

# Bulletin

## SIMLESA Highlights

October-December 2012

A quarterly publication of Sustainable Intensification of Maize-Legume Systems for Food Security in Eastern and Southern Africa (SIMLESA) Program

### Partners meet in Ethiopia to launch Adoption Pathways



The first planning and inception meeting of the 'Identifying socioeconomic constraints to and incentives for faster technology adoption: Pathways to sustainable intensification in Eastern and Southern Africa' (Adoption Pathways project) took place at the International Livestock Research Institute (ILRI) campus in Addis Ababa, Ethiopia, during 13-15 September 2012. The meeting was attended by over 25 participants from 5 universities and research institutes (Ethiopia, Kenya, Tanzania, Malawi, and Mozambique), international partner universities (University of Queensland, Australia, and Norwegian University of Life Sciences), International Food Policy Research Institute (IFPRI), CIMMYT, Australian International Food Security Center (AIFSC), Australian Center for International Agriculture Research (ACIAR), and resource persons from US universities.

The Adoption Pathways project is a continuation of a fruitful partnership between ACIAR and African researchers which began under the Sustainable Intensification of Maize-Legume Systems for Food Security in Eastern and Southern Africa (SIMLESA) initiative led by CIMMYT. It is funded by the newly established AIFSC, which is housed in ACIAR and whose mission is to "accelerate demand-driven research, delivery and adoption of innovations to improve food security."

The project focuses on the socioeconomic, policy, institutional, risk, and agro-climatic constraints and/or incentives that affect farmers' technology-adoption behavior. Building on the success of SIMLESA, the Adoption Pathways project will systematically collect and analyze household, plot, and village level data from sentinel villages representing maize-legume based farming systems in Ethiopia, Kenya, Tanzania, Malawi, and Mozambique. Data collected from the sentinel villages will help monitor long-term trends and development changes, and fill the knowledge gaps in designing programs and policies that accelerate technology adoption, stimulate productivity growth, and lead to sustainable agricultural intensification pathways. The planned activities will be implemented in close collaboration with the SIMLESA team to ensure that the knowledge and outputs generated by this project will help bridge the gap between agricultural research and adoption of research outputs.

Bronnie Anderson-Smith, AIFSC executive officer, and John Dixon, ACIAR senior adviser/research program manager, highlighted the unique opportunity provided by the project to contribute towards three core strategic focal areas of AIFSC: access to food; education, training, and gender research; and building resilient farming systems.



CIMMYT<sup>MR</sup>

International Maize and Wheat Improvement Center

Throughout the meeting, project participants became familiar with methodological innovations in adoption and impact analysis, gender integration in household level data collection, modeling approaches to determine vulnerability and risk management strategies, conducting risk experiments, and developing econometric and economy-wide models to estimate the impact of technology adoption.

During the closing session, Lisa Filippetto, the Australian Ambassador to Ethiopia, emphasized the important role economists play in integrating the elements of marketing, value-chain analysis, and income generation in technology adoption. "Participants should get involved in policy dialogue in their respective countries so that the 'adoption pathways' lead to outcomes and impacts," she said, adding that "this meeting symbolizes the beginning of the start of a pioneering partnership between AIFSC, CIMMYT, and other national and international partners."

## SIMLESA achievements and challenges in Southern Africa

The Sustainable Intensification of Maize-Legume Systems for Food Security in Eastern and Southern Africa (SIMLESA) initiative held its annual review and planning meetings for Southern Africa in Chimoio, Mozambique (3-4 September 2012), and Lilongwe, Malawi (6-7 September 2012).

The meeting in Mozambique was attended by 47 participants from the national agriculture research system (NARS) from Sussundenga, Rutanda, Manica, Angonia, and Gorongossa active in SIMLESA Mozambique, and researchers from the Australian Centre for International Agriculture Research (ACIAR), CIMMYT, International Crops Research Institute for Semi-Arid Tropics (ICRISAT), Queensland Alliance for Agriculture and Food Innovation (QAAFI) in association with the Queensland Department of Employment, Economic Development and Innovation (QDEEDI), and Agriculture Research Council of South Africa (ARC-SA). It was opened by Feliciano Mazuze on behalf of the director general of Instituto de Investigaçao Agraria Mozambique (IIAM), and praised by John Dixon, ACIAR principal regional coordinator and research program manager, who congratulated the SIMLESA team on the promising achievements to date.

The participants had the opportunity to attend site-specific presentations by NARS partners and discuss new partnerships with the private sector and NGOs willing to join SIMLESA. These new partners include Denago Commercial, Associação dos Produtores de Oleaginosas

(IDEAA-CA), and Instituto Superior Politécnico de Manica (ISPM). They agreed on expanding SIMLESA activities in new communities in line with the SIMLESA target of reaching out to 100,000 farmers within 10 years. The meeting was concluded with presentation of certificates of participation to extension staff and IP members who had participated in the training facilitated by ARC-SA in Chimoio, Mozambique.

The Malawi meeting was attended by 36 NARS officials from Kasungu, Mitundu, Balaka, Ntcheu, Salima, and Mchinji active in SIMLESA-Malawi, and researchers from CIMMYT, QAAFI in association with QDEEDI, International Crops Research Institute for the Semi-Arid Tropics (ICRISAT), ARC-SA, Malawi Agricultural Sector Wide Approach (ASWAp), Bunda College of Agriculture, and CPM Agri-Enterprises. Mackson Banda, program steering committee member, expressed satisfaction with the levels of achievements within SIMLESA-Malawi during his opening speech, as significant improvements have been achieved in program implementation and data generation since the last in-country review and planning meeting. The meeting consisted of presentations on adoption survey findings, on-station trial results, and conservation agriculture. The participants agreed that scaling out the initiatives and the innovation platforms engagement remain to be the key challenges. To address some of the issues, ASWAp agreed to include farmers participating in SIMLESA in the government-initiated subsidy program.



## Conservation agriculture in Zambia: less labor and higher yields

To reduce farm labor, improve soil productivity and crop yields, and contribute towards food security of farming households in the changing climate environment, CIMMYT, the International Institute of Tropical Agriculture (IITA), and the Zambia Agriculture Research Institute (ZARI) introduced and expanded conservation agriculture (CA) in Zambia. The activities are implemented under the

Sustainable Intensification of Maize-Legume based Cropping Systems for Food Security in Eastern Province of Zambia (SIMLEZA) project funded by USAID.

CA entails reduced or no tillage systems, keeping crop residue on the soil surface as mulch, and using crop rotation. It increases the infiltration of water in the soil and thus reduces soil erosion and surface run-off of water that is desperately needed for plant production. This is a crucial change in regions like Zambia's Eastern Province, where most smallholder farmers engage in the traditional ridge and furrow farming and planting maize in monocropping.

While ridging was once promoted as a measure against erosion and high intensity rainfall, it now shows its drawbacks: ridge preparation, mostly done by women and children, is long, tedious, and difficult as most farmers use hoes. Furthermore, farm productivity in Eastern Zambia is already generally low due to increasingly erratic rainfall, low fertilizer use, soil degradation, pests and diseases in the monocropped maize, and weeds, which leads to yields too low to sustain households' food requirements from one harvest to the next. Crop rotation and diversification help farmers arrest the spread of disease and reduce the risk of crop failure. In addition, they enable farmers to grow cereals and legumes, a source of cash and food crops to boost household incomes.



To address these issues, CIMMYT organized community meetings to raise awareness on CA and conducted training sessions for extension officers and farmers to build knowledge, capacity, and skills. Facilitators from CIMMYT and IITA led a hands-on training for extension officers in November 2011. The extension officers then

went on to train farmers in their communities and facilitated the establishment of demonstration plots, where they showcased successful examples of CA systems.

The demonstration plots serve as learning centers for farmers in each community. Farmers also have a chance to share information on CA through farmer-to-farmer exchange visits, field days, and community meetings. Maren Tembo, who hosts a demonstration plot in the Mangena community in Chipata District, is excited about this new technology "The practice demands less labor, which enables me to grow other crops such as groundnuts, tobacco, and cotton. I'm looking forward to earning additional income from these crops to supplement my current household budget."

Another farmer from the district, Mulenga Zulu, has also benefitted from the project. "My crop shows greater yields than before. I anticipate higher profits as a result of applying CA on my farm," he says. Like Tembo, he is also happy about the reduced labor demands.

Having experienced CA, both Tembo and Zulu hope that more farmers will adopt the practice. "This project should continue so that others can learn from us that we do things differently now," she added. Learning about CA has enabled Tembo to lessen the challenges her family faces, especially the tedious labor in preparing the field. Zulu is proud to see that other farmers admire what they see on his farm.

The future of the project is promising: with testimonies from fellow farmers, assistance from dedicated extension workers, and community media broadcasts, more farmers in the neighboring districts are bound to pick up the practice. Besides higher yields for less work, there is an added long-term bonus for the farmers: their interaction with service providers, initiated through the project, will improve their market access for both farm inputs and outputs.



## SIMLESA embraces innovation platforms and partnerships in Mozambique

For the past three years the SIMLESA project has been working towards its target of improving maize/legume productivity by 30 percent and reducing downside risk by 30 percent. Over a ten-year span, the project hopes to impact 100,000 farmers with conservation agriculture (CA) and maize/legume technologies.

One of SIMLESA's key objectives is to increase the uptake of CA and maize/legume technologies amongst smallholder farmers in Mozambique. Mozambique remains one of the countries in southern Africa with low average maize yields (0.73 t/ha) due to low uptake of fertilizer (<4%) and improved maize varieties (<10%), impacting both food security and incomes.

To address these issues, key private sector stakeholders and NGOs met in Chimoio, Mozambique, on 20 August 2012. Among the topics discussed was how best to strengthen innovation platforms and partnerships to further disseminate SIMLESA activities among smallholder farmers, a subject highlighted in the opening speech by David Mariote, Central Region Director of the Instituto de Investigação Agrária de Moçambique (IIAM).

SIMLESA highlights to date were expounded by Isaiah Nyagumbo, Cropping Systems Agronomist, and Munyaradzi Mutenje, Agricultural Economist, from CIMMYT's Southern Africa Regional Office, and Domingos Dias, Senior Agronomist and SIMLESA Coordinator at IIAM.

Achievements include CA trials and treatments established in the provinces of Manica (Manica and Sussundenga districts), Sofala (Gorongosa district), and Tete (Angonia district). The trials focus on testing CA-based rotations/intercrops of maize with common beans or cowpea. Different crop establishment methods using CA equipment such as animal traction direct seeders and rippers, and manual traction seeders, such as jab planters, are also being tested. Work on seed development has been accelerated through the seed road map via seed multiplication and participatory variety selection activities that actively involve farmers' associations such as IDEAA-CA.

The meeting was attended by 25 participants from 15 institutions. Stakeholders included agrodealers (seed houses and fertilizer suppliers), NGOs (International Fertilizer Development Centre and Total Land Care), and financial and academic institutions.

The participating institutions expressed great interest in providing a platform for SIMLESA's current and future objectives in new communities. Most of the planned joint initiatives are expected to be formally launched during the next SIMLESA Annual Review and Planning Meeting scheduled for 3-4 September 2012 in Chimoio, Mozambique.



## Scientists from SIMLESA Spillover countries visit Kenya

A delegation of scientists from South Sudan, Rwanda, and Uganda—the spillover countries of the Sustainable Intensification of Maize-Legume Systems for Food Security in Eastern and Southern Africa (SIMLESA) initiative—visited Embu, Kenya, during 18-20 July 2012, to gain hands-on experience in implementing the program and to learn about its impact on livelihoods of smallholder farmers.

The delegation comprised of Leonidas Dusengemungu, Albert Ruhakana, and Alphonse Nyobanyire from Rwanda; Luka Atwok, Anna Itwari, and Cirino Oketayoyt from South Sudan; and Drake N. Mubiru, William Nanyenya, and Godfrey Otim from Uganda. The scientists found the visit very educative and informative. They learned about the implementation of SIMLESA in Kenya and the role of national agricultural research institutions, the Kenya Agricultural Research Institute (KARI) in particular, in the process. They also gained insights into the innovation platform establishment and arising challenges, maize-beans intercropping and timing, challenges and coping strategies for the implementation of SIMLESA, and the level of adaptation of SIMLESA technologies in Kenya.

In his introductory remarks, Stephen Njoka, KARI-Embu Center Director, explained the Center's mandate, activities, opportunities, and challenges in conducting agricultural research in Kenya. He noted that research programs at KARI-Embu range from food crops and crop health, natural resource management, horticultural and industrial crops, animal production and health research, outreach and partnerships, to cross-cutting programs, such as socioeconomics and applied statistics. The Center also offers advisory services, such as technical support for partners and capacity development for other service providers, including extension service providers and NGOs.

Alfred Micheni, KARI Agronomist and SIMLESA Site Coordinator for eastern Kenya, explained that the western and eastern sites in Kenya had been selected because of their potential for the highest impact. This was determined



by their agricultural production constraints: low soil fertility, erratic rainfall, high cost of farm inputs, high incidences of pests and diseases, high cost of credit, and small land sizes.

The scientists had a chance to interact with farmers participating in SIMLESA during a farmers' field day in Kyeni Division, Embu County, on 20 July 2012. The field day was hosted by the Kyeni Innovation Platform and showcased various treatments under conservation agriculture (CA): maize-legume intercrop, minimum tillage, furrows and ridges, use of herbicides, residue retention, and variety selection. The scientists also had the opportunity to compare the robust crops under CA with those under conventional agricultural practices which were unable to cope with the prolonged drought in the region.

Charles Nkonge, SIMLESA National Coordinator, stressed the importance of the innovation platforms used by the program to evaluate and scale out maize-legume intensification technologies and knowledge in a participatory manner. Other strategies for scaling out include farmer exchange visits and participatory exploratory demonstrations. Nkonge stressed the importance of the participatory nature of the evaluations; through cooperation between the farmers and other

collaborators, experimental designs of some of the treatments were adjusted to achieve more efficiency. For instance, the design of maize-pigeon pea intercropping trial was changed from intercropping of one pigeon-pea row between two rows of maize, giving one crop of maize and pigeon pea per season, to five rows of maize between two rows of pigeon pea and one row of common beans between two rows of maize. With the new design, two crops of maize, two crops of beans, and one crop of pigeon pea are harvested every year. This demonstration of successful practices allowed the representatives from SIMLESA Spillover countries to leave Kenya feeling optimistic about the new partnership.



## Capacity building in gender mainstreaming for SIMLESA



The Sustainable Intensification of Maize-Legume Systems for Food Security in Eastern and Southern Africa (SIMLESA) initiative held its third workshop on gender mainstreaming at the International Livestock Research Institute (ILRI) campus, Addis Ababa, Ethiopia, during 24-27 July 2012. Following recommendations from the previous meeting in Tanzania, this workshop aimed to compile field-related case studies on gender mainstreaming activities, and to harmonize gender mainstreaming action plans for five SIMLESA countries: Ethiopia, Kenya, Malawi, Mozambique, and Tanzania.

Twenty participants from these five countries attended, and, for the first time, extension officers from SIMLESA sites in each of the five countries also participated. The workshop was opened by Dagne Wegary on behalf of SIMLESA Program Coordinator Mulugetta Mekuria, and facilitated by Forough Olinga, Gender Expert at the Association for Strengthening Agricultural Research in

Eastern and Central Africa (ASARECA), Enock Warinda, Monitoring and Evaluation Unit leader at ASARECA, Daisy Namono, Consultant, and Ruth Nankinga, Administrative Assistant at ASARECA. Bekele Shiferaw, CIMMYT Socioeconomics Program Director, and Menale Kassie, Socioeconomist and SIMLESA Objective 1 Coordinator, also contributed encouragement and insight on mainstreaming gender within SIMLESA.

The extension officers shared their field experiences which were then used to identify good practices and potential case studies for further development. At the end of the workshop, the participants developed country gender mainstreaming action plans to be funded and implemented, created a format for the case studies, and agreed to submit at least eight case studies to Olinga and Namono for evaluation by 26 August 2012. To follow up, Namono will visit SIMLESA countries to finalize the case studies for publication before the end of the year.

## SIMLESA Expansion Sensitization workshop conducted in Southern Ethiopia

The South Agricultural Research Institute (SARI), one of the SIMLESA-Expansion project implementing institutions of Ethiopia, organized a one-day stakeholders' sensitization workshop on August 20, 2012. The workshop was attended by various representatives from SARI, Hawassa Agricultural Research Center (HARC), Wondogenet Agricultural Research Center (WARC), South Bureau and Sidama Zone department of Agriculture, Boricha and Loka Abaya districts offices of agriculture, marketing and cooperatives services, South Seed Enterprise, input suppliers, NGOs, peasant association administrators, development agents and hosting farmers. A scientist from CIMMYT and SIMLESA project and objective coordinators from the Ethiopian Institute of Agricultural Research (EIAR) also attended the workshop.

During the workshop, welcome address was made by Mr. Daniel Markos, HARC director; opening speech was given by Dr. Nugessie Dana, SARI Director General; and objectives of the workshop were highlighted by Dr. Daniel Dauro, focal person of SIMLESA Expansion in Southern Ethiopia. Several presentations related to initiation, concept and overview of the projects and its current progresses were made by concerned researchers. Some of the notable presentations include: overview of the project by Dr. Dagne Wegary of CIMMYT-Ethiopia; concepts and principles of conservation agriculture by Solomon Jemal (SIMLESA-Ethiopia objective 2 leader); innovation platform and scaling out of technologies by Mekonnen Sime

(SIMLESA-Ethiopia national coordinator) and innovation systems members' roles and responsibilities by Dr. Daniel Dauro.

The current progresses of the expansion program under different objectives were presented by respective responsible researchers. These presentations indicated that SIMLESA expansion in the region is being implemented in two districts. Several project activities have already

been started and encouraging progresses were reported. Site selection and community surveys have already been completed; and household baseline survey tools were developed, shared and are ready for use. On-farm exploratory conservation agriculture (CA) trials were planted on six farmers' fields in each of the two selected districts. On-farm and on-station participatory variety selection (PVS) trials of maize, haricot bean and forage crops are under evaluation each on 3-6 farmers' fields.

Based on the presentations, several questions and comments were raised by the participants and thoroughly discussed. Finally, general discussion was made and closing remark of the workshop was given by Mr. Mesfin Kare, head of Sidama zone department of Agriculture.



## Expanding SIMLESA to the Kalahari

With plans to expand to more countries in the region, the Sustainable Intensification of Maize-Legume cropping systems for food security in Eastern and Southern Africa (SIMLESA) program has included Botswana as a spill-over country, reflecting its recognition of the importance of crop-livestock interaction in the farming system. To initiate the spill-over activities, the Australian Centre for International Agricultural Research (ACIAR) has allocated a research grant to Botswana through the CIMMYT-SIMLESA program.

During 23-25 July 2012, SIMLESA program coordinator Mulugetta Mekuria and cropping systems agronomist Isaiah Nyagumbo visited Gaborone, Botswana, to introduce SIMLESA to the Botswana National Agriculture Research System officials and to develop a work plan for the newly funded Spillover project.

The project seeks to draw lessons from five core SIMLESA countries and share these with Botswana, Rwanda, Uganda, and South Sudan. It will also carry farming systems characterization studies on sites to be identified for subsequent SIMLESA activities. In Botswana, the primary activities will include exchange visits by Botswana scientists to core SIMLESA countries, surveys and characterization studies, and capacity building through short-term training. The meeting was attended by more than 20 participants from different research stations in Botswana. Mekuria highlighted the SIMLESA project rationale, objectives, impact pathways, and partnership modalities, and outlined the linkages and synergies between SIMLESA and other CIMMYT projects and programs, including Drought Tolerant Maize for Africa (DTMA), New Seed Initiative for Maize

in Southern Africa (NSIMA), and Conservation Agriculture (CA). Nyagumbo then facilitated discussions on the anticipated outcomes of the Spillover project, focusing on the following objectives: developing an understanding of SIMLESA in Botswana, identifying kick-start investigatory activities leading to larger action plans linked to the SIMLESA program, and integrating Botswana scientists into SIMLESA capacity building activities.

The group work and plenary discussions resulted in a draft workplan which will be finalized shortly. According to this plan, the project will focus on CA, crop-livestock linkages, fodder crops production, and multiplication of suitable maize varieties for Botswana's arid to semi-arid environment. The Botswana team showed a high level of interest in the project, and Stephen Chite, Chief Agricultural Research Officer and Head of arable crops research, expressed his appreciation to CIMMYT for its continued support for the national maize research program and to ACIAR for its financial support.



## SIMLESA farmers from western and eastern Kenya share their experiences



A delegation of 20 farmers, research technicians, and Ministry of Agriculture officials from western Kenya visited their counterparts in eastern Kenya during 12-13 June 2012 to learn and share their experiences with implementing Sustainable Intensification of Maize-Legume based Cropping Systems for Food Security in Eastern and Southern Africa (SIMLESA) project.

Before meeting their counterparts, the visiting farmers toured on-station SIMLESA trials at the Kenya Agricultural Research Institute (KARI-Embu) where Charles Mugo, KARI technician, took them through the various trials and treatments: maize and beans under minimum tillage, bean under conventional tillage, bean under minimum tillage, bean under furrow and ridge tillage, and maize and bean under furrows and ridges. The farmers had a chance to see trials addressing the livestock residue retention conflict among the mixed farming communities.

SIMLESA has partnered with the International Fund for Agricultural Development (IFAD) to try out alternative fodder species. Treatments under these trials include retaining all, half, or a quarter of the residues on each plot, and intercropping the maize with Desmodium to fix nitrogen in the soil and provide animal feed.

The performance of the on-station trials and a visit to the Kyeni Innovation Platform in Embu County encouraged the farmers to scale out conservation agriculture (CA). "They are able to conserve water, especially in this area characterized by low, scarce and erratic rainfall. It has not rained for almost one and a half month in the area," said Teresa Maitha Njiru, a member of the Kyeni Innovation Platform, explaining why her crops were robust, particularly those under furrows and ridges. Njiru, who has been practicing CA for the last four cropping seasons, hailed the practice for its productivity, environmental friendliness, and cost effectiveness.

Above all, she appreciated that it is not labor-intensive. "*Hakuna Kazi hapa*, there is no work here," she said, referring to the little time required to prepare and manage a CA plot. "And I only spray three days after planting for weed control," she added.



The furrows and ridges technology stood out also for Titus Miriti from Chuka. "Ridges and furrows technology has the greatest and best effect on crop performance and the greatest benefit because this area is arid. It is very good in water retention," Miriti pointed out, stating that CA is much more rewarding than the conventional practice.

Benson Nyakundi, technician at KARI-Kakemega and trip coordinator, noted that the CA technologies were important in boosting food security in Kenya. "New technologies like these being implemented by SIMLESA are critical in fighting food insecurity that is rampant in the country." Lorna Oketch, Siaya County agricultural officer, praised SIMLESA for making extension services and providers a part of the project implementation team. "This will go a long way in sustaining the project even beyond the project timeframe."

The exchange visit was organized and facilitated by John Achieng, former SIMLESA site coordinators for western and Alfred Micheni, SIMLESA site coordinators for eastern Kenya.

## Building the capacity of young maize breeders in Ethiopia



In 2011 and 2012, the federal and regional agricultural research institutes of Ethiopia have employed a number of new maize breeders to strengthen the maize program in their respective institutions. Although these recruits have good theoretical knowledge on the general principles of crop science and breeding, they are new to the practical skills of maize breeding. Capacity building to increase the efficiency of National Agricultural Research Systems (NARS) is one of the main program objectives for the SIMLESA

It is against this background that SIMLESA, in collaboration with the National Maize Research Project organized an on-job training course on maize breeding during 18-20 September, 2012 at Melkassa Agricultural Research Center (MARC). The training combined theoretical and practical sessions on maize breeding. In addition, the trainings served as refresher course for senior breeders and a forum to share their rich experiences with young maize breeders joining the research system. The training is a major contributor to capacity building of the research team for increased maize technology generation, improved production and productivity, and promotion of the technologies in Ethiopia.

A total of 47 junior breeders from different research centers of Ethiopian such as the Ethiopian Institute of Agricultural Research (EIAR), Oromia Regional Agricultural Research Institute, Amhara Regional Agricultural Research Institute, South Regional Agricultural Research Institute, Somali Pastoralist and Agropastoralist



Regional Research Institute, Gambela Regional Agricultural Research Institute and Haramaya University participated on the training.

The trainers were from Haramaya University, experienced researchers from NARS and CIMMY Ethiopia.

The major topics covered included: Effective Breeding Methods for Cross Pollinated Crops with special emphasis to maize; Theoretical Aspects of Maize Breeding; Inbred Line and Hybrid/synthetic Variety Development; Breeding for Biotic Stress Resistance; Breeding for Abiotic Stress Tolerance; Management of Trials and Nurseries; Maize Seed Production and Management; Biometrical Methods for maize breeding; Application of fieldbook in maize breeding; Introduction to Molecular Breeding, Cropping system for sustainable maize production; On farm participatory trials - assessment of farmers perception and selection criteria, Gender mainstreaming into maize research and Quarantine requisitions for introduction of maize germplasm.

## SIMLESA researchers discuss monitoring and evaluation

The fourth workshop on monitoring and evaluation (M&E) organized by the Sustainable Intensification of Maize-Legume Systems for Food Security in Eastern and Southern Africa (SIMLESA) initiative took place at the International Livestock Research Institute (ILRI) campus, Addis Ababa, Ethiopia, during 27 July – 1 August 2012. Following recommendations from the previous meeting in Nairobi, Kenya, the workshop aimed to update SIMLESA country performance monitoring plan and train M&E focal persons and country objective coordinators in qualitative data collection, participatory design of data collection tools, and data quality management for Ethiopia, Kenya, Malawi, Mozambique, and Tanzania. The workshop was opened by Enock Warinda (Association for Strengthening Agricultural Research in Eastern and Central Africa–ASARECA) and attended by 16 participants, including CIMMYT scientists, Dagne Wegary and Menale Kassie. Participants shared their experiences with data collection under SIMLESA and discussed potential ways to strengthen the data collection system. At the end of the workshop, the



country M&E focal persons were tasked to develop M&E concepts for their respective countries to be funded and implemented through ASARECA and CIMMYT. To follow up on these activities, Peter Beine (ASARECA) and Austin Ngindi (CIMMYT-SIMLESA) will visit SIMLESA countries to assist with data quality assessment.

## ARC training: helping SIMLESA partners understand better concepts and practices of CA

Researchers, extension staff and members of Innovation Learning Platforms (ILeP) from Sussundenga, Manica, Angonia and Gorongosa regions in Mozambique recently benefitted from a capacity building workshop organized by SIMLESA and the Mozambique National Institute of Agronomic Research (IIAM) in Chimoio.

The aim of the course was to improve technical skills of the partners in conservation agriculture and basic knowledge in Innovation Learning Platforms, gender, among other issues. The training covered a range of topics including: extension skills, communications skills; research; conservation agriculture and agronomic practices; participatory research; and the development of Innovation Platforms, integrated pest, weed and disease management; calibrating CA equipment and sprayers, basic concepts

in gender; soil health, integrated nutrient management; indicators of monitoring and evaluation; and crop production (cereals and legumes).

The training was attended by 40 participants from IIAM, agro-dealers, seed producers, NGO's, extension staff, farmer's associations, ILePs, Caritas and Academic institutions.

The training was organized by Isaiah Nyagumbo, SIMLESA Objective 2 Coordinator for southern Africa and Domingos Dias, Mozambique SIMLESA National Coordinator. It was facilitated by experts from ARC who included Colletah Chitsike (IP, gender and extension), Annelie De Beer (cereals and legume production), Michael Kidson and Patiente Chauke (IPD management, soil health and land preparation), and Marlene van der Walt (weed management).



## Scientists from SIMLESA Spillover countries on exchange visit to Ethiopia



SIMLESA program, developed by African and Australian stakeholders, fits regional and national agricultural development priorities. It aims at increasing farm-level food security and productivity, in the context of climate risk and change. It will result in resilient, profitable and sustainable farming systems that overcome food insecurity for significant numbers of farm families in Ethiopia, Kenya, Malawi, Mozambique and Tanzania.

In Ethiopia, the core SIMLESA program is supported by ACIAR while the expansion program is supported by AusAID, and both managed by CIMMYT. The overall aim of the program is to improve rural livelihoods in drought prone areas of Ethiopia through productive and sustainable maize/legume/livestock systems and risk management strategies that conserve the natural resource base. The expanded program will add livestock fodder and forage components to the maize-legume system focus of the original SIMLESA Program.

SIMLESA program activities have been implemented in two maize-legume based farming systems classified as mid-altitude dryland and the mid-attitude sub-humid zones of the country since March 2010. A large proportion of the activities (about 65%) are conducted in the drought affected areas of the Rift Valley region of Ethiopia by scientists from Melkassa and Awassa Agricultural Research Centers while the remaining share of activities are conducted in the sub-humid, high potential maize growing areas of the country by staff from Bako and Pawe Agricultural Research Centres. In the drought stressed maize-legume areas, five administrative zones (provinces) (East Shewa, West Arsi, Guraghe, Hadiya and Sidama) are targeted, whilst four administrative zones (West Shewa, East Wellega, Awi and Pawe Special woreda) are targeted in the sub-humid maize-legume based farming system.

Since April 2012 (following the approval of SIMLESA-Expansion) by AusAID, the SIMLESA area has expanded to



three additional target sites where mixed farming based on maize/legume/livestock systems are critical for livelihood security and adaptation to climate change: (i) north-western sub-humid areas (Pawe-Adet Corridor comprising two districts in western Gojjam of Amhara Region); (ii) eastern mid-altitude drylands (two districts in Jijiga zone of Somali Region), and (iii) southern mid-altitude drylands (two districts in Sidama Zone of SNNPR).

During 18-25 September, 11 scientists and partners from SIMLESA spillover countries - Uganda (3), Botswana (3), Rwanda (2) and South Sudan (3) - financial support for the visit was from CIMMYT and ACIAR visited SIMLESA activities in Ethiopia. The purpose of the trip was to expose scientists and partners involved in the SIMLESA program of spillover countries in order to understand the SIMLESA system and how it is being implemented, experience SIMLESA protocols, interact with the Ethiopian research fraternity and create stronger linkages between SIMLESA countries.

The delegation visited on-station and on-farm trials as well as farmers who had up taken the improved practices. Two agro-ecological zones were visited: i) mid-altitude dryland zone in the Rift Valley with maize-common bean system in Melkassa Agricultural Research Center and Wondogent (Hawassa) Agricultural Research Center (WoARC), and ii) High potential area characterized by sub-humid zone in western Ethiopia with maize-soybean/common bean systems in Bako Agricultural Research Center (BARC) areas.

Activities visited include:

- Identification of maize/legumes varieties compatible for intercropping
- CA implements trials
- On station and on farm conservation agriculture (CA) exploratory trials
- On station and on farm participatory variety selection trials
- Breeder and pre-basic seed increase at MARC and BARC on stations
- Field days organized at Adami Tulu district (under MARC), Meskan district (under WoARC) and Bako Tibe (under BARC)

In general, the visit was a great opportunity to interact and share experiences with scientists from the different countries. Through the interactions the team learnt

of the challenges and the various solutions used to overcome the challenges faced in each country, in as far as, agricultural production is concerned and the general well being of the people.



## About the Bulletin

This bulletin is a quarterly publication of the Sustainable Intensification of Maize-Legume based Cropping Systems for Food Security in Eastern and Southern Africa (SIMLESA) Program, funded by Australian Centre for International Agricultural Research (ACIAR), and managed by the International Maize and Wheat Improvement Centre (CIMMYT). It is implemented by the National Agricultural Research Systems (NARS) of Ethiopia, Kenya, Tanzania, Malawi and Mozambique in collaboration with the Association for Strengthening Agricultural Research in Eastern and Central Africa (ASARECA), International Crops Research Institute for Semi-Arid Tropics (ICRISAT), the Agricultural Research Council of South Africa (ARC), the Queensland Alliance for Agriculture and Food Innovation (QAAFI) in association with Queensland Department of Employment, Economic Development and Innovation, (QDEEDI) Queensland, and Murdoch University in Western Australia. SIMLESA aims to improve the livelihoods of smallholder farmers in drought-prone areas of Eastern and Southern Africa, through intensification of maize-legume cropping systems.

SIMLESA focuses on five countries in Africa—Ethiopia, Kenya, Malawi, Mozambique, Tanzania—and Australia, with spillovers anticipated in neighboring countries. The sustainable intensification of maize-legume cropping systems, while reducing yield variability, requires an integrated approach to the complex production

and marketing system for these crops. Through participatory research and development with farmers, extension agencies, non-governmental organizations, universities and agribusinesses along the value chains, the program aims to improve maize and legume productivity by 30% and to reduce the expected downside yield risk by 30% on approximately 500,000 farms within 10 years.

