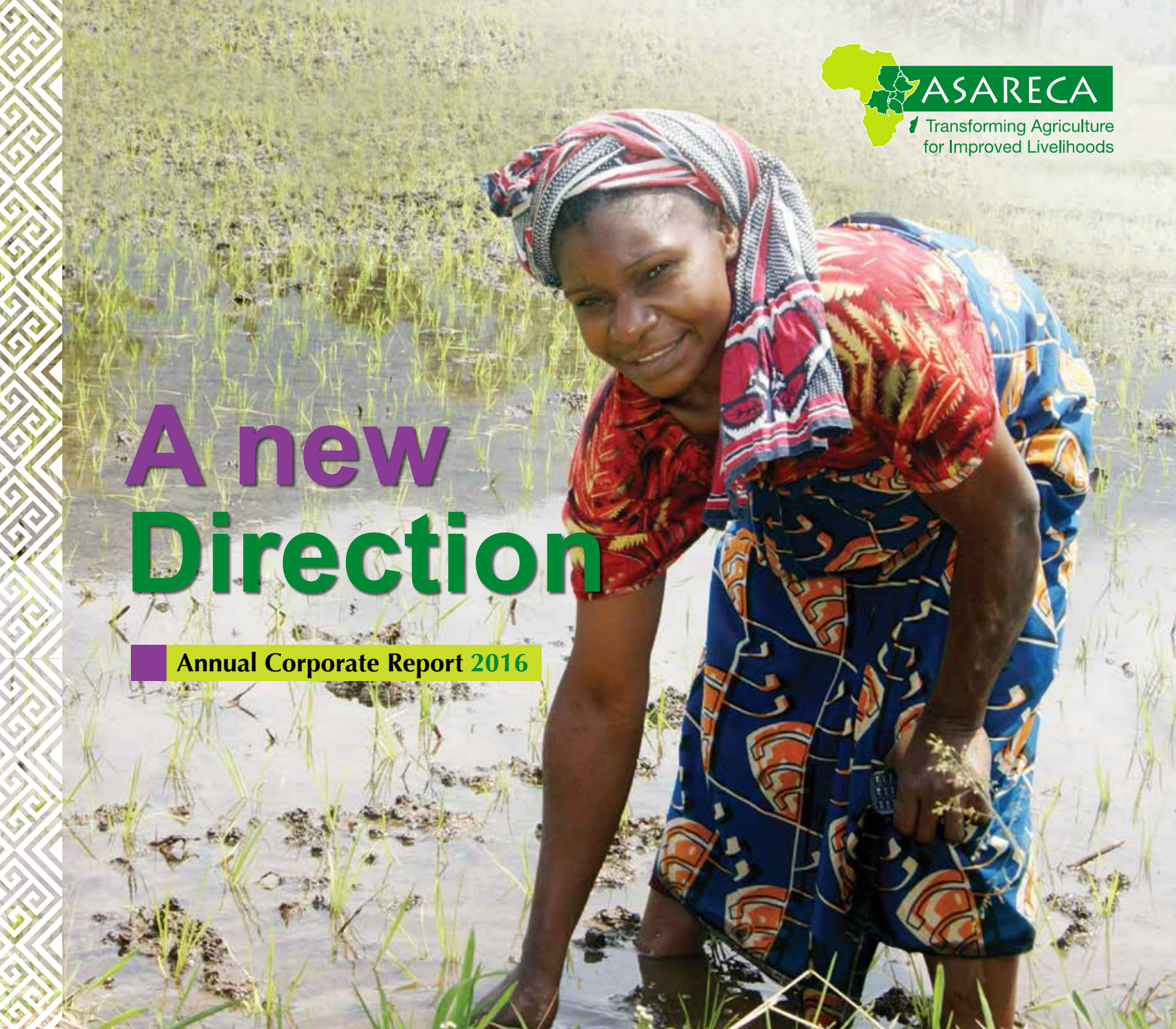
ASARECA
Transforming Agriculture
for Improved Livelihoods
A new
Direction
Annual Corporate Report 2016

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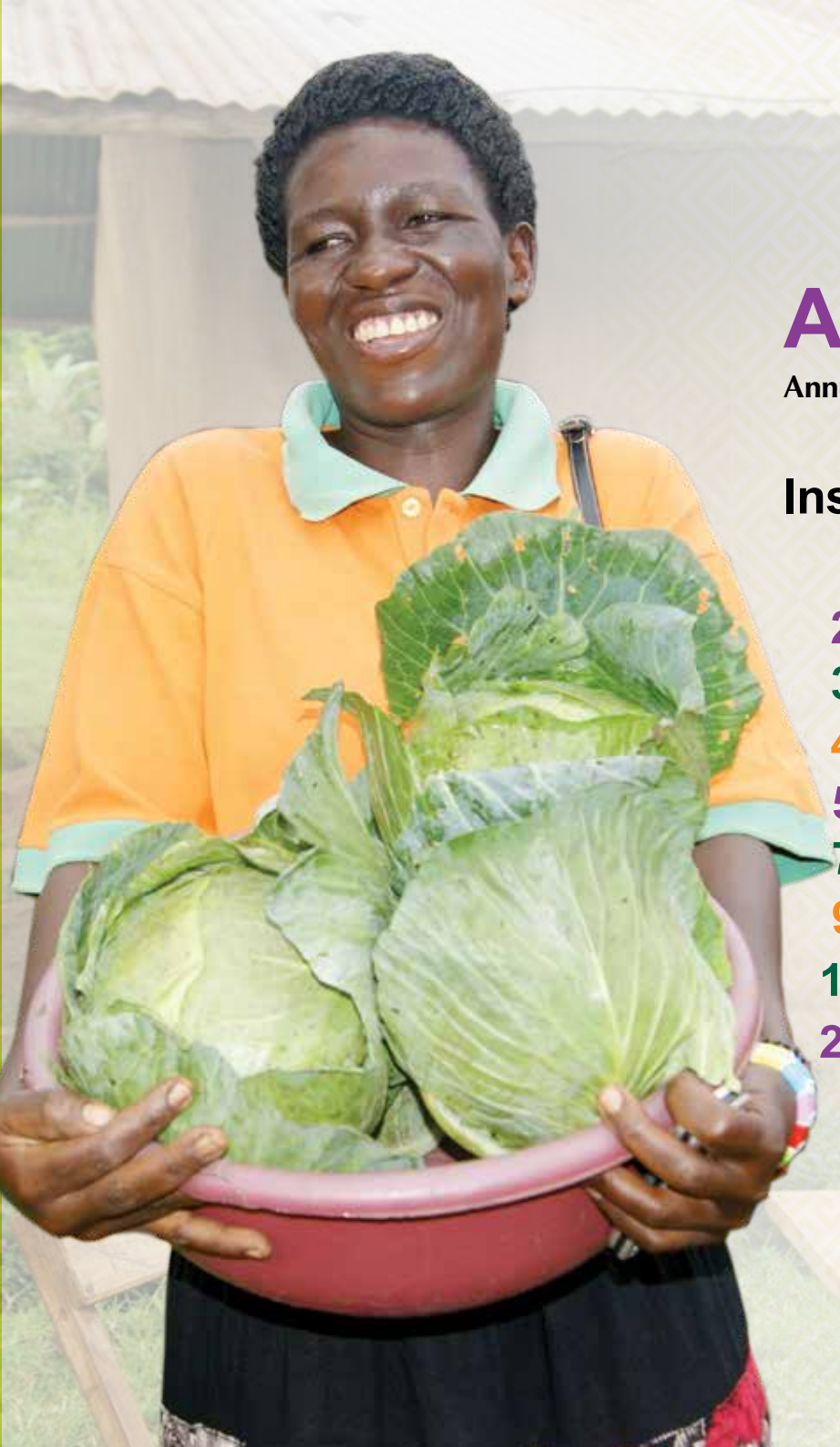

A New Direction

Annual Corporate Report 2016

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Niche of the repositioned **ASARECA**

ASARECA is strategically repositioned to perform a higher level

coordination convening
facilitative supportive
advocacy **catalytic**

role to enhance sustainable agricultural transformation, economic growth and inclusive development in the Eastern and Central Africa (ECA) sub-region.

A repositioned ASARECA is poised to provide leadership as a premier intermediary and interlocutor for research, public, private and civil society organizations to facilitate collaboration in specific AR4D initiatives. This means avoiding duplication, but instead nurture and coordinate effective partnerships to exploit synergies, create a more enabling policy and investment environment, and mobilise resources to invest in AR4D in the ECA sub-region.

ASARECA Vision

A transformed Eastern and Central Africa agricultural sector supporting improved livelihoods, sustained economic growth and inclusive development

ASARECA mission

Contribute to increased productivity, commercialization and competitiveness of the Eastern and Central Africa agricultural sector through strengthened and coordinated regional agricultural research, extension and education systems

ASARECA in the continental context

ASARECA is well aligned to contribute significantly to the implementation of the major regional and continental frameworks such as the Comprehensive Africa Agricultural Development Programme (CAADP), the Malabo Declaration on Accelerated African Agricultural Growth and Transformation (A3GT), the Science, Technology and Innovation Strategy for Africa (STISA); the Science Agenda for Agriculture in Africa (S3A); the Technologies for African Agricultural Transformation (TAAT) programme; the African Agricultural Research Programme (AARP), the United Nations Sustainable Development Goals (SDGs); the CGIAR Centres/Commodity Research Programmes particularly in the implementation of the TAAT and AARP Programmes; the Common Market for Eastern and Southern Africa (COMESA), the East African Community (EAC) particularly in the implementation of its Agriculture and Rural Development Policy (EAC-ARDP); the Inter-Governmental Authority on Development (IGAD) in carrying out its mandate of promoting sustainable agriculture development and food security, conserving, protecting and improving the quality of the environment; ensuring prudent and rational utilization of natural resources.

ASARECA coverage

Re-defining ASARECA's role in AR4D

ASARECA BOD Chairman, Dr. Ambrose Agona

It is 22 years since the Association for Strengthening Agricultural Research in Eastern and Central Africa (ASARECA) was established. 2016 was a landmark year in ASARECA because the institution had to make strategic decisions to shape the future of Agricultural Research for Development (AR4D) in the sub-region. The decisions took into cognisance the fact that the AR4D landscape in which ASARECA operates had changed.

Besides rapid advances in science and technology, various developments have taken place in the national, regional and global arena. These include major changes in ASARECA's operating and policy environments. In this context, a new ASARECA Strategy and Results Frame Work (A-SRF) was developed to take advantage of current and emerging opportunities.

The new Strategy repositions the institution to perform a higher level supportive, facilitative, coordination and advocacy role to contribute significantly to sustainable agricultural transformation, sustained economic growth and inclusive development in the sub region.

The strategy is well aligned to the major regional, continental and global frameworks including CAADP, which is the overarching continental agricultural development framework; the African Union's (AU) Malabo Declaration on Accelerated African Agricultural Growth and Transformation (A3GT); the Science, Technology and

Innovation Strategy for Africa (STISA); the Science Agenda for Agriculture in Africa (S3A) and the United Nations Sustainable Development Goals (SDGs). Of particular interest to ASARECA is SDG 2 that seeks to end hunger, achieve food security and improve nutrition and promote sustainable agriculture by 2030.

ASARECA has committed to focus on four thematic areas that are well aligned to the major ongoing regional and continental initiatives.

The themes include:

- Integrated capacity strengthening.
- Development and scaling up of technologies and innovations.
- Policy advocacy, market analysis and institutional arrangements.
- Knowledge and information management.

By committing to deliver on these thematic areas, ASARECA will strategically provide technical support to the agriculture and related strategies of the Common Market for Eastern and Southern Africa (COMESA); the East African Community (EAC); and the Inter-Governmental Authority on Development (IGAD) to contribute significantly to the implementation of the major regional and continental programmes.

The new A-SRF is the outcome of several months of continuous learning, discussion, communication and negotiation by ASARECA stakeholders to build consensus.

> **"The new Strategy repositions the institution to perform a higher level supportive, facilitative, coordination and advocacy role to contribute significantly to sustainable agricultural transformation, sustained economic growth and inclusive development in the sub region"**

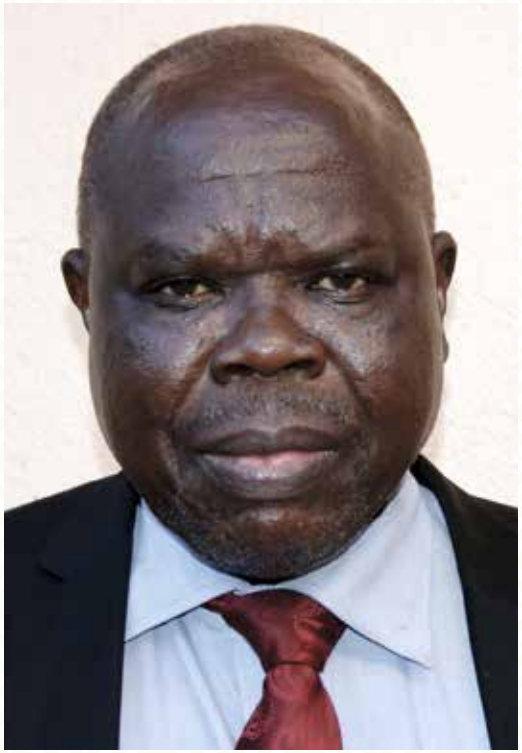
In this regard, I wish to thank the ASARECA Board of Directors for their active participation in the planning process; the past and current development partners for their continued financial support; the ASARECA Interim Executive Secretary for providing overall guidance and coordination of the Strategic Planning process; and ASARECA staff for their commitment and participation in the development of this new strategy.

The guiding principles outlined in the strategy form the basis for developing detailed five-year implementation Operational Plans.

Finally, I call upon all the ASARECA member states and the development partners to support the implementation of the new Strategy and Results Framework.

A new ASARECA promise

ASARECA Interim Executive Secretary, Dr. Cyprian Ebong



Over the last 20 years since inception in 1994, ASARECA has grown from strength to strength. This is partly as a result of learning lessons a long the way. The year 2016 was a defining moment for the way forward for the National Agricultural Research Systems. As a best practice, ASARECA commissioned an external programme and management review of the institution for the last 20 years.

This consisted of an Internally Commissioned External Review (ICER) and the development of a new 10-year Strategy and Results Frame Work (SRF) for the period 2017-2027. The BoD approved the strategy in December 2016.

Of fundamental importance in the stock taking process was the fact that ASARECA is not an isolated actor in the AR4D arena. The new strategy therefore, streamlines ASARECA investment portfolio and value proposition to a niche that the institution can shoulder best and leaves other roles to other actors. The mandate of a repositioned ASARECA will therefore be to: **(i)** support and coordinate the implementation of agricultural transformation programmes for which economies of scale, the need for specialization and harmonization, and spill over effects dictates that management be placed at the sub-regional level; **(ii)** enhance effective management and exchange of agricultural knowledge, information and learning amongst all stakeholders to inform AR4D processes; **(iii)** identify regional challenges and opportunities and coordinate value-adding partnerships to respond to the challenges; **(iv)** facilitate and coordinate capacity strengthening interventions for national, sub-regional partners; **(v)** support the formulation and harmonization of

policies and regulatory frameworks to create an enabling environment for positive transformation of AR4D; and **(vi)** provide leadership and facilitate structured and inclusive discussions on AR4D strategic priorities.

To operationalise the new strategy, ASARECA will develop an Operational Plan (2017-2021) to distil national, regional and continental development aspirations required to bring about sustainable agricultural transformation, economic growth and inclusive development in the sub-region.

To operationalise the new strategy, ASARECA will develop an Operational Plan (2017-2021) to distil national, regional and continental development aspirations required to bring about sustainable agricultural transformation, economic growth and inclusive development in the sub-region

Apart from defining the future, ASARECA implemented three MDTF projects that were commissioned in 2014. The projects covered agricultural water productivity, the Maize Lethal Necrosis Virus (MLN) and Wheat productivity. This period also marks the final year in the implementation of the three projects. ASARECA is also implementing a project on Virtual Irrigation Academy supported by the Australian Centre for International Agricultural Research (ACIAR). The projects posted good results in generating technologies, innovations and management practices, disseminating improved technologies and innovations, establishing an enabling policy environment, strengthening infrastructure development and capacity building, nurturing partnerships and reclaiming degraded lands and watersheds.

I wish to express sincere appreciation to the chairman and members of the ASARECA Board of Directors for providing guidance that contributed to the overall success of the planning process. I thank the ASARECA partners and collaborators for their continuous engagement and keen interest in the process. I applaud ASARECA staff for their dedication and commitment.

Most importantly, ASARECA is grateful to Development Partners under the World Bank administered Multi-Donor Trust Fund for financial and technical support. These include the European Union and USAID. We are also grateful to bilateral development partners namely; ACIAR, AU, IFAD and FARA and IFPRI for engaging with us resourcefully in 2016.

I would like, therefore to invite you to have a glimpse of our efforts through this Annual Corporate Report.

ASARECA
new thematic areas

Under the new strategic direction, ASARECA is expected to focus on the following themes:

1 Integrated Capacity Strengthening

The overall aim of this theme is to carry out a comprehensive and holistic strengthening and integration of different types of AR4D capacities and competencies at systemic, organizational and individual levels to support the attainment of inclusive and sustainable agricultural transformation in the ECA countries.

2 Development and Scaling up of Technologies and Innovations

The overall aim of this thematic area is to support the development of technologies and innovations to address regional challenges and take advantage of available and emerging opportunities; support the development of approaches, methods, tools and pathways for enhancing uptake and utilization of existing and emerging technologies, innovations and management practices; enhance scaling up of priority integrated regional agricultural value chains; and support private sector-driven agribusiness incubation and entrepreneurship development.

3 Policy Advocacy, Market Analysis and Institutional Arrangements

The overall aim for this thematic area is to support policy advocacy to create an enabling environment, strengthening regional input and output market analysis and establishment of functional regional institutional arrangements to enhance regional trade. In this thematic area, ASARECA will engage with the regional the Regional Economic Communities (RECs) such as Common Market for Eastern and Southern Africa (COMESA) and with the East African Community (EAC) to generate and provide the required data and information.

4 Knowledge and Information Management

The overall aim of this thematic area is to facilitate access by AR4D community in ECA to reliable and up-to-date data, knowledge and information to ensure evidence-based decision-making in priority-setting and capacity development for AR4D.

Cross-cutting issues

1 Gender considerations

The mainstreaming of gender into agriculture is a key strategy for promotion of equality between men, women and youth, and for sustainable agricultural production, integrated natural resource management and environmental conservation. Enhancing capacity for gender-responsive work environments and research will enable ASARECA to ensure equality of outcomes for men, women and youth in agricultural transformation processes.

2 Environmental Sustainability

The increasing demand for food and raw materials from an expanding population has continued to place great strains on what are mostly low-input systems. To feed the growing population, the current low-input systems need to be intensified to raise productivity on existing agricultural and pastoral lands and safeguard natural lands and watersheds. ASARECA will continue to use and adapt the existing country systems for environmental and social assessments to strengthen technical capacity.

3 Monitoring and Evaluation

ASARECA is maintaining a continuous participatory and rigorous monitoring and evaluation system capable of tracking the implementation of the strategic result areas under each thematic area.

ASARECA in Numbers

Water management

1,200

Estimated number of households directly benefiting from improved Agricultural Water Management (AWM) technologies in Ethiopia

Household Income

US$ 24,000

Income earned by some households from fish and vegetables in Machakos, Kenya

Education

3,393

Number of agricultural graduates that Kenya needs to produce per annum for the next 10 years to meet the demand that will be created by projected growth in agriculture

2016

Partnerships & Interactions

Participants at the AHC-STAFF meeting in Nairobi, Kenya. Capacity development is a key ASARECA intervention area.

African human capital workshop

ASARECA hosted the Africa Human Capital (AHC-STAFF) workshop in Nairobi, Kenya from March 15-16, 2016. The meeting brought together representatives of key stakeholders from academia, Government and Development Partners to discuss and validate the draft findings of three studies commissioned in Kenya. The studies include: *An assessment and forecasting of the qualitative human capital requirements in agriculture*; *An assessment of the human capital requirements along technology and value chains with a focus on the dairy value chain*; *A review of Kenya's National Agriculture and Food Security Investment Plans and determining implementation capacity gaps.*

Science Agenda meeting

ASARECA participated in a workshop of the Science Agenda for Agriculture in Africa (S3A) from March 14-16, 2016 at the FARA secretariat, Accra, Ghana.

The objective of the meeting was to elaborate the contribution of FARA and sub-regional research organizations to the African Development Bank's (AfDB's) initiative on Technologies for Africa's Agricultural Transformation (TAAT) and to develop a proposal for advancing country level participation in the S3A

Science for Agriculture Consortium write-shop

ASARECA participated in a write-shop of all Pillar 4 organizations in Washington DC from September 19-30, 2016. The institutions represented were FARA, SROs (ASARECA, CORAF, CCARDESSA), AFAAS and RUFORUM. The meeting was meant to develop a proposal for the Science for Agriculture Consortium (S4AC). ASARECA was represented by the Interim executive Secretary, Prof. Francis Wachira and Dr. Joseph Methu, the Head of Partnerships and Capacity Development. Convened by the World Bank, the meeting endorsed the idea of strengthening the institutional architecture of Pillar 4 organizations, develop the consortium and implement joint resource mobilization strategies.

Gender policy brief for African women

ASARECA participated in writing a gender policy brief entitled "Raising Agricultural Productivity, Improving Food Security and reducing the Physical burden of women in Agriculture."The write-shop was convened under the umbrella of the African Women in Technology Initiative (AWIT). ASARECA is one of the partners of the AWIT initiative *(http://www.empowerwomen.org/en/cop/awit)*. The ASARECA-AWIT collaboration aims at promoting exchange of lessons learned and good practices; and up scaling of rural technologies for women.

Participants at the S4AC write-shop in Washington DC.

Scientist under AU-IBAR are encouraging the movement of livestock within the region to increase genetic diversity.

Providing leadership to UA/IBAR Animal Genetic Resources project

ASARECA signed a sub-delegation agreement with the African Union Inter-African Bureau for Animal Resources (AU-IBAR) to support the implementation of the project on "Strengthening the capacity of African countries in conservation and sustainable utilization of African Animal Genetic Resources (AnGR)". ASARECA was also appointed the Sub-regional Focal Point of the AnGR project in Eastern Africa. ASARECA then participated in a workshop to compile lessons learnt and best practices related to the development of guidelines and policies on AnGR, crossbreeding, selection, conservation and preservation of AnGR in Africa. The meeting was hosted by AU-IBAR in Abidjan, Côte d'Ivoire from May 24 - 27, 2016. With regard to Eastern Africa, the workshop observed that livestock mobility underpins genetic flow and diversity of AnGR. The workshop recommended that movement of livestock within the production systems should be encouraged and all efforts made to secure pastoral mobility, since pastoralism remains the most optimal activity for utilization of marginal lands.

Support to the seed policy discourse

ASARECA participated in the seed mutual accountability framework meeting from February 23 – 24, 2016 in Addis Ababa, Ethiopia. The objectives of the meeting were to revisit the COMESA Seed Harmonization Implementation Plan (COMSHIP) at national and regional level, update status of COMSHIP at national level, review the role of the private seed sector in COMSHIP, validate the monitoring and evaluation framework of COMSHIP, review the seed information system, and propose a COMSHIP mutual accountability mechanism.

In a related event, ASARECA participated in the partners consultative meeting on COMESA Biotechnology and Biosafety Policy Implementation Plan (COMBIP) on March 4, 2016 in Nairobi, Kenya. The aim of the meeting was to familiarize the team with the Regional Approach to Biotechnology and Biosafety policy in Eastern and Southern Africa (RABBESA) and with the implementation process of the COMBIP. ASARECA also attended the ACTESA Seed Programme Advisory Committee meeting from 8 – 9 March.

The objectives of the meeting were to: review technical and financial milestones of the project, review the work-plan and budget for 2016, and provide an update on the status of COMSHIP in member states.

Sharing knowledge on climate change

ASARECA shared lessons learnt and findings at various international conferences including the Soil Science Society of East Africa, Africa Soil Science Society Conference in Morogoro, Tanzania; the COMESA/EAC/SADC Regional Climate Smart Agriculture (CSA) Conference in Nairobi (Kenya); the 3rd International Interdisciplinary Conference at the University of Eldoret; and the COMESA/EAC/SADC Regional Scientific Symposium on CSA in Lusaka, Zambia. A total of 10 scientific papers were presented in these conferences and some of them are now available in conference proceedings.

Thunen University partnership

ASARECA renewed its partnership with Thünen University in 2016 to promote the AGMEMOD price forecasting model in Africa. Initial actions were presented in a joint paper on the Rwanda case study during the 7th FARA General Assembly and Science Week in Kigali, in June 2016. Plans are under way for capacity development in AGMEMOD through a spring school to be held in Thünen University in May 2017. Contacts for 12 participants drawn from Ethiopia, Kenya, Rwanda and Uganda have been shared with the AGMEMOD team at Thünen University.

ICRISAT Director General, David Bergvinson (L) in the ASARECA boardroom during a meeting to explore areas of collaboration.

ICRISAT visits ASARECA

The Director General of ICRISAT visited ASARECA in November 2016 to explore potential areas of collaboration. ASARECA expects to expand the scope of its partnership with ICRISAT in 2017. The ASARECA Interim Executive Secretary continued to serve as a member of the Independent Advisory Committee of the combined Grain Legumes and Dry land Cereals under ICRISAT.

Support to CAADP

ASARECA participated in the CAADP technical network on research and extension meeting on October 9, 2016 in Accra, Ghana. The objective of the meeting was to review the long-term agenda of the network. The agenda included: identifying priority CAADP thematic areas, revising the earlier agreed work plan and articulating the short-term activities.

Board approves risk policy

The ASARECA 21st Board of Directors meeting in June 2016 approved the ASARECA Risk Policy. The policy recognizes that risk management is an integral part of good governance and that ASARECA is committed to establishing an organizational culture that ensures risk management is embedded in all its activities and processes.

The policy forms part of the organization's internal control and corporate governance arrangements. The objectives of the policy are to:
i) Facilitate the Board and management to make informed business decisions.

ii) Identify, evaluate and manage risks within the organization in a coordinated manner.

iii) Improve strategic planning processes as a result of a structured consideration of risk.

iv) Ensure compliance with the relevant laws and regulations and that the organizations' assets are safeguarded.

Prior to the presentation of the draft policy to the Board for approval, the secretariat carried out a risk assessment mainly to profile risks deemed to be a threat to the institution and its programming and strategies to mitigate the risks

SIMLESA planning

ASARECA participated in the 6th Annual Review and Planning Meeting for the Sustainable Intensification of Maize-Legume Systems in Eastern and Southern Africa (SIMLESA) project in Lilongwe Malawi. During the meeting, ASARECA was asked to prepare a paper for presentation in the 1st CCARDESA General Assembly and science week in June, 2016 in Malawi and to also produce a policy guidance paper on synthesis of policy options for sustainable intensification using the Eastern and Southern Africa experience. Over the last years (Phase 1), ASARECA has been leading the implementation of the policy component of SIMLESA from 2015 to 2017. Prior to this, ASARECA had been providing leadership in Monitoring and Evaluation, special studies on adoption of technologies, innovations and management practices and mainstreaming gender into agricultural research for development process.

Technical Support to COMESA

ASARECA provided technical backstopping to COMESA in mapping out the status of Reducing Emissions from Deforestation and forest Degradation (REDD) + and the scientific evidence on climate smart agriculture (CSA) in the COMESA-EAC-SADC regions. The reports emerging from these two processes clearly show that most countries in the region are still in the first phase of REDD+ development. There is adequate scientific evidence and best-bet CSA technologies ready for up-scaling across the African landscapes.

ASARECA at the FARA Agriculture Science Week in Rwanda

ASARECA participated during FARA's 7th Africa Science week and General Assembly in Kigali, Rwanda from June 12-16, 2016. ASARECA made presentations on the side events, which highlighted the present and future of wheat research in the sub-region and action planning for capacity development for country implementation of the CAADP and Science Agenda for Agriculture in Africa. Presentations were also made at the CTA side event on Agriculture and Nutrition nexus development. To display corporate presence, ASARECA also participated in an exhibition in which various knowledge products were shared out.

EAAPP Phase I exit strategy

ASARECA kept the EAAPP coordination office functional until March 31, 2016. The EAAPP coordination office completed pending tasks including completion of the Country Implementation Completion and Results Reports (ICRR), the regional ICRR, Proceedings of the EAAPP Conference, publication of selected EAAPP TIMPs and the Special issue of the African Crop Science Journal with the articles presented during the EAAPP Conference. These tasks were completed during the period. Also, the World Bank commissioned a consultant to do its own Implementation Completion Report (ICRR).

Prior to its closure, the EAAPP member countries had developed (under the guidance and leadership of ASARECA as the convener) an exit strategy as a sustainability tool to ensure continued collaboration and exchange of germplasm.

Irrigated rice farm. ASARECA and partners are promoting Climate Smart irrigation innovations in Malawi and Tanzania.

Improving agricultural water use, efficiency and productivity through smart irrigation

ASARECA worked with the Centre for Scientific and Industrial Research Organisation (CSIRO) to develop a project titled "A Virtual Irrigation Academy (VIA) to improve Water Productivity in Malawi and Tanzania". In 2016, ASARECA started to implement some work packages of the five-year programme. It is expected that additional US$ 200,000 funding from ACIAR will be channelled to ASARECA. All implementing irrigation schemes have been identified and the necessary monitoring equipment installed. As part of implementation activities, ASARECA convened a training workshop on the use of irrigation monitoring tools in Blantyre, Malawi from April 11-13, 2016. The purpose of the meeting was to equip the implementing team, farmers and other stakeholders with skills on how to assemble and install irrigation-monitoring tools and take readings. The tools will be used in the farmers' fields during project implementation. It will also provide a basis for monitoring and evaluation work. As a coordinated approach, ASARECA also trained baseline enumerators from April 25-28, 2016 in Lilongwe. With the skills acquired, they conducted a baseline survey, analysed data and submitted reports. This data will be used as benchmark information for measuring/assessing progress in implementation.

Agribusiness incubation forum

ASARECA in conjunction with the African Agribusiness Incubation Network (AAIN) convened a high level regional forum on the impact of agri-business incubation in East Africa. The meeting was held in Kampala on May 18, 2016. The forum was hosted in collaboration with three agri-business incubators that have been established under UniBRAIN. It was attended by key stakeholders in the Agribusiness Development Sector. At least 100 young entrepreneurs drawn from Uganda and Kenya benefited from the three day forum which sought to consolidate lessons learnt in implementation of UniBRAIN. Stakeholders at the forum identified the following key lessons arising from implementation of UniBRAIN:

- There is need for strong partnerships between incubators and financial institutions to support agri-business incubation.
- Partnership between incubators and financial institutions provides first-hand information on incubate credit-worthiness. It also helps in exploring and developing special financial products.
- Further research and development is necessary to generate innovations and products for incubation and to refine existing products for wider markets.
- There is still need for further industrial development of products, especially those around the banana fibre for optimal returns.
- There is need to explore further models of financing incubation processes and actors along the value chains.

Dr Joseph Methu explains the progress of Agri-business incubation initiatives.

- Adequate risk analysis of ideas at testing stages is necessary to ensure that innovations survival rate is high.
- There is need to create synergies between the different stakeholders working with youth and agribusiness actors.

People and organizations working on business development services and organizing youth need to have close working relationships with incubators to optimally utilize available services and avoid duplication.

STORIES

progress, achievements & impacts

22 Assessing the adoption of Quality Protein Maize and climbing Beans

26 Conducive policy environment for Agricultural Research for Development

28 Embracing partnerships to support farmers fight Maize Lethal Necrosis Virus

32 Increasing wheat production in Rwanda and Burundi

36 Increasing productivity through agricultural water management

42 Gender mainstreaming takes root in ASARECA countries

46 Nurturing capacity development for agricultural productivity

The cost of staking materails is a major challenge to the promotion of climbing bean

Assessing the adoption of Quality Protein Maize and climbing Beans

ASARECA in partnership with IFPRI undertook studies to assess the adoption and diffusion of technologies in Tanzania, DR Congo and Rwanda. Surveys for Quality Protein Maize (QPM) were undertaken in Tanzania and DRC, respectively, while the surveys for climbing beans were carried out in Rwanda.

This follows a memorandum of understanding that was signed in June 2015 between IFPRI and ASARECA to strengthen collaboration and harness comparative advantages of the two organizations. Some of key findings from the surveys so far are highlighted below:

a. Decision making

Findings from the surveys indicate that decision making at household level on matters related to agricultural production is done jointly by both males and females in a majority of households (51.02%). This shows that there is some progress towards ensuring equitable participation in decision making processes in the agricultural sector.

b. Adoption levels

The findings show higher levels of adoption in 2015 for the two technologies promoted across the intervention countries. Adoption levels for QPM and climbing beans were estimated at 78.4% and 77.3%, respectively. Adoption levels for QPM in DRC were higher (82.9%) than those in Tanzania (56.79%). The low adoption level of technology utilization in Tanzania was attributed to lack of seed, which in-turn was caused by high demand that is outstripping supply; effects of climate change on seed production; and limited participation of policy makers in technology promotion.

c. Varieties used

A majority of maize growing households (55.4%) in DRC reported that they cultivated Mudishi 3, while in Tanzania, the most popular variety cultivated was Lishe K-1 (70.5%). Preference for Mudishi 3 was attributed to its high nutritional content and its resistance to Maize Streak Virus (MSV), Green Leaf Spot (GLS), cob rots, E. Turcicum and other fungal diseases. The performance of Mudishi 3 in the field was reported to be good with a yield potential of 3-4 tons/ha. Lishe K-1 was preferred mainly because of

Adoption levels for QPM and climbing beans were estimated at 78.4% and 77.3% in Tanzania and DRC.

its flint colour and high yields. On the other hand, Gisenyi (17.2%), Gasirida (13.7%), and RWV 1129 (11.6%), were the most popular climbing bean varieties among the farmers. These varieties were promoted by ASARECA in collaboration with Rwanda Agricultural Board (RAB).

d. Technology diffusion

Technology diffusion is understood to occur when more land in target areas is brought under the technology being promoted. Findings show that a cumulative total area of 426,000 acres (172,470 ha) had been established under Quality Protein Maize (QPM) by 2015.

ASARECA played a cardinal role in introducing and disseminating the technologies among the target beneficiaries. However, subsequent spread (diffusion) of the technologies to the entire population was due to farmer-to-farmer exchange of materials and related information.

Constraints to adoption of QPM and CB technologies

Several factors were reported as constraining the adoption of the technologies promoted. These mainly included:

- Lack of seed due to low seed production capacity, few seed producers, demand outstripping supply, inability of local seed producers to meet seed production requirements like minimum isolation distances, effects of climate change, and poor or weak seed distribution networks.

■ Where community seed production systems existed, it was noted that these were not performing to expectations. For example, most of the farmers identified to be seed producers were unable to meet the minimum isolation distances.

■ QPM varieties available on the market are very limited in terms of diversity. This presents a challenge in that farmers have limited options to choose from. Climbing beans on the other-hand have more diverse varieties (both local and improved) compared to QPM. Survey findings indicate that climbing beans had over 30 improved varieties compared to 2 QPM varieties in DRC and 4 in Tanzania.

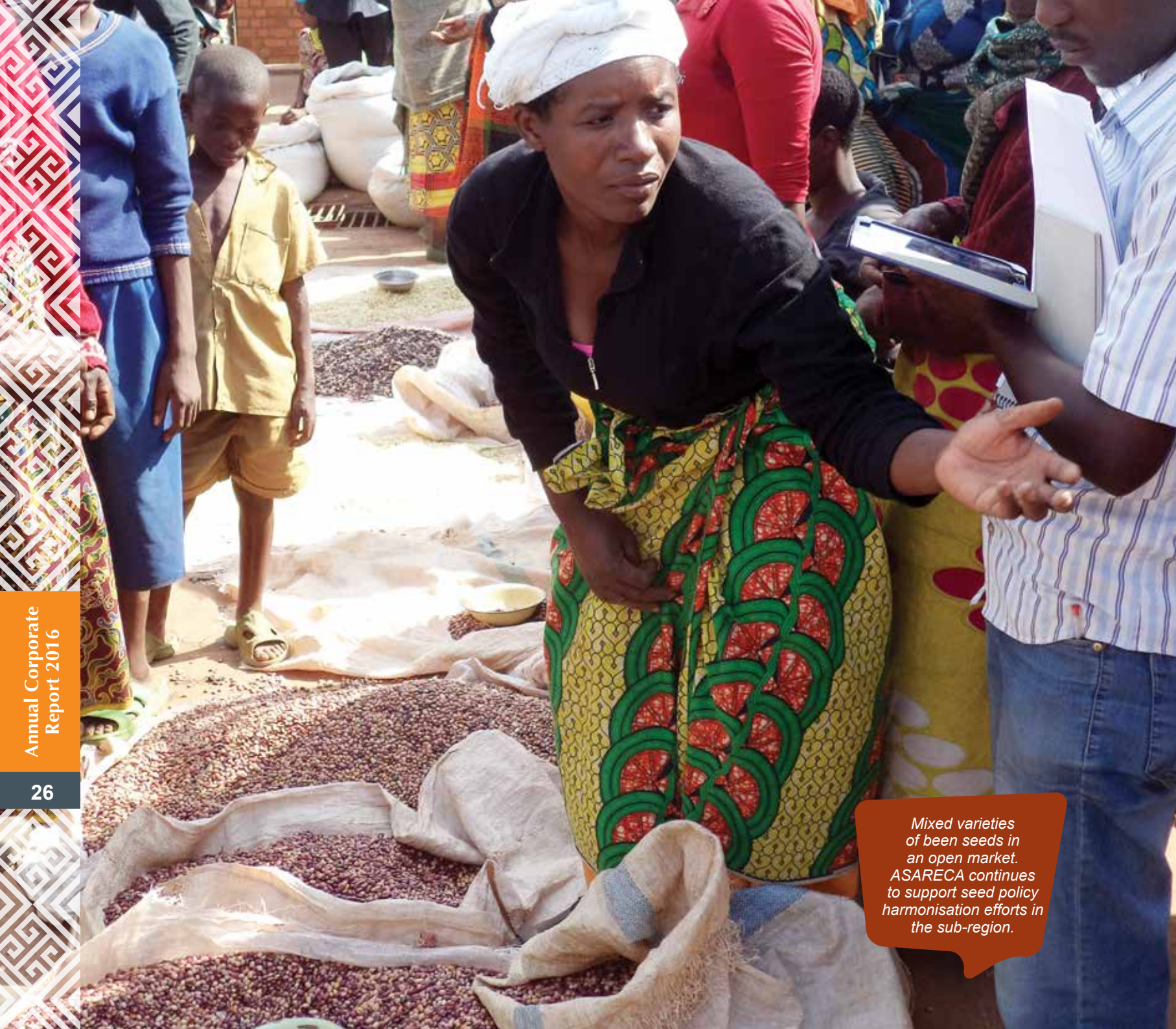
ASARECA played a cardinal role in introducing and disseminating the technologies among the target beneficiaries. However, subsequent spread (diffusion) of the technologies to the entire population was due to farmer-to-farmer exchange of materials and related information

■ Lack of basic and improved storage facilities were cited as major problems affecting QPM production, especially in DRC. This is further aggravated by susceptibility of the current QPM varieties to storage pests, which affect the quality of grain put onto the market. Besides, farmers cannot store produce for price stabilisation.

Findings indicate that climbing beans had over 30 improved varieties.

■ Findings from the survey indicate that 38.3% of the farmers stopped growing climbing beans due to lack of staking materials. The use of staking materials is critical for achieving yield potential estimated at 5tons/ha. Without staking, farmers lose between 50-90% of the estimated yield potential.

■ The production of QPM grain is affected by lack of drought tolerant varieties. Secondly, QPM seed production has been affected by drought often resulting in production of poor quality seed. For the case of climbing beans, climate change effects have mainly affected the availability of woody staking materials.



Mixed varieties of been seeds in an open market. ASARECA continues to support seed policy harmonisation efforts in the sub-region.

Conducive policy environment for Agricultural Research for Development

ASARECA continued to follow up and engage with the relevant key policy makers that participated in the high-level policy forum organized by ASARECA in October 2015. ASARECA continued to facilitate review of the seed laws under the COMESA seeds regulations project. Other policy milestones include:

Ethiopia seed policy harmonization

Through the COMESA seed trade harmonization regulations implementation project, ASARECA worked with the national partners in Ethiopia to review the seed laws and regulations with the aim of aligning them to COMESA seed regulations.

Rwanda law governing seeds and plant varieties

In 2015, ASARECA contributed to the review of the law on production, quality control and commercialization of plant quality seed to align it with the COMESA seed regulations. In 2016, the law governing seeds and plant varieties was passed after discussion in Parliament. This work was supported by the COMESA Seed Harmonization Implementation Plan.

Meanwhile in Burundi, ASARECA supported the national institutions to develop a seeds and varieties roadmap. This enabled the national review team in Burundi to draft changes to the Ministerial orders. These have since been forwarded to the Ministry of Justice for review. This work is supported by the COMESA Seed Harmonization Implementation Plan.

COMESA biosafety and seed policies

In March 2016, ASARECA and other partners initiated actions towards the implementation of the COMESA Biosafety Policy Implementation Plan (COMBIP), which was validated by stakeholders in 2015.

ASARECA proceeded to provide technical support to review seed acts in Burundi, Ethiopia and Rwanda, aligning them with COMESA seed regulations under the COMESA Seeds Regulations Implementation Plan (COMSHIP). COMSHIP was ratified in 2014 and commenced implementation in 2015.

Maize bean inter-crop

Embracing partnerships to support farmers fight Maize Lethal Necrosis Virus

Integrated management of the maize lethal necrosis (MLN) disease is one of ASARECA flagship projects. The project started in late 2014, and is being implemented in seven countries: Burundi, Ethiopia, Kenya, Rwanda, South Sudan, Tanzania and Uganda.

ASARECA and collaborating partners in the NARIs used an integrated and multi-pronged approach to support farmers to overcome challenges associated with MLN. These included different control strategies, such as development and use of appropriate management practices alongside breeding and germplasm development activities in the implementing countries and in CYMMYT in Naivasha, Kenya.

By the end 2016, a total of 7 management practices had been tested and validated, while 3 were promoted in the partner countries. The practices include: Use of clean and certified seed; crop rotation and control of different vectors using different chemical products.

Testing into the use of integrated soil fertility management (ISFM) has been completed. However, the technologies have not yet been packaged for the farmers. Meanwhile, use of insect traps and water use technologies is still under validation by University of Nairobi (UoN) in Kenya.

Other promising management practices that have been tried are:

Intercropping Maize and Legumes: This has shown some promise of being able to repel thrips, aphids and leafhoppers away from maize. Thrips, aphids, and leaf hoppers are thought to be vectors of the MLN virus. As a bonus, stem borers are also reduced due to the presence of natural enemies. Similarly, intercropping/border cropping maize with sorghum, pearl millet, coriander, and Napier have also shown reduced infestation on maize. Coriander hosted more thrips, and could potentially act as a pull crop.

Other management practices such as: avoiding maize cultivation; staggered cropping; planting maize once a year; planting another crop or having no crop when maize is not grown have also shown promising results with very

minimal vector population and disease effects. There is also evidence that MLN is not spreading adversely in maize zones where the crop is grown once a year.

Seed dressing: Seed dressing using various products such as *Gaucho*, *Poncho*, *Thunder*, and *Marshal* have shown strong negative effects on *aphids*, *cutworm*, *leafhoppers* and *thrips*. The efficacy of five pesticides: *cypermethrin*, *lambda cyhalothrin*, *rocket* (40% *Profenofos* + 4% *cypermethrin*), *nimbecidine* (0.03% *Azadractin*) and *imidacloprid* (200g/l) continued to be validated for use in management of MLN in the mid and high altitudes areas of Rwanda: RHM104 (MLN tolerant) and SC513 (MLN susceptible) varieties were used in mid-altitude areas; while RHT132 (MLN tolerant) and PAN691 (MLN susceptible) varieties were used in the highland areas.

Evaluation of host plant resistance of various hybrids and OPVs was on going as at the end of the year, with preliminary results showing significant variability in performance of germplasm.

Soil fertility management: Soil fertility management is also important in mitigating effects of MLN. Evidence generated indicates that lack of nutrients (control) significantly constrained maize growth in the very early stages of development. Thus, lack of nutrients combined with infestation from the MLN viruses was more severe in arresting maize growth and development. On the other hand, presence of ideal or near ideal soil nutrient conditions

A MLN infested maize plant.

reduced MLN virus expression on plants. Therefore proper soil management to ensure availability of micronutrients and secondary elements in the soil are critical in militating against MLN development.

> **Soil fertility management is also important in mitigating effects of MLN. Evidence indicates that lack of nutrients significantly constrains maize growth in the early stages of development**

Development of Knowledge base on MLN: Surveys were conducted to establish what viruses cause MLN and what strains are more virulent within the MCMV were conducted in 4 counties. Similar surveys had initially been done in other counties of Kenya under KAPAP. Surveys were conducted to determine the etiology of MLN causing viruses.

Plant health rallies were implemented in Kenya, Uganda, Tanzania, Rwanda and Burundi, which generated a lot of information on the perceptions and knowledge of the MLN. Also 1 Radio program (MaaliShabani was produced and aired on Radio-Taiffa-KBC as part of awareness raising on MLN.

Rwanda

To date a total of 240 MLN samples have been collected from 16 districts infected by the Maize Lethal Necrosis. The samples were collected on Maize, Sorghum and Napier grass. The samples were sent to Ohio State University, USA for further analysis. Rwanda also carried out studies on seed transmission of MLN. Seed samples from infected plants were collected in farmers' fields and germinated in the laboratory. The seed transmission rates will be studied using ELISA and RT-PCR procedures.

Ethiopia

Seed from locally available germplasm obtained from released and advanced experimental maize materials including OPV lines and hybrids was collected and organized in six sets of trials and sent for screening at CIMMYT in Naivasha, Kenya.

Also, 71 commercial seed samples were tested; MLND was detected in 4 seeds (0.02%) out of the 26,400 seeds tested.

Burundi

MLN surveillance survey was conducted in Burundi covering the provinces of Ngozi, Kirundo, Ruyigi, Cankuzo, Rutana, Makamba and Cibitoke, which border with neighbouring countries where the MLN is already declared. The main virus (MCMV), which causes MLN, was detected for the first time in Burundi in samples from farmers' fields of Cibitoke province.

A wheat farmer in Burundi. The potential for wheat production in Burundi is higher than its current state

Increasing wheat production in Rwanda and Burundi

In 2014 ASARECA and the CGIAR research program on Wheat (WHEAT), led by the International Maize and Wheat Improvement Center (CIMMYT) initiated the "Enhancing Wheat Productivity and Value Chains in Rwanda and Burundi" project to promote smallholder wheat value chains.

The overall objective of the project was to improve the productivity and competitiveness of smallholder wheat production systems in the two countries.

In Rwanda, the project is being implemented in Musanze while in Burundi it is being implemented at Mugongomanga and Muruta communes.

This project came to an end in December 2016. But before it did, at least six out of a targeted seven proven wheat management practices and innovations were tested in Burundi. These include sowing techniques, application of fertilizer, weeding, harvesting techniques, threshing techniques, post harvest techniques. Two new varieties, ISWSN 64 and HRWYT12, were selected by farmers.

All these were done following the Innovation Technology Adoption platforms approach. As a result, the mean yield at project sites has increased from 0.8 to 2.5 t/ha, exceeding the project target of 1.6 t/ha. It is expected that at least two improved wheat varieties will be made available for uptake in Burundi.

Development of management practices in Rwanda

An assessment of technology adaptability and package technologies was conducted in Kinigi, Rwerere and Nyamagabe Research Stations in Rwanda. Processing of yield and other agronomic data from these trials was carried out. Meanwhile, wheat germplasm recently obtained from CIMMYT-Mexico; and advanced wheat lines and varieties have been evaluated for adaptability in different agro-ecologies of Rwanda.

Fields of improved varieties, such as Njoro BW2, Chozi,

Demonstration plots were established to help target farmers to evaluate promising technologies.

Simba, EN161 and EN48 demonstrating appropriate agronomic practices such as seed bed preparation, fertilizer application and other crop management practices were established to validate suitability of the selected packages for wider dissemination.

Three (3) demonstration plots were established to help the target farmers to evaluate promising technologies.

These fields are now being used as farmer field schools in the respective areas. New and advanced varieties used include the Kenyan and local materials such as: K. Eagle10, K. Robin, K. Sunbird, K. Wren, EN161, EN48, Njoro BW2, Chozi and Musama.

Smallholder wheat farmers in Rwanda; were able to increase productivity from 2tons/ha to 2.86tons/ha in Butaro and Mukura respectively by simply using a good variety accompanied by appropriate management practices.

Burundi

Farmers continue to use the demonstration plots established in 2015 as part of the Farmers Field School (FFS). They have benefited mainly through the use of improved varieties and improved agricultural practices which have resulted in doubling of yields.

Production of different wheat varieties at Mugongomanga and Muruta communities continue to show that improved varieties outperformed local varieties.

"Wheat is a major staple food crop in Rwanda and Burundi. Its demand is growing faster than any other major food grain. Currently, the increasing gap between domestic production and consumption is met through imports, which strain the limited foreign exchange reserves of the fragile economies in Rwanda and Burundi"

Why wheat?

Wheat is a major staple food crop in Rwanda and Burundi. Its demand is growing faster than any other major food grain. Currently, the increasing gap between domestic production and consumption is met through imports, which strain the limited foreign exchange reserves of the fragile economies in the two countries.

Despite the two countries having conducive environments for production of the crop, their productivity is marginal. In Burundi, national annual wheat production is estimated at 10,000 tones, and the current national productivity level is at 0.4-0.8 t/ha.

In Rwanda yields are averaging 2 t/ha. This is mainly because wheat is sown in broadcast system, which leads to wastage of materials and poor productivity. The wheat project is supported by the Multi Donor Trust Fund administered by the World Bank), in collaboration with WHEAT (http://wheat.org) from the CGIAR Fund.

Bumper harvest of cabbages in Bungokho in Mbale, Uganda

Increasing productivity through agricultural water management

Starting 2014 through to 2016 ASARECA and member countries implemented the "Sustainable agricultural water productivity enhancement for improved food and nutrition security in ECA" project. The project was anchored on scaling out climate smart agriculture to landscape levels across Eastern and Central Africa.

This was a follow up initiative to an earlier project named "Integrated management of water for productivity and livelihood security under variable and changing climatic conditions in ECA", which was implemented from 2009 to 2013.

Both projects were supported by the Multi Donor Trust Fund (MDTF) comprising the European Commission, the United States Agency for International Development (USAID), Canadian International Development Agency (CIDA), and Department for International Development (DfID). The two successive projects used water as an entry point to stimulate demand for other productivity enhancing technologies to enhance agricultural productivity. They projects built capacity to harness and enhance utilization of water resources including rainwater, runoff water, surface and ground water at farm and watershed levels. The predecessor project was implemented in five countries namely Kenya, Ethiopia, Eritrea, Rwanda and Madagascar; and the successor project brought on board Burundi, Uganda and South Sudan.

The successor project came to an end in 2016 leaving life changing impacts in the implementing countries.

Burundi

In Burundi, the project was implemented in Muhembuzi watershed in Kirundo province and Kibimba watershed in Gitega Province. Muhembuzi is a semi-arid zone with fertile soil, but with insufficient rainfall for crop survival. Kibimba watershed in Gitega Province is a tropical zone where rainfall is moderate, but the soil is poor.

Soil and water conservation technologies such as mulching, tumbukiza and production and utilization of organic

Integrated soil and water management initiative for growing onions in Burundi.

manure were deployed to control run off, hence significantly reducing soil erosion. The hilly landscapes in the two watersheds were transformed into fertile land suitable for agricultural production.

As a result, participating farmers have realized improved nutrition and household incomes levels. For example, households participating in various project activities realized a total of US$ 17,358 from sale of various agricultural commodities arising from project interventions.

Similarly, a total of 592 households indicated that their nutrition levels had improved as a result of improved incomes and consumption of a variety of vegetables and other products promoted by the project.

Uganda

Through the improvement of agricultural water productivity, participating farmers have achieved over 50% increase in yields of maize, 100% increase in onion production, and 150% increase on market-oriented horticulture in Uganda. The farmers were trained in nursery management and raising trees. This kicked off excitement to grow trees in Ongino, Bunghoko and Kwapa watersheds where the interventions

were implemented. A total of 500 trees were planted by two (2) schools, while 18,135 trees were planted by individual farmers.

Following training in soil and water conservation technologies such as contour bunds, trenches, tied ridging, a total 780 trenches were established on farmers plots; eight water reservoirs to harvest water runoff (complete with pumps and horse pipes) were established; and 3 micro-catchment reservoirs of 240,000 liters were also established. As a result, 29 farmers in Kwapa; and 13 households in Bunghoko are using water from the micro-catchment and the river for supplementary irrigation. Water from reservoirs is used to grow onions, cabbages, tomatoes and cowpea in the dry season.

75 plots to demonstrate these integrated activities were established (35 for maize; 30 for onions; 5 for cabbages and 5 for groundnuts). Both the local and national governments have appreciated that the CSA approach makes a difference and are supporting the initiatives. For example, Bungokho local Government has included in the 2015/16 budget a vote to buy a water pump and supply system to extend the CSA water supply by 700m3 to increase the number of farmers benefiting from supplementary irrigation to grow off-season vegetables. As the communities continue to earn income from off season vegetable production using supplementary irrigation, the level of ownership has increased. In Kwapa and Bungokho, farmers bought water pipes using their own resources and extended them to their gardens.

Cabbages nourished with nutrient-rich-water from fish ponds.

Sudan

In one of the project sites in the Western Sudan Sandy Plains, the productive performance of sheep was enhanced significantly through strategic feeding. The reproductive performance of ewes' increased significantly. Out of the initial 68 ewes, 56 have lambed giving a total of 76 off-springs (41 male and 35 females), while 8 are about to lamb. Improved feeding has also resulted into increased twinning (40- 50%) and 1.2 – 1.6 prolificacy compared to less than 5% and 1 under the traditional system, respectively. This has enhanced the net worth of 13 families in the landscape.

Field observations and follow up made by the project staff has revealed increased awareness among producers about the potential benefits from the value chain on AWP. The target communities now appreciate that agricultural water can be used to diversify agricultural outputs to include animal production.

In the target site up to 242 producers adopted the agricultural water productivity TIMPs. The producers used their own resources to purchase improved feed rations, process plant fodder and crop residues, purchase small ruminants for replicated rounds of fattening and milk production, and apply for credit facilities.

Eritrea

A total of 294 households (227-growing Rhamunusprinoides; 32-growing malt barley, and 35 growing sorghum) have been linked to the market through various marketing channels. Rhamunusprinoides farmers are earning up to 250Nafka/Kg produced. The farmers earned up to US$ 91,000 from sale of 5,500 Kg of Rhamunusprinoides. A high yielding sorghum variety (up to 2000-2500 Kg/ha) and appropriate water interventions were promoted by the project in Eritrea. This has resulted into improved food and income security for the participating farmers.

Up to 60 check dams were established to control run off and protect downstream arable land (25ha) in just 1 site alone. Because of the benefits of the project, the Eritrean government allocated up to 1.02 million Nafka (about US$ 68,000) for scaling up project activities in other communities

Kenya

In Kenya, a total of five (at watershed level) and 15 (at farm level) CSA technologies and innovations were identified by the stakeholders for evaluation and up-scaling to enhance productivity, income, resilience, mitigation and adaptation

A rice farmer in Morogoro, Tanzania using water optimally.

to climate change. The selection of these technologies was guided by the ease of adoption, investment required and ability to make the best use of increased water availability.

A total of 12 value chains (maize, sorghum, cow pea, green grams, fruits and vegetables, dairy, fish, apiculture, cassava, poultry and beans) were promoted as means of increasing food, nutrition and income security across the watersheds.

A total of 15 demand driven and cost effective agricultural water management technologies, innovations and management practices selected through participatory evaluations have been embraced by farmers and have so far posted very impressive results. These included: (i) Maize and beans production under soil and water conservation technologies such as irrigation, tied-ridges and terraces (ii)

maize and bean production with organic and inorganic fertilizers using the micro-dosing technique (iii) tomato production under irrigation (iv) drought tolerant/escaping crops such as sorghum, pigeon pea, cowpea and green grams (v) use of agro-advisories to minimize losses and maximize on opportunities presented by bad and good weather respectively (vi) seed priming (vii) agroforestry and tree nursery establishment (viii) income generating activities such as poultry, dairy and fish farming, and (ix) improved agronomic practices such as early planting, thinning, timely weeding etc. To-date up to 196 farmers (142F and 82M) have adopted the CSA technologies promoted.

Over 100 farmers purchased the "improved crops storage" bags from Purdue University (USA). The innovative storage bags cost about US$ 2, and require no pre-treatment of the grains, thus, drastically reducing the storage cost. This was done to protect the bumper harvest realized by farmers due to project interventions. Indeed, for the first time in decades, no aflatoxin-related deaths were reported in the two watersheds.

As a result of adoption of CSA technologies in Kenya, a number of outcomes are being observed among the intervention households. Households have been able to increase their maize yields from about 0.5 tons/ha to 3.0 tons/ha through use of supplemental irrigation and application of farm manure. Their incomes too have improved. Some households are generating as much as US$24,000 per month from the sale of fish and vegetables. Households previously relying on food aid for about a 1/4 of the year are now food secure.

Ethiopia

To-date, a total of 980 ha of land are under improved Agricultural Water Management (AWM) technologies (deep trenches and bunds, tree planting, dam checks). An estimated 1,200 households are directly benefiting from these interventions mainly as a result of increase in wheat yields by over 80% (from less than 5Quintal/ha before the intervention to 20 to 30 Quintal/ha) after the intervention.

> **Through the improvement of agricultural water productivity, participating farmers have achieved over 50% increase in yields of maize, 100% increase in onion production, and 150% increase in market-oriented horticulture in Uganda**

Over 500 households have adopted various crop technologies ranging from improved wheat varieties (danfi, kursht-drought resistant variety), malt barley and high value crops (apples). Most of the farmers are linked to the market. For example, malt barley farmers have been linked to a beer factory, while the wheat farmers were linked to the seed and wheat flour companies.

Farmers participate in project design and implementation to ensure inclusive research.

Gender mainstreaming takes root in ASARECA countries

ASARECA played a central role in the initial thought process and roll-out of the Gender-Responsive Researchers Equipped for Agricultural Transformation (GREAT) initiative. This new project funded by the Gates Foundation is intended to enhance gender mainstreaming skills in AR4D institutions by building the capacity of researchers to undertake gender-responsive research.

GREAT seeks to develop, test and deliver specialized training programmes for agricultural researchers on how to design, implement, and measure gender-responsive agricultural research projects, while engaging leadership and policymakers in Sub-Saharan Africa on the importance of considering gender in agricultural research.

GREAT is being implemented collaboratively by African Women in Agricultural Research for Development (AWARD), Cornel University, Makerere University and ASARECA. Some of the activities undertaken so far include mentoring and training scientists in a certificate course.

ASARECA's role in GREAT is to

- Provide input into course design and delivery
- Lead organization of country-level events
- Identify institutional teams from NARIs
- Document the impact of the courses at the NARI level
- Engage policymakers to support gender-responsive research and development
- Generate ripple effects within national institutions.

So far, ASARECA has led the process of identifying research teams working on roots, tubers and bananas (RTBs) across the ASARECA, CCARDESA and CORAF sub-regions and mentoring of two scientists from the National Agricultural Research Organisation (NARO) Uganda on gender mainstreaming in research.

ASARECA's role in GREAT is part of deepening gender mainstreaming in AR4D.

ASARECA has entrenched Gender Mainstreaming as a

Participants at the GREAT gender mainstreaming training interact with the GREAT project support team.

major support function in ensuring efficient and effective delivery of interventions.

Following ASARECA gender mainstreaming initiatives started in 2008, to date over 75% of the ASARECA-member countries have mainstreamed gender into their national policies, thereby actively engaging all gender categories in project management. This has mainly taken four directions namely:

Pluralistic decision-making process

ASARECA has promoted pluralistic decision-making approach among the key partners by providing all

strategic groups the opportunity to participate in the decision-making process.

As a result, this led to further integration of assorted skills and competencies within the NARIs, universities, NGOs, farmer organizations, public and the private sectors.

Enhancing capacity for gender-responsive work environments and research enables ASARECA to ensure equality of outcomes for men, women and youth in agricultural transformation processes

Strengthening institutional mechanisms

The ASARECA Gender Project Guide was reviewed by the ASARECA Regional Gender Technical Advisory Team (ARGAT) and is published online. The guide serves as a practical tool for mainstreaming gender into project activities and processes to achieve equality of outcomes for men and women participating in ASARECA funded projects.

The specific objectives of the guide are to:

- Provide clear direction and procedure for the implementation of gender mainstreaming in ASARECA supported projects in a coherent and systematic manner.

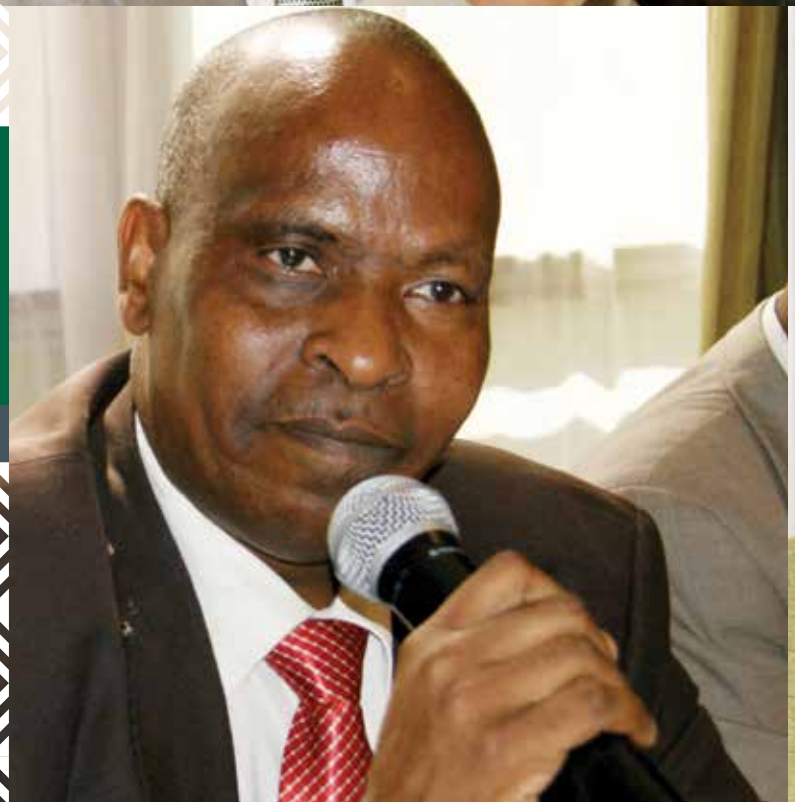
- Create mechanisms to ensure equitable participation by the target group in all project activities and interventions.

- Foster equitable access to project resources and services for both men and women across the gender categories.

- Serve as a reference document for similar actions on gender mainstreaming guidelines in agricultural research for development.

ASARECA formed a Regional Gender Working Group composed of gender Focal Persons (GFPs), gender Champions,

Project gender contacts for the NARIs, and the secretariat. This group continues to share information and knowledge using the online e-mailing list. The group is also linked to the International Gender Reference Group referred to as ASARECA Regional Gender Technical Advisory Team. Besides, ASARECA continues to provide support to ASARECA projects, making available the gender project guide and related checklists.



Nurturing capacity development
for agricultural productivity

FARA in collaboration with ASARECA have been implementing the Africa Human Capital in Science, Technology and Agripreneurship for Food Security Framework (AHC- STAFF) to address the human capital challenges that are impeding successful implementation of the Comprehensive Africa Agriculture Development Programme (CAADP) and the Science Agenda for Agriculture in Africa (S3A).

AHC-STAFF is a three year-initiative supported by the European Union to develop country-based and regional investment frameworks to guide domestic and development partner support towards demand-led human capital formation in agriculture.

The initiative is expected to benefit CAADP implementation across the continent. FARA is coordinating AHC-STAFF at continental level, while ASARECA is responsible for implementation of the initiative in Eastern and Central Africa.

AHC-STAFF started by implementing four sector wide studies, which are expected to define the current human capacities and the gaps to achieve the desired pool of resources at sub-regional and continental levels.

In the ASARECA sub-region, the following studies were initiated;

i). Review the National Agricultural and Food Security Investment Plans (NAFSIPs) and determine the implementation capacity gaps;

ii). Assessment of human capital requirements along technology and value chains;

iii). Assessment and forecast of the qualitative human capital requirements in agriculture, and;

iv). Interpreting the Global Yield Gap Atlas data to determine capacity gaps.

A draft report from Ethiopia on NaFSIP indicated significant economic development and steady increase in

agricultural production. The report, however, notes that Ethiopia's rural population is still highly vulnerable to effects of drought, which is affecting almost 1 million smallholder farmers and pastoralists. This was attributed to institutional capacity gaps and low investments in agriculture, which is as low as 0.22% of the total GDP share.

In terms of Assessing and forecasting qualitative human capital requirements in agriculture, Kenya needs to produce 3,393 agricultural graduates per annum for the next 10 years to meet the demand that will be created by the projected growth in agriculture

The draft report on Uganda observes that agricultural sector Development Strategy and Investment Plan (2010/11 – 2014/15) does not provide for capacity development as a key component for a successful monitoring and evaluation system.

It notes that the Ministry of Agriculture is ill prepared to handle large development projects. In terms of assessing and forecasting of the qualitative human capital requirements in agriculture, the report shows that Uganda's annual supply of agricultural human resources is currently growing at a rate of 12%.

The draft report for Kenya shows that the Agriculture Sector Development Support Programme (ASDSP) still faces a host of challenges. Some of the challenges include weak sector coordination and low capacity for policy advocacy, which are necessary ingredients for stimulating private sector investments in agriculture.

The report also notes considerable under-utilization of the existing potential in productivity, commercialization and competitiveness in the dairy sector.

It recommends more investment in productivity to meet the country's 7% target growth rate. In terms of Assessing and forecasting qualitative human capital requirements in agriculture, Kenya needs to produce 3,393 agricultural graduates per annum for the next 10 years to meet the demand that will be created by the projected growth in agriculture.

Preliminary findings from Rwanda indicate that there are significant gaps in terms of human capital requirements along technology and commodity value chains.

ASARECA in Numbers

Climate Change

1, 000,000

Smallholder farmers and pastoralists affected by drought in Ethiopia

Water management

50%, 100%, 150%

Percentage increases in maize yield, onion and horticulture production respectively, as a result of improved agricultural water productivity in project sites in Eastern Uganda

Gender mainstreaming

75%

Percentage of the ASARECA-member countries that have mainstreamed gender into their national policies and projects

ASARECA
Transforming Agriculture for Improved Livelihoods

A New Direction

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