing and scaling out climate resilient and sustainable smallholder maize-legume farming systems that improve productivity and reduce risk through the development and functioning of local innovation systems.

The agronomic achievements included the evaluation of 98 exploratory trials in 2010 – 2014. The program facilitated the holding of 15 field days during 2011 – 2014.

- Ten farmers from Kilosa and 10 farmers from Karatu visited CA plots of Mbulu farmers during the 2012 cropping season
- Fifteen farmers from Northern zone (Karatu and Mbulu districts) were facilitated to visit their fellow farmer in the eastern zone in 2013.

Fifteen innovation Platform were identified:

Five functional IPs at district level, and 10 at community level were identified and used in scaling out of identified technologies:

The IPS had the following advantages:

- Timely available of inputs to farmers
- Forum for farmers to discuss agricultural production challenges
- Enforcement of by laws.
- Easy agricultural information flow

Objective 3 focused on increasing the range of maize and legume varieties available to smallholders through accelerated breeding, regional testing and release, and availability of performance data.

The PVS approach offered farmers a chance to select varieties according to their preferences.

One hundred and seventy-two and 124 maize and pigeon pea PVS, respectively, were evaluated with farmers from 2011 to 2014. Sixty six and 13 maize and pigeon pea varieties were also evaluated.

In addition, Maize/legume varieties were selected for seed road map. SIMLESA supported the production of breeder seed for pigeon pea. SIMLESA also supported the production of breeder seed for maize road map. Identified technologies for scaling out in Tanzania:

- Intercropping maize pigeon pea under CA
- Maize hybrids i) TAN H 600, ii) Selian H 308 iii) TZH 538
- Pigeon pea variety i) Mali
- Weed management (use of herbicide in maize legume intercropping under CA)

Lessons learned:

- Farmers' field day and exchange visits important tools in creating awareness and transferring of the CA technology.
- Crop residues retention a big challenge in agro-pastoral communities.
- Use of fertilizer and proper crop husbandry practices significantly increase in yields.
- Involving partners is an efficient strategy in scaling out technologies.
- Group methods and mass media (TV, radio programs and newspapers) are efficient avenues for awareness creation and wider dissemination of the technologies.

- Involving IP is an effective strategy for solving farmers' challenges and enhance technology adoption.

The objective had the following challenges:

- Maize Lethal Necrotic Disease affecting districts in the Northern Zone
- Stunted growth
- Yellowing with necrosis of green lesions
- Drying of tassels and cobs at advanced stage of maize development
- Very poor grain filling
- Drying of the plant and eventually death of the maize plant
- Competition of crop residues for livestock feed and field mulch.

### **Suggested Research Activities SIMLESA Phase 2 Objective 1**

1. Business models that enhance adoption of CA technologies
2. Policy analysis and implications of government programs on CA adoption
3. Farmers organizations and implications for CA adoption (e.g. association vs cooperatives)
4. Modeling CA adoption (location, market, technology and costs)

### **Suggested Research Activities SIMLESA Phase 2 Objective 2**

1. Continue with on-station and on-farm exploratory trials with some modifications
2. Explore new options for pest management (particularly weeds) on CA trials
3. Collaborate with FACASI to address mechanization in CA plots
4. Explore alternative source of livestock feeds

### **Suggested Research Activities SIMLESA Phase 2 Objective 3**

- Continue with on-farm maize, pigeon pea and bean PVS
- Continue with breeder seed multiplication of parental lines of Selian H 208, Selian H 308, TAN H 600 and TZH 538
- Continue with breeder seed production of four Pigeon pea lines: ICEAP 00557, ICEAP 00554, ICEAP 00932 and ICEAP 00053

Proposed support from ILRI for SIMLESA Phase 2

- ILRI for forages research to be carried out in collaboration with colleagues at Ilonga Research Institute in the eastern and Selian Research Institute in the northern zone
- ILRI to supply improved germplasm of forages.

Proposed support from ICRISAT for SIMLESA Phase 2:

- Linking farmers to external markets
- Supply improved germ-plasm of pigeon pea and work with smallholder farmers
- Participate in a Pigeon-pea value chain study to improve production per unit area.

Proposed support from CIAT and QAAFI for SIMLESA Phase 2

- CIAT to supply improved germplasm of common bean for continuous PVS with farmers
- Supply N2 fixation Rhizobia for bean varieties PVS with farmers
- QAAFI APSIM model utilization, Risk analysis in CA, Typology adoption and recommendations for CA scaling out technologies

#### **1.4 Highlights of SIMLESA I Achievements in Kenya since 2010 and Implications for SIMLESA 2**

**Presented by Charles Nkonge: National Coordinator, Kenya**

Under SIMLESA – I, there were four study sites in Western Kenya and four study sites in Eastern Kenya.

##### **Objective I: Highlights of Achievements**

Main Objective: To characterize maize-legume production and input and output value chain systems and impact pathways, and identify broad systemic constraints and options for field testing.

Nkonge said community and household baseline surveys were undertaken in 2010 and 2011 in which eight communities were characterized through key informant discussions involving 302 women and 301 men farmers and 88 villages /communities characterized through baseline surveys.

The following were the activities:

- Maize – legume production systems, including both input and output value chain systems and impact pathways were characterized
- Benchmarks/baseline data against which the program interventions/progress could be evaluated were generated
- Broad systemic constraints, opportunities and options for field testing were identified, documented and used by Objectives 2 and 3.
- Based on the household data, six farm typologies were identified and described which would use similar intensification technologies as likely pathways out of poverty for smallholder farmers.
- Crop types and varieties grown in the communities were identified and documented.
- Access to agricultural inputs and services were identified and documented
- Baseline information has been used in guiding areas of program intervention and periodic progress review.

##### **Maize and legumes value chains analysis**

These included:

- Mapping of Maize and legumes value chain actors
- Documenting and identification of constraints, opportunities and interventions on the maize and legumes value chains

The program also conducted an adoption monitoring survey for technologies/practices covering 785 households was conducted in 2012 and 2013 (two and half years after) in the exploratory trial villages to find out:

- Progress of SIMLESA's technology adoption and number of research communities reached as well as adopters
- Identify host farmers who use technologies beyond exploratory sites
- Channels through which farmers became aware of SIMLESA activities.

The adoption monitoring survey results are indicated below:

| Technology                                  | At start of Program(Baseline) | Two and half years later (Adoption survey) |
|---|-------------------------------|--|
| 1. CA- no till, residue retained            | 1%<                           | 58% (Western and Eastern Kenya)            |
| 2. CA- Furrows and ridges, residue retained | 1%<                           | 38% (Eastern Kenya)                        |
| 3. Embean 14                                | 1%<                           | 71%  |

Participatory evaluation of maize and legumes varieties and management practices as well as the economics of developed technologies, including of CA, were jointly assessed with objective 2 and 3. teams.

## Objective 2: Highlights of Achievements

Main Objective: To test and develop productive, resilient and sustainable smallholder maize-legume cropping systems and innovation systems for local scaling out .

The effect of tillage method on water use efficiency (WUE):

- The effect of the different tillage practices on WUE was not significant.
- However, there was a significant interaction effect ( $P < 0.05$ ) between seasons and tillage practices on WUE.
- Zero tillage plots with maize- legume intercrop recorded the highest WUE compared to the other tillage practices.

The Effect of Tillage Method on Grain Yields:

- The effects of the different tillage practices on yield were not significantly different ( $P < 0.05$ ) from each other.
- However zero tillage with maize legume intercrop gave the highest maize grain yield when compared to the other treatments.



Smallholder farmers preferred the following tillage methods:

Three conservation agriculture practices (furrows and ridges; no-till; no-till +desmodium) were preferred by farmers during on-farm and on-station evaluation of the best bet options under maize-legume cropping systems in eight sites.

The farmers preferred these farming practices because CA practices are labor saving hence more profitable; and more moisture conserving and soil fertility improving?). The farmers also preferred practices to be scaled – out mainly through local innovation platforms.

The Embean 14 variety was release through SIMLESA support. Researchers started experimenting with the variety in 2010 as a pre-release. After two and half years the variety was adopted by 71 percent of the farmers (out of 785 interviewed). In March 2014, the variety was formerly released by KEPHIS.

The SIMLESA program established eight innovation platforms, with the following focus:

- i. Identifying food production challenges and opportunities;
- ii. Managing and evaluating technological options and limitations;
- ii. Advising on the best inputs and output market and linking the sites with the partners.
- iii. Promoting the community endorsed technologies/feedbacks;
- iv. Easy access to constraint solving information for stakeholders, rapid community mobilization, networking and synergy creation
- v. Increased level of self - driven interventions, thus minimizing top- down supervision
- vi. IPs act as agents of change thus filling the gap of the limited extension services leading to increased awareness on improved technologies, increased adoption, increased out scaling and productivity
- vii. Increased community visioning with set targets for improved productivity and marketing

### Objective 3: Highlights of Achievements

Main objective 3: To increase the range of maize and legume varieties available for smallholders through accelerated breeding, regional testing and release, and availability of performance data.

Maize and legume varieties evaluated through participatory variety selection (PVS). The following varieties were selected by farmers through PVS:

| Maize     | Beans     | Pigeon peas | Soya beans | Groundnuts |
|-----------|-----------|-------------|------------|------------|
| KH500-39E | KK8       | ICEAP 00850 | SB 19      | ICGV99568  |
| KH500-38E | Embean 14 | ICPL87091   |            | ICGV 90704 |
| KDVI      | KK15      |             |            | ICGV12991  |
| KDV6      | KATX69    |             |            |            |

|         |  |  |  |  |
|---------|--|--|--|--|
| H520    |  |  |  |  |
| KSTP 94 |  |  |  |  |
| KH 633A |  |  |  |  |

**Farmers preferred varieties:**

| Crop       | Western   | Eastern                                 |
|------------|---|---|
| Beans      | KK8   | Embean 14                               |
| Soybean    | SBI9  |   |
| Maize      | KH6333A<br>KSTP94<br>H520                       | H539<br>H538<br>Embu226<br>KDVI<br>KDV6 |
| Groundnut  | ICGV-SM-99568<br>ICGV-SM-90704<br>ICGV-SM-12991 |   |
| Pigeon pea |   | ICEAP 00850<br>ICPL 87091               |

The following partner institutions played a role in seed production:

1. Kenya seed to produce 1000 tons of H520 selected by farmers in western Kenya
2. Mogotyo Plantations planted hybrid KH 539E (30MT) towards Seed Road Map last season
3. Licensed by KARI to produce KH 500-39E KH 500-36E and KH 500-37E.

Testcross maize hybrids developed and evaluated between 2012 to 2013:

| Source        | 2012 LR   | 2012 SR   | 2013 LR   | 2013 SR   | Total      |
|---------------|-----------|-----------|-----------|-----------|------------|
| KARI          | 10 [1]    | 11 [2]    | 12 [0]    | 16        | 49         |
| CIMMYT (DTMA) | 9 [2]     | 9 [1]     | 30 [3]    | 30        | 78         |
| Checks        | 3         | 3         | 6         | 6         | 18         |
| <b>Total</b>  | <b>22</b> | <b>23</b> | <b>45</b> | <b>49</b> | <b>145</b> |

### Objective 3: Highlights of Achievements

*Objective 4: To support the development of regional and local innovations systems*

- ❑ A total of four researchers and two partners (4 women and 2 men) attended a total of four gender mainstreaming SIMLESA supported workshops held in 2011 and 2012. The trainees were sensitized on gender terms and concepts; gender-analysis tools and recording of gender responsive data and these served as trainers in gender.
- ❑ Documentation of five gender case study cases on good practices was carried out.

### Monitoring and Evaluation

Four officers were trained on monitoring and evaluation during the four training workshops that they participated in. After training in gender and M&E, the researchers used the skills that they had acquired in developing gender responsive activities. Key performance indicators that were used in monitoring the progress of program implementation were also monitored and evaluated. Other officers were trained to record gender responsive data.

### Objective 5: Capacity building to increase the efficiency of agricultural research today and in the future

Several equipment were purchased and infrastructural development effected. Several short courses were held for researchers, farmers and other partners. Three PhDs and one MSc students are at various stages of completing their studies. Several exchange visits were held between researchers and partners in SIMLESA countries and between farmers.

Ten papers were presented in conferences, 10 articles printed in news bulletins and newspapers and eight radio broadcasts were produced. Six program semi-annual reports and three annual reports were submitted.

### Challenges

- Unpredictable performance of bean varieties in western Kenya
- Best bet variety for pigeon pea not yet found for eastern Kenya
- Emerging diseases (MLND) in maize

## Way Forward

- Continue with the on-station long term trials
- Continue with the on- farm exploratory trials but with strategically reduced number of sites due to reduced funding
- Scale out promising and farmer preferred technologies through competitive grants and other methods such as demonstrations/field days/shows.
- Continue with short and long term capacity building.
- Address research issues identified in SIMLESA -I such as unpredictable performance of bean varieties in western Kenya; and best bet variety for pigeon pea not yet found for eastern Kenya
- Collaborate with other institutions on Maize Lethal Necrotic Disease and other emerging research issues.

## I.4 DISCUSSIONS ON KENYA AND TANZANIA PRESENTATIONS

**Table 1: Discussions on Kenya and Tanzania SIMLESA program highlights**

| Questions/Suggestions/Comments   | Reactions/Responses/Answers  |
|--|--|
| Dr Fidelis Myaka: Tanzania - On your way forward for Phase 2, you did not mention your out scaling/upscaling activities/strategies. Can you tell us more on this?  | Dr Mugendi: These have been mentioned e.g CA' weed control – these will be scaled up in SIMLESA 2.   |
| David Kahan: What ideas do you have to attach business models during second phase of the program?  | Dr Mugendi: First, I must admit that in Phase I we lacked business modelling; and there was a general lack of capacity within the program to implement this. In SIMLESA 2, there are strategies in place to implement business models.   |
| David Kahan: Yes, there are various opportunities to implement business models in Phase 2 of the program, but each country must be clear which areas need strengthening  | Dr Mugendi: Noted, with thanks.  |
| Dr Isaiah Nyagumbo: Why did you get yield responses of CA in 2012, and not in the other years?   | Dr Mugendi: This was a result of the weather, we received less rains in 2012 compared to the other years.  |
| Dr Nyagumbo: Your yield data concentrated on maize yet the project is on intensification of maize and legumes. Data on objective 2 is not convincing enough. ON IPs, can we document this in the project and demonstrate cropping methods (e.g. Tillage methods) that need to be scaled out as this is not mentioned on the scaling out plans. | The project demonstrated yield and productivity on pigeon pea. The technologies for scaling out in SIMLESA 2 are the same as the farmer chosen technologies, so we need to complement them. On IPs, the project identified 10 IPs at community level. However, it's difficult to tell their future performance at this stage of the project. |
| Dr Moti Jaleta: Are the farmers going for CA with rotation, or CA with intercropping? You said 239 farmers adopted CA- is it the whole package of they were implement part of the  | Dr Mugendi: It's not the whole package – selected some aspects of CA. We were testing intercropping on – farm only.  |

|  |   |
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| package?   |   |
| George Mburathi: During the first year of the SIMLESA I program, we identified issues of market access for smallholder farmers.  | Dr Mugendi: Market access remains a critical arm of the project. SIMLESA complements other projects. In Tanzania, there was a project which assisted pigeon pea farmers to access markets from Europe. However, ICRISAT should work with farmers to access markets.   |
| Dr Myaka: We need to document the achievements of SIMLEAA Phase I. Also, we don't have young people participating in the program. Can we do something about this?  | Dr John Sariah, SIMLESA- Tanzania objective 2 Leader, Northern Tanzania: We have a full report on SIMLESA Phase I achievements in Tanzania.   |
| Dr Myaka: Both Kenya and Tanzania mentioned the maize lethal virus, but none mentioned a way forward.  | Charles Nkonge: CIMMYT is supporting us in research work and we will have the capacity to assist our smallholder farmers contain the disease.   |
| Dr Jaleta (on Kenya): WE are saying CA saves on labor. However we are using herbicides which may increase costs of production, and affects on profitability levels. Is saving on labor actually bringing profitability within CA?  | Charles Nkonge: The challenge within CA at the moment is that we are not analyzing gross margins (as an investment). On labor, this is a more scarce resource. Farmers are therefore interested in CA as it is labor saving.  |
| David Kahan: Kenya's presentation focused on mostly on plot level as opposed to farm level research/experiments. How do you intend to focus on the whole-farm approach in the second phase of the program? How would you include the commercialization approach? You also highlighted work with IPS, what type of issues would be addressed by IPS in SIMLESA 2? | Charles Nkonge: Commercialization of smallholders gives us a lot of opportunities for scaling up. Using IPOs, we will use the networking collaborations that IPOs have to market framers produce and other services. The challenge is many stakeholders have different interest which may be difficult to strike a balance. |
| Dr Nyagumbo: (To both Kenya and Tanzania) – IPS may not necessarily be the best model to use. You may need to think about other alternatives.  | Charles Nkonge: Other ways could be found, but for the moment, IPS are doing well in terms of helping to disseminate technologies and research themes. But, we will look into other opinions as we scale up our work.   |
|  | Afred Micheni, Eastern Kenya: During SIMLESA I, we had functional IPs, had various technologies to be scaled out, and we had general challenges and coping strategies faced by researchers. We did not try other avenues except IPs. We also need to work hard on "from plot to farm."                                      |
|  | Dr Mugendi: We have functional IPs at district level and they are all in all five districts. The IPS will help us in scaling out activities at the grassroots level.  |
|  | John Sariah: In addition to IPs we have extension workers, and demonstrations. The challenge with IPs is that of stakeholder differences in approach and belief. IPS are not the only avenue  |

|   |  |
|---|--|
|   | to upscale agricultural technologies – we can demonstrate technologies, work with farmer groups and link them to output and input marketing.   |
| George Mburathi: Your updates (Kenya) on project achievements are highly commendable. But are you bringing those successes out through documentation? Now that you are going to integrate livestock and crops in Objective 2, did we document these in SIMLESA I? | <p>Charles Nkonge: Yes, you are right. Crops-livestock integration helps in disease control e.g. striga infestation.</p> <p>Dr George Ayaga: After this planning meeting, we are going back to the framers and ask them which technologies worked best for them. We will then out scale these best technologies in the second phase, with the help of IPs.</p> |

## 1.5 WHAT HAS CHANGED IN SIMLESA 2 – THE NEW LOG FRAME

### 1.5.1 SIMLESA 2: What is good, difficult, and different? – Presented by Dr Isaiah Nyagumbo

Dr Nyagumbo, who presented on behalf of Dr Mulugetta Mekuria’s cantered on “What is Good-Difficult and Different? In SIMLESA 2 work. He gave a brief profile of the program. The ACIAR-funded SIMLESA program launch and planning was convened to plan for the implementation of SIMLESA II in Ethiopia, together with other partners such as CIMMYT and CIAT.

He said the SIMLESA program implementation was being implemented by CIMMYT jointly NARS partners, with a financial grant form ACIAR (Phase 1 -2010 to 2014) and phase 2 (2014 to 2018).

The program’s regional and international partners include ICRISAT, QAAFI, ARC, ASARECA, and MU. The second phase includes CCARDESA, ILRI, and CIAT.

SIMLESA I had gathered collective experience, produced the 2012 mid- term review report, held the third and fourth annual review planning meetings as well as a project steering committee meeting to inform the planning of SIMLESA II.

Phase I of the program has empowered the National Agricultural Research Stations (NARS) in making important decisions regarding the program, build the capacity of the NARS to execute programs (programming, scientifically and financially).

As a result of its achievements, SIMLESA is being considered as a model project among government and the donor community. The4 program has also participated in various regional and international conferences to advance its agricultural for development objectives.

Dr Nyagumbo said SIMLESA is being institutionalized into NARS strategies especially the adoption of SIMLESA approaches into their operational models such as the agricultural value chain analysis, innovations platforms, gender mainstreaming and M&E institutionalization.

In SIMLESA 2 the program was banking on its successes in conservation agriculture-based cropping systems which had raised productivity increasing technologies, NARS ownership of program work and capacity building.

Challenges in implementation were highlighted as CA-based sustainable intensification in integrating other disciplines; risk reducing innovations and research designs, scaling out and business engagement (except maize seed), and M&E which supports management.

The overall objective of SIMLESA II is the continuation of the original 10-year vision by the year 2023: to sustainably improve maize and legume productivity of selected maize-based farming systems in each target country by 30 percent from the 2009 average and to reduce the expected downside yield risk by 30 percent on approximately an additional 650,000 farms in the SIMLESA countries.

### **SIMLESA II has the following elements:**

The combination of innovations with the aim to increasing productivity and profitability, reduce downside production risks, enhance sustainability and strengthen innovation platforms/systems.

SIMLESA II implementation period is 2014 to 2018 with the following implication: continuation with adjustment to 1<sup>st</sup> phase (2010-13) to build on SIMLESA-I achievements and lessons/feedback with the aim of strengthening multi-disciplinary field teams, targeting, and scaling-out; refocus some research and capacity building and phase down on completed research.

SIMLESA 2 would be different from SIMLESA 1 and changes would include the following:

Broader technological focus with the core thrust on Conservation Agriculture (CA)-based sustainable intensification, system orientation- from plot to farm, impact orientation-adoption, impact pathways, value chain linkages; partnership and scaling up/out and the management of competitive and commissioned grants.

There are several capacity building opportunities in SIMLESA II, such as:

- Training of at least 100 professionals on CA-based sustainable intensification, provided to build and enhance capacity of national and regional programs,
- Train 50 trained professionals on gender mainstreaming,
- Train 25 professionals on seed systems,
- Train 10 research managers,
- Train 50 extension and scaling out professionals,
- Opportunities to access competitive Australian PhD scholarships and ARC supported MSc. and PhD scholarships.

SIMLESA II will use lessons learned from SIMLESA I. These are the following:

- Integrating value chains activities with technologies,
- capacity building and local policy analysis,
- Use of innovation platforms;
- Consult women during project design and implementation and understand the incentives of all chain members and value chain dynamics within the broader market and trade context.

In SIMLESA II there some new activities that would be implemented differently, such as:

### **Objective I:**

The objective will make use of the rich and comprehensive data set available. The objective will no longer be a socioeconomics “silo” but will be multidisciplinary. Typologies to be used for targeting purposes will also be introduced to evaluate developed SIMLESA options. The objective will implement the value chain analysis and market studies for farmer- market linkages and agribusiness

development. In addition, objective 1 will adopt and monitor results to influence technology development and feed back to objective 2 and 3.

### **Objective 2:**

Fine tuning of current options and new areas of research by all and not just agronomists. The program is expected to:

- revisit on station and on farm exploratory trials- numbers and sites;
- package options for scaling out – objectives 1, 3 and 4;
- Produce case farms studies;
- going from plot to farm scale; and
- Facilitate CIAT and QAAFI to collaborate on country specific soil science research

### **Objective 3:**

Making available more new and resilient varieties of maize and legumes. There will be no more breeding as both legumes and maize breeding has a heavy investment by BMGF. The objective will help the program:

- refine the seed road maps per country;
- strengthen seed companies;
- to have more emphasis on legumes by strengthening the informal seed sector and capacity building

### **Objective 4:**

This is now a new standalone objective. It is no longer a refugee under objective 2. There is a competitive grant for scaling out with current and new scaling out partners. The objective will strengthen and use agricultural innovative platforms (AIPs) for scaling out, and work with agribusinesses to facilitate scaling out. Another area of focus for the objective would be measuring and documenting scaling out experiences and lessons. At the conclusion of ACIAR funding in 2018, the program would have reached 650,000 households in the five core SIMLESA countries and the three spillover countries.

### **Objective 5:**

Strengthened capacity building on specific country needs. This includes:

- on the job training, including online training by QAAFI;
- the development and production of a gender strategy for SIMLESA II;
- communications office on board from 1<sup>st</sup> September 2014;
- M and E officer under recruitment;
- Two QAAFI scientists based in Harare (Zimbabwe) and Addis Ababa (Ethiopia);
- improved program management and governance in place for SIMLESA II ; and
- strict and regular reporting by all partners.

However, Dr Nyagumbo said the road to SIMLESA success would not be smooth. Therefore, there was a great need to sustain the achievements of SIMLESA 1. But this would be more difficult as SIMLESA 2 had fewer resources than SIMLESA 1 although more activities were to be implemented in the new phase. SIMLESA 2 will coordinate a multi stakeholder program facing challenges in the area of limited capacity by partners to implement new areas of research and managing competitive grants and commissioned research. In addition, the program would be expected to get trust based data access, share policy issues and reach out to 650, 000 households.



### **1.5.1 Objective 1: log frame and outcomes - Presented by Dr Paswel Marenya**

Dr Marenya outlined objective 1 achievements as follows:

- About 508 research villages/communities were identified and characterized for demonstrating and evaluating technologies during SIMLESA-I and 2.
- Comprehensive household, plot and village level survey data from 3, 613 farm households [3020 male and 563 female] and 28 districts were collected in the five SIMLESA countries.
- Survey reports which characterized target areas for each country were prepared. These reports were shared with all our partners.
- At the level of markets, we produced value chain reports on input-output market constraints, opportunities and interventions.
- Training on value chain, constructing farm household typology and adoption and impact analysis training was provided for about 15 national partners and CIMMYT staff.
- Results have been presented at international conferences and SIMLESA annual meetings.

#### **Achievements: Capacity Building**

1. Several training courses conducted
  - January 2013: Regional Trainings on Value Chains on Constraints, Opportunities, Tools and Interventions
  - January 2013: Regional Training on Gender disaggregated survey, data and analysis and Integration
  - October 2013: Regional Training on household survey design, adoption and impact analysis
  - Ethiopia Partners Training on Value Chains and Impact Analysis
  - Regional Training on household typology analysis
2. Two MSc Students, 5 PhDs recruited (3 PhDs completed): Theses and Dissertation based SIMLESA baseline and Value chain surveys data.

#### **Achievements: Publications and Outreach**

- A number of policy and academic relevant peer reviewed papers on adoption and impacts, gender food security gap were produced and shared widely
- Adoption monitoring surveys were carried out in each country for 2011 crop calendar and about 16, 860 farm households (male-10910 and Female-5950) were identified as adopters of SIMLESA technologies.
- Five Baseline Survey Reports completed and distributed across multidisciplinary teams
- Fifteen publications: peer reviewed, conference proceedings and discussion papers
- Six policy briefs produced in 2014
- Market and Value Chain assessment reports
- Results presented in various international - including annual meetings

Dr Marenya also gave an example on empirical lessons (Adoption):

**Group Membership:** Those farmers belonging to groups had higher chance to adopt:

- In Ethiopia: Crop diversification and minimum tillage
- In Kenya: Improved varieties and fertilizer
- In Malawi: Soil and water conservation

### **Proximity to Markets**

When close to markets farmers had a higher chance to adopt:

- In Ethiopia: Crop diversification and manure use
- In Malawi: Improved varieties
- In Tanzania: Crop diversification and minimum tillage

### **Household Assets**

With more assets in the household farmers had a higher chance to adopt:

- In Ethiopia: Soil and water conservation
- In Kenya and Tanzania: Manure

Dr Marenya added that objective 1 had five outputs and 16 activities which were to be achieved in 15 quarters.

He outlined the outputs, as follows:

- Refined understanding of CA-based intensification and feed options in selected farming systems
- Understanding maize, legume and fodder/forage value chains, focusing on institutional/agribusiness constraints and opportunities, costs and pricing patterns (gender specific)
- Understanding farm risks (perception, attitude, exposure, sensitivity, interactions) and management responses/-innovations under different biophysical, socioeconomic and institutional settings.
- Functional farm-household typologies matched to CA-based intensification options
- Identified and refined recommendation domains and adoption and impact pathways for 15 maize-legume-forage/fodder production systems

In SIMLESA 2, the focus would be on impact pathways to demonstrate milestones in agricultural research and development. Another focus would be on adoption pathways and feedback mechanisms on participatory farmer research extension and the development of the agribusiness model. This would pave way for modalities for diffusion of projects and provide opportunities for scaling up. The program would also work with agribusiness focusing on public investments as a way of supporting technology adoption among partners.

The program will use a business model approach to modernize market linkages for value chains. Communication and information dissemination came out strongly as an approach that would enable the program to achieve greater impact, and influence relevant stakeholders at various stages of the agriculture and research process in Ethiopia. In this regard, communication materials should be simple and user-friendly.

**Table 2: Discussions on Objective one log frame and outcomes**

| Questions/Suggestions/Comments  | Reactions/Responses/Answers   |
|---|---|
| Alfred Micheni: Objective 2 is also expected to produce policy briefs. From experience, policy makers take too long to implement issues contained in policy briefs. How do you intend to use policy makers in generating these briefs and make them more accountable? | National Research Systems in different countries are best placed to handle this aspect of the work. |

### **1.5.2 Objective 2: log frame and outcomes- Presented by Dr Isaiah Nyagumbo and Hae Koo Kim**

Dr Isaiah Nyagumbo asked the participants on what they perceived as changing in objective 2 (From SIMLESA 1 to SIMLESA 2).

He added that the program was planning on ways to build on Phase 1 achievements to support Phase 2 research objectives.

Nyagumbo made comparisons of the two phases, as:

| PHASE 1  | PHASE 2  |
|--|--|
| To test and develop productive, resilient and sustainable smallholder maize-legume cropping systems and innovation systems for local scaling out | To test and adapt productive, CA-based intensification options for sustainable smallholder maize-legume production systems |

The innovation systems and local scaling out component was shifted to objective 4.

In phase 1, objective 2 had the following outputs:

1. Options for systems intensification
2. Develop functional local innovation systems
3. Evaluations of exploratory trials and characterization
4. Adjustments to the maize-legume systems
5. CA systems incorporated into farmers own fields
6. Farmer learning facilitated through exchange/study visits

Objective 1 strategy focused on a number of activities, including farmer consultations and agreement on treatments; farmer field days; on –station trials and community awareness of agricultural interventions.

The following were the key issues emerging from the implementation of the first phase:

- Difficulties experienced in implementing all three principles: components, stepwise adoption.
  - Labor savings from CA were generally the key benefit especially in herbicide assisted systems.
  - Yield benefits were the most apparent from rotation systems.
  - Yield increases were not apparent in some situations especially waterlogged soils.
  - There were diseases in some maize varieties and environments under CA.
- 
- No significant improvement in soil properties in the short term (currently, 3-4 years).
  - Advantages of CA in soil moisture improvement was established
  - Residue availability is one of the main concerns in mixed crop-livestock farming systems and termite prone environments.
  - Weeding: labor cost, Nitrogen fertilizer availability, water conservation, herbicides, and farm mechanization challenges.

Phase 2, has, therefore, the following outputs:

- Annually evaluate 150 on-farm trials of sequenced and refined CA-based intensification options for different types of farms across 15 maize-legume-forage/fodder production systems
- Understanding productivity and soil health dynamics of CA based intensification practices
- Lessons from CA-based intensification experiments shared and linked to targeting strategies

The future of objective 2 is to address variety issues (intercropping, diseases, Nitrogen stress tolerance) through testing released materials e.g. Drought Tolerant Maize for Africa (DTMA) project. The program will develop alternative soil cover options and promote crop-livestock interactions as well as carefully design farm scale studies (2.1.3).

There is also a need to strengthen the science outputs in phase 2. Partnerships with those organizations with a comparative advantage for quality enhancement would also be established. The program will develop strategies to work with the other SIMLESA objectives to achieve maximum results. Above, all the objective deliverables would also need to be aligned with the budget.

What good activities were carried out during SIMLESA 1?

- created ground for CA concepts for practices
- supported scientific data generation and analysis
- capacity building opportunities
- better organized data collection (after 2<sup>nd</sup> year)
- flexibility for improvement of project outcomes (need for better definition of outcomes?)
- preliminary recommendations from success stories
- encouraging documents and information for future efforts
- increased adoption of legume varieties

However, the objective had its fair share of challenges, such as:

- on-farm/on-station trials not site and context dependent
- The extension system and mindset of people needed to be changed to accept CA
- lack of site and socioeconomic specific recommendations that could convince policy change
- reporting without well documented background information

- insufficient incentive/credit for documentation and reporting
- insect, pest and disease damage (integrated pest management strategy needed?)
- lack of communication products for reporting results for wider use
- working with the extension staff due to staff turnover and discontinuity (this challenge extends to research, NGOs and other partners)
- NARS overburdened with many activities
- poor early establishment of CA plots (requirement of breeding under CA?)

The objective, would need to be aligned w2ityh the other objectives.

**Table 3: Discussions on objective 2 presentation: log frame and outcomes**

| Questions/Suggestions/Comments   | Reactions/Responses/Answers   |
|--|---|
| Dr Fidelis Myaka: From your presentation, I expected to see a logical framework. Even under planned SIMLESA activities your outputs are note measurable. Can you explain why this is so? | Dr Nyagumbo: The whole idea was to simplify what is in the new phase – we did not want to extract the whole log frame. WE want to revisit our work and deliver results.   |
| Dr Myaka: Yes, I agree but we need outputs to be guided so as not to go back to SIMLESA I. We need measurable activities for out scaling.  | Hae Koo Kim: This is exactly what is in the log frame. If we presented the whole log frame, it would be complicated to agronomist, for example. This is not a rigid framework – think around issues emerging during the last four years, e.g., residue management, it’s beneficial to farmers. The issue is also about gaining impact, reaching more farmers. |

#### **1.5.4. Objective 3: log frame and outcomes- Presented by Dr Dagne Wegary**

Dr Dagney Wegary said objective three had the following focus: Increase range of maize, legume and fodder/forage varieties available for smallholders through accelerated breeding, regional testing and release and provision of quality seed.

The main activities were:

- Short-listing new and best-bet maize, legume and forage varieties with potential adaptation to the conditions and farmer’s needs in targeted maize-legume systems
- Varieties mostly from ongoing breeding programs such as DTMA, TL-II
- Evaluation of identified varieties in PVS and Mother-Baby Trials in target communities
- Production and supply of different classes of maize and legume seeds of selected varieties

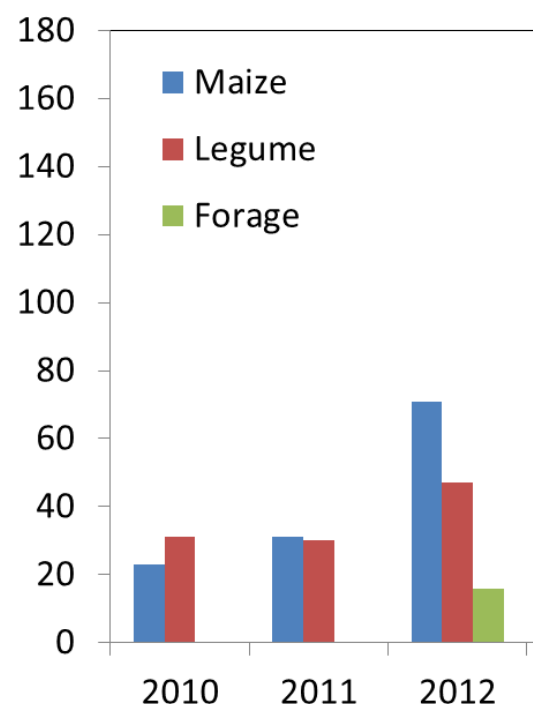
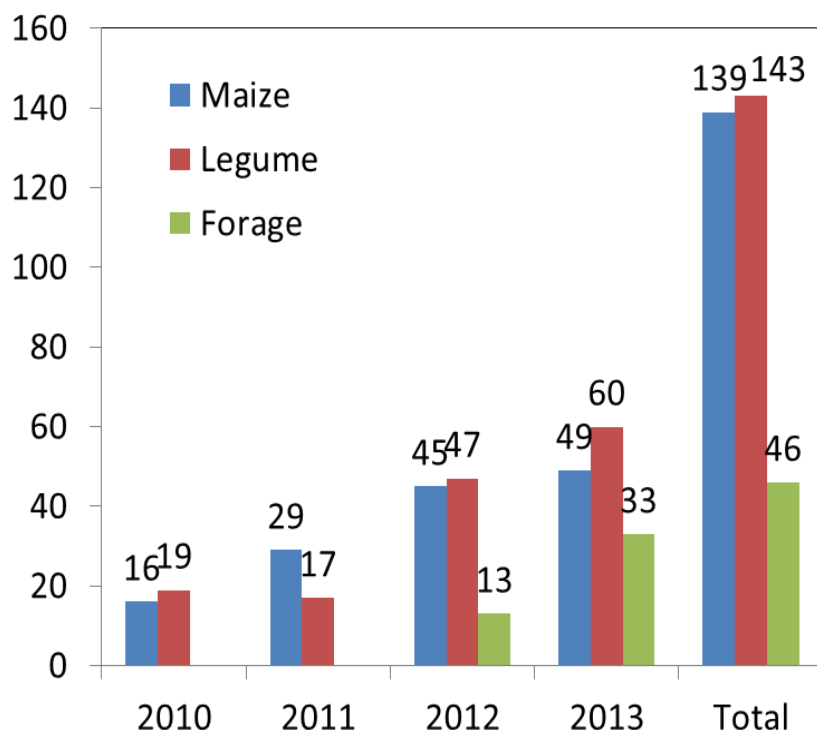
Accelerated breeding

- Regional nurseries composed of best-bet maize and legume varieties
- Maize, inbred lines characterized per se and in testcrosses for priority traits (intercropping compatibility drought, N stress, pests, diseases)
- G x E analysis and modeling in scaling out best varieties to promote into similar growing environments within and across countries

Multilocation leading to:

- Availability of performance data
- DUS and VCU testing of selected maize OPVs and hybrids
- Seed production characteristics of elite maize hybrids and OPVs established

**Achievements were listed as follows:**



**Graph 1: Number of varieties evaluated in PVS trials during 2010-2013**

**Graph 2: Number of PVS trials conducted during 2010-2013**

**What is New in SIMLESA-II for Objective 3?**

- Linkage with objective 2 to identify varieties suitable for CA based systems
- Introduction of legume/fodder species in targeted farming systems
- Identify key seed systems bottlenecks (strong linkage with obj. 1 & 4)
- More focus on scaling-out and seed supply
- Small grants for SMEs and CBOs for seed production

**SIMLESA-II Objective 3: Implementation Plan**

Output 3.1 Stress tolerant maize varieties, higher yielding legume varieties and fodder/forage varieties available to farmers in the selected farming systems

Activity 3.1.2: Potential legume species and varieties for the target environment in the program analyzed with TLII partners annually.

Activity 3.1.3: Identify and refine best forage/fodder species and variety suited for target AEZ for use in maize-legumes-forage production system.

Activity 3.1.4: Increase farmer access to promising but underinvested material through seed increase at relevant stage of seed production pipeline.

Activity 3.1.5: Identify, tackle and refine seed availability bottlenecks of improved maize, legume/forage varieties (from sister projects such as DTMA, TL-II), including seed systems and agribusiness support and improved seed distribution road maps in each of the five countries.

Dr Wegary listed the challenges facing the objective as follows:

- Stimulating seed companies to actively produce and promote SIMLESA-identified varieties in the target geographies
  - Standards in varietal promotion and field demos (management, plot size, site selection)
  - Feedback loops and linkages (esp. with Objective 2) for selection and use of right varieties for seed scale-up and demonstrations under CA.
- High staff turnover and limited capacity

**Table 4: Discussions on objective 3 log frame and outcomes**

| Questions/Suggestions/Comments  | Reactions/Responses/Answers  |
|---|--|
| Alfred Micheni: Thanks for the good presentation. There were no fodder/forage interventions in SIMLESA 1. How are you going to integrate them under SIMLESA 2? Your presentation also focuses heavily on Ethiopia. Why is this? | Dr Wegary: These have been mentioned. e.g. CA' weed control – these will be scaled up in SIMLESA 2.<br><br>Wegary: Our work covers all SIMLESA countries, not just Ethiopia.   |
| Christina Ndung'u: Need to include other stakeholders, such as agro vets.   | Wegary: Noted. This will be dealt with in specific groups But some seed companies do not deal in forage seeds – this will have to be looked into.  |
| Dr Isaiah Nyagumbo: The high cost of seed is a hindering factor, how are you going to deal with this?   | Wegary: Seed companies believe seed is cheaper. We will look at community-based seed producers who sell to communities at affordable prices.   |
| Alfred Micheni: Through IPS, some of the members have gone into informal seed production systems with technical backstopping from SIMLESA.  |  |
| Dr Myaka: When we combine all the objectives, what are we supposed to achieve in SIMLESA countries?   | Dr Menalie Kassie: Through participatory research with farmers, extension agencies, non-governmental organizations, universities and agribusiness, the initiative aims to improve maize and legume productivity by 30 percent and to reduce the expected yield risk by 30 percent on approximately 500,000 rural households within 10 years. |
|   |  |

### **I.5.6 Objective 4 log frame and outcomes- Presented by Dr Michael Misiko Wegary**

Objective 4: To support the development of local and regional innovations systems and scaling out modalities

The Objective 4 Team is concerned with the following issues in SIMLESA:

- 1 Policy Options, organizational Models
- 2 Scaling multi-stakeholder interaction mechanization
- 3 Scaling CA-based intensification options
- 4 Knowledge sharing

Objective 4 will prioritize the following:

- Build on SIMLESA I- Lessons on AIP for the improvement of phase 2 and one of the strategies is to identify one national leadership per country to champion objective 4 activities.
- Prioritize and integration of several innovations as developed by SIMLESA activities.
- Aligning approaches to take into consideration gender and youth. It has been observed in SIMLESA that 40 percent of the adopters are women hence the need for such consideration as most technologies are not gender sensitive.
- There are gains and lessons that have been learned from SIMLESA I, such as facilitation of PVA, seed bulking, on-farm CA-based technology testing that are important and should be included in phase 2 of SIMLESA. Scaling out strategies need to be intensified as well as looking at the sustainability of the interventions and technologies being introduced.

### **I.5.7 Business Models log frame and outcomes- Presented by Dr David Kahan**

Elements of the business model

Focus on creation of profitable revenue and the delivery required to keep the revenue flowing.

- Offering: What do you offer?
- Monetization: How to monetize the offering?
- Sustainability: How to sustain it?

It is the framework of rules and incentives within which the business operates.

Models of business linkages

Smallholder farmers can be linked to mechanization, technologies and input supply networks through three 'driver' models:

- Farmer-led model
- Private sector driven model
- Intermediary model



What type of technologies/ innovations are we talking about?

#### *Technological innovations*

- Husbandry practices – (CA: rotations, intercropping, spacing, crop - livestock interventions etc.)
- Quality certified seeds – private sector involvement
- Mechanization (FACASI) – service providers
- Linkages with input-output markets (dealers/ buyers)
- Value adding technologies

#### *Institutional innovations*

- Insurance/ finance linkages
- Technical and business management skills
- Institutional innovations (community, district, national level)
- Institutional development and partnerships (horizontal and vertical linkages)
- Policies, rules and regulations etc.

#### *Example business models*

- Contract farming – larger farmers provide services to small scale producers
- Agribusiness linkages
- Private business development service provision
- Private sector dealers – agro-dealer networks, certifying agro-dealers
- Farmer cooperatives and associations
- Agribusiness service centers
- One stop shop – broader range of support services
- Innovation platforms

#### *Fiscal sustainability: ways to generate revenue flows*

- *Membership dues* – members of farmer organization pay annual membership dues.
- *Private – public sector contributions* - innovation funds, matching funds etc.
- *Levy on produce sold* - has potential where the marketing system is sufficiently concentrated to permit ready collection of taxes.
- *Revenue generating activities*
- *Payment for services* (livestock, mechanization, advisory services): Selling a mix of products and services to farmers of different size.

#### *Scaling-up*

- It's not about more money (though that may help)
- It's about reaching a critical mass or tipping point of adopters to trigger spontaneous, population level scale
- It's not about individual projects (though they are important instruments for learning and validation)
- It's about supporting longer-term programs of engagement and building momentum (drivers)
- Creating viable spaces to support & sustain technology and align incentives for actors in the chain ... so that it is politically, organizationally and financially sustainable beyond the program

## Seven Types of Scaling Up

- Horizontal: across geographic areas; farmer to farmer
- 2. Vertical: top-down, and/or policy, legal, institutional change
- 3. Functional expansion, by adding additional components
- 4. Virtual – Using ITC as the major delivery mechanism
- 5. Demand Driven: driven by new beneficiaries and users seeking out the innovation
- 6. Supply-Driven: “push” from existing to new adopters
- 7. Spontaneous vs. Managed: leave adopters to do it themselves, vs. pro-actively manage the process

How can we catalyze a shift from Supply Drive to Demand Driven, Managed to Spontaneous?

### What Makes a Model Scalable?

- Credible: evidence of success, endorsements, causality
- Observable: you can see and feel the results
- Relevant: relates to objectively important issues, policy priorities, actual demand of beneficiaries vs. objective need
- Winners and Losers: the stakeholders who will benefit or lose from large scale implementation? Relative power?
- Clear Advantage: over existing policy, programs, practices or other promising new alternatives i.e. cost effective
- Easily Implementable (intrinsic): in new contexts, beneficiaries
- Easy to Adopt and Transfer (extrinsic): compatible with existing capabilities, culture and incentives
- Affordable: Within financial/budgetary constraints (space) at scale for all actors, market price point, financial space

What can we do: Tools to support the approach

### Business coordination:

- Information dissemination tools
- Producer – buyer workshops
- Strategic management
- Training in negotiation and contracts

### Customer Needs

- Market appraisal and surveys
- Train good agriculture practices and post-harvest and handling- Train in agro-processing and value addition
- Train in Standards and certification processes
- Develop product quality and safety grading systems

Managing processes:

- Mapping exercises and
- Appraise financial institutions and support loan applications
- Investment appraisal
- Train in bulk buying and collective marketing
- Introduce switch to re-usable items
- Train in business, financial management and marketing skills

What type of business support do IPs need?

- Training and support in group marketing
- Training and support in business management
- Money management – financial management
- Linking with the private sector
- Deal making/ negotiating/ contracting
- Business organization
- Investment appraisal/ business planning

Support

- We need a presence on the ground to develop agribusiness
- We need technical support – mentoring : demand responsive
- SIMLESA resources for agribusiness are limited but .....
  - ▶ Under the FACASI project CIMMYT has employed a cadre of agribusiness specialists
    - Benesta Titus – Tanzania
    - John Mung’oo – Kenya
    - David Kahan – technical support from Ethiopia

**Table 5: Discussions on Business Models**

| Questions/Suggestions/Comments  | Reactions/Responses/Answers  |
|---|--|
| Dr Moti Jaleta What would you do to attract investment?   | David Kahan: We are dealing with maize-based systems which have very low income – so it’s a question of scale to produce more and improve on the infrastructure. |
| Dr Moti Jaleta: Given the technical and institutional innovations, where should we go in SIMLESA? | David Kahan: Institutional may be the first to support the technical   |

**DAY 2: 15 OCTOBER 2014**

Facilitator: Dr Peter Setimela: Feedback from stakeholders on presented log frames.

**2.0** The participants gave feedback on the presented log frames. The following points came out strongly:

1. Is there overlap between objectives: Need to harmonize parallel activities cutting across objectives. Also, streamline overlaps/linkages after objective discussions
2. Remember the planned targets!
3. Watch out for silos
4. Consider attractive or favourable technologies to farmers

Dr Isaiah Nyagumbo suggested that participants form groups to plan activities and then give feedback and re-align the activities.

Dr Menale Kassie suggested that participants should not forget the target as obtained in the project document. There was need, he said, to target farmers/beneficiaries). Dr Kassie gave the following presentation to illustrate his point:

### Target communities and farmers

| Year      | No of communities reached | No of farmers reached | Adopters      |
|-----------|---------------------------|-----------------------|---------------|
| 1         | 38                        | 7600                  |               |
| 2         | 68                        | 13680                 | 5092          |
| 3         | 123                       | 24624                 | 9166          |
| <b>4</b>  | <b>222</b>                | <b>44323</b>          | <b>16498</b>  |
| 5         | 399                       | 79782                 | 29697         |
| 6         | 718                       | 143607                | 53454         |
| 7         | 1292                      | 258493                | 96217         |
| <b>8</b>  | <b>2326</b>               | <b>465287</b>         | <b>173190</b> |
| 9         | 4188                      | 837517                | 311742        |
| <b>10</b> | <b>7538</b>               | <b>1507531</b>        | <b>561136</b> |

**Adoption:** Intercropping, rotations, minimum tillage, new maize and legume varieties and their combinations

### Technology/practice adopters target by country

| Year     | Ethiopia      | Kenya         | Tanzania      | Malawi        | Moz           | Total          |
|----------|---------------|---------------|---------------|---------------|---------------|----------------|
| 1        | 0             | 0             | 0             | 0             | 0             | 0              |
| 2        | 1,200         | 1,000         | 1,000         | 900           | 900           | 5,000          |
| 3        | 2,160         | 1,800         | 1,800         | 1,620         | 1,620         | 9,000          |
| <b>4</b> | <b>3,888</b>  | <b>3,240</b>  | <b>3,240</b>  | <b>2,916</b>  | <b>2,916</b>  | <b>16,200</b>  |
| 5        | 6,998         | 5,832         | 5,832         | 5,249         | 5,249         | 29,160         |
| 6        | 12,597        | 10,498        | 10,498        | 9,448         | 9,448         | 52,488         |
| 7        | 22,675        | 18,896        | 18,896        | 17,006        | 17,006        | 94,478         |
| <b>8</b> | <b>40,815</b> | <b>34,012</b> | <b>34,012</b> | <b>30,611</b> | <b>30,611</b> | <b>170,061</b> |
| 9        | 73,466        | 61,222        | 61,222        | 55,100        | 55,100        | 306,110        |
| 10       | 132,240       | 110,200       | 110,200       | 99,180        | 99,180        | 550,998        |

## Target and reached communities and farmers (2010-2013)

| Country         | Research communities |            | Number of farmers reached |               |               |               | Number of ad  |               |   |
|-----------------|----------------------|------------|---------------------------|---------------|---------------|---------------|---------------|---------------|---|
|                 | Target               | Achieved   | Target                    | Achieved      |               |               | Target        | Actu          |   |
|                 |                      |            |                           | Male          | Female        | Total         |               | Male          | F |
| Ethiopia        | 54                   | 54         | 10,454                    | 8781          | 1673          | 10,454        | 3,800         | 3,192         |   |
| Kenya           | 38                   | 30         | 8,913                     | 5,364         | 8,236         | 13,600        | 3,240         | 1,401         |   |
| <b>Tanzania</b> | <b>38</b>            | <b>40</b>  | <b>8,913</b>              | <b>6,715</b>  | <b>3,128</b>  | <b>9,843</b>  | <b>3,240</b>  | <b>2,088</b>  |   |
| Malawi          | 36                   | 36         | 8,022                     | 2,177         | 2,263         | 4,440         | 2,916         | 1,137         |   |
| Mozambique      | 36                   | 36         | 8,022                     | 6,222         | 2,419         | 8,641         | 2,916         | 3,763         |   |
| <b>Total</b>    | <b>222</b>           | <b>196</b> | <b>44,323</b>             | <b>29,259</b> | <b>17,719</b> | <b>46,978</b> | <b>16,112</b> | <b>11,581</b> |   |

☐ Validate and sustain adoption?

### Other Outputs and impacts

- 30/30 goals
- Improved food security and reduced poverty

### Questions raised yesterday

- Cost of seed
- Integration of objectives for max impact
- Risk analysis
- CIMMYT role in impacting policy makers
- Experience on how forage can be integrated in the existing farming system
- Business model (technical versus institutional)+ IP?

### High seed cost versus low productivity

|                 | District        |                 |                       |                       |
|-----------------|-----------------|-----------------|-----------------------|-----------------------|
| Yield (kg/ha)   | Karatu (n=168)  | Mbulu (n=181)   | Mvomero (n=136)       | Kilosa (n=218)        |
| Maize (Overall) | 1816.4 (3004.3) | 1295.9 (1275.8) | <b>831.9 (1081.8)</b> | <b>897.9 (1594.7)</b> |
| Maize (Local)   | 910.8 (853.)    | 970.5 (602.9)   | 391.1 (724.4)         | 320.6 (302.8)         |

|                |                 |         |                |          |
|----------------|-----------------|---------|----------------|----------|
| Maize (OPV)    |                 | 1273.3  |                | 1056.6   |
|                | 1342.9 (3487.2) | (39.4)  | 818.5 (723.5)  | (2002.8) |
| Maize (Hybrid) |                 | 1316.4  |                | 762.9    |
|                | 2055.7 (2902.9) | (302.7) | 1128.6 (743.6) | (609.2)  |

After the presentation, Dr Wegary asked what could be done to reduce cost of seed among smallholder farmers. Dr Kassie said this could be influenced by internal and external factors (productivity; seed company involvement).

Charles Nkonge said in Kenya it was not just the high cost of seed, but fertilizer as well. The point is how should our farmers move from subsistence to commercial farmers.

As part of solving the high cost of seed, the meeting suggested that other stakeholders – seed companies – to develop a mechanism to monitor villages and see how many farmers are adopting the technologies.

There was also a need to integrate SIMLESA with other different projects implemented by scientists and form strategic partnerships. Dr Myaka said what he saw as a challenge was adoption – reach could be achieved. He also questioned whether M and E was going to be externally or internally driven. We need an external eye, he said.

Dr Kassie said the issue of external eye was very critical. We need to work with Ministry of Agriculture for us to have a very good extension message.

## 2.1 GENDER STRATEGY

Presented by Dr Vongai Kandiwa: CIMMYT Gender Specialist

In Eastern and Southern Africa where CIMMYT's Sustainable Intensification of Maize-Legume Cropping Systems for Food Security in Eastern and Southern Africa (SIMLESA) program works, women hold the key to improving the quality of life and increasing the food security of rural families. While men may have greater access to land, credit, and market networks, women have the potential to be the drivers of agricultural productivity.

SIMLESA strives to provide men, women and youth with equitable access to inputs, credit, markets, and training opportunities. We integrate gender sensitivity into all program activities, facilitate people's access to basic services, and continually evaluate results to maximize our impact on both men and women.

As part of our agricultural research and development work, SIMLESA's commitment to integrating gender strives to bring time- and labor-saving technologies to women farmers in the region, for example. That's why SIMLESA, a program that aims to increase food security and incomes for smallholder farmers in five core countries in Eastern and Southern Africa (Ethiopia, Kenya, Malawi, Mozambique, and Tanzania) is ensuring women are among those receiving the technical assistance that can help them reach their full potential in the agriculture sector.

As SIMLESA begins its second phase, with all the excitement and energy, it is good to take stock of where we are on fostering gender equality and where we go from here. After all, our funding partners, ACIAR, the CGIAR system, CIMMYT, and national governments in all SIMLESA countries are committed to social inclusion broadly, and to gender equity in particular. Specifically, these institutions' gender policy positions challenge us to be vigilant about inclusiveness.

Do our approaches reach all *individuals* in the communities we serve? In what ways may certain subgroups, such as women or men, be constrained in accessing and adopting improved technologies? What can we do differently to understand the various social contexts and develop ways to address them? If we pay attention to gender, what difference will it make in terms of ensuring food and income security and natural resource conservation?

In SIMLESA II, we aim to consolidate the gains made during SIMLESA I. Through the Association for Strengthening Agricultural Research in Eastern and Southern Africa (ASARECA)'s leadership, SIMLESA I strengthened the capacity of over 1,000 individuals by providing gender-sensitive training at times and places that were convenient for men and women to ensure they received equal access to the skills and knowledge needed to succeed in agriculture.

Additionally, ASARECA documented in-depth case studies that improved our understanding of best practices for gender analysis and development practice. SIMLESA II is poised to build upon this solid foundation and effectively integrate gender. We are happy to report on four key pathways to integrate gender into agricultural value chains and ensure all household members benefit from expanded economic opportunities:

- a strong team of gender experts
- a gender strategy
- an gender Monitoring and Evaluation (M&E) framework
- solid commitment from the project leadership and team

First, because SIMLESA operates in five core African countries, it is essential to have a strong coordination unit that helps to streamline and to an extent, standardize activities and tracking of progress. SIMLESA II engaged CIMMYT's gender specialist, Vongai Kandiwa, to lead and coordinate the integration of gender. Since joining the SIMLESA family in July 2014 and with the help and input from country coordinators, Vongai identified a strong team of country gender focal persons: Dr. Rehima Mussema (Ethiopia); Charles Nkonge (Kenya); Kenneth Chaula (Malawi); Maria Luz (Mozambique); and Vidah Mahava (Tanzania). This team will ensure that gender is taken into account during priority setting fora, such as country planning and coordination meetings, provide technical backstopping in-country and provide leadership on monitoring and evaluation of gender equality outcomes and processes.

Second, SIMLESA produced and shared widely with SIMLESA team a draft gender strategy for the program. The strategy provides clear guidelines on where gender is relevant, delineates where action is feasible, what specifically needs to be done, by whom, at what level, at what cost, and how to track progress? The strategy is built upon three key principles:

*Understanding* – we seek to critically examine and understand how, and in what contexts gender impacts in conservation agriculture (CA-based) maize-legume systems especially for adoption and scaling out.

*Opportunity* – women are sometimes unable to influence the decisions that directly affect farm yields and household income. SIMLESA promotes agriculture as a family business, giving women the ability and autonomy to make decisions. We train women in leadership skills, negotiation, and group formation. We also endeavor to foster equal opportunities for men, women and youth to access

information, markets, participate in demonstrations, trials and field days, receive training and provide leadership in local agricultural innovation platforms.

*Learning* – we strive for continued learning on gender through research and practice. Overall, in SIMLESA II, we hope to minimize the chances of creating gender gaps in access to improved technologies and opportunities, bridge gender gaps where they exist and avoid creating new ones. The strategy was presented and discussed at the Malawi and Mozambique Planning meetings in August this year. It was also presented again at the Ethiopia, Kenya, and Tanzania planning meetings before being finalized by end of November.

Third, the SIMLESA gender strategy outlines clear and measurable monitoring and evaluation (M&E) indicators which will be integrated into the overall SIMLESA M and E framework. Most importantly, we do not only track standard quantitative indicators, but also qualitative ones such as approaches and processes that are effective in ensuring equal participation and benefits sharing between men and women in communities where we work. The idea is to share ideas, learn from one another, and constantly improve on our strategies.

Looking ahead, what will it take to successfully integrate gender? Success on gender in SIMLESA will not entirely depend on what individual SIMLESA gender experts do. Rather, it is our collective commitments, responsibilities and efforts that matter. After all, many of the gender relevant activities will be led and carried out by other SIMLESA team members who are not necessarily gender specialists. In the most cases, project teams are never lacking commitment to gender. But, what is usually limiting is clarity on what needs to be done? With our SIMLESA gender team in place, a solid strategy and an M&E framework, we have no excuses.

### **Discussions/ Questions/Comments/Observations**

One critical issue that emerged after the mainstreaming gender presentation was for the SIMLESA program to critically look at its work plans and see how gender could be integrated as this was not a negotiable activity. There was also a need to look at both male headed and female headed households to check on which house hold type was severely hit by food shortages as these operate in different contexts and environments. Survey data was available. This could be analyzed and a position found out.

Overall, the meeting agreed to synergize gender issues among research centers, stakeholders and the whole SIMLESA program.

## **2.2 Capacity Building Training and M&E Arrangements in SIMLESA-2: Gift Mashango**

Mashango outlined the capacity building program as follows:

1. Training of at least 20 professionals on CA-based sustainable intensification, provided to build and enhance capacity of national and regional programs
2. 10 Trained professionals on Gender mainstreaming
3. Trained professionals on seed systems
4. Trained research managers
5. Trained extension and scaling out professionals



6. Competitive Australian PhD scholarships
7. ARC supported MSc and PhD scholarships

On CA-based sustainable intensification, Mashango said the following trainings were planned:

- CA based intensification in smallholder agriculture
  - Farm and household typologies,
  - Recommendation domains (including GIS),
  - Biomass mgmt. including fodder/forage,
  - Soil quality,
  - Value chains,
  - Adoption, risk and impact analysis,
  - Emerging topics, (supported by on site/on the job training.
  - On-line training courses
  - Soil and weather monitoring
  - Communication Training
- 
- On training on gender mainstreaming, Mashango said at least 10 people would be trained on gender mainstreaming. However, he said the training on gender mainstreaming would focus on site and on the job training.

**Other trainings were listed as:**

- Training on seed systems-Seed producers training courses
- Research Management training-NARES management training on 'soft skills', leadership and team building, M&E, administration and prioritization.
- Extension and scaling out training-Annual extension capacity building based on country-specific training needs and short courses

**These are the plans on Monitoring and Evaluation issues:**

- CIMMYT will recruit M&E specialist to effectively monitor program activities
- Performance Monitoring Plan (PMP) developed by ASARECA will be modified, updated
- M&E focal person will be capacitated as part of enhancing data quality management and M&E system within SIMLESA
- PMP to be updated regularly

On the budget for Kenya and Tanzania, Mashango told the participants that there had been a budget reduction and that the budget would mainly be used for operations and for the July 2014 to June 2018 no additional funds would be availed. Countries should concentrate on activities relevant to them.

The main budget lines were outlined:

Operational Budget

- Research operating expenses
- Total travel (travel + subsistence)
- Infrastructure cost
- Capital asset/asset usage (does not include vehicles)
- ii. Coordination and oversight
- iii. Competitive Grant

### **DAY 3: 16 OCTOBER 2014**

## **3.0 Alignment of each Objective action plan with overall priorities: Plenary Review of Action Plans developed for each objective**

Facilitator: Dr Moti Jatela

### **3.1 Objective one: Tanzania - Presented by Theresa**

#### **Questions/Comments/Observations**

For analysis, there is need for quality data. There is also a need to work with the communications unit to produce high quality communications material. Other considerations were as follows:

- How does information generated from the analysis/publications cascade to objective 2, 3 and 4.
- Objective 1 will work on designing policy briefs to communicate downstream
- Include objective 2 in value chain analysis
- How best do we document success stories and failures
- Emphasize on partner roles and CIMMYT.

### **3.2 Objective 2: Presented by John Sariah**

#### **Questions/Comments/Observations**

On log frame 2.1, include objective 4 in extension material development

On 2.1.1: Is there a possibility of combining varieties and CA trials in 2.1.2. Long term trials need long term data and students could help thereby building capacity and offering training to them. How do we benefit from field days and objective 4 involvement – how do we get maximum use of field days? There is need to allocate budget for each activity.

We will bring in new varieties of beans/cowpeas and modify activities to identify what goes out for scaling out.

On 2.1.2: ILRI is on board. Why is CIAT the only organization mentioned? Need to check and integrate ILRL

2.2.2: Do we have enough diversity for testing and incorporating objective 3.

2.2.3: Fertilizer trials in Mandela village – need to include it under CA.

CIAT will support work on soil analysis, residue interactions based on country requirements, protocol development, residue/nitrogen interactions and comparisons across country.

QAAFI to support on activities with own funds in 2.2.5 and 2.2.6.

### **3.3 Objective 3: Presented by Dr Barnabas Kinla**

#### **Questions/Comments/Observations**

There is need to engage other objectives for leveraging funds to continue with the work.

3.1.1: Could we include more varieties.

3.1.1.2: was this not done in Phase I? Objective 3 should identify (annually) material for testing under 2.1.2 in objective 2 from country breeding systems.

3.1.2: Work on beans should continue. Should we leave work on pigeon pea to ICRISAT? 3.1.3.1: Need to incorporate forages that fit well in maize systems e.g. not elephant grass.

3.1.4.2: The price of \$1,000 per ton of seed maize – is this efficient?

### **3.4 Objective 4**

#### **Questions/Comments/Observations**

On 4.1.2: How could this be done – should we evaluate current organizational models?

There are high expectations from objective 4: Need to facilitate linkages between partners, seed companies – to achieve targets. Strong commitments from other stakeholders are also needed.

Objective 4 should produce user-friendly communications products, such as videos (a very powerful tool). There is also a need to link objective 4 and 5 in the area of training.

Objective 4 need to be involved on business models as well.

Value chain data has already been gathered by objective 1. However objective 1 should generate information that can be used by other objectives (2, 3, and 4).

### **3.5 Objective one: Kenya**

#### **Questions/Comments/Observations**

It was observed that objective 1 was the pillar of the other objectives.

During phase I, marketing was identified to be a major weakness in the program. This needs to be strengthened in SIMLESA 2.

### **3.6 Objective 2: Kenya**

#### **Questions/Comments/Observations**

There is need to improve on data collection and quality control. Soil health work also needs to be strengthened.

### **3.7 Objective 3: Kenya**

#### **Questions/Comments/Observations**

On 3.1.1.1: Identify varieties/materials now for testing of maize and legumes

3.1.4: Forage – this needs to be incorporated and strengthened. Do we include root crops as well. Take into account how these intercrop.

3.1.3.1: Needs to be aligned to “road map”.

On 3.1.5: More activities are being added and managed in collaboration with objective 2.

### **3.8 Objective 3: Kenya**

#### **Questions/Comments/Observations**

Regarding IPs, where can CIMMYT effectively contribute? Are there any differences in the IP models in use? Which components of CA will be scaled out under objective 4? Similar sites of objective 2 and 4 will be used. Also, varieties should be included in demos.

IPs were set up for scaling out, business models are rather a new concept to support IPs. Demonstrations will also need to be carefully designed.

Gender seems to be missing from the presentation. However, men and women are involved in IPs in neighboring Tanzania.

Typologies could help answer some of the questions on who takes on what technology.

Going forward:

- Need to schedule activities for objective 4
- Decide on demonstrations principles
- Simplify issues – e.g. technical guides

### **3.10 WAY FORWARD - WHAT NEXT?**

- Object teams to consolidate their plan and submit by 22 Oct 2014, Tanzania and Kenya 18 October 2014.
- Gift Mashango – project manager to send country plans to objective leaders who are expected to feedback by 24 October
- Final plans to be sent to national coordinators
- Funds to be transferred immediately to NARS-National coordinators to make requisitions
- A template to be sent to objective teams so that they standardize objective plans
- Objective teams to agree on a schedule for protocol development ( Some trials may remain until next year)

#### **Other Budget**

- Country teams to finalize aligning budgets to planned activities as well.

## **DAY 4: 17 OCTOBER 2014**

This day focused on presentations on IPs in Kenya.

### **BUNGOMA SOUTH INNOVATION PLATFORM SIMLESA: Presented by Lynda Kebaso**

#### **Main achievements**

- ▶ The IP has been registered as a CBO with the Ministry of Social Services and have operational bank accounts
- ▶ The IP has at least 8 demo sites which are being used as learning sites for the promoted CA technologies and out scaling
- ▶ The IP has held at least 3 field days and one exchange visit since establishment
- ▶ Up to 24 farmers representatives have received practical trainings on technology utilization from the IP

#### **Positive attributes of working with SIMLESA**

- ▶ Able to reach out to many farmer groups
- ▶ Strengthened stakeholder collaboration
- ▶ Increased food production
- ▶ More land has been put under CA
- ▶ New technologies easily disseminated to appropriate beneficiaries via the IP

#### **Number of farmers reached**

- ▶ Works in 8 wards and have established 9 demo farms in the sub county. Each demo site is managed by a CBO/FFS with approximately 10 groups and each group has 10 to 15 farmer members. Total farmers involved/reached by BUSOFIPs in the 8 wards =  $9 \times 7 \times 10 = 630$  farmers.

#### **What has worked well**

- ▶ Ease of organising joint ventures e.g. Field days due to diversified skills from the different actors
- ▶ Easy accessibility of information by farmers from different actors
- ▶ Easy and faster provision of inputs such as herbicides by farmers through IP (Agro-dealers, NGO)
- ▶ Joint mobilization of resources by the different actors.
- ▶ CA as a technology has been accepted and adopted
- ▶ Collaborators have found a common ground of working together for the benefit of the community
- ▶ Soil conservation enhanced

## **Challenges**

- ▶ Unbelieving farmers/partners who adopt a wait and see attitude
- ▶ Absence of other actors in the value chain making it difficult to complete the whole chain(traders)
- ▶ Inadequate funds to purchase needed materials (e.g. operation of IP, inputs for the demo farms)
- ▶ Dependency syndrome among producers/farmer
- ▶ Mistrust among partners
- ▶ Dynamism of the actors in the IP

## **Future Roles of the IP in scaling out**

- ▶ Source and provide knowledge and information for farmers and partners
- ▶ Create an enabling environment to attract new value chain actors and reach out to the vulnerable in the communities
- ▶ Build capacities of members to enhance utilization and out scaling of improved technologies
- ▶ Catalyse farmer market chain linkages for increase production and income generation

## **Out-scaling plan**

- ▶ Through CBOS(Community Based Organization)/FFS, groups and individual farmers
- ▶ Enhance stakeholder collaboration. Especially the county government
- ▶ Address farmer's core needs in order to attract them e.g., marketing, transport, storage etc.
- ▶ To directly address the vulnerable groups/Farmers limitations(Gender mainstreaming)

## **Planning meeting conclusion**

The meeting was officially closed by Dr Lucas Mugendi, who thanked all participants for their time and commitment to the SIMLESA program.