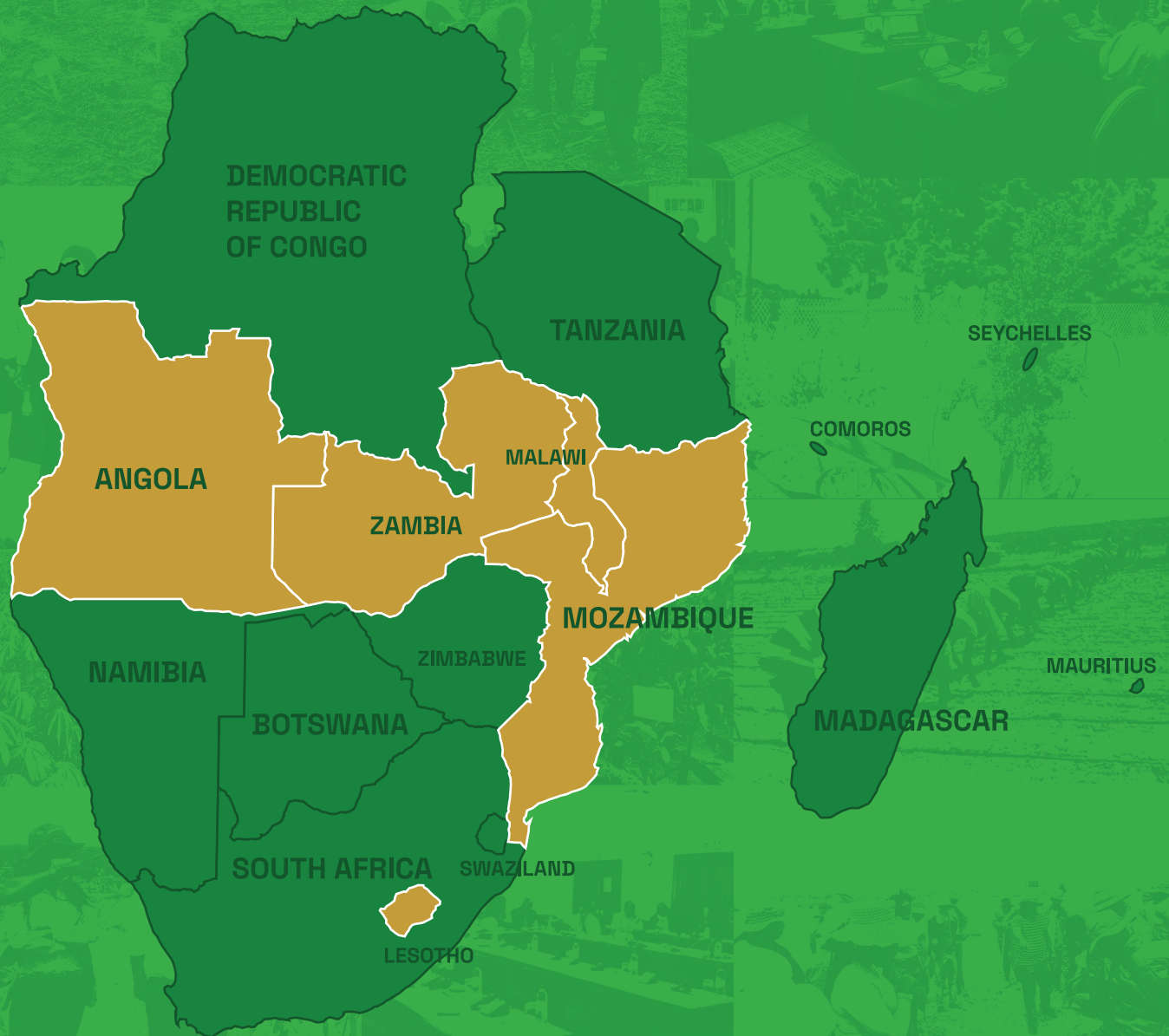


CCARDESA

Centre for Coordination of Agricultural Research and Development for Southern Africa



AGRICULTURAL PRODUCTIVITY PROGRAMME FOR SOUTHERN AFRICA (APPSA)



Compendium of APPSA Impact Stories

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Sharing the Erasable Footprints of APPSA in Mozambique

24 Oct 2019



The Agricultural Productivity Program for Southern Africa (APPSA) dissemination seminar was held on 24th -25th October 2019, in Maputo. This programme which CCARDESA is coordinating at regional level provided an opportunity to showcase and discuss the rich lessons and insights shared by Principal Investigators (PI's) of the World Bank funded projects in last six years of the program implementation.

According to Dr. Olga Fafetine, the Director General of the Mozambique Agricultural Research Institute (IIAM), investments in technology generation and dissemination is instrumental for the agricultural sector. "The Government of Mozambique has been investing a considerable amount of resources to generate technologies," she said. In this technology generation and dissemination framework, strategic partnerships with academia, private sector, farmers' association and others have been the main engine of the sustainable improvement of agricultural technologies.

"APPSA is aimed at improving production, ensuring food security and nutrition for Mozambicans in general," said Olga Fafetine, and she further explained that at country-level farmers have benefited from the technologies as evidenced by their income which has increased significantly. Dr. Anabela Zacarias, APPSA Country Coordinator also briefly explained that APPSA programme advocates for the increase of agricultural productivity whose main beneficiary is the farmer.

The Inspector General of the Ministry of Agriculture and Food Security (MASA), Félix Paulo, stressed the need to increase production and productivity using existing technologies, because in his opinion, it does

not make any sense to continue with poor agricultural performance with the existing technological advancements.

Farmers' testimonials

According to Gremo Matias, a farmer from Angónia District, Tete Province, the agricultural technologies developed by IIAM under APPSA contributed to the increase of his production. **"Before I benefited from APPSA technologies, my agricultural income was low and I could not fulfill my dreams. But today, I have high yields in my production and have already made some dreams come true from these innovations."**

Another farmer pleased with IIAM's interventions is Ms Isaltina Aly, from Malema District, Nampula Province, who today beams with unending joy because her production has increased since receiving APPSA training and technology. **"Before the advent of APPSA, I didn't know about these new farming techniques. So I could not get better results. With this APPSA program I see the growth of my production, and I want to praise the government for partnering with APPSA and IIAM"**, she said.

APPSA is six years World Bank funded Program which started in 2013 coordinated by the Centre for Coordination of Agricultural Research and Development for Southern Africa (CCARDESA) which was implemented in Mozambique, Malawi and Zambia. The programme is expanding to other countries and Lesotho and Angola have recently joined the programme which CCARDESA is promoting in the region because of its potential to increase the much needed investment in the agricultural sector.

SADC Delegates Admires the Newly Constructed Regional Centre of Leadership on Rice

03 Feb 2020

“Huge and Worthwhile Investment” was the impression shared by the majority during the stakeholders visit to the newly built Regional Centre of Leadership in rice-based systems research in Namacurra, Mozambique held on the 30th of January 2020.

The visit started with a courtesy call to His Excellence Governor of Zambezia, Mr Augusto Pio Matos who highlighted the potential contribution of the rice RCoL both at local and regional levels. **“We are all glad to have the rice RCoL in our province especially because it will support local small-holder famers as well as from other rice-based farming areas across the country such as Gaza province and from the SADC region as a whole”**, emphasized Pio Matos.

The Rice RCoL is a newly built 50 hectares research infrastructure which encompasses Biotechnology Lab, Entomology Lab, Seed Lab, Seed warehouse, Chemical and Fertilizer warehouse, Administrative block, Water reservoirs, Irrigation and Water pump systems as well as houses for researchers. About 30 delegates from 10 SADC member states had an opportunity to tour a research infrastructure built under the Agricultural Productivity Programme for Southern Africa (APPSA), a six years World Bank funded project.

“This is a huge investment for the region, that will benefit not only in Mozambique but SADC region and the entire Africa”, said one of the visitors,

Dr N’guni Dickson, APPSA Coordinator in Zambia. APPSA has supported agricultural research, technology dissemination, and capacity building activities in Malawi, Mozambique and Zambia. Priority farming systems for each RCoL were



identified on the basis of a regional priority-setting study that identified leading R&D priorities for the SADC region, as well as in country priorities. Malawi has established an RCoL on maize and maize-based farming systems. Zambia established an RCoL on food legumes and food legumes-based farming systems. Mozambique has established an RCoL on rice and rice-based farming systems. An RCoL is defined as a leading agricultural technology centre or program with established capacity (or the potential to establish capacity) that distinguishes it as a leader in the region and beyond.

Rice cultivation has been practiced in Mozambique for more than 500 years. It is mainly done in lowland rainfed ecologies, where farmers follow traditional management practices. According to Judite Faria, Provincial Secretary of the State who also hosted the delegates from various countries in the SADC region in her office, RCoL establishment in Namacurra will contribute to fast tracking the rice production and productivity as well as contribute to strengthening of the value chain.

“Our expectation is that the RCoL will be a key player in the value chain given that we don’t want it to only focus on increasing production but also on market systems”, shared Judite Faria.

Rice is one of the major crops for production in Mozambique, along with maize, wheat, and sorghum. However, rice consumption has increased rapidly in recent years, from 86 thousand tons in 1990 to 519 thousand tons in 2010, at an annual growth rate of 8.6%.

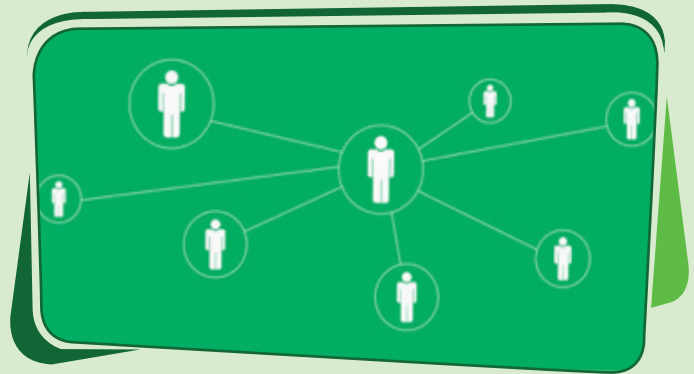
CCARDESA Facilitates Improvement of Collaborative R&D Proposals under APPSA in Angola and Lesotho

22 Jun 2020

The Centre for Coordination of Agricultural Research and Development for Southern Africa (CCARDESA) recently facilitated a series of virtual workshops for agricultural scientists to undertake collaborative research under the Agricultural Productivity Program for Southern Africa (APPSA) in Angola and Lesotho. The virtual workshops were meant to provide lead scientists of the Research and Development (R&D) projects with relevant technical inputs to finalize their proposals in preparation for implementation during the 2020/21 cropping season. Key areas discussed during the virtual meetings included alignment of the project goals, objectives, methodology, activities, outputs indicators as well as inclusion of the theory of change in project proposals.

APPSA is a regional project supported by World Bank (WB). The project originally started with three countries (Malawi, Mozambique and Zambia), and it has now expanded to Angola and Lesotho. The first phase of implementation in the three countries commenced in 2013 and officially ended in January 2020. Angola and Lesotho joined the APPSA Project in 2019 and are expected to implement the project until 2025.

CCARDESA had planned to facilitate face-to-face meetings between collaborating scientists, but due to limitations imposed by the COVID-19 outbreak which forced countries and organizations to abide with social distancing regulations and the ban of travel across borders, CCARDESA adopted a virtual approach to fulfil the planned activity. The workshops were attended by the Principal Investigators (PI's), co-Principal Investigators (Co-PI's) and members from the technical committees from Angola and Lesotho, as well as the APPSA Count Coordinators. Discussions focused on 8 projects covering different topics and



crops such as cassava, maize, peach fruits, leafy vegetables, and legumes breeding as well as molecular and morphological characterization, socio-economic studies, and dissemination. Most of these projects have been implemented in the previous phase of APPSA in Malawi, Mozambique and Zambia. However, given that their topics were equally important for Angola and Lesotho, the two countries agreed collectively to adopt and adapt them as well. The scientists agreed to incorporate the contributions from participants of the virtual workshops and submit revised versions to CCARDESA by early July 2020.

The eight R&D projects that are expected to be implemented in 2020/21 Cropping season are on:

1. Strengthening sorghum seed delivery systems in Lesotho and Angola
2. Performance of bean genotypes under multi environments
3. Characterization of common bean (*Phaseolus vulgaris* L.) genotypes using morphological and molecular markers;
4. Drivers to Technology Adoption and Profitability- Dissemination of improved technologies under maize and beans in Lesotho and Angola;
5. Pathogens Limiting Cassava Culture In Angola: Epide miology And Integrated Pests Management Measures.;
6. Evaluation of Cassava Genotypes tolerant to Drought
7. Collection, characterization, conservation and exchange of germplasm of Cassava, Cowpea, Peach trees and indigenous leafy vegetables in Lesotho and Angola;
8. Breeding Maize Tolerant to Acid Soils and the Other Biotic and Abiotic Stress Conditions.

Angola Launches APPSA Program

24 Feb 2021

The Agricultural Productivity Program for Southern Africa (APPSA) in Angola was officially launched on the 24th of February 2021 in Huambo (Angola), an event witnessed by key country and regional stakeholders such as the World Bank, Government representatives, APPSA Steering Committee, implementing partners, farmer organisations amongst a host of key participants.

This important milestone symbolically adds Angola to the list of APPSA participating countries alongside Lesotho in the current APPSA phase, following the successful implementation of this flagship program in Malawi, Mozambique, and Zambia from 2013 to January 2020. Angola and Lesotho are expected to implement APPSA until 2025.

Angola will take the lead on Cassava while Lesotho is establishing the Regional Center of Leadership (RCoL) in Horticulture. Malawi, Mozambique and Zambia have already established RCoLs on Maize, Rice and Legumes, respectively.

The establishment of the Cassava RCoL will set the pace for regional collaboration in the generation and dissemination of efficient and effective cassava AR4D technologies. The RCoL will facilitate the generation of critical solutions in the growing, harvesting and processing of Cassava. This will be tackled through development of networks, specialization and sharing of research data bases that are beyond the reach of individual countries.



In Angola, APPSA will support the development of the Cassava RCoL including the upgrading of research infrastructure, research fields, laboratories, office equipment, IT and knowledge management. APPSA will invest in human capital development through providing scientific training at graduate and post-graduate levels as well as skills and capacity development through short term courses to ensure sustainability of the Cassava RCoL programmes.

Cassava is the third most important source of human calories after rice and maize, according to the UN Food and Agriculture Organization. Nicknamed “the bread of the tropics” cassava is food source for over half a billion people around the world. Despite favourable conditions for growing cassava in most SADC countries, low yields still at the top of the agenda due to issues such as pests and diseases and use of local varieties.

APPSA is a World Bank funded initiative coordinated at regional level by the Center for Coordination of Agricultural Research and Development for Southern Africa (CCARDESA). The project development objective of APPSA is to improve technology generation and dissemination within and among participating countries within the SADC region.

APPSA Supports the Improvement of Research Infrastructure in Lesotho

12 Mar 2021



The Agricultural Productivity Programme for Southern Africa (APPSA) is a six-year regional programme supported by the World Bank and coordinated by the Centre for Coordination of Agricultural Research and Development for Southern Africa (CCARDESA). APPSA seeks to promote a regional approach to agricultural research, technology generation and dissemination by supporting the strengthening and scaling up of RCoLs on commodities of regional importance.

APPSA is currently supporting the improvement of agricultural research infrastructures at different research stations in the Kingdom of Lesotho as the country establishes the Regional Centre of Leadership (RCoL) for horticulture crop farming system.

Lesotho under APPSA is establishing the RCoL for Horticulture in Maseru but will also have 4 Regional Research Offices (RROs) in Mokhotlong, Mahobong, Siloe and Nyakosoba. Infrastructure development in Lesotho includes rehabilitation of irrigation systems for the country's five Regional Research Stations, rehabilitation of the main office block for PIU staff, and temporary water connections at the four Regional Research Offices. Lesotho's improved research infrastructure is expected to enhance the capacity of the horticultural RCoL in conducting research, reduce research costs as well as improve

research and knowledge dissemination efficiencies. As the RCoL for Horticulture, Lesotho is positioned as the regional hub for horticulture research and development and will lead in the technical coordination of R&D sub-projects related to horticulture-based farming systems. The RCoL will assume the national and regional coordination role for Research & Development and will collaborate with other APPSA implementing countries being Angola, Malawi, Mozambique and Zambia.

The implementation of research activities by the RCoL will be funded through an R&D sub-project mechanism that facilitates regional collaboration to ensure that APPSA investments generate not only national but also regional benefits. The R&D sub-projects will support research, technology dissemination, training, knowledge management and other activities that will contribute to and benefit from enhanced regional collaboration.

APPSA has established fully operational RCoLs on Maize, Legumes and Rice based farming systems in Malawi, Zambia and Mozambique, respectively. It is also currently supporting the establishment of the Cassava RCoL in Angola.

Heat and Drought Tolerant Varieties: Mitigating Climate Change Effects through Maize Breeding

14 May 2021



Climate change has emerged as a serious variable in crop production in the SADC region and across the globe. Reports indicate that for every one-degree Celsius increase in temperature, there is a corresponding five percent decrease in crop productivity.

The Centre for Coordination of Agricultural Research and Development for Southern Africa (CCARDESA) through the Agricultural Productivity Programme for Southern Africa (APPSA) supported the development of maize varieties that can adapt to climate change as a way of improving food security in the region spearheaded by Malawi, Mozambique and Zambia.

The trials which were led by Dr. Kesbell Kaonga (Malawi) in partnership with scientists from Mozambique and Zambia, were conducted between 2013 and 2020. The aim of this research was to develop hybrid varieties tolerant to heat and drought by using double haploid donor inbred lines.

According to Dr. Kaonga, the economic losses as a result of climate-related disasters are significant.

“Malawi for instance, loses 1.7% of its Gross Domestic Product (GDP) on average every year due to the combined effects of droughts and floods”, said Dr. Kaonga.

Note that, maize remains crucial for food security in Southern Africa, accounting for an average of 36% of all caloric intake in the region, and heat and drought seem to be critical in determining the levels of production and productivity in the region.

Indeed, for FAO, severe droughts account for half of the world’s food emergencies annually. In 2003, the World Food Programme spent \$565 million in response to drought in Sub-Saharan Africa and approximately 20 million metric tons is lost each year due to drought. **“When we first started our research journey we wanted to select at least 9 hybrids as potential candidates for release in the participating countries as follows: 3 drought-tolerant varieties, 3 heat-tolerant varieties and 3 that combine heat and drought tolerance”,** added Dr. Kaonga.

Dr. Kaonga also shared that the donor lines for heat and drought tolerance came from CIMMYT and were crossed to Malawi inbred lines.

In the effort to develop hybrid varieties that are tolerant to heat and drought, donor lines were evaluated in Malawi, Mozambique, and Zambia under managed stresses. Additionally, the drought trials were evaluated for two seasons by withdrawing irrigation at the stage to coincide with the hottest period of the dry season.

In the case of developing double haploid inbred lines that are tolerant to heat and drought, the source populations were generated using donor lines and locally adapted ones.

“After the exercise, we identified 8 entries with high yields across the countries, from which 5 were the most stable. All the identified hybrids were tolerant to common maize diseases”, ended Dr. Kaonga.

APPSA gets the limelight in the joint Meeting of SADC Ministers of Agriculture, Food Security, Fisheries and Aquaculture

06 Jun 2021



This was shared by Dr Cliff Sibusiso Dlamini, the Executive Director of the Centre for Coordination of Agricultural Research and Development for Southern Africa (CCARDESA), in his opening remarks for the World Bank Implementation Support Mission (ISM) under the Agricultural Productivity Program for Southern Africa (APPSA), held through video conferencing from May 31 to June 4, 2021.

According to Dr Dlamini, the high-level commitment towards APPSA is a clear indicator that the program has been able to significantly contribute to fostering agricultural research and development in the SADC region.

“In the Ministers’ Meeting, SADC Member States noted the remarkable achievements under the APPSA Programme since its inception, and further pledged their strong support for the Programme going forward”, shared Dr Dlamini.

SADC Ministers responsible for Agriculture and Food Security, Fisheries and Aquaculture met virtually on 7 May 2021, to review progress in the implementation of the SADC relevant sectoral programmes, projects and related strategies under the Regional Agricultural Policy (RAP), in line with the Regional Indicative Strategic Development Plan (RISDP) (2020-2030).

Tahira Syed, the APPSA Regional Task Team Leader (TTL), views the increasing interest and commitment from the SADC Ministers of agriculture, food security, fisheries and aquaculture as an excellent window of opportunity for the program to advocate for other countries from the region to join the APPSA family.

“We should keep our eyes on the ball [...] because it was through the good work that Malawi, Mozambique and Zambia did, we were able to get APPSA Angola and Lesotho and my real hope and wish is that we invite other new partners, other new member countries from the SADC member states who are willing to say we need another APPSA”, Tahira elaborated.

APPSA is a six year World Bank funded initiative aimed at promoting collaboration among SADC countries and has been supporting the generation and dissemination of technologies, innovations and management practices across the region.

Over 50 Agricultural Scientists from Angola and Lesotho Trained on Proposal Writing under APPSA

16 Jun 2021



About 56 Agricultural Scientists from the Republic of Angola and the Kingdom of Lesotho are attending a proposal writing training under the Agricultural Productivity Program for Southern Africa (APPSA). This training is conducted virtually with facilitation by the Agricultural Research Council (ARC) from the Republic of South Africa (RSA) and will run from the 14th to the 16th of June 2021.

The 3 days training is aimed at building capacity amongst scientists in APPSA countries in resource mobilization through writing fundable proposals and enhance the scientific and technical quality of R&D sub-projects implemented by APPSA participating countries.

This training is being conducted as part of the capacity building initiatives under APPSA, a regional project supported by the World Bank to promote regional collaboration and put in place mechanisms to encourage technology generation and dissemination across the SADC region.

APPSA, which is regionally coordinated by the Center for Coordination of Agricultural Research and Development for Southern Africa (CCARDESA), was first implemented in Malawi, Mozambique and Zambia, in the first phase and has since extended to Angola and Lesotho.

As a regional project, APPSA is based on partnerships and collaboration among participating countries. All R&D interventions are undertaken through collaborative R&D projects involving the participation of at least two countries.

For Dr Majola Mabuza, the APPSA Regional Coordinator, the proposal writing training is to support APPSA Scientists to be able to prepare winning proposals to successfully benefit from available research funds to implement R&D sub-projects.

“This training has come at an opportune time when APPSA will be launching the first Call for Proposals and we expect to receive applications from most of you, which should reflect the skills gained from this training”, stressed Dr Mabuza.

APPSA Call for Proposals is issued at country level with different cycles following specific thematic areas on commodities of interest for the participating countries. Currently, Angola is establishing the Regional Center of Leadership (RCoL) for Cassava and, Lesotho is establishing the RCoL on Horticulture.

Angola and Lesotho Scientists Come Together to Write High Quality Collaborative Grant Proposals under APPSA

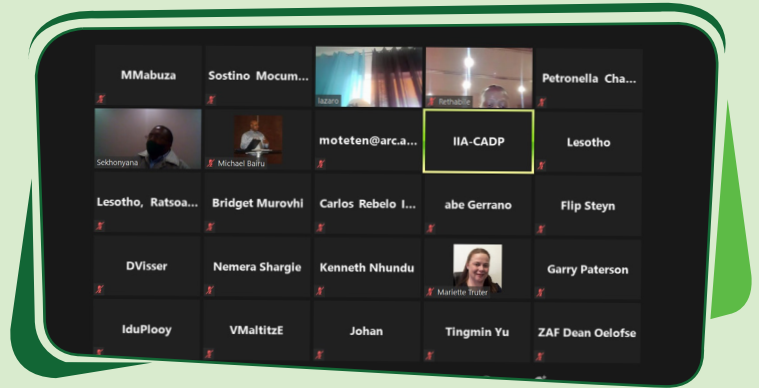
28 Jun 2021

The Center for Coordination of Agricultural Research and Development for Southern Africa (CCARDESA) is hosting a virtual writeshop under the Agricultural Productivity Program for Southern Africa (APPSA) with scientists from the Republic of Angola and the Kingdom of Lesotho. The workshop, which started from the 28th and will run until the 30st of June 2021 is planned to develop 11 high quality collaborative grant proposals to be jointly implemented in both countries. The process is being facilitated by experts from the Agricultural Research Council (ARC) from the Republic of South Africa (RSA).

Specifically, the writeshop seeks to achieve the following:

- (i) To facilitate the writing process of 11 R&D proposals identified from the original APPSA Countries;
- (ii) To consolidate collaborative research teams and initiate collaboration amongst Scientists when developing the proposals;
- (iii) To facilitate harmonization of research titles and adaptation to the national and regional priorities; and
- (iv) To discuss and reach consensus on a plan for completion of quality proposals for timely submission within time frames indicated by CCARDESA.

APPSA is a six-year World Bank funded program with regional coordination by CCARDESA. The project is currently under implementation in Angola and Lesotho facilitating the establishment of Regional Centers of Leadership (RCoLs) on Cassava and Horticulture, respectively. Previously (from 2013 to January 2020), APPSA was implemented in Malawi (Maize RCoL), Mozambique (Rice RCoL) and Zambia (Legumes RCoL). The three APPSA pilot countries



have implemented together a total of 74 collaborative R&D sub-projects.

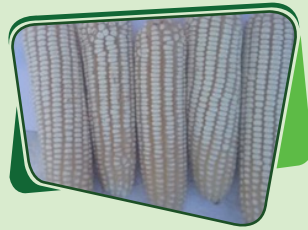
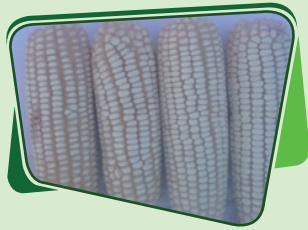
The 11 projects which scientists from Angola and Lesotho are focusing on for the ongoing three days writeshop, were extracted and adapted from the previous APPSA implementing countries considering current local and regional needs. Indeed, APPSA is operationalized through the implementation of joint regional R&D sub-projects.

The writeshop has adopted an approach that includes plenary discussions and working groups. For plenaries, scientists are exposed to guidelines and procedures on the proposal development process. Scientists are then split into smaller working groups to generate fundable R&D proposals.

After the writeshop, proposals will be refined and subjected to a review process to identify winning proposals, which should be jointly and simultaneously implemented by Scientists from both Angola and Lesotho. Results are expected to benefit implementing countries with spill over effects in other countries at SADC level.

Approved proposals must be led by a Principal Investigator (PI) from one of the implementing countries and co-Principal Investigator(s) from the other. This is to allow a broadened discussion of agricultural research topics and accommodate the regional perspective in the implementation of APPSA R&D sub-projects.

This writeshop comes after a Proposal Writing training which was hosted in Mid-June 2021, in which the same scientists were capacitated on how to prepare winning research proposals.



Malawi releases MLND tolerant maize hybrids and high yielding multi-disease resistant hybrid maize varieties

30 Aug 2021

The Center for Coordination of Agricultural Research and Development for Southern Africa (CCARDESA), through the Agricultural Productivity Program for Southern Africa (APPSA), has facilitated the release of two Maize Lethal Necrosis Disease (MLND) tolerant hybrids and three high yielding multi-disease resistant hybrids with traits preferred by smallholder farmers. These hybrids which were released in Malawi, have a greater potential of having the spill-over effects to the entire SADC region.

According to the recently released 2021 SADC Synthesis Report on the State of Food and Nutrition Security and Vulnerability, maize is the single most important cereal crop in Southern Africa, accounting for almost 70% of total cereal production in the region. The maize crop is produced on medium to high potential agricultural land primarily for human consumption, with only about 5% for animal consumption.

Biotic constraints have a significant effect on crop production and productivity, hence the need for breeding programs to release improved varieties that are resistant to those with relatively high economic importance. The APPSA sub-project titled “Breeding for Maize Leaf Necrosis Disease tolerance and development of maize varieties resistant to major diseases in Malawi, Mozambique and Zambia” has responded by successfully developing hybrids that are resistant to MLND, Grey leaf spot, Turicum leaf blight and rust diseases.

These hybrids are suitable for the major agro-ecological regions.

Prior to this, SADC did not have a recorded maize variety resistant to MLND, a viral disease caused by the double infection of maize plants with Maize chlorotic mottle virus (MCMV) and any of the cereal viruses in the Potyviridae group. MLND is a biotic constraint with a potential of wiping-out the entire maize crop field. While this disease has not yet been reported in the APPSA countries, its presence in Tanzania and DRC poses a big threat to the maize industry in Malawi and other APPSA countries. MLND has also been reported in Kenya, DRC, Ethiopia, Rwanda, Sudan and Uganda.

Among other accomplishments under this project, APPSA has assisted Malawi to have additional germplasm that were accessed from CIMMYT and Mozambique. About 254 maize germplasms were mobilized, of which 202 were local maize accessions, 10 inbred lines resistant to MLND, 4 resistant to downy mildew and 33 resistant to multiple major diseases.

Malawi is the Regional Center of Leadership (RCoL) for maize and maize based production systems, established with support from CCARDESA under the APPSA initiative. Despite Malawi, Mozambique and Zambia being currently MLND free there is still a need to continue developing, releasing and commercializing more hybrids resistant to this notorious disease in readiness for incursion to prevent famine in the region.



CCARDESA Undertakes the First Physical APPSA Backstopping Mission to the Kingdom of Lesotho

14 Sep 2021

The Centre for Coordination of Agricultural Research and Development for Southern Africa (CCARDESA) is conducting the first physical technical backstopping mission to the Kingdom of Lesotho from September 13 to 17, 2021, under the Agricultural Productivity Program for Southern Africa (APPSA). The mission, which includes field visits, training on Monitoring and Evaluation, and ICKM related topics, started with a courtesy call to the Principal Secretary of the Ministry of Agriculture and Food Security, Mr. Nchakha Makara.

“The Ministry is happy to host CCARDESA for this mission, and we believe your visit will benefit Lesotho in pursuing her regional mandate under APPSA. This programme is very key for our Ministry and the country at large, and we hope whatever challenges that have been reported either internally or with our partners in Angola will be accorded due attention to find lasting solutions”, said Mr. Makara.

Technical backstopping is an instrumental approach adopted by CCARDESA to assess in-situ project implementation, appreciate the challenges, and provide guidance on how to overcome identified bottlenecks. **“We were supposed to visit Lesotho much earlier in the year, but because of the travel restrictions related to Covid-19, most of our backstopping activities were done virtually. However, as soon we were allowed to travel by authorities at CCARDESA, we had to combine the backstopping with other activities, which include the M&E and ICKM as well as field visits”**, shared Dr. Mabuza.

From Monday to Wednesday (September 13-15, 2021), CCARDESA will facilitate an M&E training to strengthen the local capacity on the Result-based Management (RBM) approach. This training session is led by the APPSA Regional M&E Officer, Mr. Dagmore Tawonezvi, and is aimed at providing M&E experts with relevant



tools to set and assess result-based indicators instead of activity-based. In the same training, a session will be dedicated to discussing regional M&E collaboration opportunities under Information, Communication, and Knowledge Management (ICKM). This last session will be led by the APPSA Regional ICKM Officer, Mr. Sostino Mocumbe.

On Thursday (September 16, 2021), the CCARDESA team will do site visits to verify and supplement information on APPSA infrastructure, laboratories, and other research facilities from the Department of Agricultural Research developed or improved. Friday, September 17, 2021, is dedicated to the Scientific Conference in which researchers that are currently running APPSA R&D sub-projects are expected to make presentations to share achievements made thus far, limitations, lessons learned, and recommendations for the future. The conference will also facilitate knowledge sharing and exchange among scientists as well as set common ground on matters related to project management.

APPSA is a World Bank funded regional collaborative research project currently implemented in Angola and Lesotho. Angola is establishing the Regional Centre of Leadership (RCoL) on cassava and cassava-based farming systems, whereas the Kingdom of Lesotho has chosen to establish the RCoL on horticulture and horticulture-based farming systems. Both countries are encouraged to co-implement R&D sub-projects. However, generated technologies and innovations should benefit Angola and Lesotho, as well as the entire SADC region. Hence, after Lesotho, in two weeks' time, the CCARDESA team will do a similar backstopping mission in Angola.

CCARDESA Facilitates 3-Day Training on Result-based Management Approach in Lesotho

15 Sep 2021



The Centre for Coordination of Agricultural Research and Development for Southern Africa (CCARDESA) capacitated about 20 agricultural scientists and M&E experts on Result-based Management (RBM) approach, from 13th to 15th September, 2021 in Maseru, Kingdom of Lesotho. The training was held as part of CCARDESA's backstopping mission under the Agricultural Productivity Program for Southern Africa (APPSA) in Lesotho.

APPSA is a 6-year World Bank funded regional initiative currently implemented both in Angola and Lesotho with regional coordination by CCARDESA. Angola is establishing the Regional Centre of Leadership (RCoL) on cassava and cassava-based farming systems whereas Lesotho is focusing on horticulture and horticulture-based farming systems.

As a regional coordinating body, CCARDESA has a critical role to play in supporting the capacity building of APPSA Project Implementation Units (PIUs) as well as key stakeholders on different topics of interest. The RBM is one of such topics. For 3 days, participants were exposed to advanced methods and procedures to effectively track results and impact at country and regional levels. Facilitated by Mr Dagmore Tawonezvi, who is the APPSA Regional M&E Officer, the training was attended by among others, Dr Lefulesele Lebesa, the Director of Research under the Ministry of Agriculture and Food Security in the Kingdom of Lesotho.

RBM or results-based approach is a life-cycle approach to management that integrates strategy, people, resources, processes, and measurements to improve decision-making, transparency, and accountability. The approach focuses on achieving outcomes, implementing performance measurement, learning, and adapting, as well as reporting performance.

For Mr Tawonezvi, during project implementation, Managers are often tempted to only focus their attention on inputs (what we spend), activities (what we do), and outputs (what we produce). This may significantly blind the entire process affecting their capacity to see the destination and, when implementation has gone off course. "We can only take corrective action or MANAGE effectively, when we know where we are going and this requires looking beyond activities and outputs and focusing on actual results", added Mr Tawonezvi.

The training concluded with a session where participants were introduced to the CCARDESA D-Group. This is an on-line facility that hosts discussion groups for Scientists, M&E experts and other stakeholders, allowing them to share agricultural information with their peers from across the region.

CCARDESA Undertakes the First Physical APPSA Backstopping Mission to the Kingdom of Lesotho

17 Sep 2021



The Centre for Coordination of Agricultural Research and Development for Southern Africa (CCARDESA) took stock of the implementation of the Agricultural Productivity Program for Southern Africa (APPSA) regarding scientific trials, infrastructure and acquired equipment during a field visit held on the 16th of September in the Mountain Kingdom of Lesotho. The visit covered the Agricultural College, National University of Lesotho (NUL) as well as Maseru, Nyakosoba and Machache Research stations.

In Maseru Research Station, CCARDESA delegates visited the improved and fully equipped infrastructure for APPSA Project Implementation Unit (PIU) housed at the Department of Agriculture Research (DAR) headquarters. The visit included Plant Protection, Seed, Soils and Biotechnology Laboratories. In addition, delegates were exposed to successfully procured and acquired agricultural implements under APPSA, namely: 2 Holland tractors, 1 Sheller, 1 Planter, 1 Boom Sprayer and 1 Mower. APPSA Lesotho has also acquired 5 double cab bakkies and 1 single cab bakkie.

The Lesotho Agriculture College (LAC) is a longstanding partner of DAR, the main implementer of APPSA in Lesotho. CCARDESA also toured the different facilities used by LAC for agricultural

research, which is mostly done in collaboration with DAR and NUL.

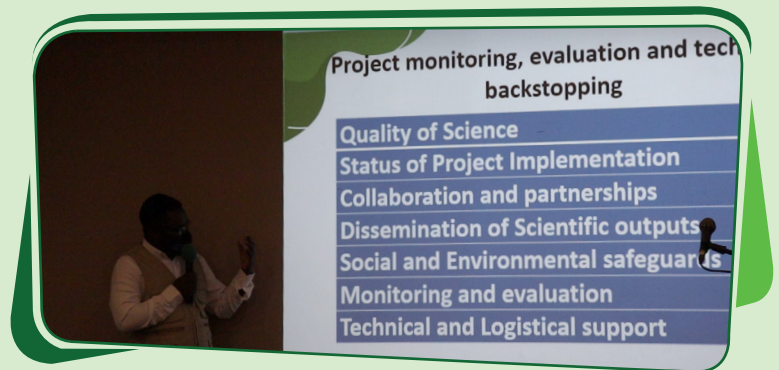
The sample of scientific trials ongoing in Lesotho under APPSA were visited in Nyakosoba and Machache research stations as well as the National University of Lesotho. Delegates visited trials on peach trees collection and characterization as well as sorghum selection. It was also possible to appreciate the fencing project under infrastructure for both research stations.

Indeed, under infrastructure, APPSA is also considering building accommodation for researchers in research stations. An important observation made during the site visits is the support the project is receiving from traditional authorities. APPSA Lesotho has also made a deliberate and very important decision to source manual labour for construction projects from communities neighbouring the different project sites.

On the last day of the mission (17/09/2021), Scientists from Lesotho will present progress achieved in implementing the 8 R&D sub-projects that were inherited from the first phase countries under APPSA (Malawi, Mozambique and Zambia).

CCARDESA Facilitates the First APPSA Scientific Conference in Lesotho

20 Sep 2021



The Centre for Coordination of Agricultural Research and Development for Southern Africa (CCARDESA) facilitated the first Scientific Conference under the Agricultural Productivity Program for Southern Africa (APPSA) on the 17th of September 2021, in the Mountain Kingdom of Lesotho. The conference was aimed at providing scientists implementing APPSA R&D sub-projects in Lesotho with a technical discussion forum to share research results as well as stimulate knowledge exchange.

APPSA is a World Bank funded program currently implemented in Angola and Lesotho with regional coordination by CCARDESA. Angola is establishing the Regional Centre of Leadership (RCOL) on cassava and cassava-based farming systems whereas Lesotho is focusing on horticulture and horticulture-based farming systems.

The Conference, which focused on accomplishments from implementing R&D sub-projects including challenges and limitations, was attended by among others, Mr Nchakha Makara, the Principal Secretary of the Ministry of Agriculture and Food Security in the Kingdom of Lesotho and the Director of Agricultural Research, Dr Lefulesele Lebesa.

The R&D regional approach is instrumental on program priorities, on leveraging expertise for program priorities not available internally within the partner centres, particularly regarding exploring new scientific approaches and tools as well as on promoting cross-Centre collaboration, value for money, the potential for scaling-up across the SADC region, and sustainability. APPSA is currently running eight R&D sub-projects adapted from the previous arrangement that included Malawi, Mozambique and Zambia. However, Angola and Lesotho are

co-implementing five on specific commodities of interest. For the remaining three, Angola is jointly implementing with previous APPSA countries.

The Scientific Conference also discussed the awarding of other regional R&D sub-projects following the approved project development process. Aligned to this, in August 2021, APPSA issued the first formal Call for Concept Notes covering six thematic areas and, about 10 proposals are currently under review.

Overall, in this Conference, scientists reported on the following ongoing APPSA R&D sub-projects:

- LG-P01-2020: Performance of bean genotype under multi environments in Lesotho and Angola
- LG-P02-2020: Characterization of common bean (*Phaseolus vulgaris* L.) genotypes using morphological and molecular markers.
- MC-P01-2020: Drivers to Technology Adoption and Profitability-Dissemination of improved technologies maize and beans in Lesotho and Angola.
- MC-P02-2020: Collection, characterisation and conservation of Cassava, Peach trees and indigenous leafy vegetables germplasm in Angola and Lesotho.
- SG-P01-2020: Strengthening the sorghum seed delivery systems in Lesotho and Angola.

The Scientific Conference concluded with a session where participants were introduced to the CCARDESA Mobile Learning App. This is a mobile-based tool that hosts 57 technical briefs, quizzes on 7 value chains and a discussion forum for Scientists, Extension officers, Academia and other stakeholders, allowing them to share agricultural information with their peers from across the region. The CCARDESA Mobile App is available for download in both Apple Store for iPhone and Play Store for android devices.



CCARDESA Facilitates M&E Workshop for APPSA Angola and Lesotho

04 Oct 2021

The Centre for Coordination of Agricultural Research and Development for Southern Africa (CCARDESA) is hosting a two-day virtual monitoring and evaluation workshop from 4th to 5th of October 2021. The main objective of the workshop is to build common understanding of the results framework and monitoring tools under the Agricultural Productivity Program for Southern Africa (APPSA) among M&E experts and scientists from Angola and Lesotho.

APPSA is a six-year World Bank funded initiative currently under implementation in Angola and Lesotho with regional coordination by CCARDESA. The APPSA project development objective (PDO) is to increase the availability of improved agricultural technologies in participating countries within the Southern Africa Development Community (SADC) region.

Day 1 was dedicated towards building an understanding for each country on how to organize the entire M&E and reporting format around the Results Framework. CCARDESA then led the

discussion on the consolidated Results Framework and data collection tool for measuring indicators across countries to ensure consistency.

The focus for day 2 will be on the regional MIS as participants will discuss the preliminary findings on the assessment of AKVO for potential adoption by Angola and Lesotho. AKVO is a web-based system that was used during the first phase of APPSA implemented in Malawi, Mozambique and Zambia. The assessment was recommended during the last Implementation Support Mission (ISM) conducted by the World Bank in June 2021.

Workshop participants include APPSA M&E experts and scientists from the Agronomic Research Institute of the Republic of Angola, the Department of Agricultural Research of the Kingdom of Lesotho, APPSA staff based at the CCARDESA Secretariat, and the World Bank M&E Specialist based in Zambia, Ms Ngao Mubanga.

CCARDESA
Centre for Coordination of Agricultural Research and Development for Southern Africa



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AGRICULTURAL PRODUCTIVITY PROGRAM FOR SOUTHERN AFRICA (APPSA)

WELCOME

**VIRTUAL EVENT ON
MILESTONE ACHIEVEMENTS
OF THE APPSA PROGRAMME
SINCE INCEPTION**



**28 OCTOBER 2021
9:00 - 12:00 HRS, CAT**



CCARDESA hosts a virtual event on milestone achievements under the APPSA programme

29 Oct 2021

The Centre for Coordination of Agricultural Research and Development for Southern Africa (CCARDESA) hosted a virtual event on the 28th of October 2021 to take stock of milestone achievements under the Agricultural Productivity Programme for Southern Africa (APPSA) since its inception. The event, which was officially opened by the Minister of Agriculture of the Republic of Malawi, Honourable Lobin Lowe, was aimed at sensitising SADC Member States of the existence of Regional Centres of Leadership (RCoLs) established under APPSA, their roles in stimulating agricultural productivity in the region, and the need to establish more RCoLs covering other key commodities of regional importance.

The event was attended by over 70 delegates, including Principal Secretaries from Ministries

responsible for Agriculture and food security, fisheries and aquaculture, Directors of Agricultural Research, Senior Government officials, SADC FANR, World Bank officials, Researchers, APPSA family, private sector, CCARDESA Secretariat and the media.

The implementation of APPSA is based on partnerships and collaboration among SADC countries. Each country under APPSA establishes an RCoL in its respective commodity area that distinguishes it as a leader in the region and beyond. So far, Zambia has established an RCoL in legume-based farming systems, Malawi in maize-based farming systems and Mozambique in rice-based farming systems. In the current phase, Angola and Lesotho are establishing RCoLs in Cassava and Horticulture-based farming systems, respectively. The benefits from these

facilities are expected to spill over to other countries within the region and beyond.

According to the Minister, APPSA has done a lot since inception. However, to improve its impact and effectiveness more Regional Centres of Leadership need to be established in other commodities of regional importance. “Countries that are currently not part of APPSA, are urged to take the opportunity today to appreciate the work done by existing Regional Centres of Leadership established through the APPSA programme. Use this rare opportunity to identify possible areas for collaboration and partnership in Agricultural Research for Development”, alluded the Honourable Minister when making his opening remarks.

APPSA is a World Bank-funded initiative and CCARDESA has been facilitating its implementation since inception. The programme started with three countries (Malawi, Mozambique and Zambia) since 2013 (First Phase) and expanded to Angola and Lesotho in 2019 (Second Phase). Its main thrust is to improve agricultural technology generation and dissemination within and among participating countries; building capacity within national Research and Development (R&D) systems; and enhancing regional collaboration in agricultural research and development. During the first phase of project implementation, 160 Agricultural Research for Development (AR4D) technologies were generated and 301 disseminated and RCoLs were established in each of the participating countries.

For Dr Cliff Sibusiso Dlamini, CCARDESA Executive Director, the design of APPSA is based on the premise that a regional approach to technology generation and dissemination is more effective and strategic than efforts of an individual country. “Our wish as CCARDESA is to see the SADC region establishing more RCoLs and diversifying the focus to other commodities of regional importance,

including livestock, shared Dr Dlamini in his remarks.

The virtual event on APPSA, was to showcase the achievements made by the first three countries in the areas of agricultural research and development; to demonstrate the roles of the RCoLs and how they can service the needs of SADC region; to enhance collaboration and partnerships in AR4D amongst the SADC Member States; and to share information to countries aspiring to join the APPSA family and participate in establishing RCoLs in other commodities of regional importance.

The World Bank led a session on the process aspiring countries are expected to follow if they intend to join APPSA. The presentation also touched on project funding portfolios country eligibility to access funds from the Bank as well as areas of focus and interest. Since 2013, APPSA has invested a total of US\$140 million – the largest share in agricultural R&D by far in the SADC region. Currently, APPSA is the only ongoing regional programme focused on agricultural productivity in the continent.

Evidence of achievements was shared through pre-recorded videos from Malawi, Mozambique and Zambia in which key players such as Permanent Secretaries, Research Directors, Researchers, Partners and Beneficiaries voiced-out their perceptions on project accomplishments in their respective countries.

This was immediately followed by a panel discussion featuring three panellists (Dr Tenyson Mzengeza from Malawi, Dr Olga Fefetine from Mozambique and Dr Dickson Ng’uni from Zambia). In their deliberations, panellists were unanimous on the positive impact of the project on improving country research capacity including technology generation and dissemination as well as infrastructure, equipment and training of staff.

APPSA to fast-track outstanding activities as Phase 2 heads for year 3 of implementation

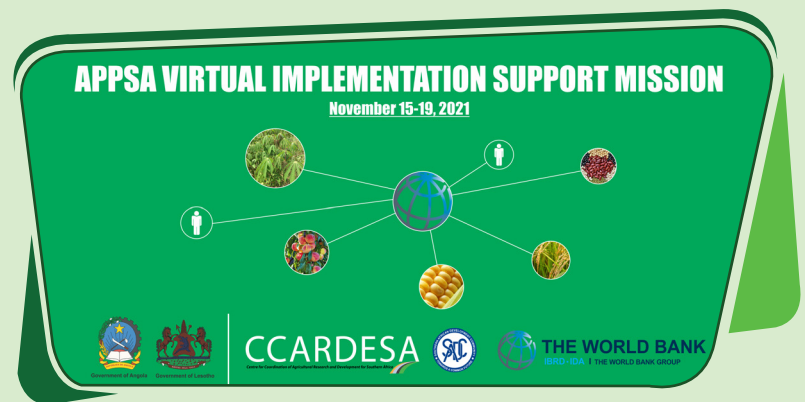
16 Nov 2021

This was raised by Tahira Syed, APPSA Task Team Leader (TTL) based in the World Bank office in Washington DC, during her opening remarks in the third joint virtual Implementation Support Mission to the Agricultural Productivity Programme for Southern Africa (APPSA) in Angola and Lesotho. The Mission kicked off on 15th November and will be concluded on 19th November 2021.

APPSA is a regional World Bank funded initiative currently implemented in Angola and Lesotho to establish a Regional Center of Leadership (RCoL) on Cassava and Cassava-based farming systems and a Regional Center of Leadership in Horticulture and Horticulture-based farming systems, respectively. According to Tahira, this mission will be the last before the project mid-term review, which is scheduled for August next year, as the six-year project heads for year three of implementation.

“We need to take stock of where we are in terms of achievements and issues that need to be resolved. In order for the mid-term review to go well, we really need to come together and show good progress”, added Tahira Syed.

In his opening remarks, Dr Cliff Sibusiso Dlamini, the CCARDESA Executive Director, applauded the work done by Angola and Lesotho with support from CCARDESA and the World Bank, particularly in addressing the key action points from the last ISM, despite COVID-19 related challenges that have affected implementation of some activities on the ground. “Some notable achievements include: identification of 13 technologies (6 in Lesotho and 7 in Angola) from the shelf for dissemination; engagement of the Agricultural Research Council (ARC) from South Africa to support scientists in the development of 10 R&D project proposals and ensure quality of science; making a new call for concept notes; training of scientists from Angola and Lesotho on proposal



writing; training of PIU staff and scientists on results-based monitoring and evaluation; and undertaking a physical backstopping mission in Lesotho and a virtual one in Angola. Other planned activities are on-going and will be completed before end of December 2021”, shared Dr Dlamini.

APPSA is a collaborative research programme based essentially on partnerships between two or more implementing countries. Both Angola and Lesotho have reiterated their commitment to continue working together to successfully implement local and regional activities. According to Dr João Neto, Director of the Agronomic Research Institute (IIA) of Angola, APPSA must be focused on delivering meaningful results, which is what the region and the global community expect to see. “Angola, being a Cassava RCoL has successfully installed in Malanje 118 accessions for technology showcase to display best practices and techniques for growing about 5 different cassava varieties”, added Dr Neto.

The representative of the Director for Agricultural Research in Lesotho, Ms Rethabile Nchee, highlighted the relevance of APPSA in strengthening country-scientific capacity for generation of agricultural technologies and innovation as well as appropriate dissemination of such. **“At the height of the COVID-19 pandemic, there was so much that we could not do or achieve. Now that the situation is gradually getting back to normal, let us pull up our sleeves so that by the end of the 6 years we have better technologies that can be transferred to other countries in the SADC region”,** suggested Ms Nchee. On day 2, countries and CCARDESA will be giving details on progress achieved on the implementation of 8 R&D sub-projects commissioned in 2020, 10 R&D research proposals being developed with assistance from ARC and developments regarding the call for Concept Notes.

CCARDESA Hosts a Regional Joint APPSA Review and Planning Workshop with Angola and Lesotho

29 No 2021



The Centre for Coordination of Agricultural Research and Development for Southern Africa (CCARDESA) is hosting a regional joint planning workshop for the Agricultural Productivity Programme for Southern Africa (APPSA) with Angola and Lesotho, from the 29th of November to the 3rd of December, in Johannesburg, South Africa. The workshop, which is also aimed at facilitating the adoption of a result-based planning approach, includes participants from the APPSA first Phase countries, namely Malawi, Mozambique and Zambia.

This workshop follows the recommendations of the recent World Bank Implementation Support Mission (ISM) which underlined the need for the first Phase countries to be involved in the planning and subsequent implementation of the APPSA Annual Work Plan and Budget. Worth noting – Malawi, Mozambique and Zambia have been part of the ISM including the recent one convened from 15th to 19th November 2021.

“The participation of the original APPSA countries in the review and planning workshop is very instrumental as they have gone through most of what we are currently pursuing, and as such they have relevant experience and/or wisdom to share with the rest of us”, said Dr Majola Mabuza, APPSA Regional Coordinator during his opening remarks.

APPSA is a six-year regional World Bank funded

initiative based on collaboration between two or more countries. A regional review and planning is pivotal for a harmonized implementation of project activities. APPSA Project Development Objective (PDO) is to increase the availability of improved agricultural technologies in participating countries in the SADC region. The PDO is assessed through specific indicators and targets based on the regional Results Framework. Some of the PDO indicators are as follows:

- (i) Number of technologies that are being made available to farmers and other end users;
- (ii) Percentage of Lead Farmers in targeted areas who are aware and adopt an improved technology promoted by the Project;
- (iii) Number of technologies generated or promoted by the Project in one participating country that are released in another participating country;
- (iv) Direct Project beneficiaries (number) of which female (percentage); and
- (v) Farmers reached with agricultural assets or services.

Besides the review and planning meeting, on Wednesday, the 1st of December, the workshop will focus on policy harmonization and strategic partnerships. Thursday, the 2nd of December, will be dedicated to review and endorsement of R&D concept notes and, finally on Friday there will be thematic discussions by M&E and Communication Working groups.

APPSA countries discuss domestication of the SADC harmonised seed regulatory system

02 Feb 2022

Agricultural productivity relies significantly on increased availability and access to quality seed. Free trade and movement of seeds between borders within the region has the potential to positively impact over 70% of the region's population that depends on agriculture for food, income, and employment.

The Centre for Coordination of Agricultural Research and Development for Southern Africa (CCARDESA), through the Agricultural Productivity Programme for Southern Africa (APPSA), has been supporting the domestication of Harmonized Seed Regulatory System (HSRS) among implementing countries to facilitate exchange of germplasm between scientists who have a responsibility to increase availability of improved varieties within the region. The HSRS essentially establishes commonly agreed standards, rules, and procedures related to Seed Variety Release, Seed Certification and Quality Assurance, and Quarantine and Phytosanitary Measures for Seed.

According to Dr Claid Mujaju, Director of Research Services Department in Zimbabwe "stringent laws and regulations in member countries are affecting seed movement within the region, and farmers remain seed insecure resulting in food insecurity". The HSRS is meant to change this scenario towards an open seed trade and/or exchange environment in the region. "The main purpose of the HSRS is to:

- (1) make it convenient and cheaper for seed movement;
- (2) stimulate availability of more varieties;
- (3) encourage more companies to invest in seed business; and
- (4) increase choices available to farmers", added Dr Mujaju. These are some of the salient



points Dr Mujaju raised during the first dialogue under APPSA Phase 2 on domestication of the SADC harmonized seed regulatory system. The event, which was attended by representatives from all APPSA countries (Angola, Lesotho, Malawi, Mozambique and Zambia), was hosted in Johannesburg, South Africa on the 1st of December 2021.

Although most countries from the region have already signed the memorandum of understanding to operationalize the SADC Technical Agreements on Harmonization of Seed Regulations, the full understanding on requirements to registering new and existing varieties in the SADC Catalogue as well as to move germplasm from one country to another within the region, is yet to be achieved.

APPSA is a World Bank funded regional programme which is currently (2019-2024) implemented by Angola and Lesotho to establish Regional Centers of Leadership (RCoLs) on Cassava and Horticulture, respectively. From 2013 to 2019, APPSA also supported Malawi (RCoL on Maize), Mozambique (RCoL on Rice) and Zambia (RCoL on Legumes). The programme is based on collaborative research and partnerships between scientists from two or more countries. This is made possible by the continuous exchange of knowledge and germplasm contributing towards reducing duplication of efforts and resources.

Over 70 Researchers and Extension staff reached by APPSA Angola and Lesotho on Grievance Redress Mechanism

11 Feb 2022



A grievance redress mechanism (GRM) is a critical tool to mitigate, manage, and resolve potential or realized negative impacts, as well as fulfil obligations under international human rights law and contribute to positive relations with communities and project implementers or investors. The GRM enables project implementers to learn about and resolve concerns before they escalate. Addressing grievances from those impacted by projects of any magnitude, is a core component of managing operational risk.

The Centre for Coordination of Agricultural Research and Development for Southern Africa (CCARDESA) through the Agricultural Productivity Programme for Southern Africa (APPSA) has been facilitating GRM roll out and awareness workshops in Angola and Lesotho. This activity is led by the APPSA country Project Implementation Unit (PIU) under Environmental Social Safeguards (ESS) component.

APPSA is a six-year World Bank funded initiative which is currently implemented by Angola and Lesotho to establish Regional Centres of Leadership (RCoL) on cassava-based farming systems and horticulture-based farming systems, respectively. From 2013 to 2019, APPSA supported the establishment of RCoLs in Malawi (Maize RCoL), Mozambique (Rice RCoL) and Zambia (Legumes RCoL).

The establishment of RCoLs includes infrastructure development to strengthen the research capacity both at country and regional levels as well as the implementation of collaborative R&D projects. According to the World Bank, many major infrastructure and research projects around the world are stalled due to disputes over land, water,

or labour related issues. The costs of ignoring such disputes—or delayed response—are high.

In November 2021, APPSA Angola conducted training on “Safeguards induction” with about 29 participants including researchers and partners, in Chianga and Mazozo. In the Kingdom of Lesotho, 44 District and Extension staff from Mochale’s Hoek, Leribe and Maseru, attended the GRM workshops, held between the third and fourth week of January 2022. This is an ongoing process which is aimed at sensitizing Researchers, District Staff and Extension officers on the GRM that the project has introduced to address concerns, comments, and queries on the project.

Overall, Angola and Lesotho have successfully kickstarted the trainings or sensitization campaigns on the adoption of GRM principles in the implementation of the APPSA project. The exercise recorded positive results as the GRM was warmly welcomed by participants as a tool that will assist not only the district and Extension staff, but also the host communities and farmers to lodge comments, concerns and queries they may have about the project and implementation of its various sub-projects.

The approach proposes three interlinked steps: (i) a risk-based assessment of potential grievances, disputes or conflicts that may arise during project preparation and implementation; (ii) identification of the client’s existing capacity for grievance redress; and (iii) an action plan that identifies priority areas for strengthening grievance capacity, or if necessary, establishing new mechanisms at the project level. Where applicable, dedicated resources should be allocated for realisation of the action plan.



CCARDESA Facilitates Strengthening of Technology Dissemination Strategies for APPSA R&D Sub-projects implemented in Angola and Lesotho

02 Mar 2022

One of the greatest challenges among scientists, policy makers and agricultural project implementers is to ensure that farmers benefit from improved technologies generated through the research system. Well-articulated dissemination methods and approaches can be effective in delivering timely, relevant, and tailored information on agricultural technology to both extension officers and farmers.

The Centre for Coordination of Agricultural Research and Development for Southern Africa (CCARDESA), through the Agricultural Productivity Programme for Southern Africa (APPSA), is facilitating the design and strengthening of dissemination strategies for improved technologies among R&D sub-projects implemented in Angola and Lesotho. This initiative is in line with some of the key recommendations of

the recent World Bank Implementation Support Mission (ISM).

According to the Project Appraisal Document (PAD), every R&D sub-project financed under APPSA should have a dissemination plan and support activities designed to ensure that new technologies do not remain “on the shelf”. About 56 delegates from Angola, Lesotho, Malawi, Mozambique and Zambia are currently gathered in Johannesburg, South Africa to harmonize their technology dissemination strategies and approaches.

The meeting in Johannesburg has also provided a platform for experiential learning for experts under the APPSA Project Implementation Units from Angola, Lesotho and CCARDESA

APPSA Commissions 10 New R&D Sub-projects and Endorses 28 Concept Notes for Angola and Lesotho

04 Mar 2022



The Agricultural Productivity Programme for Southern Africa (APPSA) officially commissioned 10 new R&D sub-projects and endorsed 28 Concept Notes on the 3rd of March 2022 in Johannesburg, South Africa. The new sub-projects, led by scientists from Angola and Lesotho, are adding on the 8 that are currently ongoing and are expected to start implementation with immediate effect. Presiding over the event was the Executive Director of CCARDESA, Dr Cliff Sibusiso Dlamini, Director of Agricultural Research from the Republic of Angola, Dr João Ferreira Neto and Dr Lefulesele Lebesa, the Director of Agricultural Research from the Kingdom of Lesotho.

The commissioning of these R&D sub-projects is a critical milestone for the project as APPSA is driven by the need to increase the availability of improved agricultural technologies in participating countries in the Southern Africa Development Community (SADC) region.

In his opening remarks, Dr Dlamini noted that the development of these sub-projects was by no means an easy task. Due to the COVID-19 related travel restrictions, all processes were done virtually, including the proposal writing training which was conducted by the Agricultural Research Council (ARC) from South Africa and the actual write up. He applauded the Scientists for their commitment and dedication throughout the proposal writing phase. However, he was quick to caution them that the commissioning of the sub-projects was not the end

result, but the beginning of the “real work” that needs to be implemented on the ground.

Dr Neto commended CCARDESA for facilitating the concept note and proposal development processes. His sentiments were echoed by Dr Lebesa who was represented by Ms Monica Lephole, the Country Coordinator for Lesotho. From a total of 46 concept notes that were received from Angola and Lesotho, 28 were recommended to proceed to full proposal development after undergoing a rigorous review process at national and regional level. These were endorsed and announced during the event. The full proposals are expected to be commissioned before end of this year.

APPSA is a six-year World Bank funded research project currently under implementation in Angola and Lesotho and regionally coordinated by CCARDESA. Despite the differences in crop priorities and language barriers, scientists from both Angola and Lesotho have been working together to generate and share agricultural technologies and innovation to benefit the entire SADC farming community.

The APPSA projects follow 6 specific thematic areas:

- (1) Crop genetic diversity, breeding and improvement,
- (2) Postharvest Technologies,
- (3) Irrigation and Mechanization Technologies;
- (4) Production Systems and Management Technologies,
- (5) Dissemination and Technology transfer; and
- (6) Seed Systems.

“All hands on deck” in Angola and Lesotho towards ensuring farmers’ access to quality seeds of improved sorghum

11 Mar 2022



Sorghum is a well-known climate-resilient crop in Africa and can withstand climatic conditions that are not favourable to most cultivated crops. Indeed, sorghum is mainly cultivated by smallholder farmers in semi-arid areas where other cereals (e.g. maize) have very low adaptability. However, farmers usually use seeds from local landraces that are characterised by lateness to maturity, poor harvest index, variable plant height, and are highly susceptible to several diseases and insect pests.

One of the Research and Development (R&D) sub-projects implemented under the Agricultural Productivity Programme for Southern Africa (APPSA) in Angola and Lesotho seeks to promote sorghum productivity in the two countries through increasing availability of quality seed of recommended improved varieties and landraces. The project is led by Dr Mpho Liphoto from the National University of Lesotho and Mr Óscar Morais from the Agronomic Research Institute of Angola as Principal Investigator (PI) and Co-Principal Investigator (Co-PI), respectively.

As key players in this sub-project, smallholder farmers have a major role to play in certified seed production and grain production, working under close supervision of extension and research experts from the two countries. This sub-project will contribute to farmers’ increased access to improved sorghum varieties and gradually replace local landraces, which are currently in use but with very low yields and other undesirable characteristics.

From a nutritional perspective, a major advantage of sorghum as a healthy and nutritious crop is its relatively high proportion of slowly digestible starch components when compared with other staple cereals. Sorghum is also uniquely rich in diverse bioactive polyphenols and other beneficial compounds that are associated with reduced risk of nutrition-linked chronic diseases, including type 2 diabetes, cardiovascular disease, and some types of cancer (see Teferra and Awika, 2019 for details). In Angola and Lesotho, sorghum is used for human and animal feed while the grains can also be used in the manufacturing of traditional beer.



APPSA is a six-year World Bank funded initiative, currently under implementation in Angola and Lesotho, with regional coordination by the Centre for Coordination of Agricultural Research and Development for Southern Africa (CCARDESA). Its mandate is to promote regional collaboration and put in place mechanisms to encourage technology generation and dissemination across national borders of participating countries in the SADC region.

APPSA Regional Steering Committee Convenes in Angola

09 May 2022

The Republic of Angola hosted the Agricultural Productivity Programme for Southern Africa (APPSA) Regional Steering Committee (RSC) meeting on the 5th of May 2022 in Luanda. The meeting, which was chaired by Angola's Secretary of State from the Ministry of Agriculture and Fisheries, Dr João Manuel Bartolomeu da Cunha, was attended by RSC members from APPSA first phase countries (Malawi, Mozambique and Zambia) and current implementing countries (Angola and Lesotho).

The Kingdom of Lesotho was led by the Principal Secretary from the Ministry of Agriculture and Food Security – Advocate Mole Kumalo. Republic of Malawi was led by the Director of Agricultural Research – Dr Wilkson Makumba, Republic of Mozambique was led by the Director General of Agricultural Research Institute of Mozambique – Dr Olga Fafetine, while the Republic of Zambia was represented by the Deputy Director of Zambia Agricultural Research Institute - Dr Dickson Ng'uni. Also, in attendance was the Center for Coordination of Agricultural Research and Development for Southern Africa (CCARDESA), led by the Executive Director – Dr Cliff Dlamini and the World Bank, represented by the TTL for Angola – Aniceto Bila

APPSA is a six-year World Bank funded initiative currently being implemented in Angola and Lesotho with regional coordination from CCARDESA. Angola and Lesotho are establishing Regional Centres of Leadership (RCoLs) on cassava and horticulture,



respectively. APPSA has already facilitated the establishment of RCoLs on Maize in Malawi, Rice in Mozambique and edible Legumes in Zambia.

The RSC is essentially tasked to provide policy guidance to improve synergy of APPSA with national and regional strategies and promote collaboration between the implementing countries.

This meeting was held at a time when APPSA is preparing for a Mid-Term Review (MTR), which is scheduled for the third quarter of 2022. The MTR will assess, among others, progress towards achieving the project development objectives (PDO), key implementation challenges, performance, effectiveness of implementation strategies, achievements and lessons learnt, and use these to recommend adjustments where necessary.

The main discussion points were based on progress reports that were presented by the two implementing countries, Angola and Lesotho, as well as regional activities that are implemented by CCARDESA. First phase countries also shared their experiences on:

- (i) how they have managed to integrate APPSA generated Agricultural Research for Development (AR4D) technologies into their national agricultural research systems;
- (ii) current utilization of facilities constructed/ established through APPSA; and
- (iii) the engagement of staff capacitated through the project.

On the 6th of May 2022, RSC members visited Mazozo Agricultural Research Station, about 40km from Luanda, to appreciate some of the APPSA ongoing activities in Angola.



CCARDESA Launches a Status Report on Digitalization in the Agricultural Systems of the SADC region

02 Jul 2022



The Centre for Coordination of Agricultural Research and Development for Southern Africa (CCARDESA) launched a Status report on Digitalization in Agricultural Systems of the Southern Africa Development Community (SADC). The study was conducted by IMC Worldwide, a consultancy firm commissioned by CCARDESA in November 2020. The launch was held virtually on the 23rd of June 2022, officiated by Mr Domingos Gove – Director for SADC Food, Agriculture and Natural Resources (FANR) Directorate, Dr Marie-Agnes Jouanjean – a representative of the World Bank, and Dr Simon Mwale – CCARDESA's Acting Executive Director.

This is a World Bank funded initiative, which is Coordinated by CCARDESA under the Agricultural Productivity Programme for Southern Africa (APPSA). Over and above the financial support, the World Bank provided technical support throughout the study. The report reflects the current landscape of national and regional digital Agritech innovations, coupled with an assessment of the policy environment. Essentially, the study managed to document and verify a range of digital and agritech available in each country within the SADC region and evaluated the extent to which the current syllabi in agriculture universities and other institutions of higher learning as well as innovation hubs facilitate digital skills development. It also discusses in detail how these actors may work collaboratively together to drive digital integration and to develop a vibrant digital ecosystem made up of multiple stakeholders.

In his remarks, Mr Gove noted that this study is aligned with the Regional Agricultural policy

framework as it contributes towards the agricultural transformation agenda of SADC. "Agriculture is the first pillar under the Regional Indicative Strategic Development Plan (RISDP, 2020-2030) and such initiatives have the potential to address most of the challenges in the sector such as access to improved technologies, climate smart agriculture and many others", added Mr Gove when delivering his opening remarks. Dr Simon Mwale, who was speaking on behalf of the Executive Director and Head of Mission, Dr Cliff Dlamini further highlighted that digitalization in agriculture is a game changer as it contributes significantly to increased productivity, profitability, adaptation and resilience to climate change. Speaking on behalf of the World Bank, Dr Marie-Agnes Jouanjean thanked CCARDESA for facilitating the study and IMC for delivering a quality product. She further noted, with appreciation, the critical role played by the SADC FANR Directorate in making this study a reality.

From this webinar, participants were able to appreciate: The extent to which national and regional policies and regulatory frameworks of the SADC countries provide a conducive environment (policy space) for agricultural digital innovations; Policy opportunities and gaps that need to be addressed if the SADC region is to fully take advantage of the digital transformation; The various agricultural digital innovations available in each country; The various agricultural digital players within the region and their roles in the digitalization value chain; The extent to which the current agricultural syllabi in agricultural Universities and colleges embrace digital agricultural skills, innovations and applications that encourage youths to become digital entrepreneurs; and the interactive Agrihub portal within the CCARDESA website.

CCARDESA Facilitates Technical Backstopping Mission for APPSA R&D Subprojects in Angola and Lesotho

10 Jul 2022



The Centre for Coordination of Agricultural Research and Development for Southern Africa (CCARDESA) undertook a technical backstopping mission for the Agricultural Productivity Programme for Southern Africa (APPSA) in the Republic of Angola and the Mountain Kingdom of Lesotho from the 20th to 25th of June and the from the 3rd to the 7th of July 2022, respectively.

The aim of the mission was to support the Cassava and Horticulture RCoLs in Angola and Lesotho to improve the delivery of their project activities while adhering to the scientific standards. Specifically, the mission reviewed progress made in the implementation of collaborative R&D sub-projects and RCoL infrastructural improvements, identified implementation challenges and proposed mitigation strategies. The mission also reviewed compliance with environmental and social safeguards management frameworks (ESMF). CCARDESA engaged a team of independent reviewers composed of an Agricultural Scientist, an Agricultural Technology Dissemination Expert and an Environmental and Social Safeguards Expert.

APPSA is a six-year World Bank funded initiative currently under implementation in Angola and Lesotho, with regional coordination by CCARDESA. Lesotho is establishing a Regional Centre of Leadership on Horticulture and Horticulture-based farming systems whereas Angola is focusing on Cassava and Cassava-based farming systems.

In Angola, the backstopping mission team visited Chianga Research Station in Huambo, Malanje Research Station in Malanje, and Mazozo Research Station in Luanda. In Lesotho, the team visited Maseru Research Station, Siloe Regional Station, Tale

Resource Centre, Matlakeng Resource Centre and Mokhotlong Regional Station. In all the Stations, the technical team had an opportunity to interact with Principal Investigators (PI) of on-going APPSA R&D sub-projects. Scientists from both countries found this initiative to be of paramount importance as it was an opportunity to share successes and challenges as well as getting guidance/assistance where required. It is worth noting that this backstopping mission was a follow-up initiative of a peer review exercise for all Sub-projects held in Johannesburg in the first quarter of 2022 where it was agreed that a final review report would be concluded upon verification during site visits.

Preliminary comments from the technical team indicated that both Angola and Lesotho have adopted recommendations from the peer review meeting in Johannesburg. Technical logistical support, which was previously identified as a key limitation was successfully addressed following the development of catch-up plans and improved disbursements at country level. Regarding the quality of science, sub-projects have clear research designs and protocols as well as dissemination plans.

Under M&E, it was noted that both countries have data collection tools in place and research outputs are aligned with the APPSA global result framework as stipulated in the Project Appraisal Document (PAD). Environmental and Social Safeguards instruments have been delivered to scientists implementing R&D sub-projects and on-station trials have been reported to face less risks. In addition, the mission also included discussions on infrastructure in which plans were recommended to be adjusted and implementation pace accelerated to meet deadlines without sacrificing compliance on procurement procedures as well as environmental and social safeguards requirements.



CCARDESA Facilitates a writeshop for Scientists from Angola and Lesotho to develop R&D Proposals

01 Aug 2022

The Center for Coordination of Agricultural Research and Development for Southern Africa (CCARDESA) is facilitating a writeshop for Principal Investigators (PI) who developed successful Concept Notes (CNs) from the last call for proposals under the Agricultural Productivity Programme for Southern Africa (APPSA). From this writeshop, which is scheduled to run from the 1st to the 5th of August 2022 in Johannesburg, South Africa, Scientists from Angola and Lesotho are aiming to finalise the development of 27 collaborative project proposals.

Research & Development (R&D) Sub-projects are a key element in achieving the APPSA Project Development Objective (PDO), which is to increase availability of improved agricultural technologies in participating countries in the Southern Africa Development Community (SADC) region. Currently, a total of 18 R&D Sub-projects led by scientists

from Angola and Lesotho are implemented in the two countries. Commissioning of new proposals will add on the list of on-going R&D subprojects. Both implementing countries agree that this writeshop is also an opportunity to ensure that approved proposals are commissioned and start implementation before the end of the current calendar year.

APPSA is a World Bank funded initiative currently implemented by Angola and Lesotho and regionally coordination by CCARDESA. Under APPSA, Angola is establishing a Regional Center of Leadership (RCoL) on cassava and cassava-based farming systems whereas Lesotho is focusing on horticulture and horticulture-based farming systems. From 2013 to 2019, Malawi, Mozambique and Zambia successfully established RCoLs on maize, rice and food legumes, respectively.



About 6 Improved Sorghum Varieties to be Available in the Next Cropping Season in Angola and Lesotho

19 Aug 2022

This information was shared by Dr Mpho Liphoto from the National University of Lesotho (NUL) who is the Principal Investigator for the Research and Development (R&D) sub-project under the Agricultural Productivity Programme for Southern Africa (APPSA), titled “Strengthening seed delivery systems in Angola and Lesotho – The Case of Sorghum”. This R&D sub-project has so far successfully identified at least two potential lines for Lesotho and an additional four in Angola to be recommended for the next cropping season.

Dr Liphoto is working together with Mr. Óscar Morais (Co-Principal Investigator) from the Instituto de Investigação Agronómica (IIA) in Angola to promote the availability of improved and high-quality sorghum seed amongst smallholder farmers through breeding and adaptive research.

According to Dr Liphoto, regional collaboration has been instrumental in the success of the sub-project, and this included sharing of local accessions between Angola and Lesotho; and improved lines from ICRISAT for testing and participatory selection.

In addition, Dr Liphoto said that even though sorghum is critical for food security in the SADC region, not much has been done to ensure farmers have access to good quality seed both in terms of yield and taste for human consumption.

“Sorghum productivity is getting lower because there are no suitable improved varieties that farmers can access and grow. Searching from the market shelves, we find that now the grain that we eat is no longer palatable, meaning it wasn’t meant for human consumption as such”, concluded Dr Liphoto.

APPSA is a six-year World Bank funded initiative currently implemented in Angola and Lesotho with regional oversight by the Center for Coordination of Agricultural Research and Development for Southern Africa (CCARDESA). The programme has provided Dr Liphoto and Mr. Morais with resources to adequately conduct their trials and effectively contribute towards closing the gap in the access and availability of improved sorghum seed among smallholder farmers in their respective countries.

CCARDESA Builds Capacity on Communication Products among APPSA-Angola Scientists

01 Oct 2022



Scientists implementing Research and Development (R&D) sub-projects under the Agricultural Productivity Programme for Southern Africa (APPSA) in the Republic of Angola, have been trained on how to develop communication products to promote technologies being generated and/or disseminated at country level. The training was held on the 27th and 28th of September 2022, in Malange Province, Angola, in an initiative led by the Centre for Coordination of Agricultural Research and Development for Southern Africa (CCARDESA) in collaboration with the local APPSA Project Implementation Unit (PIU).

This training was officiated and closed by the Director of Agriculture in Malange Province, Mr Carlos Chipoiá and the Director General for the main country agricultural research institution, the Instituto de Investigação Agronómica (IIA), Dr João da Costa Ferreira Neto. Both leaders took the opportunity to commend the initiative, which assisted APPSA scientists to generate key publications to benefit farmers, extension services as well as fellow scientists.

“Research with no publications is no research at all, hence it is critical to provide scientists with adequate tools for knowledge sharing and exchange”, said Mr Chipoiá. On the other hand, according to Dr Neto, the training came in the right moment as APPSA Angola is working towards dissemination of improved technologies. **“We thank CCARDESA for availing themselves to come to Angola and conduct this Wcritical training from which the provided templates will assist in the development of specific products which are going to contribute to fast-track dissemination activities”,** added Dr Neto.

The two intensive training days brought together senior scientists mostly from IIA and some from the University Agostinho Neto. Through a hands-on approach, scientists were exposed to different communication techniques and tools including brochures and booklets on technologies and innovations. In addition, they were refreshed on scientific posters as well as description of technologies.

Essentially, this training was a platform to compile and outline critical communication products for future publication. Hence, at the end of the exercise, scientists successfully drafted:

- (a) Summaries of APPSA R&D sub-projects;
- (b) Compendium of technologies under development and dissemination;
- (c) Posters and Leaflets on APPSA R&D; and (d) R&D success stories.

In the same event, scientists were acquainted with the Communications Strategy for the Regional Centre of Leadership on Cassava and Cassava-based farming systems, which was developed with facilitation from CCARDESA. This document is aimed at assisting APPSA implementing countries to strengthen their project activities' visibility as well as knowledge sharing and exchange both at country and regional levels.

APPSA is a six-year World Bank funded initiative with regional coordination by CCARDESA. The project is currently being implemented by Angola and Lesotho. It's objective is to increase the availability of improved agricultural technologies in participating countries and in the SADC region. Angola is focusing on cassava-based farming systems, whereas Lesotho on horticulture-based farming systems.

Angola launches the Cassava Regional Centre of Leadership in Malanje

13 Oct 2022

The Republic of Angola hosted the official launch of the Regional Centre of Leadership (RCoL) on Cassava and Cassava-based farming systems on the 29th of September 2022 in Malanje Province. The event was witnessed by the country's top agricultural scientists, senior Government officials from the Ministry of Agriculture and Forestry, the Centre for Coordination of Agricultural Research and Development for Southern Africa (CCARDESA) and other partners. In the same event, Angola officially engaged the Design and Supervision Firm for the construction of the Cassava RCoL. The firm is a joint venture between DAR Angola and CONSULGAL.

The ceremony was led by the Director General of the Instituto de Investigação Agronómica (IIA), the main public agricultural research institution in Angola, Dr João Ferreira da Costa Neto. Dr Neto urged the firm to work around the clock to beat the tight deadline as the Cassava RCoL building must be delivered before 2025. **“Time is not on our side as we need the structures to be handed over within the next 22 months in compliance with the recommendation from the World Bank, which is to complete all activities within the lifetime of the Agricultural Productivity Programme for Southern Africa (APPSA)”**, said Dr Neto.



Signing of Design and Supervision contract between IIA and DAR & CONSULGAL



The Cassava RCoL is being established under APPSA, a six-year initiative funded by the World Bank and regionally overseen by CCARDESA. So far, APPSA has successfully supported the establishment of RCoLs on maize, rice and legume foods in Malawi, Mozambique, and Zambia, respectively. In fact, RCoLs are meant to serve the entire region to avoid duplication of resources in research as each country within SADC is to lead on a specific commodity of importance, and all generated research outputs are expected to spillover across borders. Currently, besides Angola (which is focusing on cassava), APPSA is also supporting the Mountain Kingdom of Lesotho to establish the RCoL on Horticulture and Horticulture-based farming systems.

In Angola, the engagement of the design and supervision firm is the first stage of the long-awaited construction of the Cassava RCoL. Among the deliverables, the Design and Supervision firm is expected to provide the following: environmental and social impact assessment report, project masterplan, detailed architecture and engineering designs, implementation schedule, phasing, cost estimates, bidding documentation as well as inspection and supervision of the construction works.

The entire Cassava RCoL construction project is budgeted at US\$3.5 million to cover an estimated area of 14,000 square meters, and is expected to include:

- (a) Office blocks and conference rooms;
- (b) Agricultural experimentation areas and greenhouses;
- (c) Laboratories and Specialized Storage Areas;
- (d) Social Area with cafeteria, dormitories, and leisure;
- (e) Technical Services including Maintenance, Water and Electricity, Meteorology and Communications;
- (f) Waste treatment;
- (g) Security (Accesses, guards and fences); and
- (h) Circulation, Parking Lots, etc.



CCARDESA Strengthens the Capacity of APPSA Scientists in planning and implementation of field trials in Lesotho

21 Oct 2022

Scientists leading Research and Development (R&D) sub-projects under the Agricultural Productivity Programme for Southern Africa (APPSA) in the Mountain Kingdom of Lesotho, were taken through a hands-on training in planning and implementation of field trials. The training, which was held in Maseru from 17 to 19 October 2022, was facilitated by the Centre for Coordination of Agricultural Research and Development for Southern Africa (CCARDESA).

APPSA is a six-year World Bank funded initiative currently being implemented by the Republic of Angola and the Kingdom of Lesotho, with regional coordination by CCARDESA. The programme is based on regional implementation of collaborative R&D sub-projects. Currently, a total of 18 sub-projects are implemented in both countries focusing on generation and dissemination of improved technologies.



The training also covered different methods and approaches of experimental design and field layout.



The training targeted scientists implementing APPSA R&D Subprojects in Lesotho

For the APPSA scientists in the Kingdom of Lesotho, this training came at the right time as the production season is about to start and most of them will soon be engaged in their field work. Scientists were exposed to the theory and practical aspects of:

- (i) planning of field experiments and development of research protocols;
- (ii) types of experimental designs and the principles and procedures of selecting appropriate ones;
- (iii) designing of field experiments and developing a field layout using statistical software; and
- (iv) establishing and managing field trials. With this training, APPSA completes a key milestone in Lesotho as Principal and Co-Principal Investigators leading APPSA R&D sub-projects will now adopt harmonized scientifically approved methods of planning and management of research trials, which will allow them to generate high quality data and research outputs.



Seed selection is a critical step in the establishment of field trials.



CCARDESA Enhances the Capacity of APPSA Scientists in Angola in Planning and Implementation of Field Trials

28 Oct 2022

The Centre for Coordination of Agricultural Research and Development (CCARDESA) facilitated a training on planning and implementation of field trials for Scientists from the Instituto de Investigação Agronómica (IIA) and José Eduardo dos Santos University who are currently leading research and development (R&D) sub-projects under the Agricultural Productivity Programme for Southern Africa (APPSA). The training which was aimed at improving the quality of science in the implementation of APPSA R&D sub-projects, was conducted in Huambo, Angola from the 25th to 27th of October 2022.

According to Dr Amílcar Salumbo, the Deputy Director General of IIA, the training on field trials will improve the already existing knowledge amongst scientists in Angola. He also indicated that this is an opportunity to

strengthen their ability to match research objectives with results both at national and regional levels. **“While most scientists attending this training are already acquainted with the principles of field trials, there is always room for improvement as science is dynamic and research outputs under APPSA must address country and regional concerns”**, noted Dr Salumbo in his opening remarks.

APPSA is a six-year World Bank funded initiative currently implemented by the Republic of Angola and the Mountain Kingdom of Lesotho with regional coordination by CCARDESA. Angola is establishing a Regional Centre of Leadership (RCoL) in Cassava and Cassava-based farming systems whereas Lesotho is establishing an RCoL in Horticulture and Horticulture-based farming systems.



Group photo at Chianga Research Station, Huambo-Angola

Angola and Lesotho are jointly implementing 18 R&D sub-projects, and more are expected to be commissioned in the near future. Most of the R&D sub-projects rely on field trials and demonstrations to generate and/or disseminate improved technologies. This training was recommended by a technical backstopping mission led by CCARDESA earlier in the year, which included independent reviewers from the region who advised that APPSA scientists needed to strengthen their skills on planning and implementation of field trials.

Similar to what was offered to Scientists in Lesotho in mid-October, the training covered methodological

approaches of research designs, and the selection of experimental sites as well as establishment and management of field trials. This included topics such as blocking, randomization, replication, sampling and a guide for developing research protocols. Scientists were also introduced to concepts of data collection, data entry, and preliminary data analysis using R Statistical package. Additional related training sessions that CCARDESA has planned for Scientists under APPSA include data management and statistical analysis and scientific writing for publication. Both countries are now ready for the planting season as the rains have already started in the region.

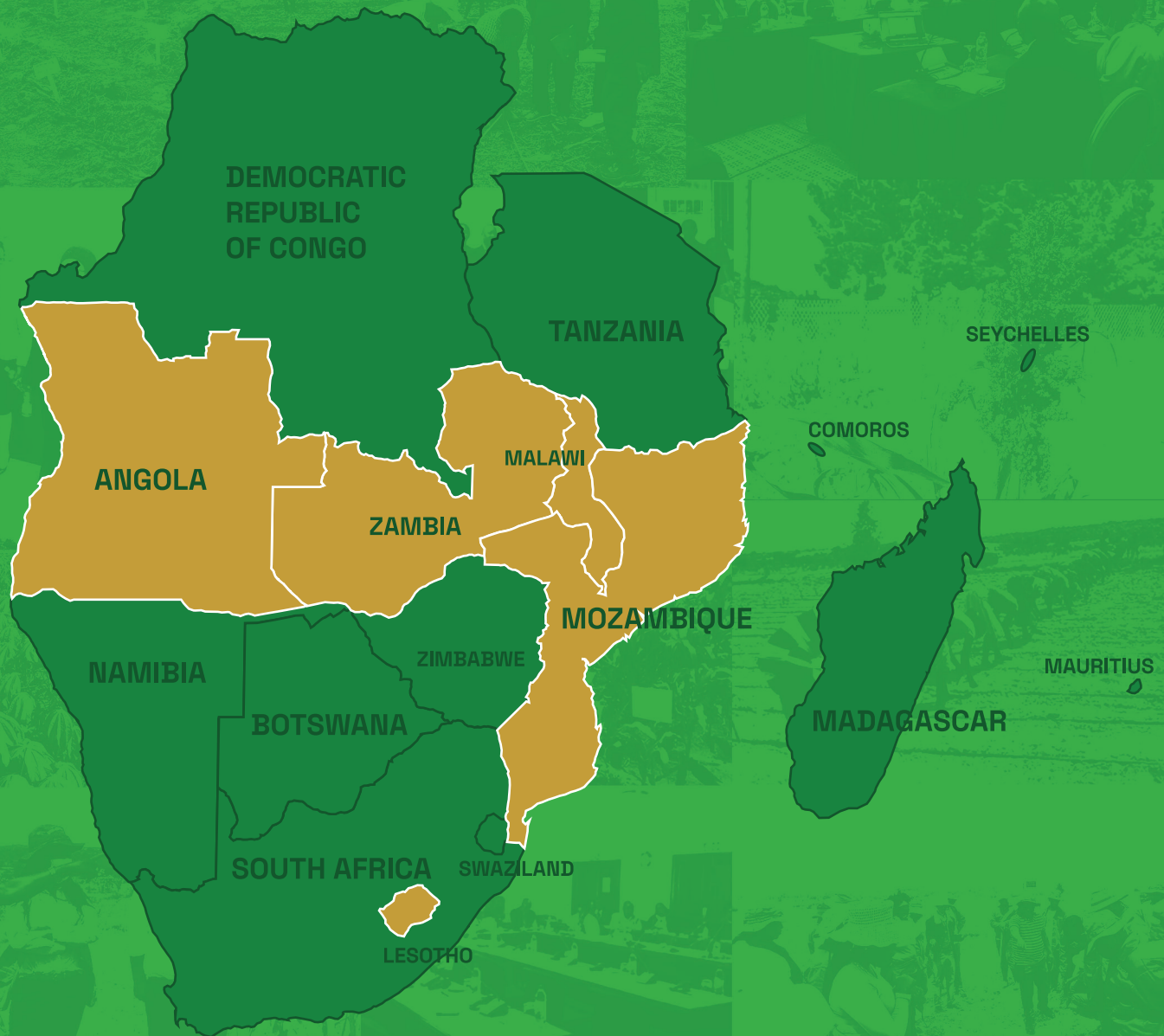
Scientists were trained in different methods of experimental design in Agriculture



Compendium of **APPSA**

Impact Stories

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