

[View this email in your browser](#)



Newsletter Vol.21

ASARECA Status paper on AR4D Priorities for member countries– (2019–2020)



Dear stakeholders,
This a long read, but we feel that you need to take time and peruse through.

Prof. JJ Muhinda
Executive Director
ASARECA

Background

Agriculture contributes a significant share to the Gross Domestic Product (GDP) and employs majority of populations in ASARECA member countries, namely: Burundi, Democratic Republic of Congo (DRC), Ethiopia, Eritrea, Madagascar, Kenya, Republic of the Congo (RoC), Rwanda, South Sudan, Sudan, Tanzania and Uganda. These economies are characterized by large agriculture sector with farmers requiring access to markets for productivity growth to translate to higher incomes. The agriculture sector requires an enabling policy and regulatory environment to sustain productivity growth linked to markets and increased incomes, which could trigger increased demand and lay the foundation for agricultural transformation. Because the opportunities and constraints to transformation are similar across ASARECA members, regionally coordinated initiatives are critical in supporting collaboration to generate regional public goods to address the constraints. There are, however, some important differences among ASARECA member countries. While some countries are net exporters of various agriculture commodities (e.g. Uganda, Kenya), others are net importers of almost all commodities (e.g. Burundi, DRC and RoC, Eritrea, Madagascar). The capacity for research and development varies greatly among countries with Burundi, South Sudan, Eritrea and Madagascar requiring ample human and institutional capacity strengthening compared to their peers. There are also significant differences in on-farm productivity, and integration of farmers and private sector investments in value chains. Building resilience in the agriculture sector for instance would stabilize growth in Kenya, Uganda, and Rwanda, which have suffered from droughts in recent years, including a severe drought in

2017 (World Bank, 2018). Nearly all these countries have developed national agricultural investment blueprints that are expected to guide transformation of the agricultural sector. Based on the foregoing, and given that countries are at different levels, the section below highlights some of the key priorities:

1. Burundi

Burundi has the potential to be food self-sufficient. However, the Global Hunger Index ranks the country as having the highest level of hunger, out of 79 countries worldwide (GHI, 2019). Burundi's population is young, but growing rapidly with average population density of 257 people per square kilometer. Ninety per cent of this population is small-scale subsistence farmers (Ndayiragije *et al.* 2017). All the social indicators are at low levels with agriculture, which is the main source of employment for nearly 80% of the population, failing to generate enough income, besides contributing only 40% of GDP. Urgent action is therefore needed to increase agricultural production and thus prevent food insecurity from being added to the other sources of social tension. The main staple crops grown are banana, cassava, sweet potato and beans with coffee as the main export commodity, thus accounting for more than 60% of export revenues (World Bank, 2019). Climatic hazards and the resurgence of epidemics often aggravate this situation.

AR4D priority investment areas

Burundi (alongside DRC and RoC) is a net importer and has relatively less advanced capacity for R&D (World Bank, 2018; OEC, 2020). The country needs more investments in leveraging partnerships to build its national capacity and to bring assorted public goods generated from other countries. To help the country get out of this situation, resources are urgently needed to tackle the level of food insecurity, which is almost twice as high as the average for sub-Saharan African countries, with about 1.77 million people in need of humanitarian assistance, estimated at \$106 million in 2019 (UN OCHA, 2019). The following are key priority areas for investment in agriculture:

Transformative Capacity Strengthening and Integration

- In seeking to boost human and institutional capacity to conduct agricultural research for development (AR4D), a lot of focus has been on: (i) supporting students to undertake post-graduate (masters and PhD) studies; (ii) facilitating capacity strengthening for young scientists through coaching and partnerships building for placements and mentorship; (iii) coordinating research management training for selected NARI staff; (iv) supporting establishment of priority research infrastructure and equipment; (v) streamlining best bet institutional arrangements; and (vi) coordinating capacity strengthening in foresight activities for surveillance and early warning.

Agricultural Transformation Technologies and Innovations

As part of enhancing agricultural transformation via adoption and scaling up of priority technologies and innovations, Burundi has the opportunity to:

- Harness soil resources, especially in areas that have been stressed by the growing populations and the rising demand for natural resources. Among the potential interventions in ensuring natural resources management include: (i) improvement of soil fertility through adoption of soil fertility-enhancing technologies; (ii) rescuing forests and wetlands through introduction of management regimes; and (iii) addressing flooding in lowlands and sedimentation of lakes.
 - Harness the enormous potential of water resources for irrigation, as well as for
-

conservation and management innovations to reduce over dependence on rain fed agriculture.

- Investment in the livestock sector to address acute shortfalls in the supply of dairy and meat products, which is currently far below local and export demand. Given that the country faces annual deficits of 86 million tons of meat, 39 million litres of milk, and 18 million eggs as of 2020, more focus should be on modernizing the sector through establishment of basic requisite infrastructure and institutional arrangements to stimulate its growth.

Enabling Policy Environment

- Undertaking land reforms, developing and implementing policies to address the progressive land fragmentation resulting from high demographic growth demands, which have led to steady decline in soil fertility, failure to boost productivity and declining household incomes.

Functional Markets and Transformative Institutions

- Establishing facilities to open up the potential to trade with neighboring countries and international markets. These include: Research laboratories to comply with international sanitary and phytosanitary standards; processing plants to cut down currently significant losses for perishable products; storage facilities; and transport and marketing infrastructure.
- Investment in preparedness and response to natural threats and improved resilience, including early warning systems, and advisories for migratory species.

Knowledge and Information Management

- Strengthen knowledge management and communication within the NARS, especially the NARI, the Agriculture line ministry and the whole range of AR4D actors. Just like Eritrea and Madagascar, Burundi is one of the NARS that is under exposed to the continental AR4D opportunities. Focus is on: Undertaking a holistic communication capacity gap assessment including human capacities, Attitudes Knowledge and Practices (KAPs), infrastructure limitations and institutional bottlenecks; targeted interventions to address knowledge management and communication capacity gaps including provision of infrastructure and harnessing of multi stakeholder partnerships to re-tool the system (ASARECA, 2020).

2. Democratic Republic of Congo Introduction

About 70 percent of the employed population of the Democratic Republic of Congo (DRC) is engaged in subsistence agriculture. However, only about 10 million of the country's 80 million hectares of arable land are under cultivation. The macroeconomic environment in DRC has improved markedly in recent years, yet the livelihoods of most Congolese have not improved (USAID, 2020). The difficult external environment and increased political uncertainty have depressed the near-term economic outlook. DRC ranks among the poorest countries in the world with record rates of extreme poverty in the world. Child malnutrition is widespread, and most of the population lives in conditions of moderate to serious food insecurity. Despite this, DRC, with its area of unparalleled farmland in Africa, offers several investment opportunities in the agricultural sector from production to marketing, to create a chain of competitive value capable of feeding 2 billion people (UNDP, 2019).

AR4D priority investment areas

Amid the extremes as the country with some of the richest natural resource base in Africa, largest population globally, poorest people and starving people, DRC offers some of the most exciting potential for agricultural and development growth rates. Targeted investment is urgently needed, especially in significant capacity building and institutional support in the agriculture sector to help the country to get out of this situation (IFAD, 2019). Some of the key priorities include:

Transformative Capacity Strengthening and Integration

- Strengthening human, institutional and infrastructural capacity for increased production and access to services. Investments should be targeted to: Strengthening the capacity of the National Agricultural Research System to conduct research and priority setting for AR4D; rehabilitation and establishment of AR4D infrastructure including research laboratories, training facilities including capacity building for financial services.

Agricultural Transformation Technologies and Innovations

- Increasing the amount of land under cultivation and promotion of integrated crop management technologies to improve productivity of smallholder farmers to increase food security and sustainable, equitable economic development.
- Establishing a system of phytosanitary surveillance and management of plant and animal quarantine in the interior of the country and at border points and regular update of the relevant regulatory measures.

Enabling Policy Environment

- Addressing the progressive land atomization and fragmentation resulting from the pressure high demographic growth demands which have led to steady decline in soil fertility, failure to boost productivity and declining household incomes.

Functional Markets and Transformative Institutions

- Promoting industrialization in crops with the highest foreign exchange potential such as coffee, cocoa, tea, cinchona, sugar, palm oil, cattle, swine, poultry maize, cassava, rice, soybeans, peanuts, peas, beans, and fish. This entails: reinvigorating the value chains; development of agro-industrial zones and industrial parks; and supporting large scale farmers to invest in the appropriate zones.
- Supporting producer cooperatives to access markets by improving productivity, value addition; establishment of bulking and storage facilities; strengthening supervision of cooperatives; opening up feeder roads for market access.
- Providing incentives for the development of rural business activities directly aimed at establishing agri-food partnerships by building strengthening partnerships between farmers, financial institutions, input suppliers and traders; and setting up business development services for rural enterprises.

Knowledge and Information Management

- Strengthen knowledge management and communication within the NARS, especially the NARI, the Agriculture line ministry and the whole range of AR4D arena globally. Just like Eritrea and Madagascar, Burundi is one of the NARS that is inadequately is less exposed to the continental AR4D opportunities. Investments will be targeted to: Undertaking a
-

holistic communication capacity gap assessment including human capacities, Attitudes Knowledge and Practices (KAPs), infrastructure limitations and institutional bottlenecks; targeted interventions to address knowledge management and communication capacity gaps including provision of infrastructure and harnessing of multi stakeholder partnerships to re-tool the system (ASARECA, 2019).

- Design and implementation of a system for monitoring and evaluation of agricultural development programs for government personnel, staff of the National Agricultural Research Institutions and assorted NGOs to collect, analyse and publish agricultural information

3. Ethiopia Introduction

Ethiopia has had a history of acute food shortages that hit the country in 1985 and recently. About 85% of the Ethiopian population earns a living from agriculture, which has influenced the Government to adopt a strategy of 'agricultural development led industrialization (ADLI). Unlike most African countries, land in Ethiopia is owned by the State, which means that land user rights are controlled by the State (ENP, 2015). Smallholder production accounts for 95% of agricultural output, which lack the capacity to produce the expected rapid growth. Ethiopia still faces persistent food insecurity and reliance on food aid with more than seven million receiving regular support from the cash- and food-for-work Productive Safety Net Programme (PSNP), while in any given year several million others face shocks requiring emergency assistance (FAO, 2019).

AR4D priority investment areas

The National AR4D blue print, the Second Growth and Transformation Plan (GTP II) 2016-2020 highlights improving agricultural productivity and commercialization; reducing degradation and improving productivity of natural resources; reducing vulnerability to disaster and building disaster mitigation capacity as some of key priority areas where Government focus is on. Overall capacity strengthening across all AR4D subsectors features as a key priority (ASPI, 2010). Below are highlights of the priority areas:

Transformative Capacity Strengthening and Integration

- Strengthening infrastructure and human capacity for the national agricultural research institutions including the NARIs, universities and colleges to undertake research; the Planning and Programming Directorate (PPD) to mainstream sector priorities; the monitoring and evaluation system to track implementation of priorities.

Agricultural Transformation Technologies and Innovations

- Promoting accelerated growth in agricultural production by focusing on strategic priority high value crops and livestock production through: adoption of improved crop technologies and best practices by smallholder farmers linked with medium and large scale commercial farmers via out-grower schemes and contract farming arrangements; enhanced services for testing and certification of chemical use; enhanced cooperative capacity and efficiency, and reduced pre and post-harvest losses.
 - Promoting the adoption of improved livestock husbandry and feed production technologies; stimulating private sector investment in commercial livestock enterprises; and strengthening systems for certification of livestock products.
 - Promoting sustainable, broad-based, and inclusive agricultural development through: Reclamation of areas devastated by aridity, soil erosion and flooding; enhanced conservation of indigenous biodiversity resources while facilitating livelihoods
-

improvement; irrigation and forestry development.

Enabling Policy Environment

- Boosting capacity for policy analysis in the Agriculture, Planning and Finance sectors to confront policy reforms and institutional arrangements including policy gaps in use of agricultural water to produce high-value staple food crops and livestock feeds; and gaps in drought resilience and sustainable livelihoods.
- Enhancing food and nutrition security through strengthening of disaster prevention and response ability, and ensuring adequate and timely food transfers to chronically food insecure households such as pastoral and agro-pastoralist households.

Functional Markets and Transformative Institutions

- Boosting domestic and external markets through promotion of commodity value chains and agribusiness development. Emphasis is on: establishment of market systems that benefit farmers and non-farm rural actors; creation of institutional reforms, investments, and incentives that are favorable for farmers and agro-entrepreneurs to develop high-value products
- Development of market-oriented rural infrastructure; and strengthening rural financial systems to drive agriculture.

Knowledge and Information Management

- Building institutional capacity for implementing monitoring and evaluation of agricultural development inclining data capture to inform policy options. Investments in this area should focus on building requisite AR4D skills, developing performance competencies and attitudes of staff in the National Agricultural Research System.

4. Eritrea Introduction

Subsistence agriculture employs about 80 percent of Eritrea's population, but its contribution to the economy is minimal. Eritrea has substantial natural resources that can be developed to sustain socioeconomic development including land and water resources and arable land (17%) suitable for crop and horticultural production. Of this, 0.6 million hectare is suitable for irrigation, while 0.5% of the total land area is forest. Eritrea can only become self-sufficient in food production if it is able to address the failure of the agricultural sector to increase production on the supply side and the inability or the poor purchasing power of the population on the demand side to supplement the food needs (Ravinder, 2015).

AR4D priority investment areas

The policy of the government of the state of Eritrea is to transform traditional farming system into modern irrigated commercial farming system and develop market-lead economy. To help the country to get out of this situation, targeted investment is urgently needed in the following areas:

Transformative Capacity Strengthening and Integration

- Strengthening infrastructure and human capacity for the national agricultural research institutions including the line ministries, the NARIs, universities, and colleges to undertake planning, research, priority setting and monitor and evaluate implementation.
 - Building capacity in preparedness and response to natural threats and improve resilience,
-

including early warning systems and farmer advisories for migratory species; improved productivity and market access of crop and livestock, including integrated pest management, improved seed multiplication, micro-irrigation and pressurized irrigation systems.

Agricultural Transformation Technologies and Innovations

- Promoting irrigated and supplementary irrigated agriculture and water harvesting through the construction of dams and wells, improvement of small and large-scale irrigation schemes, and expansion of water efficient pressurized irrigation system.
- Sustainable natural resources management through protection of wildlife and forest resources; protection of catchments augmented by reforestation; promotion of multipurpose tree species and agroforestry; farmland leveling and consolidation of fragmented and degraded plots to secure land of promote mechanization.
- Increasing agricultural productivity through crop/livestock intensification and integration in strategic and industrial crops such as pulses and high value horticultural crops and livestock resources.

Enabling Policy Environment

- Boosting capacity for policy analysis in the Agriculture, Planning and Finance sectors to

Functional Markets and Transformative Institutions

- Promotion of efficient post-harvest management and establishment of appropriate agro-processing and storage facilities including cold stores for horticultural products and milk, silos for grains; and value chain development of pelagic fisheries resources.

Knowledge and Information Management

- Strengthen knowledge management and communication within the NARS, especially the NARI, the Agriculture line ministry and the whole range of AR4D arena globally. Investments will be targeted to: Undertaking a holistic communication capacity gap assessment including human capacities, Attitudes Knowledge and Practices (KAPs), infrastructure limitations and institutional bottlenecks; targeted interventions to address knowledge management and communication capacity gaps including provision of infrastructure and harnessing of multi stakeholder partnerships to re-tool the system.

5. Uganda Introduction

Agriculture is the backbone of Uganda's economy, employing 72% of the population, 77 percent of whom are women, 63 percent youth, and contributing half of the export earnings and a quarter of the country's gross domestic product (GDP). Since most Ugandans live in rural areas and practice farming, raising agriculture incomes is a centerpiece of Uganda's Second National Development Plan (NDPII): 2015-2020, which is critical to reducing poverty, boosting prosperity and creating jobs, especially for women and youth. In the backdrop of this, the rising population and growth in incomes have increased the demand for food and agro-processed products putting increased pressure on the environment amid frequent and severe climate conditions, made worse by the continued dependence on rain fed agriculture(DSIP, 2015). Combined with poor agricultural practices, low technological adoption, insecurity over land ownership, poor access to extension services, low quality inputs, and lack of credit, the agriculture sector continues to be hindered from realizing its full potential. Challenges notwithstanding, Ugandan agriculture has enormous potential to transform the economy and make farming much more productive and profitable for

Ugandan smallholder farmers (PIP, 2018).

AR4D priority investment areas

In contrast to the gloomy supply-side constraints, demand-side opportunities for agriculture and food for Uganda and its neighbors including a booming domestic and regional demand for higher-value foods, urbanization, and dietary shifts offer massive opportunities for Ugandan farmers. The following are priority investment options for Uganda's agriculture:

Transformative Capacity Strengthening and Integration

- Strengthening infrastructure and human capacity for the national agricultural research
- Development of incentive schemes for acquisition and maintenance of mechanization equipment including purchase of tractors, rehabilitation and refurbishment of the mechanization resource centres, building capacity for technical training operators, mechanics, technicians and farmers.

Agricultural Transformation Technologies and Innovations

- Promotion of climate smart Agriculture Technologies, Innovations, and Management Practices (TIMPS) to enhance resilience of agriculture production and rural livelihoods. Investments target increasing the resilience of agro-ecosystems and of rural livelihoods; increasing alternatives for rural farmers in terms of finance and other safety nets; and making them less susceptible to climate-related hazards.
- Increasing productivity and commercialization of selected agricultural commodities in specified clusters of districts across the country (maize, beans, rice, cassava, coffee); in the 12 twelve national priority commodities (bananas, beans, maize, rice, cassava, tea, coffee, fruits and vegetables, dairy, fish, livestock/meat); and in the four strategic commodities (cocoa, cotton, oil seeds, and oil palm).
- Strengthening agricultural research; implementing the single spine extension system; technology adaptation at the farm level; increasing access to and effective use of critical farm inputs; promoting sustainable land use and soil management; increasing access to agricultural finance with specific options for women farmers; and strengthening agricultural institutions for effective coordination and service delivery.
- Boosting the contribution of the goat industry to incomes and welfare through control of diseases such as FMD, Trypanosomiasis, Newcastle, Lumpy skin disease, and Brucellosis, and promoting, sustainable fisheries development through improvement of infrastructure and environment for fish production, handling markets, and good marketing strategies.
- Research and development in agro processing and value addition, post harvest management including research in aflatoxins in foodstuffs to improve food safety for commercialization.
- Research and development in low cost irrigation and mechanization technologies to address water deficits.
- Controlling crop pests and diseases, particularly epidemic ones including BXW, CMD, and FAW by strengthening pest and disease surveillance, forecast, monitoring and diagnostic systems for timely response.

Enabling Policy Environment

- Strengthening public institutions and creating an enabling policy environment by enhancing the capacity of Ministry of Agriculture staff and staff of the National Agricultural Research Institutes and their agencies and district Local Government production departments for efficient and effective implementation of the agriculture programs.

Functional Markets and Transformative Institutions

Just like Kenya and Rwanda, Uganda has a relatively more advanced capacity, is net-exporter in the commodities and is better placed to access regional markets (ECAATP PAD, 2018). Investments therefore should focus on supporting private sector value addition to stimulate inclusive business models and improve linkages among smallholders and firms of all sizes thereby improving the countries Balance of Payments; providing complementary public goods and services like agricultural research and roads in rural areas to reduce the private investment risk

- Commercialization of agriculture, to increase production and productivity along the value chains including agro-processing and marketing as a launch path to industrialization.

Knowledge and Information Management

Improving smallholder farmer's access to Agriculture information and financial services, building functional input and output markets, improving the agribusiness environment, strengthening agricultural regulatory services and access to finance for farmers.

- Establishing an efficient National Food and Agricultural Statistics (NFAS) system to provide data to underpin major government policy programmes.

6. Rwanda Introduction

Rwanda is a landlocked country with 26,338 square kilometers dominated by highlands and lowest altitude in 950m above the sea level. Due to this, 90% of Rwanda's domestic cropland is on slopes ranging from 5% to 55%. With 441 inhabitants per square kilometer, Rwanda had the second highest population density in Africa as of 2015. Agriculture is the main economic activity in Rwanda with 70% of the population engaged in the sector, and around 72% of the working population employed in agriculture. The agricultural sector accounts for 33% of the national GDP. Majority of the agricultural labor force in Rwanda is women (87 percent), but women don't have equal access to production technologies and markets. Tea and coffee are the major exports while plantains, cassava, potatoes, sweet potatoes, maize and beans are the most productive crops (MINAGRI, 2018). Rwanda exports dry beans, potatoes, maize, rice, cassava flour, maize flour, poultry and live animals within Eastern Africa. Due to the strong link between agriculture and poverty, the challenges in Rwanda's agriculture are also drivers of rural poverty. Despite remarkable improvements over recent years, the agricultural sector in Rwanda still faces many challenges including land degradation and soil erosion, inequitable land use and distribution, over dependence on rainfall and vulnerability to climate shocks, low levels of productivity for both crops and livestock poor processing capacity. Building resiliency in the agriculture sector would stabilize growth in Rwanda (World Bank, 2018).

AR4D priority investment areas

Due to land scarcity, the Government of Rwanda is promoting intensification as a strategy to increase production and farmers' incomes and accordingly move Rwandan agriculture from a largely subsistence sector to a more knowledge-intensive, market-oriented sector. The following are priority investment area for Rwanda's agriculture:

Transformative Capacity Strengthening and Integration

- Building capacity for resilience through on-farm measures to increase productivity through alternative land management to complement terracing with comprehensive climate smart soil and integrated watershed management, better weather and climate information and early warning.
- Strengthening infrastructure and human capacity for agricultural research through partnerships including linking with universities, middle education institutes, and farmer training centres to ensure that appropriate training, knowledge, and skills are imparted to the various actors involved in planning, implementing, and managing land husbandry practices.

Agricultural Transformation Technologies and Innovations

- Generating effective land husbandry practices to address soil fertility challenges, within an integrated landscape management approach; promoting innovation and extension services through improvement in agronomic knowledge and technology and innovation, aimed at developing improved varieties and breeds.
- Enhancing productivity and resilience through strengthening of sustainable and resilient production systems for crops and animal resources. Significant investment is required in irrigation to increase the irrigated areas from 48,508 ha to 102,284 ha.
- Fighting land erosion through radical terracing; promoting biological soil control measures; increase access to fertilizers, boosting animal and fisheries production; and mainstreaming nutrition sensitive agriculture; building resilience around natural resources (land and water) through development of decision tools for predicting soil degradation, landslides and nutrients losses.

Enabling Policy Environment

- Creating responsive institutions through evidence-based policymaking.
- Enhanced focus in policy analysis and enhancing capacity to gather information and convert it to evidence-based policy. New technologies such as satellite imagery and electronic farmer feedback are earmarked.

Functional Markets and Transformative Institutions

- Facilitating the establishment of inclusive markets and linkages between production and processing, especially input markets such as fertilizers, insurance, finance aggregation, promotion of value addition, market infrastructure and export readiness through creation of productive alliances for soft infrastructure along the value chains including storage facilities, drying grounds and local cold rooms.

Knowledge and Information Management

- Creating a central repository of knowledge and expertise on land husbandry and institutionalizing knowledge management and sharing to roll out best practices and technologies.

7. Kenya Introduction

The agriculture sector continues to play a vital role in Kenya's economy. The sector was one of the first to fully devolve the function of service provision to the county governments underscoring the importance of County Governments' role in ensuring food security. Agriculture contributes 26 per cent of the Gross Domestic Product (GDP) and another 27 per cent of GDP indirectly through linkages with other sectors. The sector employs more than 40 per cent of the total population and

more than 70 per cent of Kenya's rural people. Despite Kenya's impressive advances across the economy, in innovation and entrepreneurship, private sector enterprise, infrastructure, public service delivery and human capabilities, agriculture continues to be the bedrock of development (ASGTS, 2019). The NAIP's nine flagships underpin Kenya's shift towards a vibrant, commercial and modern agricultural sector that sustainably supports Kenya's development and 100% food security aspiration in the context of devolution, and commitments to CAADP and the SDGs.

AR4D priority investment areas

Accordingly, Kenya's NAIP prioritizes two flagships to increase small-scale farmer, pastoralist and fisherfolk incomes; two flagships to increase agricultural output and value addition; two flagships to boost household food resilience; and three enablers that run across the anchors. Below are the flagships/priorities:

Transformative Capacity Strengthening and Integration

- With the best capacity in AR4D of the 12 ASARECA countries, Kenya in the recent years achieved the middle-income status index, but growth in agriculture has in the recent years been slowed down by prolonged dry spells. Therefore, and overall, building the capacity for resilience in Kenya as a matter of priority could stabilize the performance of Agriculture.

Agricultural Transformation Technologies and Innovations

- Increasing the incomes of 1 million farmers in 40 crop, livestock and fish production zones by providing them with a selection of farm inputs, irrigation equipment, and post-harvest handling aggregation served by farmer-facing SMEs.
- Unlocking six agro-processing facilities so as to unlock 50 new large-scale (>2,500 acre) farms delivering KES 70 billion of agricultural GDP by setting up 6 agro-processing hubs across the country through a rapid one-stop shop private public partnerships for domestic and export markets.

Enabling Policy Environment

- Restructuring governance and operations of the Strategic Food Reserve (SFR) to better serve 4 million vulnerable Kenyans by improving governance and decision making of the SFR.
- Boosting resilience of 1.3 million farming and pastoralist households in Arid and Semi-Arid Lands (ASALs) through community-driven interventions, and active national and county government coordination.
- Monitoring responses to two key food system risks, mainly sustainable and climate smart natural resource management including health of water basins, soil quality and land use; and crisis management for disease and pests.

Functional Markets and Transformative Institutions

- Empowering 1.4 million registered high-needs farmers to access inputs from a range of PPPs providers enabled by digital service delivery. The target is to diversify the agricultural subsidies programme to increase farmers' ability to invest in the right inputs. This entails registering farmers for eligibility; procurement of fertilizer, maize seed and animal feed to the farmers; providing extension services; and aflatoxin treatment.

Knowledge and Information Management

- Building critical transformation knowledge and skills for national and county government leaders, public and private sector flagship implementers (including 1,000 change agent SMEs), and revitalizing extension services through IT-enabled youth extension agents.
- Strengthening research and innovation through digital and data use to drive decision making in digital subsidy delivery, production forecasting, and monitoring of inputs transfer.
- Establishing a digital system to track performance of the SMEs, subsidies awarded for renewal to farmers.

8. Madagascar Introduction

Madagascar is covered with 8% agriculture land, 21% of forest, and 57% of pasture. Agriculture is an important sector in Madagascar's economy accounting for almost 30% of the country's gross domestic product and employing some 78% of the country's labour force PSAEP, 2016.. Most farming in the country is subsistence. The major challenges are poor institutional capacity and regulation, empowerment of civil society and the production system. In October 2015, the Ministry of Agriculture, FAO and the WFP announced that 46% of the population in Madagascar was food insecure because of a significant decrease in agricultural production over the past three agricultural seasons. This is as a result of shortages in rainfall, which also impacted the main harvest for 2015.

AR4D priority investment areas

The 2009 political crisis interrupted the drafting of Madagascar's CAADP Compact. It was eventually signed in 2013 to support the implementation of the Sector-based Programme for Agriculture, Livestock and Fisheries (PSAEP), and launched in 2016, together with the National Plan for Investment in Agriculture, Livestock and Fisheries (PNIAEP). Just like Burundi, South Sudan and Eritrea, Madagascar requires support in building various capacities to implement major priority AR4D investment areas (ASARECA, 2020):

Transformative Capacity Strengthening and Integration

- Capacity strengthening to leverage partnerships to build the national AR4D capacity and to attract flows of various public goods generated from ASARECA member countries and international partners to stimulate growth in AR4D; students to undertake Masters and PhD Studies; young scientists to access coaching, placements and mentorship programmes; research management training for NARI staff; establishing research infrastructure and equipment; streamlining best bet institutional arrangements; and foresight activities for surveillance and early warning.
-
- Strengthening the capacity for evaluation of the agricultural extension support system, including public and non-public actors; capacity to assess the requirements of producers and markets; organizational performance and links with other actors in the agri-food system.

Agricultural Transformation Technologies and Innovations

- Promoting inclusive and efficient agri-food development, taking into account food safety, nutrition and gender equality to stabilize food and nutrition security.
 - Increasing producers' resilience to effects of climate change through the promotion of Climate Smart Agriculture (CSA) approaches and techniques including access to quality and resilient seeds, provision of micro-irrigation facilities; promoting agricultural diversification, and out scaling Early Warning Early Actions against plant and animal pests
-

- and diseases including invasive and transboundary disasters such as the locust attacks.
- Sustainable management of natural resources through the restoration of degraded agricultural lands and forest landscapes to increase agriculture land; attracting sustainable financing mechanisms to promote environmental initiatives and in improving governance (Word Bank, 2013).
- Increasing land productivity by slowing down land degradation through forest landscape restoration with an ambitious goal of restoring 4 million ha by 2030.

Enabling Policy Environment

- Undertaking a comprehensive institutional and policy bottlenecks that inhibit the performance of AR4D as well as undermine Madagascar's participation in the global markets.

Functional Markets and Transformative Institutions

- Improvement of sanitary and phytosanitary systems to reinforce inter and intra-regional trade. As the world's largest producer of natural vanilla, farmers in Madagascar are keen on ensuring attaining a fair trade network.
- Empowering most vulnerable high-needs farmers to access inputs from a range of PPPs

Knowledge and Information Management

- Strengthening knowledge management and communication within the NARS, especially the NARI, the Agriculture line ministry and the whole range of AR4D arena globally. Madagascar is one of the NARS that is inadequately exposed to the continental AR4D opportunities. Investments will be targeted to: Undertaking a holistic communication capacity gap assessment including human capacities, Attitudes Knowledge and Practices (KAPs), infrastructure limitations and institutional bottlenecks; targeted interventions to address knowledge management and communication capacity gaps including provision of infrastructure and harnessing of multi stakeholder partnerships to re-tool the system.

9. Tanzania Introduction

Tanzania has 94.5 million hectares of land of which 44 million hectares are classified as arable, but only 24% of the arable land is under cultivation. Of the 50 million hectares, suitable for livestock, only 26 million hectares is under use while the rest cannot be accessed mainly due to tsetse fly infestation. Tanzania has the third largest livestock population in Africa after Sudan and Ethiopia. About 29.4 million hectares are assessed as potential for irrigation, but the area under irrigation by 2013 was only 450,392 ha, which is less than 20 percent of the potential. Though the country is well endowed with a high potential base for agriculture development, there is only a small quantity of large-scale commercial farms in the sector. Smallholders dominate the sector, which contributes about 24 per cent of GDP; and about 24 percent of exports (TAFSIF, 2011). The sector has generally registered slower growth rate, at about 4.2 percent than the targeted 6 percent, which was considered adequate to propel the economy to a growth trajectory of above 8 percent per annum.

AR4D priority investment areas

The Governments Vision of the of the Agriculture sector is: a modernized, commercial, market-oriented, highly productive, profitable, and resilient sector that utilizes natural resources in a sustainable manner for food security, expanding export markets and contributing to improved livelihoods (ASDSII, 2015). These priorities are broken down in the complementary policy

documents (ASDSII, 2015; TAFSIF, 2011).The following priorities have been earmarked to achieve Tanzania's Vision 2025.

Transformative Capacity Strengthening and Integration

- Developing the capacity of the agriculture ministry and extension staff to expand fertilizer use efficiency to deal with effective fertilizer and complementary inputs placement and use; and performing analysis of the distribution network.

Agricultural Transformation Technologies and Innovations

- Increasing and sustaining productivity of priority commodities through improvement of technology generation and delivery systems; stimulating adoption of yield-enhancing technologies, reduced on-farm and post-harvest losses, and improved livestock health services.
- Expanding the scope and impact of agricultural extension services and adapting the system to the needs of farmers by establishing institutionalized means of capturing farmer challenges; and recruiting one specialized extension agent per village.
- Accelerating water resources management and irrigation development through water resources planning and management; and re-examination of existing institutional structure, especially for watershed management, small and medium scale irrigation.
- Mitigation and adaptation to effects of climate change and disasters through research and information exchange nationally, regionally and internationally on new crops/varieties and farming systems for resilience; improved water use efficiency; land and soil management; and building foresight capacity to respond to disasters.

Enabling Policy Environment

- Reforming policy and institutional support by increasing investments in AR4D research, science technology and innovation to create the needed larger than average size research system to suit the country's diverse physical conditions and the potential for a wide range of commodities. Investments are needed to establish additional agricultural sub-stations to integrate farmers to the AR4D system and to support the current 16 public Agricultural Research Institutes.

Functional Markets and Transformative Institutions

- Increasing market access and trade through collaboration between the public and private sectors to empower producers and enhance market linkages, value addition and rural financing; establishing international and border market points; and creating marketing infrastructure for livestock and the warehouse receipt system for crops.
- Expanding agricultural development banking by creating additional rural banking branches and micro credit institutions to cover a large scope.

10. Sudan Introduction

Despite remarkable, oil-driven economic growth of about 8 percent per year during 2000–10, Sudan has experienced unprecedented poverty and food insecurity over the past two decades brought about, in part, by the poor and inconsistent performance of the agricultural sector, which employs roughly 80 percent of the country's work force(IFPRI, 2010).It is estimated that two-thirds of Sudan's total population live in rural areas and 58 percent are poor with 2 million children

suffering from acute malnutrition. There are widespread conflicts over ownership and use of land and other natural resources among pastoralists, agropastoralists and crop farmers, and over efforts to converse range and forest land into large mechanized farming. Nearly one-third (38%) of the GDP comes from Agriculture with more than one-third of the workforce engaged in agriculture and agro processing industries (FAO. 2015). The agricultural sector is responsible for 80 percent of the country's export (NAI, 2014). However agricultural productivity is low and variable due to erratic climatic conditions, degraded soils, low use of productivity-enhancing technologies, limited knowledge and poor access to rural finance services. In addition, gold mining is competing with agriculture over labour and land (IFAD, 2013).

AR4D priority investment areas

During the 1990s, agricultural research and development (R&D) investments in Sudan declined rapidly but this trend reversed in more recent years due to increased recognition of the importance of agriculture to the economy. Until the recent social upheavals, which led to change in Government, various reforms had led to increased R&D investments (IFPRI, 2010). The Government's growth priority for the agricultural sector is hinged on the following priority investment areas:

Transformative Capacity Strengthening and Integration

- Improving the weakening agricultural research and extension system by increasing public and private sector agricultural research and development investment including effectively putting in place measures to replace the now retiring experienced senior scientists with junior scientists through high-level training and enhancement of institutional and infrastructure.
- Expanding disaster risk management by building the capacity for foresight research.

Agricultural Transformation Technologies and Innovations

- Reducing over dependence on rainfed agriculture through development of capacity application of small and large-scale water harvesting technologies such as rain and groundwater resources harvesting technologies by making agricultural equipment and inputs locally, including equipment for rain and underground water harvesting.
- Enhancing agriculture productivity in crops, livestock, fisheries and forestry by addressing risks such as transboundary plant and animal pests and diseases; diversification of commodities; and expanding area of production.

Enabling Policy Environment

- Development of technical and functional capacity for policy formulation and institutional planning by building capacity for policy coordination and revising outdated agriculture and natural resources policies.
- Reforming the land tenure and land use system through rehabilitation of rangelands and facilitation of fair resource sharing to address land degradation which has dramatically increased vulnerability to climate change.

Functional Markets and Transformative Institutions

- Promoting market access by harnessing the strategic location and proximity of Sudan to the East, North Africa and Europe for trade and exploiting the potential for forward and
-

backward linkages between agriculture and industry value chains to promote exports.

- Increasing investment in rural infrastructure including irrigation systems, market access roads, rail tracks; implementation of phytosanitary standards; and expanding export through implementation of quality standards for livestock products; and expanding facilities such as slaughterhouses, agroprocessing and quarantine, veterinary inspection, and cold storage.

Knowledge and Information Management

- Improving data collection and analysis to inform policy options and future research for development investments for food and nutrition security.

11. South Sudan Introduction

Over 95% of the total area of South Sudan (658,842 km²) is considered suitable for agriculture, 50% of which is prime agricultural land. Yet the country remains one of the least developed in the world and faces formidable challenges. While a majority of the population is dependent on subsistence farming and pastoralism as sources of livelihoods, a considerable number of people continue to rely on relief assistance to meet their needs. A large part of the country, particularly the southern part, has high rainfall for 8-9 months a year. South Sudan is grappling at the very basic stage of establishing a blue print for AR4D prioritisation and investments. The country has developed the Comprehensive Agriculture Master Plan (CAMP) and the Irrigation Development Master Plan (IDMP), the first national agriculture development plans and a comprehensive set of technical documents to guide agricultural development for 25 years.

Investment Priorities

South Sudan's investment priorities are embedded in the CAMP, which covers five subsectors (crops, livestock, fishery, forestry and institutional development) and the IDMP, which complements the CAMP. The key priorities can be categorized into four broad areas including addressing hunger and food insecurity through increased food production; leveraging the agricultural sector to improve rural livelihoods and generate income; diversifying the economy through a modernized, competitive agricultural sector; and harmonizing and streamlining public and private investments and development assistance in the sector through enhanced capacity for planning and implementation. Below is a breakdown of the priorities:

Transformative Capacity Strengthening and Integration

- Building capacity for capacity for extension services through establishment and maintenance a public sector crop and livestock extension system, training a critical mass of extension staff, facilitating the movement to intervention sites, and enforcing inspection.
- Building infrastructure that is critical for Agriculture transformation such as trunk and feeder roads, , railway, electricity, ICT and storage facilities hence reducing the cost of transportation, increase access to domestic, regional and international markets.

Agricultural Transformation Technologies and Innovations

- Setting up a functional national institutional system with the line ministries providing policy and political roles; a national AR4D apex institution with research institutes akin to the EAC member-countries NARI system taking charge of AR4D implementation; and investing in human, institutional and infrastructure capacity development including increased funding to public universities offering training in animal production and health, and crops to increase intake of students, attract qualified staff, provide short-term refresher trainings, and
-

establish research infrastructure.

- Promoting agricultural productivity-enhancing technologies including the use of improved varieties of seed or breeds of livestock that are resistant to common diseases and which are more productive; and upgrading the genetic base.
- Increasing agricultural productivity in six agro-ecological zones six zones including the green belt tropical, iron stone plateau, flat plains, Nile-Sobat corridor, the semi-arid areas and the hilly mountains, through technological advancement and the improvement of seed varieties hence expanding substantially the area under cultivation
- Promoting strategic International Partnerships in Agriculture to facilitate transfer of proven agricultural technologies without reinventing the wheel.
- Exploiting full potential of natural resources while promoting conservation best practices for Climate Change mitigation through investment in agroforestry, large-scale private investment in forest resources use and conservation; exploration of market opportunities for forest products and community forestry to address rapid degradation of biodiversity resources

Enabling Policy Environment

- Promoting private sector-led development through policy formulation and regulatory framework, provision of public goods and safety nets for the socially vulnerable; providing macroeconomic support through basic infrastructure development including roads, electricity and water supply; reintegration the health, education sectors; and designing mechanisms to deliver agriculture services including regulating private sector activities for fair market competition.
- Creating policies for market information systems to boost production through market driven seed production and distribution system, expansion of mobile voice and data telecommunication to facilitate market information generation and dissemination to open up outreach and agricultural value chains development.
- Reforming and the land tenure system to promote foreign direct investment in large scale farming and reforming the laws to provide access and rights to women who from the bulk of the agriculture labourforce; clarifying procedures for large-scale land acquisition and provision of systematic support regarding access to land, farming and other income generating activities to facilitate the reintegration of IDPs in the farming system.

Functional Markets and Transformative Institutions

- Strengthening entrepreneurship to transform the sector from a subsistence to commercial orientation by introducing modern farming technologies including mechanization, use of fertilizers and improved varieties; introduction of producer cooperatives; rescuing the sector from over reliance of rainfall; and transforming the livestock sector to a business orientation for income generation and stimulating private sector participation.
- Establishment of farmer/producer organizations by reviving weakened farm cooperatives and establishing new ones to address dynamic value chains.
- Move agriculture from humanitarian aid along a continuum to recovery, resilience, and to development by expanding it beyond household production and consumption to production for income generation through support for formation of innovations platforms to ease access knowledge, new technologies, and input and output markets.

Knowledge and Information Management

- Strengthen knowledge management and communication within the NARS, especially the
-

NARI, the Agriculture line ministry and the whole range of AR4D arena globally. Investments will be targeted to: Undertaking a holistic communication capacity gap assessment including human capacities, Attitudes Knowledge and Practices (KAPs), infrastructure limitations and institutional bottlenecks; targeted interventions to address knowledge management and communication capacity gaps including provision of infrastructure and harnessing of multi stakeholder partnerships to re-tool the system.

12. Republic of the Congo Introduction

Republic of the Congo (RoC) has more than 10 million ha of arable land, more than 90.0 percent of which remains uncultivated. The performance of the agriculture sector is sub-optimal because of low investment, even though the international market offers huge prospects for agricultural and fish products. Since the 1980s, RoC has experienced a steady shrinkage of agriculture's share in GDP from 20 percent to only 4 percent recently. Trends in the sector are exacerbating food insecurity and making the country increasingly dependent on the outside world for its food. While agricultural output has declined, imports of foodstuffs have risen sharply. The country's lackluster performance is attributed to a combination of factors, including: The heavy predominance of small family farms in a very sparsely populated country; the lack of sufficient human, technological, and financial resources resulting into low productivity and incomes; and rural exodus and the aging of agricultural assets (NDP,2012).

Investment Priorities

The tagline for RoC's priority investment is transforming agriculture from a subsistence traditional farming system to modern commercial farming. This entails improving productivity through productivity enhancing modern agricultural technologies to remove the over 81 percent of the population from traditional agriculture to modern agriculture by supporting farmers and micro, small and medium enterprises. Below are key transformation priorities:

Transformative Capacity Strengthening and Integration

- Strengthening the institutional capacity to support the development of commercial agriculture by promoting a business climate, public-private dialogue, and the capacity of the rather small number of the agro pastoral population to increase crop and livestock productivity using modern tools and approaches.
- Strengthening the national capacity, including the capacity of change agents such as civil society and producer organizations to respond to emergencies and disasters associated with climate change through forecast and foresight modeling.

Agricultural Transformation Technologies and Innovations

- Enhancing the capacity for the production of fish and aquatic resources through technical assistance to undertake a comprehensive fisheries sector survey to determine protected areas, undertake biological studies for the development of fisheries, inland aquaculture and commercial species habitats; undertaking coordinated capacity building programs for operators; and building infrastructure including modern floating cages with hatcheries; production and distribution of inputs, jetties for offloading, processing and preservation of fish, and other support services.
 - Supporting the development of an irrigation master plan linked to a priority investment programme, to contribute to the integrated use of water resources for agriculture, livestock and fisheries.
-

Enabling Policy Environment

- Transforming the current communal ownership of the land to a market economy oriented system with large-scale agriculture to attract foreign direct investment, financial interventions to open up to the export markets.
- Strengthening the international trade policy through regional integration and multilateral cooperation with emphasis on promotion of Congolese exports. Investments should be aligned to increasing compliance with WTO reciprocity agreements of trade defense instruments to protect Congolese products from unfair trade practices. This entails focusing resources to the creation of quality control laboratories and strengthening regional integration to diversify trade agreements.

Functional Markets and Transformative Institutions

- Improvement of public infrastructure and the business climate for commercial agriculture by making locally produced agricultural products more competitive; reducing transaction costs and enhancing connectivity between rural, per-urban areas and the growing urban markets.
- Addressing market constraints by matching food production with population growth while cutting back on food imports, and addressing weaknesses in production capacities, trade policies and the lack of competitiveness.

Knowledge and Information Management

- Strengthening the capacity for knowledge management by laying emphasis on knowledge management to build the “Future Path” and reenergizing scientific research through participation in the generation of knowledge locally and globally for onward dissemination to extension, farmers and all sector actors; evaluation of knowledge; building human and infrastructure capacity for knowledge management, storage and dissemination.



*Copyright © *2019*ASARECA*, All rights reserved.*

Association for Strengthening Agricultural Research in Eastern and Central Africa
(ASARECA)

Plot 5, Mpigi Road | P. O. Box 765, Entebbe, Uganda

Tel: +256 414 320 556, +256 414 321 885

Email: newsletter@asareca.org

or Email:: Technical Communication Officer: b.ilakut@asareca.org

Website: www.asareca.org

Want to change how you receive these emails?

You can [update your preferences](#) or [unsubscribe from this list](#).

Disclaimer. Reasonable care has been taken to ensure that the information provided in ASARECA

Newsletter is accurate. However, ASARECA does not vouch for the accuracy of information provided on websites to which the Newsletter links. Opinions shared on external sites and ASARECA Newsletter as well as articles, editorials, news, comments and reviews, reflect the individual views of the authors and should not be construed to be those of ASARECA or its partners.

|IF:REWARDS| *|HTML:REWARDS|* *|END:IF|*