AFRICAN UNION
Semi-Arid Food Grains Research and Development
AU-SAFGRAD

STRATEGIC AND OPERATIONAL PLAN (SOP) 2019 – 2023

Ouagadougou, Burkina Faso
January 2018

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AGiR	Global Alliance for Resilience
AHSG	African Heads of State and Government
AUC	African Union Commission
AU-SAFGRAD	African Union Semi-Arid Food Grains Research and Development
CAADP	Comprehensive Africa Agriculture Development Programme
CAMA	Conference of African Ministers of Agriculture
CCAFS	Climate Change, Agriculture and Food Security
CFTA	Continental Free Trade Area
CGIAR	CGIAR Organization
CIAT	International Center for Tropical Agriculture
CILSS	Permanent Interstate Committee for Drought Control in the Sahel
CODESRIA	Council for the Development of Social Science Research in Africa
CoPs	Conference of the Parties
CSA	Climate Smart Agriculture
CSOs	Civil Society Organizations
CTA	Technical Centre for Agricultural and Rural ooperation
DRR	Disaster Risk Reduction
EAC	East African Community
EARSAM	East Africa Regional Sorghum and Millet Network
ECCAS	Economic Community of Central African States
ECOWAS	Economic Community of West African States
FANRPAN	Food, Agriculture and Natural Resource Policy Analysis Network
FAO	Food and Agriculture Organization
FARA	Forum for Agricultural Research in Africa
GGWESSI	Great Green Wall for the Sahara and Sahel Initiative
GHACOF	Greater Horn of Africa Climate Outlook Forum
HOAREC	Horn of Africa Regional Environment Centre and Network
HRI	Household Resilience Index
IARCs	International Agricultural Research Centers
ICRISAT	International Crops Research Institute for the Semi-Arid Tropics
ICT	Information and Communication Technologies
IDDRSI	IGAD's Drought Disaster Resilience and Sustainability Initiative
IFPRI	International Food Policy Research Institute
IGAD	Inter-Governmental Agency for Development
IITA	International Institute for Tropical Agriculture
IPs	Innovation Platforms
LEWS	Livestock Early Warning System
NAIPs	National Agriculture Investment Plans
NARCs	National Agricultural Research Centers

NARIs	National Agricultural Research Institutes
NARS	National Agricultural Research Systems
NEPAD	New Partnership for Africa's Development
NGOs	Non-Governmental Organizations
NPCA	NEPAD Planning and Coordinating Agency
NSA	Non-State Actors
NWFP	Non-Wood Forest Products
OAU	Organization of African Unity
OVIs	Objectively Verifiable Indicators
PAFO	Pan-African Farmers' Organization
PoW	Programme of Work
RAIPs	Regional Agriculture Investment Plans
RBM	Results-Based Management
RECs	Regional Economic Communities
RENACO	East and Central Africa Cowpea Research Network
S3A	Science Agenda for Agriculture in Africa
SAZs	Semi-Arid Zones
SROs	Sub-Regional Organizations
SSA	Sub Saharan Africa
STC	Specialized Technical Committees
STISA	Science, Technology and Innovation Strategy for Africa
SWOT	Strengths, Weaknesses, Opportunities and Threats
TPN	Thematic Programme Networks
UEMOA	West African Economic and Monetary Union
UNCCD	United Nations Convention to Combat Desertification
UNFCCC	United Nations Framework Convention on Climate Change
WCASRN	West and Central Africa Sorghum Research Network
WECAMAN	West and Central Africa Maize Network

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Finally, the Office extends its gratitude to all staff members who significantly contributed to and facilitated the preparation of this strategy.

FOREWORD

I am privileged to introduce to you the strategic and operational plan (2019-2023) for African Union's Semi- Arid Food Grain Research and Development office (African Union-SAFGRAD).

Following the success achieved by African Union –SAFGRAD in the Semi-Arid Zones of Africa as well as the considerable gained experiences which have been acquired during the history of the office, we will continue to work and build on its achievements to secure the sustainability and quality of food and improve rural livelihoods in Semi-Arid Zone of Africa. The plan describes how it will add value to strengthen the institutional capacities that would build the resilience of rural livelihoods in Semi -Arid Zone of Africa. Moreover, the plan outlines how African Union-SAFGRAD will advance the achievement of the goals and objectives of the Comprehensive Africa Agriculture Development Programme (CAADP) 2003; Agenda 2063 and Malabo Declaration 2014.

The plan includes two main outcomes that it envisages meeting through the implementation of seven substantive outputs which are the product of the conference held in April 2008, Addis Ababa, Ethiopia and titled "enhancement of rural livelihoods in Semi-Arid Zones of Africa"; the decision of Conference of African Ministers `of Agriculture (CAMA), October 2010 , Lilongwe, Malawi; adopted by Executive Council of the African Union in 2011 (EX.CL/Dec 619(XVII) ; The request of the Excellences African Heads of State and Government in 2014 {Assembly/ AU/Dec.490-516(XXII)} ; the consultancies with various stakeholders and validation workshop held in August 2018 involving key stakeholders and development partners.M

Dr. Ahmed Elmekass,
Coordinator, African Union-SAFGRAD
African Union Commission

EXECUTIVE SUMMARY

The African Union Semi-Arid Food Grain Research and Development's (AU-SAFGRAD's) goal is to contribute to sustainable food security of smallholder agricultural producers in the semi-arid zone (SAZs) of Africa by helping build their resilience to crises and shocks. The SAZs of Africa occupy a large area that spans from Senegal in West Africa through Tunisia in North Africa, Djibouti in East Africa to South Africa. These zones are among the most challenging areas of the world and will become even more so as a result of climate change.

Established in 1977, AU-SAFGRAD has gone through several phases and its main focus areas have evolved over time in response to the roles entrusted with it by AU decision-making bodies. The core functions of AU-SAFGRAD have, over the years, been crystalized into *advocacy*, *networking* and *coordination* pertaining to the advancement of agricultural research and advisory services, the sustainable management of natural resources, and addressing the challenges of desertification and climate change.

This Strategic and Operational Plan (SOP, 2019 - 2023) describes the vision, mandate and strategic objectives that AU-SAFGRAD intends to pursue over the next five years in support of ameliorating rural livelihoods in the SAZs of Africa. Specifically, the objective of the plan is to build resilience and enhance the livelihoods of smallholder agricultural producers and their communities in semi-arid zones of Africa. This is in response mainly to the changing development landscape and the evolving needs of semi-arid zones of Africa.

The development of this SOP has been informed, in part, by lessons learnt from implementing the previous strategic plan. In this regard, an important lesson of experience AU-SAFGRAD learnt is the need for a more intensified engagement with the CAADP process. The new generation CAADP-aligned NAIPs and RAIPS, which are being developed or under consideration by several countries as a response to the Malabo Declaration, offer great opportunities for AU-SAFGRAD to show its value addition by ensuring that issues around halting the desertification process and building resilience to climate change in the context of SAZs and evaluating CAADP's agricultural growth indicators in light of their relevance to semi-arid countries. Moreover, there is a realization that, the support that AU-SAFGRAD provided to regional agricultural value chains development has contributed to enhancing intra-Africa trade. Greater alignment of this body of work with Africa's drive towards a Continental Free Trade regime is likely to have even greater value addition going forward.

This SOP has also benefitted from a critical analysis of issues

confronting semi-arid zones on the Continent and the pathways available to address them. Some of thematic areas that are of critical importance to the improvement of rural livelihoods in SAZs of Africa and which informed the analysis employed in the SOP include the following: land quality and water management; crop-livestock integration and the role of pastoralism; and dry-land forestry. The analysis also took cognizance of key cross-cutting issues of wider significance, including agricultural value chains, technology generation and use, climate change, desertification and disaster risk mitigation; and policy practices and institutional issues.

A SWOT exercise was also undertaken that helped assess the performance of SAFGRAD as well as the factors that needed to be considered in designing the present SOP. In the same vein, a cause-and-effect analysis was also undertaken to map the causality pathways and linkages between the causes of the core problem and their effects on resilience-building outcomes and impact. The outcomes and impacts derived from resolving the core problem were analysed further in order to determine the solutions which then became the strategic goal and objectives to be pursued by AU-SAFGRAD in the next five years.

Thus, the strategic goal of AU-SAFGRAD is summarized as "*contribute to sustainable food security and improved rural livelihoods in semi-arid zones of Africa*." Within the scope of AU-SAFGRAD's mandate, the following two strategic objectives, which in log frame parlance are also considered as *outcomes*, have been identified to contribute to the above-mentioned goal:

1. To strengthen the policy and institutional environment for enhancing the resilience of rural livelihoods in semi-arid zones of Africa; and

2. To strengthen research-related capacity for agricultural productivity and climate change adaptation for enhanced resilience of rural livelihoods in semi-arid zones of Africa.

The following were identified as the outputs that, upon delivery by AU-SAFGRAD, will directly contribute to the achievement of the above-noted outcomes:

a) Policies and strategies addressing key issues affecting the resilience of smallholder livelihoods improved, better aligned and implemented.

b) Partnerships with policy-orientated institutions involved in combating land degradation, desertification and climate change forged

c) Engagement of Non-State Actors (NSAs) in the implementation of relevant continental strategies and declarations supported.

d) Development of agricultural commodity value-chains to

enhance resilience of livelihoods and production systems promoted.

e) Agricultural research and transfer of technologies and innovations that enhance the resilience of smallholder livelihoods facilitated.

f) Operationalization of a platform of climate change and desertification and strengthening implementation of the UNCCD process in Africa facilitated.

g) Institutional capacity and knowledge management system focused on resilience building strengthened.

Each of the above outputs has number activities that AU-SAFGRAD will execute in close collaboration with a number of its programmatic partners. The way in which outcomes, outputs and activities relate to one another and manner in which they will translate into impact is explained in the AU-SAFGRAD's theory of change.

In implementing this strategic and operational plan, AU-SAFGRAD is fully aware that the Agenda 2063 and Malabo Declaration are the framework documents that spell out the political vision for transforming Africa's agriculture and livelihoods. To demonstrate contribution to this vision, it will align the activities, outputs and outcomes with the goals and targets of the first ten years implementation plan of Agenda 2063; Malabo Declaration and the CAADP Results Framework. Actions will also be aligned with those of other relevant global, continental and regional frameworks and initiatives such as the United Nations Sustainable Development Goals (UNSDGs) on combating the impacts of climate change; the UNCCD; the UN Integrated Strategy for the Sahel; and the regional initiatives of FAO, IGAD and ECOWAS.

Finally, the SOP recognizes that successful implementation demands, inter alia, the need for giving due consideration to the following critical factors: ensuring proper coordination of actions on the ground; brokering partnerships in the main with government policy organs, private sector actors, producers' organizations, and national and international research organizations; developing an effective knowledge management and communication system; mobilizing adequate human and financial resources; instituting an effective monitoring, learning and evaluation system; and putting in place a good risk management system.

To fully implement this Strategic Plan, the indicative budget projection for the period 2019 - 2023 is USD 7.146 million.

1.0 BACKGROUND AND CONTEXT

1.1 Introduction

The African Union Semi-Arid Food Grain Research and Development's (AU-SAFGRAD's) goal is to contribute to sustainable food security of smallholder agricultural producers and others chain actors in the semi-arid zone (SAZs) of Africa by helping build their resilience[1] to crises and shocks. The SAZs of Africa occupy a large area that spans from Senegal in West Africa through Tunisia in North Africa, Djibouti in East Africa to South Africa (See Map 1). These zones are among the most challenging areas of the world and will become even more so as a result of climate change. The SAZs of Africa are also vulnerable to conflicts arising partly from natural resource use competitions and other socio-political causes.

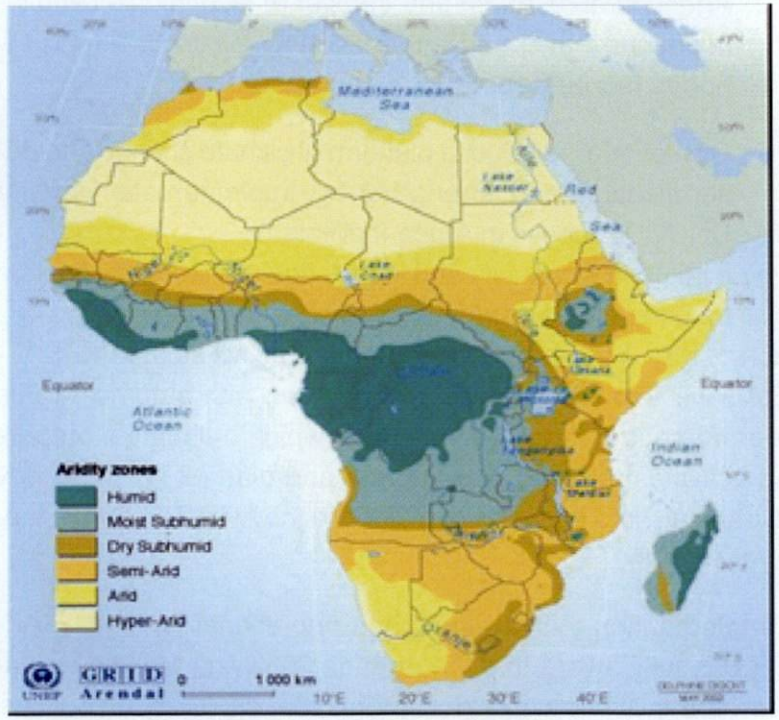


Figure 1.1 Map showing the extent of semi- arid zones of Africa[2]

[1] Resilience refers to the capacity of a system to continue providing a desired set of services in the face of disturbances, including the capacity to recover from unexpected shocks and adaptation to ongoing change. For more on this, see Biggs, R.; Schlüter, M.; Schoon, M.L. Principles for Building Resilience: Sustaining Ecosystem Services in Social-Ecological Systems; Cambridge University Press: Cambridge, UK, 2015.

[2] Source: World Meteorological Organization (WMO), United Nations Environmental Programme (UNEP), Climate Change Orange 2005. Impact, Adaptation and Vulnerability. Contribution of working group II to the third assesment report of the Intergovernmental Panel on Climate Change (IPCC) Cited by Digout 2005, UNEP/GRID-Arental(http://www.grida.no/publications/vg/africa)

This Strategic and Operational Plan (2019 - 2023) defines the vision, mandate and strategic objectives that AU-SAFGRAD intends to pursue over the next five years in support of ameliorating rural livelihoods in the SAZs of Africa. Specifically, the objective of the plan is to build resilience and enhance the livelihoods of smallholder agricultural producers and their communities in semi-arid zones of Africa. This is in response mainly to the changing development landscape and the evolving needs of semi-arid zones of Africa and is informed by lessons learnt from implementing the previous strategic plan as well as from a critical analysis of issues confronting semi-arid zones on the Continent.

The plan is intended to guide AU-SAFGRAD's actions in addressing the challenges of agriculture and rural livelihoods in semi-arid zones of Africa. In particular, the plan describes how AU-SAFGRAD – in keeping with its mandate - will support AU Member States in semi-arid zones to build resilient livelihoods for smallholder rural communities. Specifically, it is expected that the plan will enable AU-SAFGRAD to help improve countries' capacities to preparMe for, mitigate, coordinate and manage effective responses to disasters and crises affecting the livelihoods, food and nutritional security of vulnerable populations living in semi-arid zones of Africa. The plan reinforces AU-SAFGRAD's commitment to Agenda 2063 and the Comprehensive Africa Agriculture Development Programme (CAADP) and its offshoot, the Malabo Declaration.

Through this plan, AU-SAFGRAD is poised to play a catalytic role, using its convening power, to support systems that help build the resilience of livelihoods in semi-arid zones of Africa. The plan specifies the various actions and activities, timing and outputs of the specific activities and lays down the approach and methodology as well as provides a detailed work plan and log frame for its implementation.

The plan is a living document subject to constant reviews to ensure its relevance to AU-SAFGRAD. It also provides a framework within which detailed annual work plans and budget will be developed and implemented.

1.2 Profile of AU-SAFGRAD

1.2.1 Evolution of SAFGRAD

The Semi-Arid Food Grain Research and Development (SAFGRAD) was established by African Heads of State and Government of the (then) Organization of African Unity (OAU) in 1977 in Resolution 505 XXIX adopted by the Council of Ministers. Following its creation in 1977, SAFGRAD has gone through four

key phases of its historical existence; briefly summarized below. During Phase 1 (1977 – 1986), SAFGRAD's main function was to coordinate food grains research and build capacity. In collaboration with global research institutions such as IITA, ICRISAT, on the one hand, and NARS, on the other, SAFGRAD coordinated research that led to the development of improved varieties of maize, sorghum, millet and cow pea adapted to the different agro-ecological conditions of Africa's semi-arid zones. Through the Accelerated Crop Production Programmes, SAFGRAD strengthened linkages between National Agricultural Research Institutions (NARIs), extension services and farmers. Between 1980 and 1985, SAFGRAD helped to strengthen the capacity of NARIs through long- and short-term training in various aspects of food grain research.

In Phase 2 (1986 – 1994), SAFGRAD was restructured into a regional *Crop Network Management Center*. Its goal was to increase the efficiency and capacity of NARIs in sub-Saharan Africa to promote the generation and transfer of appropriate food grain technologies. This was achieved through management and coordination of four crop networks: (i) West and Central Africa Maize Network (WECAMAN); (ii) East and Central Africa Cowpea Research Network (RENACO); (iii) West and Central Africa Sorghum Research Network (WCASRN); and (iv) East Africa Regional Sorghum and Millet Network (EARSAM). SAFGRAD continued with its capacity building function by training research scientists and technicians and facilitating information exchange on food grain research and development.

Phase 3 (1994 – 2003) saw SAFGRAD redefining its mandate once again to cover more countries and commodities (e.g. tree crops, livestock) including processing of agricultural products and commercialization of technologies. This was dictated by the changing and evolving research environment at the time. With this, SAFGRAD's attention was focused on enhancing agricultural productivity; improving the nutritional quality of basic diets; transforming agricultural commodities into value-added products; and research and control of parasitic weeds in West and Central Africa[3].

Phase 4 (2003 - present): SAFGRAD entered the current phase following the creation of the African Union (AU) in 2003. With the advent of the AU, the Executive Council of the African Heads of State and Government gave AU-SAFGRAD a new responsibility to address common challenges facing African countries that are peculiar to the semi-arid zones and requested that it be "… institutionalized as a Special Agency for Food Security and Sustainable Agriculture to enable the Union streamline tasks and play key role in the improvement of the livelihoods of rural households by accelerating growth of agriculture". Furthermore, the Executive Council of the AU recommended that SAFGRAD be guided by the following as its *vison* and *mandate*:

[3] http://www.ua-safgrad.org/about-us/75-achievements/70-safgrad-phase-3

The vision of SAFGRAD is to accelerate growth of agriculture by promoting the application of more productive technologies friendly to semi-arid environment.

The mandate of SAFGRAD is to contribute to the advancement of agricultural research, technology transfer and marketing as well as the management of natural resources by facilitating and coordinating the use of the scientific talents of National Agricultural Research Centers (NARCs), International Agricultural Research Centers (IARCs) and Scientific Research Organizations (SROs) to enhance food security, promote sustainable agriculture, development of irrigation agriculture, both in rural and peri-urban areas of the semi-arid zones of Africa. [4]

1.2.2 SAFGRAD's New Beginnings

In part to ensure that AU-SAFGRAD remained relevant to the changing realities of semi-arid zones of Africa, the Conference of African Ministers of Agriculture (CAMA) that was held in Lilongwe, Malawi in 2010, requested AU-SAFGRAD to facilitate the advancement of agricultural and rural development within the semi-arid zones of Africa through *advocacy*, *coordination* and *networking* in the promotion of agricultural research, technology transfer and dissemination for the development of livelihoods in semi-arid zones of Africa[5]. The CAMA also requested AU-SAFGRAD to address six priority areas and formulate programmes to improve livelihoods in semi-arid zones of Africa. The priority areas are::

- Promote access to and management of land and water resources
- Enhance productivity, technology, and innovation
- Promote adaptation to and mitigation of the impacts of climate change and desertification
- Facilitate exploitation of national, regional and global market opportunities
- Facilitate global, regional and national policies and institutions
- Strengthen local capacities

Consistent with AU-SAFGRAD's mandate and the request from CAMA and the request of the African Heads of State and Government in 2014 (requested the Commission to rationalize and strengthen its Specialized units, in particular the Semi-Arid Food Grains Research and Development (SAFGRAD) and the Climate Change and Densification Unit(CCDU), for an effective

[4] This section draws from: AU Executive Council Third Ordinary Session, 4 – 8 July 2003; Doc. EX/CL/39 (III); EX/CL/Dec. 34 (III); Assembly/AU/Dec. 22.

[5] AU-SAFGRAD, 2010. Sustainable Rural Livelihoods in Semi-Arid Africa: Issues and Responses; Background Paper for the CAMA of 2010.

and vigorous provision of the necessary platform for guidance, experience sharing and coordination among the existing African Centres of Excellence on Desertification)"[6] To respond to these requests, AU-SAFGRAD developed and implemented its four-year Strategic Plan 2014 – 2017 to address key challenges to agriculture and rural livelihoods in semi-arid zones of Africa taking cognizance of issues of desertification, among others.

In view of the protracted development challenges facing semi-arid zones on the one hand and, on the other, the evolving thematic priorities in the wider development agenda both at continental and international levels, AU-SAFGRAD decided to review the performance of its strategic plan in 2018. This was intended to take stock of the achievements, the challenges encountered as well as to draw lessons and experiences that could inform the preparation of a new strategic and operational plan for the next five years (2019 – 2023). This strategic and operational plan is therefore the outcome of that review. It should be noted here that, for the most part, 2018 has been used to finalize activities initiated under the first Strategic Plan as well as to secure buy-in and approval of the new SOP from the relevant authorities. Thus, the new SOP can realistically start in 2019.

[6] African Heads of State and Government Assembly/AU/Dec.490-516(XXII); Assembly/AU/Decl.1(XXII) Twenty-Second Ordinary Session 30 – 31 January 2014, Addis Ababa, Ethiopia.

1.2.3 Vision and New Strategic Focus of the SOP

Based on the evolving responsibilities of SAFGRAD, as per AU Executive Council in 2003 (EX/CL/Dec.34 (III)) which was further elaborated in 2011 (EX.CL/Dec 619(XVII) and 2014 Assembly/AU/Dec.490-516(XXII), the vision of this SOP is:

'*Ensure sustainable food and nutrition security and improved rural livelihoods in semi-arid zones of Africa'*.

In line with the above, the *New Strategic Focus* for this SOP is:

> *To build the livelihood resilience of smallholders and bring about sustainable agriculture through strengthening policy and institutional ecosystems and promoting agricultural research for development in semi-arid zones of Africa*.

1.2.4 Core Values

In fulfilling its mandate and pursuing its new strategic focus, AU-SAFGRAD will adhere to the following guiding ethical principles which constitute its *Core Values*:

- *Evidence-based*: AU-SAFGRAD pursues its policy advocacy, capacity building and knowledge management activities on the bases of the best available evidence at the time of the intervention.

- *Innovativeness*: AU-SAFGRAD supports inventive systems and will work with like-minded institutions that strive to improve agricultural productivity through innovative research.

- *Partnership*: AU-SAFGRAD will strive to forge strong partnerships with like-minded groups, networks and institutions to achieve common objectives of improving agricultural productivity in semi-arid Africa. Furthermore, it shall consider in its actions both the responsibilities and interests of other stakeholders.

- *Subsidiarity*: AU-SAFGRAD ensures that activities it supports are undertaken at the most appropriate level possible, with AU-SAFGRAD assuming responsibility for which it enjoys clear comparative and strategic advantages.

- *Transparency:* AU-SAFGRAD's activities are open to public scrutiny and that SAFGRAD shall discharge its responsibilities in compliance with applicable laws and regulations.

- *Accountability:* AU-SAFGRAD shall take full responsibility for delivering results and for effective use of resources at its disposal.

- *Environmental consciousness*: AU-SAFGRAD is committed to environmental conservation while discharging its mandate.

1.2.5 Comparative Advantages and Value Proposition

Several continental, regional and national development-oriented organizations are currently working to address challenges facing semi-arid zones of Africa. As the only AU institution tasked with implementing AU decisions on issues of livelihood resilience in semi-arid zones of Africa, AU-SAFGRAD has gained more than four decades of experience working in these zones and brings unique leadership, coordination and management skills that add value to agriculture and rural livelihoods in semi-arid zones of Africa. AU-SAFGRAD's comparative advantages can be summarized as follows:

- AU-SAFGRAD is a Specialized Technical Office of the AUC with a continent-wide mandate from African Heads of State and Government to work on all aspects of agricultural research, resilience and rural livelihood challenges in semi-arid zones of Africa. It works countries and regional bodies such as the Regional Economic Communities (RECs); making it easier to address issues that transcend national and regional boundaries. .

- As a Specialized Technical Office of the AUC, AU-SAFGRAD has a huge political advantage that gives it unprecedented access to high-level continental, regional and national policy and decision-makers. AU-SAFGRAD

Young girls gardening

receives invitations to participate in important high-level policy meetings where its opinions on issues of relevance to semi-arid zones are sought, the Specialized Technical Committee (STC) on Agriculture, Rural Development, Water and Environment being one of them.

- AU-SAFGRAD is part of an extensive network of research and development organizations (e.g. UN agencies, CGIAR Organization, SROs, NARS…) that generate, disseminate, and apply new technologies to issues of agriculture and climate change. It has brokered partnerships with many of these organizations that allow it to promote adoption of their research and development products.

- In leading and coordinating development actions in semi-arid zones, AU-SAFGRAD retains a unique convening power that allows it to work with global, continental, regional and national institutions (e.g. UN agencies, CGIAR Organization, relevant AUC departments, NPCA, RECs, and NARS) focusing on building resilience in semi-arid zones of Africa.

- During the four phases of its existence (1977 to date), AU-SAFGRAD has been able to acquire substantial knowledge, experience and social capital that together, provide a strong foundation not only for effective leadership, coordination and facilitation, but also acquires a valuable advocacy space.

Thus, the key value proposition of AU-SAFGRAD can be summarized as follows:

- ❖ Coordination of AU initiatives on SAZs in Africa.
- ❖ Policy advocacy and policy coherence for critical ARD issues affecting SAZs in Africa.
- ❖ Institutional capacity development on issues of significance to SAZs of Africa.
- ❖ Knowledge management and facilitation of comparative regional learning across SAZs of Africa.

1.3 Organization of the Strategic and Operational Plan

The remainder of this document is organized in six chapters. Chapter Two describes the achievements of SAFGRAD in implementing resilience building activities, the lessons it learnt from its most recent experience and the rationale and process of developing its new SOP. Chapter Three outlines some of the major thematic issues that are central to enhancing rural livelihoods in semi-arid zones of Africa. Chapter Four discusses the strategic goals, deliverables and activities that AU-SAFGRAD commits to pursue during the ensuing five years period. It also describes the extent of alignment of SAFGRAD's new SOP with global and continental deliberations on agriculture and rural livelihoods. Chapter Five discusses the main elements that need to be considered to operationalize the plan. Finally, Chapter Six provides a concluding remark.

2.0 LEARNING FROM EXPERIENCE AND RATIONALE FOR THE NEW STRATEGIC AND OPERATIONAL PLAN

2.1 A glance at achievements in a historical perspective

Over the years, SAFGRAD has carried out a range of activities with several creditable achievements. In what follows a brief account of these achievements is provided, giving particular attention to those registered prior to the previous strategic plan period. AU-SAFGRAD's achievements during the previous strategic plan period are described in Section 2.2.

Facilitating development and transfer of technologies

In collaboration with NARS and IARCs, AU-SAFGRAD played a key role in facilitating the release of several (maize, sorghum and cowpea) food grain cultivars currently cultivated by farmers in the semi-arid regions of Africa. These improved crop varieties are drought tolerant, early maturing, resistant to major pests and diseases and are high yielding.

AU-SAFGRAD also coordinated research into the development of more efficient water conservation and soil fertility management technologies in order to support sustained crop production. AU-SAFGRAD research collaborators have developed several labour-savings devices which have proved successful.

Through establishing the Accelerated Crop Production Programme, SAFGRAD supported effective transfer of new technologies from research stations to farmers. This programme served as a link between national agricultural research institutions, extension services and farmers.

Building national research capacities

Working in collaboration with CGIARs and NARS, AU-SAFGRAD has set a functional network that brings together all the actors on the same table. Furthermore, training of research scientists and technicians has always been a major activity of AU-SAFGRAD. The training programme is aimed at strengthening African agricultural institutions by helping to build up the number of appropriately trained researchers and technicians in food grain research. AU-SAFGRAD has facilitated long-term training (M.Sc., Ph.D.) in agricultural research and management, and about 30 trained scientists have assumed research leadership positions in their respective countries. More than 2500 scientists and technicians also participated in various short training facilitated by AU-SAFGRAD. The short-term trainings provided extensive opportunities for trainees to acquire knowledge and improve their competence and skills in various agricultural domains.

Networks

AU-SAFGRAD has optimised the utilisation of resources, technologies and scientific expertise which is available within national and international institutions to substantially improve the research capabilities of NARS through a strategy of core collaborative crop network. AU-SAFGRAD has also developed efficient and functional links within and between NARS to promote the generation and dissemination of proven technologies in the semi-arid regions of Africa.

Building knowledge base

AU-SAFGRAD also has contributed to building a knowledge base on semi-arid agriculture through production and dissemination of over 500 publications. In addition, information exchange between researchers was facilitated through workshops, seminars, technical meetings and conferences. Some of the dissemination products included technical newsletters, reports, and conference proceedings and books publications.

Bulding and sharing knowledge base on semi-arid zone in Africa

2.2 An overview of SAFGRAD's implementation of its 2014 – 2017 Strategic Plan

SAFGRAD's 2014 – 2017 Strategic Plan represents its first ever medium-term plan charted to guide the operations of the organization for four years. AU-SAFGRAD as the only AU technical entity in dryland Africa, significant senior-level staff time and resources were used to representing the AU in various functions and deliberations that have both direct and indirect importance to the activities of the Office.

SAFGRAD's 2014 – 2017 Strategic Plan commits the office to deliver on four thematic areas (Box 2.1). The following briefly summarizes the achievements of SAFGRAD vis-a-vis these stated outputs.

Output 1.1: Several activities of a 'capacity strengthening' nature were undertaken with the view to affecting policy. Examples include high-level policy dialogues on natural resource management involving ministers from a range of semi-arid zones of Africa; policy-orientated trainings for middle-to senior level officials from SAZs; and lessons learning workshops on building resilience of pastoralist networks. RECs were assisted in the elaboration of policy frameworks that targeted issues pertinent to building the resilience of people living in semi-arid areas. SAFGRAD more specifically, supported some Sahelian countries and ECOWAS in the thematic review of national and regional agricultural investment plans (NAIPs and RAIPS, respectively) to better reflect issues like desertification, climate change, and agricultural water management.

Output 1.2: Here effort was exerted to enhance rapport with and provide guidance to key farmers' organizations in their planned engagement with the CAADP process. Also, significant body of work was done to assess agricultural commodity value chains of a strategic nature and support the gainful engagement of producers' organizations as well as the prioritization of strategic commodities in the Sahel; IGAD and ECCAS regions. The ultimate goal here is one of improving the competitiveness of agricultural commodities through regional value chains development for boosting intra-Africa trade.

Output 2.1: The major facilitation roles that SAFGRAD played relate to the promotion of use of drought tolerant varieties by farmers and the effort exerted to strengthen linkages between farmer-extension-research. In this later respect, SAFGRAD has supported dialogue between the Pan Africa Farmers' Organization (PAFO) and its regional members with the research and extension communities. Moreover, a road map on strengthening the link between research-extension-farmers has been initiated. Also, a functional platform on research-extension-farmers/pastoralists is being established.

As part of its research/innovation capacity building thrust, SAFGRAD supported the training of young* scientists from about forty (40) countries on thematic modules ranging from desertification, climate change, food security to modern irrigations schemes.

Output 2.2: Apart from popularizing the strategic plans in different AU languages, the major set of networking activities undertaken to deliver on this output relate to discharging the Office's responsibility as the institutional focal point for coordinating the Thematic Programme Network for the Promotion of Sustainable Agricultural/Farming Systems to Combat Desertification in Africa (TPN6). The TPN6 was launched in 2004 within the framework of the African Regional Action Programme of the United Nations Convention to Combat Desertification (UNCCD). Its global objective is to enhance efficiency of national, sub-regional and regional sustainable land management programmes and agricultural farming systems through facilitation of knowledge sharing and utilization for scaling up/out of successful experiences. In this respect, AU-SAFGRAD undertook the following activities: carried out study on 'strengthening the role of science and technology to combat desertification'; supported a range of capacity building measures for the Science and Technology Correspondents' (STC) of UNCCD in Africa, including facilitation of the engagement of *National Focal Points* in the preparatory meeting of UNCCD's Conference of Parties (COPs). Moreover, significant preparatory work was undertaken towards the end of 2017 for convening an Africa-wide training on issues of land degradation neutrality (LDN). For these activities, in particular, AU-SAFGRAD has earned plaudits from a number of African and UN entities.

2.3 Implementation challenges and lessons

The mandate of SAFGRAD and the range and scope of issues that it is expected to oversee are vast. Moreover, semi-arid zones of Africa have a range of shared set of challenges that can be addressed more meaningfully taking a regional and/or continental approach. In order to support AU member states' individual efforts and to provide continental public goods, AU-SAFGRAD requires a much more financial resource and personnel base. The Office prioritized its activities and achieved its core functions of AU representation, policy dialogue facilitation, and networking especially in themes pertinent to semi-arid zones.

It is hoped that greater synergy of AU-SAFGRAD's interventions with continental frameworks could unlock the required financial resources for implementing planned activities in line with the mandates of the Office. In this regard, an important lesson of experience AU-SAFGRAD learnt is the need for a more intensified engagement with the CAADP process. The new generation CAADP-aligned NAIPs and RAIPS, which are being

developed or under consideration by several countries as a response to the Malabo Declaration, offer great opportunities for AU-SAFGRAD to show its value addition by ensuring that critical issues of significance for rural livelihoods in SAZs are given due consideration. In particular, issues around halting the desertification process and building resilience to climate change in the context of SAZs and evaluating CAADP's agricultural growth indicators in light of their relevance to semi-arid countries could be fruitful areas for AU-SAFGRAD advocacy-related engagement with CAADP. In this regard, AU-SAFGRAD's continued involvement in the CAADP biennial review process will be essential to ensuring that resilience building-related indicators are given the attention they deserve. The support that AU-SAFGRAD provided to regional agricultural value chains development has contributed to enhancing intra-Africa trade. Greater alignment of this body of work with Africa's drive towards a Continental Free Trade regime is likely to have even greater value addition going forward

2.4 Justification for the new Strategic and Operational Plan (2019 – 2023)

Some of the challenges that informed the development of SAFGRAD's previous strategic plan have continued to persist while new threats and opportunities have emerged that will have fundamental impacts on the resilience and livelihoods of the people living in these zones. AU-SAFGRAD is revising its strategy to respond to these ongoing and emerging issues within the framework of building the resilience of rural livelihoods in semi-arid zones of Africa.

The new Strategic and Operational Plan (SOP) is being prepared at an opportune moment in African agriculture where alignment and harmonization with the CAADP Malabo Roadmap and Implementation Plan is expected to enhance the tracking and measurability of AU-SAFGRAD's contribution to the overall AU 2025 Vision on CAADP. This SOP is therefore designed for five years spanning 2019 to 2023; corresponding to and aligning with the First Ten-Year Implementation Plan of Agenda 2063 as well as the AU's Science, Technology and Innovation Strategy for Africa (STISA) 2024.

The preparation of this plan is partially informed by the review of the 2014 – 2017 Strategic Plan which provided an opportunity to (i) analyze the progress made towards achieving its objective of enhancing agriculture and livelihoods in semi-arid zones; (ii) assess the effectiveness of its implementation; (iii) draw lessons learned; and (iv) review the evolving environment in which AU-SAFGRAD operates. These provide important inputs to the planning of this 2019 – 2023 SOP which has incorporated minor shifts in strategic focus using a Results Based Management (RBM) framework. Apart from this, a number of specific reasons also underpin the significance and rationale for developing a new SOP for AU-SAFGRAD.

First, as a continental organization, AU-SAFGRAD needs a comprehensive road map; one that allows it to define its direction and set its priorities for the next five years. The plan gives it the opportunity to define its vision, mandate and objectives and also identify strategies for implementing the programmes and activities needed to fulfil the vision.Secondly, the SOP provides a framework for implementing strategic decisions of the AU and ensures that AU-SAFGRAD remains prepared to address the needs of its stakeholders. It also ensures that AU-SAFGRAD remains a focused organization that continues to avoid *ad-hoc* and haphazard responses to problems and capable of understanding future trends and coping with uncertainties.

Thirdly, the plan allows AU-SAFGRAD to deepen its understanding of the constraints and opportunities available in semi-arid zones of Africa and to address challenges in a more systematic and participatory manner. In this regard, the plan builds on AU-SAFGRAD's competitive advantages and strategically positions it to not only face the future, but also shape the future in favor of Africa's semi-arid zones.

Fourthly, the plan serves as a management tool to help AU-SAFGRAD improve its performance and to continuously adjust to the changing environment in which it operates. To this effect, the plan incorporates a results-based management framework as a tool to measure and report progress of performance in achieving the goals and objectives of AU-SAFGRAD. This allows AU-SAFGRAD to both track progress and inform future plans through lessons learned.

Finally, the plan serves not only as a good advocacy tool for promoting the visibility of AU-SAFGRAD and its work, but also for mobilizing the resources required to implement its activities.

2.5 Process and methodology for developing the Strategic and Operational Plan

The development of this strategic and operational plan was initiated through an internal process within AU-SAFGRAD. In 2017, the staff of AU-SAFGRAD began reflections and discussions on how they could review the performance of the strategic plan that would shortly come to an end in order to learn from it and reposition the organization through a new strategic and operational plan for the next five years. This led to the hiring of a team of two consultants with the responsibility to develop the new strategy that also includes an operational plan.

To begin, an inception meeting was organized in May 2018 at the AU-SAFGRAD Office in Ouagadougou, Burkina Faso during which the consultants presented an Inception Report outlining their understanding of the requirements for the strategic and operational plan, the methodology, and the expected process and

roadmap for developing the plan. The consultants and staff of AU-SAFGRAD also discussed the progress made, the achievements obtained, the challenges faced, and lessons learned during the preceding four years. The emerging issues and opportunities were also discussed as a basis for defining the priorities for the next five years.

The feedback obtained from deliberations of the inception meeting was instrumental in the development of the draft strategic and operational plan. The draft plan also benefited from a review of the relevant literature including *inter alia*, previous strategic plans, policy documents, programme review reports; a synthesis of the views of relevant stakeholders and partners on their relationships with AU-SAFGRAD and how the latter should position itself in the coming five years. These views were obtained through key informant interviews of pertinent AUC departments and other relevant stakeholders, including RECs.

An earlier version of this document has benefited from a review and validation workshop AU-SAFGRAD organized in August 2018 attracting participants from a range of key stakeholders, including AUC's different departments, RECs, SROs, International Agricultural Research Organizations, UN Agencies and International NGOs working on resilience issues in dryland Africa.

Group picture during of the validation workshop SOP 2019 - 2023

Table 2.1 SWOT Analysis

STRENGTHS	WEAKNESSES
✓ AU political support/easy access to AU decision-making organs. ✓ Continental coverage. ✓ Strategic plan efficient and motivated workforce to implement it. ✓ Timeliness and relevance of SAFGRAD's mandate – niche of SAFGRAD. ✓ Access to MS; RECs, NPCA and other pertinent institutions, including NSAs.	✓ Limited human and financial capacity. ✓ Limited organizational autonomy. ✓ Inadequate communication at a technical level within AUC. ✓ High transaction cost for resource mobilization.
OPPORTUNITIES	**THREATS**
✓ High level African political commitment to support agriculture – Malabo and Agenda 2063. ✓ Willingness of development partners to support agriculture and allied sectors. ✓ Economic and environmental importance of investing in SAZs.	✓ Shortage of donor funding in light of competing organization's with similar mandates. ✓ Changing donor priorities.

A SWOT exercise (Table 2.1) was undertaken involving an in-depth analysis of what is going on inside AU-SAFGRAD in terms of its strengths and weaknesses; a wider look at what is going on outside AU-SAFGRAD in terms of opportunities and threats and how they might affect it. This has informed not just the assessment of the performance of AU-SAFGRAD but also the factors that need to be considered in designing the present SOP.

A stakeholder analysis was also conducted to identify the expectations and roles of AU-SAFGRAD's stakeholders. Table 2.2 presents the expectations and roles of AU-SAFGRAD's partners, collaborators and clients.

Figure 2.1 Cause-and-effect analysis for resilience-building in semi-arid zones of Africa

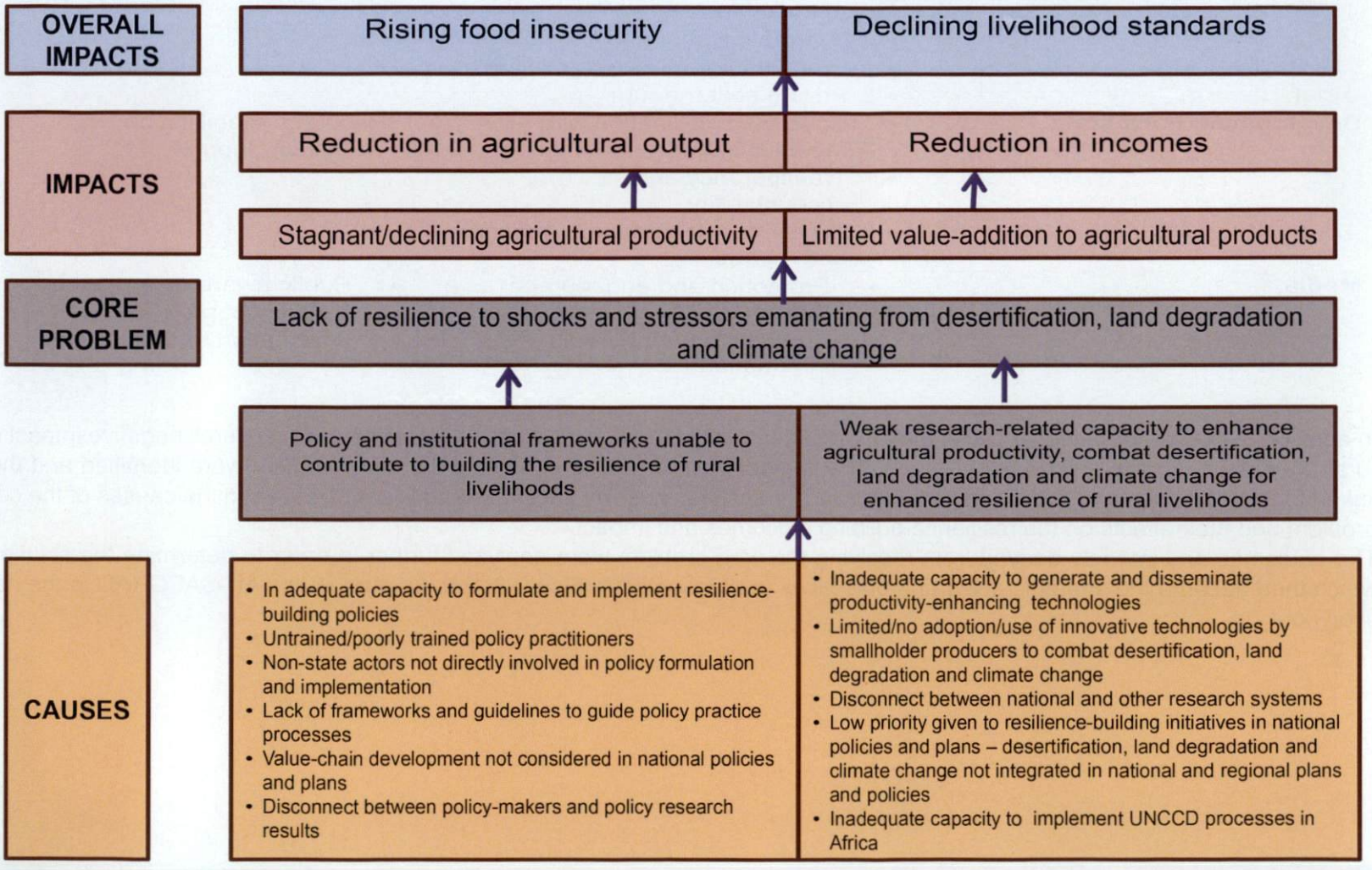
Stakeholder	Expectations	Roles
Public sector • National governmental organizations • Inter-governmental bodies	Accountable and efficient use of resources • Timely and accurate information and reports • Clear, timely and objective implementation of decisions and approved programmes	• Creation of enabling national environment (institutions, policies, laws and regulations) • Planning and implementation of policies and strategies (development, research, education/training, advisory services, etc)
Sub-regional and regional policy makers • RECs (AMU, CEN-SAD, COMESA, EAC, ECCAS, ECOWAS, IGAD, SADC) • AU-NPCA • UN Agencies	• Coordination and harmonization of actions to build resilience • Cooperation and collaboration in resilience-building programme implementation	• Creation of enabling environment at sub-regional and regional levels • Promotion of cross-boundary cooperation (policy, trade, etc) • Regional value chain development
Sub-regional and regional R&D institutions/Organizations • SROs • FARA • AFAAS • IARCs	• Research and development of innovations • Education and training • Networking and partnerships • Greater involvement and input in decision-making processes of the African Union	• Generation and dissemination of technologies and innovations • Resource mobilization and partnerships. • Formulation of specific projects
Non-State Actors • NGOs • Farmers' Organizations • Associations • APESS	• Actualization of African integrations • Greater involvement and input in decision-making process of the African Union	• Public awareness • Advocacy • Dissemination of innovations • Capacity building • Sharing of lessons learned

Private sector	• Encouragement and promotion of viable private/public partnerships • Information sharing • Promotion of African agriculture • Private sector forum	• Resource mobilization
Development Partners	• Effective coordination with Member States • Transparency and accountability • Timely and accurate information and reports	• Resource mobilization • Technical Support
Media	• Promotion and engagement as a medium of transmission • Facilitation of access to information	• Public awareness • Visibility of programmes • Information transmission

In addition, a cause-and-effect analysis was undertaken to identify the core problem that is having an overall negative impact on rural livelihoods in semi-arid zones of Africa. The immediate and remote causes of the core problem were identified and then linked to the outcomes and overall impact. Figure 2.1 maps the causality pathways and linkages between the causes of the core problem and their effects on the resilience-building outcomes and impact.

The outcomes and impacts derived from resolving the core problem were analyzed further in order to determine the solutions which then became the strategic goals and objectives (as presented in Figure 2.1) to be pursued by AU-SAFGRAD in the next five years.

Table 2.2. Analysis of the expectations and roles of AU-SAFGRAD's stakeholders



3.0 CURRENT ISSUES OF SIGNIFICANCE TO RURAL LIVELIHOODS IN SEMI-ARID ZONES OF AFRICA

3.1 Introduction

There are a number of thematic areas that are of critical importance to the improvement of rural livelihoods in SAZs of Africa. The following sections provide a brief description of some of the principal issues and associated challenges as well as the opportunities that could serve as pathways to improve agriculture and rural livelihoods in SAZs.

3.2 Land Quality and Water Management

3.2.1 Key issues and associated challenges

In semi-arid zones of Africa, land degradation and water scarcity remain among the main threats to economic development and human welfare. Land degradation triggers negative effects on the availability, quality and quantity of water resources by inducing the drying up of freshwater bodies; increasing the frequency of drought and of sandstorms and dust storms; intensifying floods; and inducing declines in soil nutrients and vegetation cover in semi-arid zones of Africa.

Agriculture and rural livelihoods in the semi-arid regions have been constrained by the uncertain availability of water, both in terms of quantity, timing and spatial distribution. The lack of water exacerbates the effects of desertification through direct, long-term impacts on land and soil quality, soil structure, organic matter and soil moisture in the regions. Shortage and unreliability of water supply also engenders temporal fluctuations in the volume of agricultural production.

3.2.2 Opportunities/Pathways

Improving access to, control and management of water in agriculture will enhance agricultural productivity and profitability in many ways, namely through reducing crop water stress by curtailing runoff, evaporation, and deep percolation losses and removal of excess water; reducing water-induced soil and nutrient loss; facilitating crop production; increasing cropping intensity; and reducing climatic risk and thereby facilitating crop intensification and diversification[7]. These can be achieved through investing in integrated landscape management programmes, which improve and safeguard restoration efforts, lower risks related to water shortages and land degradation, diversify income sources, support sustainable intensification, and reduce conflicts in the regions. Besides, a number of practices such as agro-forestry, farmer-led soil and water conservation techniques, rainwater harvesting, conservation agriculture, sustainable cultivation of water-efficient and drought-tolerant crops, and integrated soil fertility management have been identified.

[7] Cervigni R., and Morris, M (Eds.). 2016. Confronting Drought in Africa's Drylands: Opportunities for Enhancing Resilience. International Bank for Reconstruction and Development/the World Bank.

3.3 Crop-Livestock Integration

3.3.1 Key issues and associated challenges

In semi-arid zones of Africa mixed farming is the main agricultural production system, although in some pockets of the SAZs pastoralism and agro-pastoralism also predominate. Mixed farming systems are known for a considerable degree of crop-livestock integration, including integration of agroforestry practices into the mix. In particular, while crop residues are used to augment livestock fodder requirements, the benefits that accrue from livestock husbandry include energy (in the form of traction and transport) and animal manure to improve soil fertility. Moreover, proceeds from sale of crops are at times used to beef up household livestock assets, and often farmers sell their livestock to meet some of the input requirements of crop cultivation.

The above notwithstanding, a clearer understanding of the status of mixed farming systems demands an examination of each of the components separately. Thus, as regards crop husbandry, smallholder farmers are largely unable to benefit from current yield gains offered by plant genetic improvement because they farm on depleted soils that are less-responsive to fertilizer application[8]. Improved farming technologies are available that can increase and stabilize the production of millet, sorghum, maize, and other leading staples. However, these technologies are not widely adopted on a large scale due to lack of farmer knowledge, non-availability of inputs, unfavorable price incentives, and high levels of production risk. The dearth of livestock research benefitting the mixed farming system has been a subject of numerous studies. The limited livestock development research has a decidedly cattle bias, with no or little consideration of small stock (e.g., sheep and goat) and poultry which are managed by young boys and women and which provide important livelihood resources for poorer farm households.

In semi-arid regions of Africa, public institutions that provide research and extension services are weak and ineffective. The riskiness and low profitability of agriculture has discouraged investment by private firms, so distribution networks for inputs both for crop cultivation and livestock husbandry in mixed farming systems remain underdeveloped and financial institutions lending to the smallholder agriculture sub-sector are few and far between.

Livestock-keeping is one of the primary livelihood activities for large number households in semi-arid zones of Africa. Access to sufficient water and grazing/fodder resources are among the key issues that need recognition both by policy makers and programme implementers. Moreover, livestock-keepers live in highly variable environment that exposes them to a variety of shocks such as extreme weather events including severe and

[8] Tittonell, P., & Giller, K. 2013. When yield gaps are poverty traps: The paradigm of ecological intensification in African smallholder agriculture. Field Crops Research, 143(1), 76–90.

prolonged drought. Here, too, it is not uncommon to find interaction between pastoralists and sedentary farmers. Custom-bound interactions with sedentary cultivators enables pastoralists to secure food and grazing land in times of need. It is also reported that, farmers in some parts of west Africa enter into contractual relationship with pastoralists to look after their livestock especially during the dry season in distant pastures.

3.3.3 Opportunities/Pathways

Improved management practices for rainfed and irrigation development reduce the sensitivity of the regions to droughts and to improve the resilience of households. Moreover, agricultural strategies need to promote production of staples in rainfed systems and production of high-value cereals (e.g., rice), horticultural crops, and industrial crops in irrigated systems. Therefore, policy reforms and supporting investments aimed at streamlining cropping system intensification will go a long way towards stimulating changes in production technologies and crop management practices.

Regarding livestock-keeping, critical elements of transformation include the following: improving animal genetics to accelerate growth and increase off-take rates; improving animal health services to reduce losses from disease outbreaks and climate shocks; developing livestock early warning systems (LEWSs) and early response systems as well as livestock insurance to reduce the adverse impacts of shocks; facilitating early destocking when drought is imminent and restocking when rains resume; fostering better market integration, in particular by exploiting complementarities between semi-arid zones of Africa as the breeding areas and higher rainfall areas for fattening younger stock from the drier areas; and consolidating small holdings of livestock into larger, more resilient, and more viable units.

3.4 Dryland Forestry

3.4.1 Key issues and associated challenges

Forests in semi-arid zones of Africa are endowed with a large variety of non-wood forest products (NWFPs) such as fruits, seeds, flowers, gums, resins, honey, tannins, colorants, aromatics and medicines. They offer a safety net against poverty to millions of people living in these zones. However, dryland forests and landscapes are under unprecedented pressure brought about by changing and competing land uses and practices, wasteful and unsustainable water use, inappropriate cultivation and grazing practices, encroachment of farmlands and overharvesting.

At the other end of the spectrum, dryland forestry has received little global attention in terms of research and resource inventory. In addition, little policy attention from national governments and international agencies has been given to households, communities and local peoples to enhance their capacity to manage dryland forests

3.4.2 Opportunities/Pathways

Of late, participatory or collaborative forest management has emerged as an important programmatic response to the challenges of forest degradation and livelihood deterioration of forest-dependent communities in large swathes of the developing world. In general, this approach entails some level of natural resource benefit sharing and/or devolution of authority from the state to local community institutions. Successful implementation of such an approach requires significant changes in the mindset of foresters and other natural resource management professionals from.

In relation to the above, there is now a consensus among analysts to the effect that education in disciplines related to forestry, the environment and rural development be reviewed and updated at the national and global levels with a view to preparing the next generation of dryland restoration professionals capable of addressing the wider context of degradation and restoration.3.5 Cross-cutting Issues

3.5 Cross-Cutting Issues

3.5.1 Agricultural value Chains

3.5.1.1 Key issues and associated challenges

In semi-arid zones of Africa, competitiveness of agricultural products is relatively poor, and the legal and institutional environment supporting agricultural value chains is weak. This could be attributed to high production and transaction costs, and weakness of market-support and business development services (e.g., risk management, financial services, transport, refrigeration, storage, and sanitary and phytosanitary services). Besides, trade barriers, both tariff and non-tariff, restrict the availability of food in the market, artificially inflate costs and keep prices high, thereby discouraging key value chain actors from meaningfully participating in the market system. These barriers also impede market integration, keeping markets small and preventing the realization of economies of scale in all nodes of the agricultural value chains.

Like in other parts of Africa, in the semi-arid zones of Africa, the main challenges associated with agricultural trade policy reform are political, as moves to liberalize trade are likely to have negative consequences for some vested interest groups. For instance, domestic political processes affect the implementation of trade reforms and cause its frequent failures in semi-arid zones of Africa.

Trade reforms designed to reduce the gap between producer and consumer prices have the potential to benefit farmers and poor consumers, but intermediaries earning rents both in public agencies and in established private firms stand to lose. The political dynamics undermining trade policy reform are frequently exacerbated by a lack of resources.

3.5.1.2 Opportunities/Pathways

There are a range of opportunities at different levels which can

be pursued to facilitate effective agricultural value chain development in arid and semi-arid zones.

At the technical level, some of the opportunities include the following: lowering the barriers to market entry of smallholder producers through a range of risk-sharing investment mechanisms such as out-grower schemes and discounted membership in marketing cooperatives; strengthening the capacity of middle-level value chain actors (including traders, aggregators and processors); and creating and/or strengthening value-chain coordination platforms with the view to bringing together all value-chain actors and co-create solutions to challenges that affect the value chain as a whole.

At the more political level, efforts are under way to promote regional market integration using agricultural value chains as critical entry points. The Regional Economic Commissions (RECs) are making efforts to develop regional markets by reducing formal barriers and lowering technical barriers to trade by harmonizing standards and regulations. The current drive towards establishment of a continental free trade area (CFTA) could as well provide additional impetus to the promotion of agricultural value chains in the semi-arid zones of Africa. At the same time, individual countries can also act on their own when regional efforts bog down. Initiatives undertaken by sub-regional coalitions of willing members to fast-track implementation of agreements can in some cases be a more expeditious mechanism to enhance trade among participating countries.

3.5.2 Technology Generation and Use

3.5.2.1 Key issues and associated challenges

Most countries in sub-Saharan Africa (SSA) – including those in semi-arid zones - underinvest in agricultural research and development (R&D), few meeting the minimum target of 1 per cent of agricultural gross domestic product recommended by the African Union. Furthermore, national agricultural research systems (NARSs) have limited human capacity, researcher numbers and qualification levels being among the more serious constraints facing them.

A significant portion of people in semi-arid zones rely on several indigenous plant species as primary food sources for people and animals. These species are also used for other non-food purposes. These crops are often resilient and can be expected to survive under varying climatic conditions. However, their importance is undervalued. Referred to as 'orphan crops', they are often left out of the mainstream/global agricultural research agenda. Similarly, browsers, like goats, donkeys and camels, which are widely reared in semi-arid zones, attract limited research attention globally compared with grazers such as cattle.

Poor coordination between research and extension means that even the limited research results rarely reach to farmers and livestock keepers. Moreover, technology use is hampered by low adoption. Poor farm households in rain-fed and risky production environments are reluctant to adopt new farm technolo-

gies even if the later entail a higher potential productivity gain. This is not, however, to discount the negative effects of the rising costs of purchased inputs such as fertilizers, and other inorganic inputs on the pace of adoption of agricultural technologies.

3.5.2.2 Opportunities/Pathways

Given the general economic situation in most of semi-arid Africa, many countries may find the cost of involvement in a range of agricultural research activities prohibitive. It is, therefore, imperative that countries pursue regional collaboration in the use of expensive laboratory equipment and data bases. Thus, countries should explore opportunities for undertaking collaborative research of wider regional significance at/with regional centres of excellence. "Regional collaboration is most effective when it addresses common problems that a country could not address on its own and when benefits are perceived to be shared fairly".[9]

In addition to investing optimally in agricultural research, countries ought to develop capacities to make effective use of advances in other fields of science. For instance, information and communication technologies (ICTs) can play a useful role in overcoming the weak research-extension linkages. In particular, ICTs can be made to enable resource-constrained farmers to have access to, among others, up-to- date knowledge and information on agricultural technologies, best practices, extension packages for a wide range of crops and livestock, and options for agricultural risk management.[10]

In situations where farmers are risk averse, instruments such as agricultural insurance and safety nets could help farmers hedge against exposure to downward risks (including crop failure) and motivate them to adopt the desired technologies.

On the other hand, governments need to enact measures to enhance security of tenure if research is to succeed in promoting widespread adoption of land management technologies in a sustainable manner. Social capital and networks need also be encouraged to scale up successful adoption of land management technologies especially in areas where access to information and labour scarcity are key constraints.

3.5.3 Climate Change, Desertification and Disaster Risk Management

3.5.3.1 Key issues and associated challenges

Climate change is already negatively impacting upon development progress and will continue to undermine socioeconomic wellbeing of the populations in SAZs. Indeed, the main challenge posed by climate change in semi-arid zones of Africa is manifested through increases in the frequency, magnitude and severity of such events as prolonged droughts, intense heat

[9] FARA 2014. The Science Agenda for Agriculture in Africa. Accra

[10] World Bank 2011. ICT in Agriculture: Connecting smallholders to Knowledge, Networks, and Institutions.

waves, heavy precipitation and strong winds. These cause uncontrolled large-scale forest fires; massive forest dieback and pest attacks; major reductions in soil water storage capacity; and large-scale floods that accelerate and intensify soil degradation processes. Many of these factors accentuate the desertification process underway. It is estimated that, arid and semi-arid zones exposed to desertification constitute 43 per cent of the African continent.

These effects of climate change are compounded by widespread poverty, human diseases and high population growth rates that are expected to intensify demand for food, water and livestock forage within the region.

3.5.3.2 Opportunities/Pathways

In order to realize agricultural growth and achieve food security under changing climatic and desertification conditions, different conventions[11] were issued and forums established, emphasizing adaptation as a priority intervention in African agriculture. For instance, under the umbrella of UNCCD, in 2004, different Thematic Programme Networks (TPN) were formed, of these TPN6[12] was tasked to facilitate knowledge sharing and utilization for up/out-scaling successful experiences in sustainable land management initiatives. Governments and non-state actors in semi-arid zones of Africa should intensify the use of this and other mechanisms intended to mitigate the effects of climate change, combat desertification and facilitate the neutralization of land degradation (Zero Net Land Degradation). In addition, owing to the escalating manifestations of desertification and extreme climate events, there is growing need to improve climate risk-management capabilities among smallholder farmers. Capacity development of farmers and other intermediaries along the agricultural information chain to recognize weather and climate as essential resources for agricultural production and enhance their abilities to incorporate weather and climate information into farm-level decision-making should be a matter of urgent priority.

Disaster risk management strategies and programmes can play important roles in reducing vulnerability and increasing resilience of people living in semi-arid zones of Africa. Reducing barriers to trade could contribute significantly to the resilience of people living in drylands by making food more available and more affordable, including after a shock hits.

3.5.4 Policy Practice and Institutional Issues

3.5.4.1 Key issues and associated challenges

There is now a consensus that policies that favour unsustainable land uses (such as highly extractive agricultural practices, inappropriate water management, and land-use decisions that negatively affect forests and trees) must be replaced by regulations, incentives, institutions and planning processes that sup-

[11] GHACOF – Greater Horn of Africa Climate Outlook Forum, Intergovernmental Panel on Climate Change; United Nations Framework Convention on Climate Change (UNFCCC); United Nations Convention to Combat Desertification (UNCCD); Global Strategy for Plant Conservation (2011–2020)

[12] TPN6, which was launched within the framework of the African Regional Action Programme of the UNCCD, deals with Promotion of Sustainable Agricultural Farming Systems to Combat Desertification in Africa

port sustainable and equitable land-use options and make drylands attractive for funding and investment, including from the private sector. To-date, several national policies and institutions have failed to play their roles. Thus, one of the main challenges in semi-arid zones of Africa is identifying priority policy issues and designing, in an all-inclusive manner, and implementing realistic policies to enhance food security and agricultural productivity considering the unique challenges of these zones.

3.5.4.2 Opportunities/Pathways

Awareness among policymakers about the interconnectedness between, inter alia, agriculture, natural resource management and trade issues as well as the organizational framework within which policies are to be practiced are prerequisites for developing an appropriate policy framework.

In order to facilitate timely and effective implementation, policy formulation should be driven by a bottom-up approach informed by successful initiatives at the local level. Active engagement of stakeholders, including communities and the private sector as well as voluntary organizations, can contribute to long-term financial sustainability to enhance rural livelihoods in semi-arid zones of Africa. Equally important is the need for putting in place commensurate institutional arrangements so that policies have a chance of being implemented as desired.

The external environment is also conducive to facilitating participatory design of policies and strategies for the development of the agricultural sector. The existence of continental frameworks such as CAADP and its offshoot – the Malabo Declaration – constitute part of the enabling environments for increasing investments in the agricultural sector.

3.5.5 Gender and Youth Issues

3.5.5.1 Key issues and associated challenges

Empirical research and several programme documents have shown that women living in rural areas of SSA play significant roles in supporting household food and nutrition security and improving rural livelihoods. However, in SSA, women and the youth have less access than adult men to productive resources and opportunities, including access to land, livestock, education, extension/advisory facilities and financial services. Often, women's rights are undermined by customary practices that override formally constituted legal provisions[13].

Whilst education is generally believed to be a critical factor for engendering productive employment, in SSA school "… curriculum is often geared more toward academic accomplishments and to urban-focused studies than to learning useful skills that enhance rural livelihoods"[14]. The lack of access to resources has resulted in significant underemployment to adult women. These, coupled with widespread poverty, unsecured livelihood, and political instability, have fueled youth outmigration from rural

[13] See, for instance, African Union, 2017, African Union Strategy for Gender Equality & Women's Empowerment (2017-2027), Addis Ababa, Ethiopia.

[14] Min-Harris, Charlotte 2009 Youth Migration and Poverty in Sub-Saharan Africa: Empowering the Rural Youth. *http://www.youthpolicy.org/library/documents/youth-migration-and-poverty-in-sub-saharan-africa-empowering-the-rural-youth/*

areas to nearby urban centres and further afield – at times with disastrous consequences, as evidenced by the plight of the youth trying to migrate from dryland and conflict-prone Africa to Europe.

Thus, a growing challenge for policy makers is how to enable the youth and women effectively participate in, and benefit from, mainstream agricultural and rural development processes at home.

3.5.5.2 Opportunities/Pathways

Building a gender perspective and employing a youth lens into agricultural policies and projects and policy interventions aimed at closing the gender and age gaps in agriculture and rural development are of paramount importance. It is believed that such an approach is bound to produce significant gains for society by increasing agricultural productivity, reducing poverty and hunger, improving human welfare, and promoting broad-based economic growth.

As regards women, it is important to recognize and build on the tremendous resilience they show through, for instance various self-help rural economic activities they initiated. Several micro-level studies have revealed that integrating women's empowerment into programmes through, inter alia, enhancing women's access to credit and other financial inclusion mechanisms as well as facilitating a range of asset accumulation and women-centred community leadership initiatives, could positively impact on agricultural productivity.

In the same vein, providing rural youth with opportunities to stay in their communities through programmes supporting the entire agricultural value chains, not just production, will not only stem distress-induced migration but also help fuel local economic growth. In the words of a 2018 Africa Food Prize Winner, "Only through providing dynamic employment, and improving livelihoods, can we ensure Africa's growing youth population becomes an asset, not a burden. As political instability and extremism stalk the continent, creating job opportunities for rural youth will act as a powerful antidote to these threats."[15]

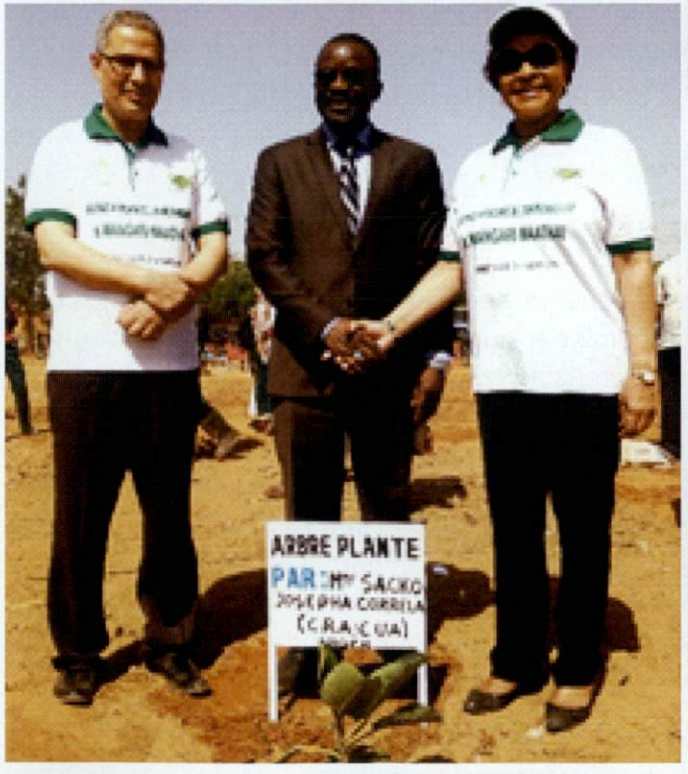
3.6 Conclusion

A productive agricultural sector in semi-arid zones of Africa has the potential to make a significant contribution to reducing vulnerability and increasing resilience. Realizing this potential and bringing about a productive and stable agricultural sector hinges on a range of science and innovation-rooted technical interventions, prioritized investments, institutional development efforts and policy reform processes. Given that semi-aridity has its own unique sets of challenges, it is imperative that technical solutions to improving agriculture be looked at from the perspective of their validity to the socio-economic and natural environment in which they are expected to be implemented.

[15] Sanginga, Nteranya 2018. "African Agriculture's Future Lies in Cultivating Youth, Not Only Crops". https://allafrica.com/stories/201809100211.html

Furthermore, effective knowledge exchange and lessons learning experiences be promoted among institutions and programmes operating in semi-arid zones of Africa to facilitate adoption of technologies and working practices. In light of the enormity of the tasks of transforming agriculture in semi-arid zones, where climate change and variability and desertification put additional stresses, it is vital that investment resources be mobilized from both internal and external sources.

Finally, policy integration should be pursued such that investment in, say, sustainable land management arena is not thwarted by competing agricultural strategies and/or trade policy instruments.



Celebrating Environment day

4.0 AU-SAFGRAD's STRATEGIC THRUST

4.1 AU-SAFGRAD's Strategic Goal, Purpose and Objectives

The strategicfocus articulated earlier provides a specific *niche* for AU-SAFGRAD that covers all aspects of resilience-building, including strengthening the policy and institutional environment; and building research-related capacity for agricultural productivity, desertification, land degradation and climate change adaptation. As illustrated in Figure 4.1, AU-SAFGRAD's strategic goal and objectives in the next five years will be built aroundthis niche

4.1.1 Strategic Goal

To enhance sustainable food and nutrition security and improved rural livelihoods in semi-arid zones of Africa.

4.1.2 Purpose

To build the livelihood resilience of smallholders and bring about sustainable agriculture through strengthening policy and institutional ecosystems and promoting agricultural research for development in semi-arid zones of Africa.

4.1.3 Strategic Objectives

Within the scope of AU-SAFGRAD's mandate, the following two strategic objectives, which in log frame parlance are also considered as ***outcomes***, have been identified to contribute to the above-mentioned goal:

- To strengthen the policy and institutional environment for enhancing the resilience of rural livelihoods in semi-arid zones of Africa; and
- To strengthen research-related capacity for agricultural productivity and climate change adaptation for enhanced resilience of rural livelihoods in semi-arid zones of Africa.

These strategic objectives/outcomes are complementary of each other and jointly contribute to building the resilience of livelihoods (Figure 4.1) and the overall goal of sustainable food security and improved rural livelihoods. The way in which outcomes, outputs and activities for each of these goals will translate into impact is explained in the AU-SAFGRAD's theory of change (shown later in the chapter in Figure 4.4).

Figure 4.1 Strategic goal and objectives of AU-SAFGRAD.

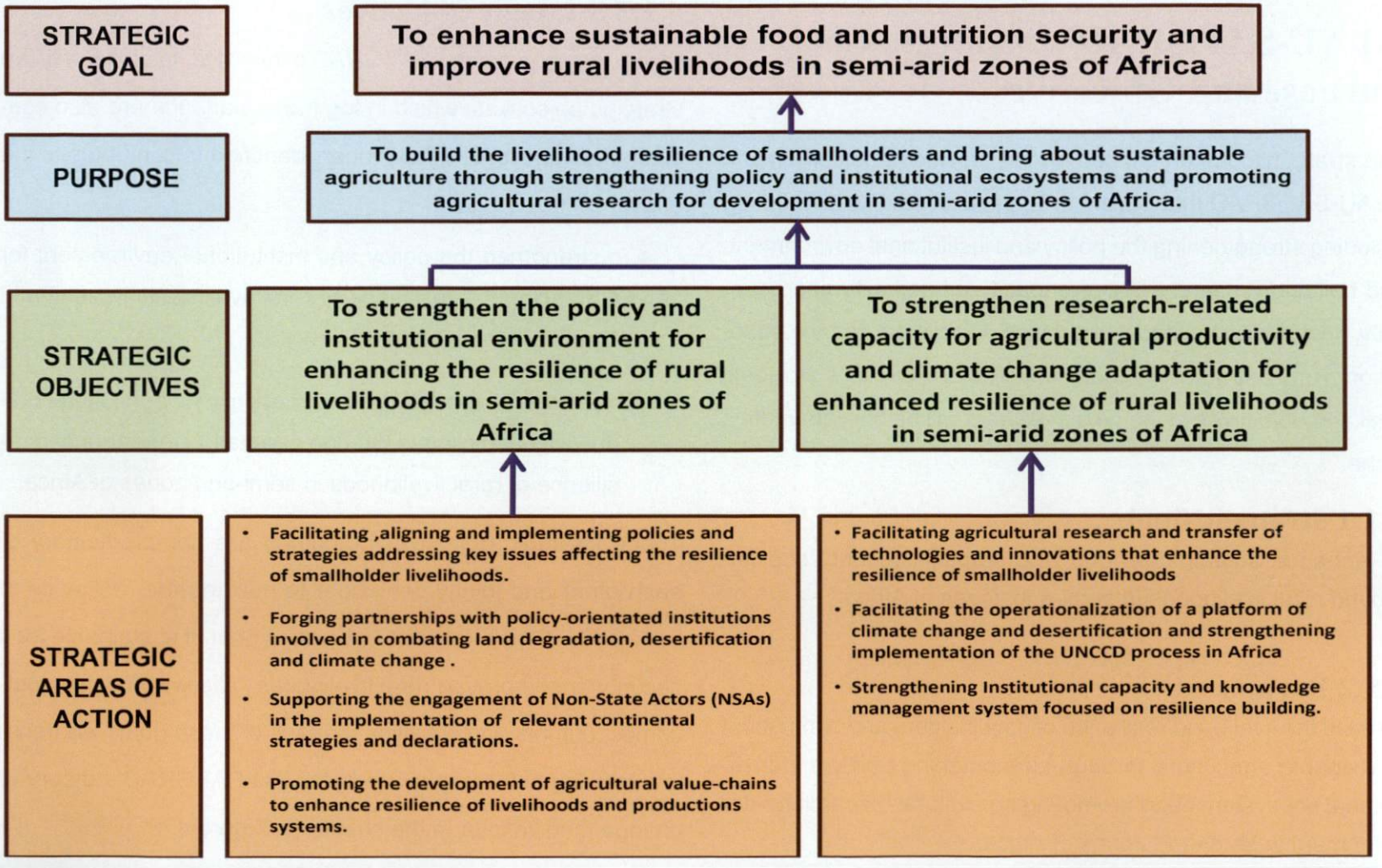
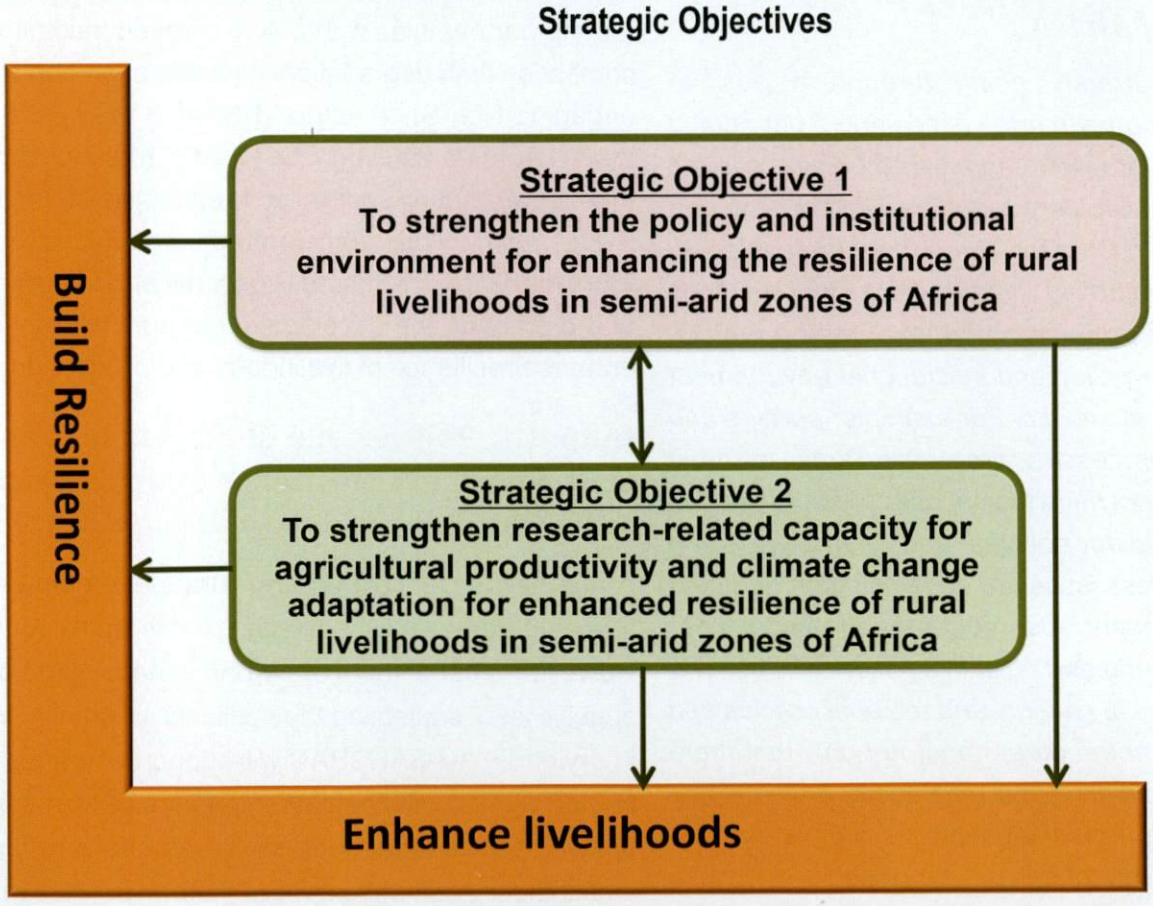


Figure 4.2. Strategic objectives for building resilience and enhancing livelihoods.



4.1.3.1 Strategic Objective 1 (Outcome 1): To strengthen the policy and institutional environment for enhanced resilience of rural livelihoods in semi-arid zones of Africa

African agriculture is currently going through a positive transformation with recent growth rates exceeding 5 per cent in some countries. The high growth in agriculture however, is not being enjoyed by most smallholder producers living in semi-arid zones of Africa. As noted in Chapter Three, they are subject to a wide range of environmental and climatic shocks that limit their resilience and capacity to produce and market their products. They are also subject to a policy and institutional environment that stifles their resilience to shocks. For example, policies and policy implementation processes are weak and, in most countries, practitioners do not have the capacity to formulate and implement resilience-building policies and plans. In some countries, policies to address issues of desertification and land degradation are totally absent. Also absent is the capacity to reform policies through sound and objective policy reviews. The ability to integrate resilience in national and regional policies and plans is equally lacking. On the other hand, not only that there is a dearth of policy institutions with a main focus on resilience building and combating desertification, there is limited systematic collaboration among the existing ones.

AU-SAFGRAD will address these gaps in facilitating policy formulation and implementation through four interrelated actions involving assisting RECs and countries to align and implement appropriate policies and strategies on key issues affecting the resilience of smallholder livelihoods in semi-arid zones of Africa; forging partnerships with policy-oriented institutions involved in combating land degradation, desertification and climate change; engaging Non-State Actors (NSAs) in the operationalization of the AU Agenda 2063 and the CAADP Malabo commitments and thereby promoting country and regional level implementation of AU's policy on Accelerated Agricultural Growth and Transformation for Shared Prosperity and Improved Livelihoods; and promoting the development of agricultural value-chains to enhance resilience of livelihoods and production systems.

Output 1: Policies and strategies addressing key issues affecting the resilience of smallholder livelihoods improved, better aligned and implemented.

A number of agricultural and rural development policies and strategic frameworks currently exist in many African countries. However, most of them are broad in nature and do not address specific issues affecting the resilience of smallholder livelihoods in drylands. AU-SAFGRAD will support countries to better align behind agreed continental/regional frameworks and implement specific policies that address issues affecting the resilience of smallholder livelihoods. Where general policies and frameworks

exist, countries will be supported to revise and implement them accordingly. Support to countries will be provided through the following actions/activities:

(i) ***Strengthening capacity for better policy formulation and implementation***

This will involve identifying all the relevant stakeholders involved in policy practice i.e. the policy formulation and implementation process. They will be facilitated to participate in training workshops, seminars, fellowships, internships and exchange visits to improve their skills in the formulation and implementation of resilience-building policies. Training materials and user-friendly manuals based on best practices, experiences and case studies carried out on issues of relevance to drylands of Africa will be produced. Knowledge and experience sharing for countries to learn from the successes and failures of others in policy formulation and implementation will be facilitated.

(ii)Undertaking advocacy to inform policy and policy implementation processes

AU-SAFGRAD will identify which policies can enhance long-term resilience through direct targeting of vulnerable areas and populations and advocate (through meetings, information sharing, policy dialogues, analysis of key trends and issues, publications, and coordinated campaigns) for their adoption. This will be done at the national, regional and continental levels, and will involve governments, RECs, Farmers' Organizations, NGOs, partners, and other development organizations. Specific actions will include: supporting production and dissemination of resilience building policy advocacy materials (policy briefs, fact sheets, social media publications); convening workshops and seminars to present research outputs and to discuss and debate key issues on resilience-building; providing a platform for researchers, policymakers and practitioners to exchange information on research related to resilience-building; and establishing and/or strengthening networks of producers' organization's for effective stakeholder representation in policy formulation and/or policy reform processes that support resilience-building for rural communities

Output 2: Partnerships with policy-orientated institutions involved in combating land degradation, desertification and climate change forged.

Forging strategic partnerships is a critical element for sustainable agricultural development as it provides a competitive advantage and an opportunity to access a broader range of resources and expertise. In resilience building, partnerships can galvanize distinctive skill sets and expertise from different partners that can be used to address issues of land degradation, desertification and climate change. By partnering with relevant institutions, AU-SAFGRAD will benefit from the strengths and resources of the partners to help build the resilience of small-

holder producers in semi-arid zones. Partnerships will support AU-SAFGRAD's efforts to develop and implement resilience building policies, promote community engagement in resilience building activities, as well as advocate for and enhance community awareness of the issues affecting their resilience. Areas in which AU-SAFGRAD will work with its partners include the following:

(i) Jointly develop frameworks and guidelines for policy formulation, review and coherence

AU-SAFGRAD, in close collaboration with such policy-focused institutions and think tanks as CILSS, CODESRIA, FANRPAN, FAO, FARA, HOAREC, IFPRI, and Le Hub Rural, will support a number of tasks, including the following: (a) make an inventory of existing policies to establish their appropriateness for addressing issues of resilience; (b) review relevant frameworks and guidelines (e.g., CAADP Guidelines) with the view to mainstreaming resilience building into NAIPs and RAIPs; (c) develop an overarching framework for resilience building to inform the formulation of rural development policies; (d) using the guidelines/frameworks, support the CAADP mutual accountability process by assisting AU member states and RECs to participate in the Joint Sector Reviews (JSR) and Biennial Review processes and report on outcomes of resilience-building actions implemented in semi-arid zones of Africa; and (e) prepare Working/Issues Papers on resilience building for promoting debate and understanding and thereby facilitate policy coherence.

(ii) Strengthening partnerships to connect policy makers with policy researchers

The relationships that AU-SAFGRAD has established and sustained over the past four decades with national governments and RECs on the one hand, and, on the other, national, regional and international agricultural research organizations as well as development policy research and academic institutions, have availed it the opportunity to influence evidence-based policy generation and review in semi-arid zones of Africa. These existing relationships and partnerships will be nurtured and strengthened, and where possible, new ones established. In particular, using its convening power, AU-SAFGRAD will facilitate (a) the engagement of policy researchers from policy-focused institutions with national, regional (e.g., RECs) and continental (e.g., AU) decision-makers through, for instance, co-organization of policy side events tagged with larger conferences (e.g., FARA – Science Week, AGRA events, AU - STC meetings/AU Environment Day, and UNCCD conferences) and (b) the participation of policy researchers in major meetings such as CAADP Partnership Platform and AU Dryland Week.

Output 3: Engagement of Non-State Actors (NSAs) in the implementation of relevant continental strategies and declarations supported.

Non-state actors (NSAs) include groups with influence and which are wholly or partly independent of state governments. According to the Cotonou Agreement,[16] non-state actors include a wide range of non-governmental development actors.[17] Increasingly, these actors are playing an instrumental role in the development arena including shaping the landscape of climate change governance across the world[18]. Considering the CAADP Malabo Declaration commitment to enhance the resilience of livelihoods and production systems to climate variability and other related risks, the engagement of NSAs at country and regional level will help to address issues of desertification, land degradation and climate change as well as foster agricultural and pastoral development in a more inclusive manner. For example, the June 2017 International Summit of non-state actors on land degradation and climate change held in Strasbourg, Germany demonstrates how engaging NSAs in CAADP Malabo Declaration could address problems of agricultural productivity and sustainable food security.

With the recognition of NSAs by African Heads of State and Government as key players in the Africa Agriculture Transformation Agenda, AU-SAFGRAD will engage NSAs through various dialogues and forums to ensure their voices are heard and considered in the formulation and implementation of policies that enhance the resilience of smallholder livelihoods. In this regard, AU-SAFGRAD will undertake the following activities:

(i) Facilitate inclusive multi-stakeholder engagement with national and regional policy formulation and revision processes. AU-SAFGRAD will support governments, including country CAADP Teams, to facilitate involvement of private sector, farmers' organizations, women associations, youth groups/networks, NGOs etc in policy formulation and policy reform processes. This will ensure stakeholder "buy-in" to new policies and policy implementation processes. Multi-stakeholder policy dialogues will be organized to bring together government and non-state actors to discuss the role of each stakeholder in the policy formulation and implementation process. In addition, AU-SAFGRAD will facilitate preparatory meetings for representatives of CSOs (including farmers'/producers' organizations) and NGOs so that they participate in fora where international negotiations and/or agreements on the governance of land degradation, desertifi-

[16] See: «Overview, The Cotonou Agreement». *The Cotonou Agreement. European Commission. 10 May 2012.*

[17] These non-state actors include community-based organisations (CBOs), farmers' organisations (FOs), trade unions, women's groups, grassroots organisations, human rights associations, religious organisations, universities and research institutes, informal private sector associations among others.

[18] See for example: https://link.springer.com/article/10.1007%2Fs10784-014-9243-8 and http://www.internationalnegotiationssurvey.se/survey-items/non-state-actors-in-climate-change-governance-2/

cation and climate change are organized.

(ii) Support the Network of Non-State Actors Coalition aligned to CAADP to participate in the Biennial Reviews. The Biennial Reviews are held at high-level meetings on the sidelines of AU Assembly and represent a peer review mechanism on the performance of agriculture on the continent. The involvement of NSAs in such fora is critical in informing the assessment – from NSAs' perspective – of progress made towards achieving CAADP goals on resilience-building, among others.

(iii) Support NSAs to promote the use of the AU Land Policy and Pastoral Policy Frameworks in the development of NAIPs and RAIPs. These policy frameworks are evidence-based documents that also benefited from continent-wide expert consultations of key stakeholders. These frameworks are intended to inform and guide countries in the development and implementation of national policies and strategies to address issues of land tenure and administration as well as issues affecting pastoralist and agro-pastoralist livelihoods. Thus, AU-SAFGRAD will promote the involvement of NSAs in the domestication of the above-noted frameworks.

Output 4: Development of agricultural commodity value-chains to enhance resilience of livelihoods and production systems promoted.

In Africa, the resilience of smallholder production and marketing systems are under constant threats from natural and man-made hazards including environmental, climatic and price shocks. Equally threatened is the resilience of the food systems and the associated value-chains[19] nested within these food systems. Many of the commodity value-chains in semi-arid zones of Africa lack the capacity to develop and thrive. They also are unable to prepare producers and other value-chain actors to respond to and recover from unexpected disasters, climatic and price shocks.

Producers, agro-processors, market agents and transporters also lack the requisite skills to fully participate in the value-chain and, most often, are not well connected and integrated in the commodity value-chains. Equally lacking of capacity are the institutions that deliver, coordinate and govern the use and flow

[19] The resilience of an agricultural value-chain refers to its capacity to continue and develop in the provision of food security and other services in the face of supply and demand disturbances, through the preparation for, response to, and recovery from unexpected shocks; the avoidance of tipping points; and adaptation to ongoing change. For more on this see: Ryan Vroegindewey and Jennifer Hodbod (2018). "Resilience of Agricultural Value Chains in Developing Country Contexts: A Framework and Assessment Approach". *Sustainability* 2018, 10, 916; doi: 10.3390/su10040916.

of resources, inputs and services across commodity value-chains such as the relevant government ministries, producers' organizations, including forest dependent communities, and traders' associations. The weak nature of the legal and regulatory frameworks and instruments adds another layer of constraint to the development of commodity value-chains in semi-arid zones of Africa.

With agriculture, including agroforestry, as the main economic activity for most people living in semi-arid zones, improving participation in well-functioning agricultural value-chains can yield multiple benefits to all those involved including producers, market agents, agro-processors and transporters. Increased participation adds value, promotes trade, diversifies rural economies and contributes to increased rural household incomes. Therefore, promoting the development of specific commodity value-chains creates employment, promotes access to high-priced markets, reduces rural poverty and enhances livelihoods.

In the 2005 Arusha Declaration on commodities, African Heads of State and Government (AHSG) adopted a plan of action to integrate commodity strategies into national development plans. Moreover, in the 2009 Abuja Declaration, African leaders requested AU member states to identify strategic commodities and promote their respective value-chains at national, regional and continental levels. In the 2014 Malabo Declaration, African Heads of State and Government also requested member states to create job opportunities for at least 30 per cent of youths in agricultural value-chains and to triple, by the year 2025, intra-African trade in agricultural commodities. AU-SAFGRAD takes cognizance of the fact that building resilience to enhance rural livelihoods in semi-arid zones cannot be successfully achieved if action is not taken to develop strategic agricultural commodity value-chains. Unless smallholder producers, market agents, agro-processors, and transporters are enabled and effectively integrated into strategic commodity value-chains, the incomes, food security and other livelihood needs of people living in semi-arid zones of Africa cannot be met. AU-SAFGRAD will have to take advantage of the opportunity that the Continental Free Trade Area (CFTA) presents for the integration of intra- and inter-regional agricultural markets on the continent.

Currently, AU-SAFGRAD is collaborating with RECs and other partners to prioritise and analyse strategic agricultural commodity value-chains. During the course of this plan, AU-SAFGRAD will collaborate with pertinent AU departments, UN institutions, CGIAR Organization and other relevant agencies to strengthen value-chains for strategic commodities produced in semi-arid zones. This will involve promoting an 'enabling environment' for development and growth of commodity value-chains; and strengthening the capacity of value-chain actors.

These actions are illustrated in Figure 4.3. They will not only contribute to increased productivity, but also help to shift agricultural production from subsistence farming into more intensive

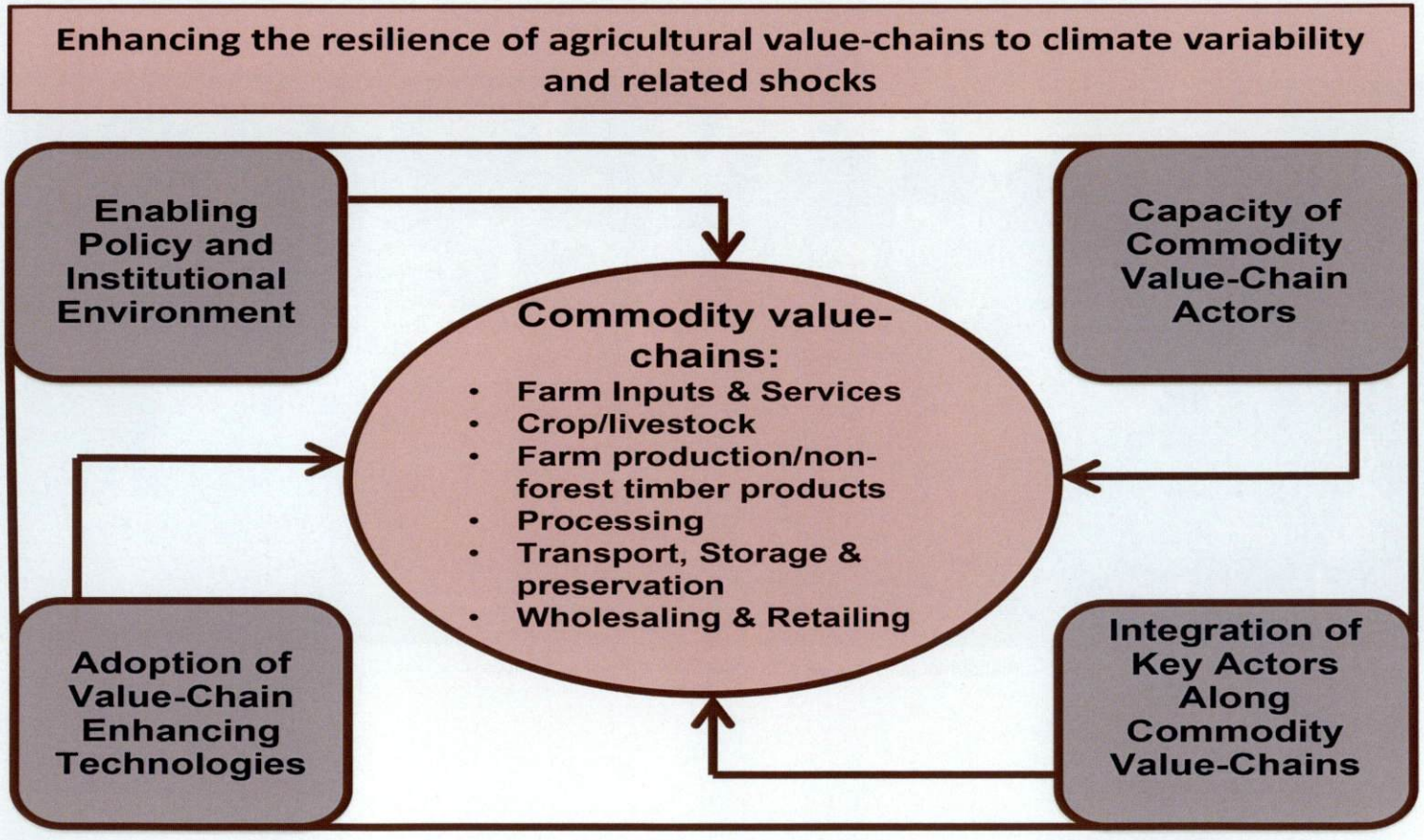
commercialized farming; improve competitiveness in markets through greater integration of producers, retailers and consumers involved in the value-chain; connect producers with more lucrative markets within and outside semi-arid zones; and create income-generating activities for members of producers' organizations. Also, the actions undertaken by AU-SAFGRAD will help to build the resilience of smallholder producers and vulnerable communities and enhance the resilience of commodity value-chains; giving them the capacity to continue functioning in the presence of shocks. The following actions/activities will be undertaken to facilitate the delivery of Output 4.

(i) Promoting an enabling environment for development and growth of commodity value-chains

Depending on resource availability and conditions on the ground, there are several ways by which AU-SAFGRAD will achieve this. The following specific tasks constitute possible menu of options: (a) facilitating RECs to develop regional value chains and establishment of regional Commodity Committees (b) facilitating the development of frameworks and guidelines for integrating commodity value-chains in national and regional policies and strategic plan; (c) supporting national and regional research and development organizations. (to generate and disseminate value-chain-enhancing technologies; (d) identifying policy options and investment opportunities to enhance resilience of agricultural value-chains and working with national (e.g. Ministries of Agriculture, Trade and Industry) and regional (e.g RECs) organizations to institutionalize value-chain development approaches within their policies and strategies; and (e) supporting innovation platforms (IPs) to scale-up technologies for promoting commodity value-chains.

Platform of farmes, research system and extension services

Figure 4.3. Possible areas for strengthening agricultural value-chains for enhanced resilience and livelihoods.



(ii) Strengthening the capacity of commodity value-chain actors

In parts of semi-arid zone Africa, years of conflict have eroded the economy, destroyed the productive and adaptive capacity of smallholder producers and their communities, cut them off from markets, and prevented public and private investments in agri-

culture. As a result, a large number of vulnerable smallholder producers have limited capacity to respond to environmental, climatic and social shocks and to take advantage of economic opportunities.

Here, too, AU-SAFGRAD has a range of options to ensure that the above-noted output is delivered: (a) organizing national and regional training workshops to strengthen the innovation and learning capacity of value-chain actors, service providers and relevant stakeholders. This will include facilitating the production of training materials for specific commodity value-chains, including commercially viable non-wood forest products. These are expected to develop the skills of value chain actors to analyze challenges and opportunities along specific commodity value-chain nodes; (b) liaising with education and research institutions to organize training and coaching workshops and seminars to improve the skills of value-chain actors and service providers (producers, market agents, agro-processors, transport agents, financial institutions) involved in the value-chains of major commodities (including those considered as 'orphan crops') produced in semi-arid zones; (c) identifying relevant technologies and innovations that enhance the performance of specific commodity value-chains and bringing them to the attention of value-chain actors and service providers.

4.1.3.2 Strategic Objective 2 (Outcome 2): To strengthen research-related capacity for agricultural productivity and climate change adaptation for enhanced resilience of rural livelihoods in Semi-Arid Zones of Africa.

As noted in Chapter Three, the semi-arid zones of Africa have been under considerable stress arising from land degradation, desertification and climate change and variability. Changes in climate, for example, are putting severe pressures on production

systems with devastating effects on agricultural productivity and food security, especially for smallholder producers living in semi-arid zones. Smallholder producers and their communities suffer disproportionately in the face of droughts, floods and other weather-related events. It is now widely recognized that adaptive, context-specific, research has to be geared towards addressing these challenges.

One of the seven (7) commitments of the Malabo Declaration on CAADP[20] is to *enhance the resilience of livelihoods and production systems to climate variability and other related risks*.-AU-SAFGRAD, in collaboration with the other AU institutions, Departments and Technical Offices, will support AU Member States and RECs to implement research-related activities that help build the resilience of smallholder producers and production systems. This will entail working with country and regional CAADP Teams, CSOs and other Non-State Actors.

The AU Business Plan to implement the CAADP-Malabo Declaration (2017 – 2021) has outlined priority actions for building the resilience of rural livelihoods and has called on AU institutions to support countries and RECs to implement the activities. In this respect, insights from the Science, Technology and Innovations Strategy for Africa (STISA) and the Science Agenda for Agriculture in Africa (S3A) will be used to inform AU-SAFGRAD's interventions.

It is recognised that several institutions are involved in the generation of evidence on resilience building, and AU-SAFGRAD will promote the use of such research results in ways that benefit its stakeholders in SAZs through, among others, knowledge capture, packaging and effective dissemination.

Output 5: Agricultural research and transfer of technologies and innovations that enhance the resilience of smallholder livelihoods facilitated.

In 2017, the Second Ordinary Session of the Specialized Technical Committee (STC) on Agriculture, Rural Development, Water and Environment requested AU-SAFGRAD to strengthen the role of science and technology in combating desertification and land degradation in Africa. This was intended to assist RECs and AU Member States experiencing serious drought to combat desertification and mitigate the effects through national action programmes that incorporate long-term strategies based on science and technology. As elucidated in the Science Agenda for

[20] The seven commitments of the Malabo Declaration on CAADP are: Commitment to the Principles and Values of the CAADP process; enhancing investment finance in agriculture; halving poverty by the year 2025, through Inclusive Agricultural Growth and Transformation; boosting Intra-African trade in agricultural commodities and services; enhancing resilience of livelihoods and production systems to climate variability and other related risks; mutual accountability to actions and results; and strengthening the African Union Commission to support delivery on these commitments.

Agriculture in Africa, the introduction of tried and tested agricultural technologies in agricultural production systems threatened by desertification, land degradation and climate change in semi-arid zones can bring about resilient and sustainable rural livelihoods. Since most of the shocks experienced in these zones are largely climate-related, the development, dissemination and use of Climate Smart Agriculture (CSA) technologies and practices present important options for reducing desertification, improving land management and addressing climate change for sustainable agriculture and food security.

CSA provides a "triple win" for farmers by sustainably increasing productivity of agricultural livelihood activities; increasing smallholder resilience and adaptation to the effects of climate change; and reducing greenhouse gas emissions from agriculture and improved carbon sequestration. In addition to CSA technologies, effective dissemination and use of innovative technologies developed on research stations help to conserve land, water, plant and animal genetic resources, biodiversity and ecosystems, all of which help to enhance resilience to climate change and natural disasters[21]. Innovative technologies also help to mitigate the effects of extreme weather events on farms and markets, particularly for women and the youth[22] (Box 4.1).

Box 4.1 Boosting resilience of women and youth in the Sahel through climate-smart agriculture[23]

Women make up more than 40 per cent of the agricultural labor force in the Sahel and play a critical role in enhancing food security and nutrition. In most places with high prevalence of undernourishment, women farmers have significantly less access to land, information, finance and agricultural inputs. This makes them more vulnerable to climate shocks, and affects their health and the food security and nutrition of the entire household. In a similar vein, lack of employment and decent living coupled with the adverse effects of climate shocks prompt the youth to migrate outside of the Continent making them vulnerable to human trafficking agents and a life of misery and destitution along the way. ***The G5 Sahel***, the institutional framework for development coordination among the five countries in the region - Burkina Faso, Chad, Mali, Mauritania, and Niger - has identified combatting climate change and environmental degradation, along with their effects on women and the youth, as a priority. This framework is expected to contribute to the three pillars of climate-smart agriculture: increasing productivity and incomes without damaging the environment; enhancing adaptation by strengthening local communities' resilience and capacities; and mitigation, by reducing and/or removing greenhouse gas emissions through responsible farming, soil management and afforestation.

The following constitute activities that could be undertaken to deliver on the above-noted output:

(i) Support commodity-based 'Innovation Platforms' to incorporate issues of resilience building, including mainstreaming of CSA.

Over the years, a number of agricultural commodity-based Innovation Platforms (IPs) have been established in several AU member states. The IPs typically are composed of decision-makers, producers and processors, scientists/researchers and technology developers, traders, financial institutions, trans-

[21] See for example, http://www.fao.org/docrep/018/i3325e/i3325e13.pdf MODULE 13: Mainstreaming CSA into National Policies and Programmes

[22] Kipkoech, Anderson K., Rhodes, Edward R., Tambi Emmanuel, Msaki Mark M., Nwajiuba Chinedum and Bangali Solomon, 2015. State of Knowledge on Climate Smart Agriculture in Africa: Synthesis of Regional Case Studies. *Pattern Draw (ed)*. Forum for Agricultural Research in Africa, Accra, Ghana. ISBN 978-9988-8383-3-1. http://www.worldcat.org/title/state-of-knowledge-on-csa-in-africa-synthesis-of-regional-case-studies/oclc/967183124

[23] For details see: http://www.unwomen.org/en/news/stories/2017/12/press-release-joint-un-initiative-on-climate-smart-agriculture-at-oneplanet-climate-summit

porters and local community leaders. These IPs have succeeded in increasing agricultural productivity, value addition, and promoting market access. However, the effective functioning of these IPs has been constrained by inter-season fluctuation in product supply and processing capacity due to climate change. It is, therefore, essential that these IPs consider policy and practical measures that would help mitigate the effects of climate variability on the functioning of the value chain for which they have been established. In this regard, AU-SAFGRAD could carry out a range of interventions including the following: (a) facilitating scientists/researchers to advice the IPs on appropriate CSA technologies and practices; (b) organizing exchange visits to learn from successful application of CSA approaches; (c) target selected IPs for disseminating relevant knowledge products and (d) developing frameworks to address the challenges that facing smallholders livelihoods in Semi-Arid Zones of Africa.

(ii) Strengthen collaboration and partnership between the NARS and the CGIAR Organization and other research institutions in order to facilitate implementation of resilience-building activities.

The advancements made in science, technology and innovation, provide opportunities to sustainably improve the resilience of livelihoods in semi-arid zones of Africa. This is possible however, if strong partnerships exist between the research and development institutions at national, regiona

l and international levels. Strengthening partnerships between the National Agricultural Research Systems (NARS), the Consultative Group on International Agricultural Research (CGIAR) Organization, International Advance Research Institutions, private sector and other agri-research stakeholders is critical for building the resilience of livelihoods in semi-arid zones of Africa. The way forward for AU-SAFGRAD therefore will be to strengthen collaboration and partnership between the NARS on the one hand, the CGIAR and other research institutions, on the other, in order to facilitate implementation of resilience-building activities. To this end, AU-SAFGRAD could consider developing proposals for donors so as to finance a range of activities that would facilitate CGIAR – NARS partnership.

(iii) Enhance the capacity of African young researchers/relevant stakeholders on the challenges of land degradation, desertification, and climate change adaptation.

Building the research capability of young researchers – the scientific leaders of tomorrow – is of critical consideration in bridging the gap in inter-generational skill sets and in helping find durable solutions to current and emerging challenges affecting the resilience of smallholder livelihoods. Thus, in addition to enhancing the technical/subject matter capacities of young researchers, the focus should also be tailored to enable them acquire knowledge and skills necessary for planning, conducting, and publishing and evaluating quality research. In this respect, the main areas of focus for AU-SAFGRAD's involvement include the following: (a) *supporting/facilitating skills acquisition by young researchers through, for instance, exploring opportunities in* national, regional and international research institutions for short-term training, internship and other vehicles of skills acquisition; (b) *advocating for, and providing support to, young researchers' participation in resilience-building technical meetings*, including workshops, seminars and conferences to develop their skills and gain experience; (c) *organizing regular*

meetings of young researchers to discuss and exchange information on research and development issues in semi-arid zones of Africa and *{d}* enhanced the skills of senior researchers.

Output 6: Operationalization of a platform of climate change and desertification and strengthening implementation of the UNCCD process in Africa facilitated.

In Decision XVI of 2014, African Heads of State and Government called on African countries to support implementation of the UNCCD process in Africa. This was intended to help Member States enhance negotiation capacity at the UNCCD and also tackle the challenges of desertification at national level. To assist African countries in this process, AU-SAFGRAD will undertake the following actions, which are also consistent with the UNCCD new strategic framework, 2018 - 2030[24].

(i) Support a platform of climate change and desertification in Africa

There are a number of platforms organized to support collective action in the area of climate change and desertification[25]. These platforms bring together smallholder producers and stakeholders from public, private, Non-State Actors – Civil Society Organizations and NGOs working on climate change and desertification in Africa to discuss and share data, information and knowledge. These platforms help to empower farmers, processors and market agents with climate information for decision-making.

Using the platform(s) that AU-SAFGRAD would like to forge partnerships with, it could support regional networks of UNCCD and UNFCCC focal points in government ministries undertake several tasks. Some of the options include the following: (a) promote exchange of experience and knowledge on climate change and desertification through, for instance, organizing lessons learning meetings on SAZs; (b) strengthen the capacity of UNCCD's African Science and Technology Correspondents through, among others, technical trainings, organisation of science-policy interface fora etc; (c) promote networking among the Centres of Excellence working in the area of desertification; and (d) support multi-stakeholder desertification-related innovation platforms to promote and scale-up the adoption of innovations that increase productivity. AU-SAFGRAD could explore opportunities for working with the G5 Sahel development coordination framework referred to in Box 4.1.

(ii) Mainstream land degradation, desertification, climate change and risk management approaches into NAIPs and RAIPs

AU-SAFGRAD will support the development of tools to assist governments and RECs to formulate policies that incorporate land degradation, desertification and climate change. Some of these undertakings include the following: (a) Development of

[24] The strategy will contribute to (i) achieving the objectives of the Convention and the 2030 Agenda for Sustainable Development, in particular regarding Sustainable Development Goal (SDG) 15 and target 15.3: "by 2030, combat desertification, restore degraded land and soil, including land affected by desertification, drought and floods, and strive to achieve a land degradation-neutral world" and other interrelated SDGs, within the scope of the Convention; (ii) improving the living conditions of affected populations; and (iii) enhancing ecosystems services.

[25] Some of such platforms include: the G5 Sahel Development Coordination Platform, the CCAFS Platform on Climate Change, the Climate Change Network for Africa, and the Platform for Africa Group of Negotiators.

frameworks and guidelines to assist country CAADP Teams to mainstream land degradation, desertification, climate change and Disaster Risk Reduction (DRR) and adaptation approaches into the NAIPs and RAIPs.[26] (b) Provision of support to processes for incorporating climate smart agriculture approaches in NAIPs and RAIPs is another option.

(iii) Strengthen research- and training-related capacity for Land Degradation at the Conference of Parties (CoP) of the United Nations Convention to Combat Desertification (UNCCD)

Most African countries in semi-arid zones do not have adequate numbers of land degradation and climate change specialists in areas of science, policy, adaptation, mitigation, carbon trading and carbon markets who can participate in the preparatory processes and negotiation sessions convened by the Conference of the Parties (CoP) of the UNCCD and the United Nations Framework Convention on Climate Change (UNFCCC)[27]. It is

[26] This involves helping Governments to put in place measures to reduce poverty and empower marginal communities through tackling underlying vulnerability and poverty.

[27] The United Nations Convention to Combat Desertification (UNCCD) was established in 1994 as the sole legally binding international agreement linking environment and development to sustainable land management. The Convention addresses specifically the arid, semi-arid and dry sub-humid areas, known as the drylands, where some of the most vulnerable ecosystems and peoples can be found. The Conference of the Parties (CoP) oversees the implementation of the Convention and is the supreme decision-

Strenghtening AfricanYoung researchers

important to assist AU Member States and regional organizations to acquire the scientific skills and competencies required to implement programmes for adaptation and mitigation of the impacts of climate change, land degradation and desertification as well as to negotiate terms and conditions that are beneficial for Africa. There are a number of action areas that could enable one deliver on this output.

AU-SAFGRAD is well-placed to initiate collaboration with relevant desertification and climate change institutions such as UNCCD Africa and CCAFS[28] with the view to strengthening the scientific capacities of UNCCD Science and Technology Correspondents (STCs) who would in turn assist national focal points (NFPs) in scientific matters related to the implementation of the Convention. This will, among other tasks, entail (a) facilitating continental, training, planning and preparatory workshops on the UNCCD and UNFCCC negotiation process where pertinent representatives to the themes of climate change and desertification from African countries would participate;

(b) Mobilizing and enhancing the capacity of Governments and regional organization's to contribute to coherent policies and programmes for developing green economies; and (c) developing communication tools to raise awareness on the impacts of climate change and the need for a green economy.

It is also possible that AU-SAFGRAD could (d) enhance the scientific skills of Member States to develop position papers on resilience-building in preparation for CoP and other UNCCD and UNFCCC meetings; (e) facilitate continental/regional meetings where climate change experts of AU Member States will discuss a number of issues of mutual interest.[29]

Output 7: Institutional capacity and knowledge management system focused on resilience building strengthened

Considering the overarching thematic issues of resilience building and the complexity of the agricultural development challenges in SAZs of Africa, a strong institutional and human resource capacity is critical for effective building of the resilience of smallholder production systems. To effectively deliver on its mandate, AU-SAFGRAD needs to strengthen its institutional

making body. The UNCCD collaborates with the UN Framework Convention on Climate Change (UNFCCC) to address issues of land, climate and biodiversity.

[28] CCAFS is the CGIAR Research Program on Climate Change Agriculture and Food Security. It is a strategic partnership of CGIAR and Future Earth, led by the International Center for Tropical Agriculture (CIAT). CCAFS brings together the world's best researchers in agriculture science, development research, climate science and Earth System Science, to identify and address the most important interactions, synergies and trade-offs between climate change, agriculture and food security.

[29] Some of the issues include: (i) the latest developments on negotiation issues related to resilience and livelihoods in the context of the Paris Agreement on risk, adaptation and mitigation; (ii) the legal provisions and implications of the different aspects of the Paris Agreement; (iii) issues related to the impact of climate change on the resilience of vulnerable communities, agriculture and food security; (iv) issues related to resilience response measures and their incorporation into international climate change agreements; and (v) foster mutual understanding for a common and unified African position.

and human resource capacity. In 2014 (AU/Dec.492 (XXII), the AU Assembly of African Heads of State and Government requested the AU Commission to strengthen AU-SAFGRAD's human capital by increasing the number of staff to ensure a critical mass of expertise for the execution of its mandate. A well-staffed AU-SAFGRAD will be able to develop and manage resilience building projects as well as coordinate actions that support and facilitate RECs and AU Member States to effectively plan and implement resilience building activities in SAZs. According to the Knowledge Management Forum[30], knowledge management (KM) involves the collection of processes that govern the creation, dissemination and utilization of knowledge. Strengthening the capacity of individuals and institutions involved in creating, disseminating and using knowledge for building resilience is of critical importance to sustainable agriculture. To address issues of resilience building in semi-arid zones of Africa, AU-SAFGRAD will support information sharing systems and processes to promote resilience building knowledge generation, sharing and use. Its focus will be on supporting primary users of information to use knowledge to promote sustainable livelihood resilience. It will also support secondary or intermediary users such as researchers, advisory services, change agents, farmers' organizations, etc to develop and disseminate information and knowledge that support the development and implementation of policies for resilience building. The following three actions will be undertaken by AU-SAFGRAD during the course of this plan:

(i) Increase the number of staff of AU-SAFGRAD who will, in collaboration with partners and stakeholders, develop and manage projects that effectively address the broad areas of resilience building in SAZ.

(ii) Supporting knowledge management, including the documentation (by national and regional research organizations and advisory service institutions) of CSA best-practice experiences and lessons that help build resilience and facilitate their widespread dissemination and scaling-up across the semi-arid zones of Africa.

(iii) Facilitating farmers' organizations, livestock associations and forest-based organizations to use information and knowledge on CSA best practices to promote sustainable crop, livestock and forestry production to help build their resilience

4.2 AU-SAFGRAD's Theory of Change

Although AU-SAFGRAD was created as a technical office to coordinate research and build capacity, it has largely served as a research and development-oriented organization; working to catalyse and facilitate actions that translate research into tangi-

[30] The Knowledge Management Forum is a *community of practice* for people working in the field of Knowledge Management (KM), offering an environment for the exchange of ideas, best practices, and business opportunities through a variety of learning, communication, and networking settings (see http://www.kmforum.org/index.htm)

ble outputs and outcomes that create positive impact on Africa's agricultural transformation. Its operational logic has been guided by the need to identify development challenges in semi-arid zones of Africa, devise solutions, develop programmes and activities, and come up with strategies that translate the activities into tangible outputs that contribute to outcome-oriented impacts. The philosophy behind this mode of operation is explained in AU-SAFGRAD's Theory of Change, which outlines the conceptual logic guiding the way in which positive change in the livelihoods of people living in semi-arid zones of Africa will be achieved. The ultimate impact is the sustainable improvement in the living standards of the people, measured in terms of positive changes in the food security, income and poverty status of the people. The platform for this success is the building of resilient households and rural communities that are not only able to prepare, mitigate and adapt to shocks, but also capable of sustainably producing high-value agricultural products to meet their food and income needs.

AU-SAFGRAD is cognizant of the fact that creating positive change starts with expectations of what its stakeholders, partners, clients and beneficiaries need and how and why its interventions will contribute towards those needs. That is, what must AU-SAFGRAD do, and do differently, in order to optimize its ability to generate outcomes that create positive impacts among these entities. It is on the basis of this that the theory of change builds on AU-SAFGRAD's comparative advantages (see Section 1.2.6) that distinctively position it as the convener, coordinator and facilitator of actions that help build the resilience of households and vulnerable communities in semi-arid zones of Africa.

In developing the theory of change of this SOP, cognizance is taken of the fact that the change processes required to meet the goals of enhanced resilience are sometimes hard to map out from the very outset, particularly in the African context, where there are multiple players involved in addressing resilience issues. It should be noted, however, that this is the first time AU-SAFGRAD is applying the theory of change concept to its strategic planning process[31]. The theory of change therefore maps out the processes through which AU-SAFGRAD will create impact from beginning to end and gives AU-SAFGRAD's senior management the opportunity to identify priorities and set the organization's goals for the next five years (2019 – 2023).
It also provides the opportunity to define the pathways through which changes will occur from the time the programmes and activities are implemented to when the expected outcomes are realized, as well as the opportunity to measure and assess progress towards achievement of the long-term goals.

As a starting point, AU-SAFGRAD's Theory of Change posits that the use of innovative technologies is the option of choice to sustainably increase agricultural productivity, build resilience and enhance livelihoods. For this to happen, however, there needs

[31] The approach, and possibly, content of this strategic and operational plan is uniquely different from that used in developing the previous 2014 – 2017 Strategic Plan. The 2014 – 2017 Strategic Plan and other previous plans adopted a consultative process that did not include a Theory of Change and Results Based Management framework.

to be a conducive policy and institutional environment that enables farmers and vulnerable communities to easily adopt the new technologies and innovations. Once adopted and correctly used, these technologies are expected to help increase agricultural production and productivity and thereby enable producers not just meet their household consumption needs but also avail sufficient quantities as a marketable surplus. By adding value through appropriate value-chain enhancement, farmers will be able to generate more income that enables them to not only enhance their living standards, but also adopt and apply additional measures that further help them to prepare, mitigate and adapt to hazards and shocks. This is what makes farmers and vulnerable communities in semi-arid zones to become more resilient and have improved livelihoods.

The log-frame in Annex 1 maps out the linkages between AU-SAFGRAD's long-term goals (vision) and the initial conditions and intermediate changes that need to occur to achieve the

goals. This is the "results chain" or the Theory of Change. Basically, the result chain has five components: inputs, activities, outputs, intermediate outcomes and impact. It provides a good understanding of how the various inputs and activities translate into outputs, outcomes and impact. The results chain is cast within the context of a given set of assumptions that need to hold in order for the implemented activities to translate into the expected intermediate outcomes and long-term impact. Constructing the "results chain" begins with identification of generic indicators for each of the three strategic areas of action at different points in the results chain and is then followed by a set of verifiable indicators that are specific enough to track and measure progress.

4.2.1 Impact Pathways

Smallholder agricultural producers and vulnerable communities in semi-arid zones of Africa are currently operating in a less conducive policy and institutional environment that makes it difficult, if not impossible, for them to build resilience to related shocks. They also do not have access to the innovative technologies that are required to increase farm productivity as well as enhance the commodity value-chains in which they are involved. The AU-SAFGRAD's Theory of Change places greater emphasis on actions that create a conducive policy and institutional environment for building resilience. With such an environment, further actions to facilitate smallholder producers to take up new technologies and practices that increase their agricultural productivity will make more products available for household use and for the market. By strengthening specific commodity value-chains to add value to agricultural products, AU-SAFGRAD will help increase the incomes of smallholder producers and vulnerable communities for a resilient and sustainable livelihood. This impact pathway is derived directly from the challenges identified earlier, to which AU-SAFGRAD is expected to respond and forms the basis for the two strategic areas of action.

Figure 4.4 shows the key results for each of the two strategic areas of action that AU-SAFGRAD needs to deliver in order to contribute to its broader goal of *Sustainable food security and improved rural livelihoods in semi-arid Africa*. This goal speaks to the AU's Malabo Commitments. Annex 1 presents measurable indicators at two levels.

The first is the high-level impact indicators which measure the impact that AU-SAFGRAD's actions will bring to AU's overall goal. These indicators capture the long-term improvement and changes in well-being in terms of food security, income and poverty. However, since AU-SAFGRAD will be operating in an environment in which other stakeholders are present and contributing – *albeit* in different proportions – towards the achievement of the common goal of the next hierarchical order, the impacts of AU-SAFGRAD cannot be separately ascertained and attributed to its interventions. AU-SAFGRAD's impact can only be assessed as a collective impact.

The second is the outcome or key results level indicators which capture the intermediate changes. These are the resilience response indicators which are measured as changes in the level of resilience of the target group. They track whether the target groups consisting of individuals, households, communities and systems are able to effectively respond to and recover from

shocks or stressors. These include the household resilience index (HRI), the number of people and households depending on relief assistance and the number of people with reduced risk to extreme weather events.

4.3 Summary of Outcomes, Outputs and Activities

As shown in Figure 4.5, this Strategic and Operational Plan will deliver two outcomes with a total of seven outputs. Activities for each of the outputs are summarized in the Log Frame in Annex1.

4.4 Strategic frameworks in support of livelihoods in semi-arid zones of Africa

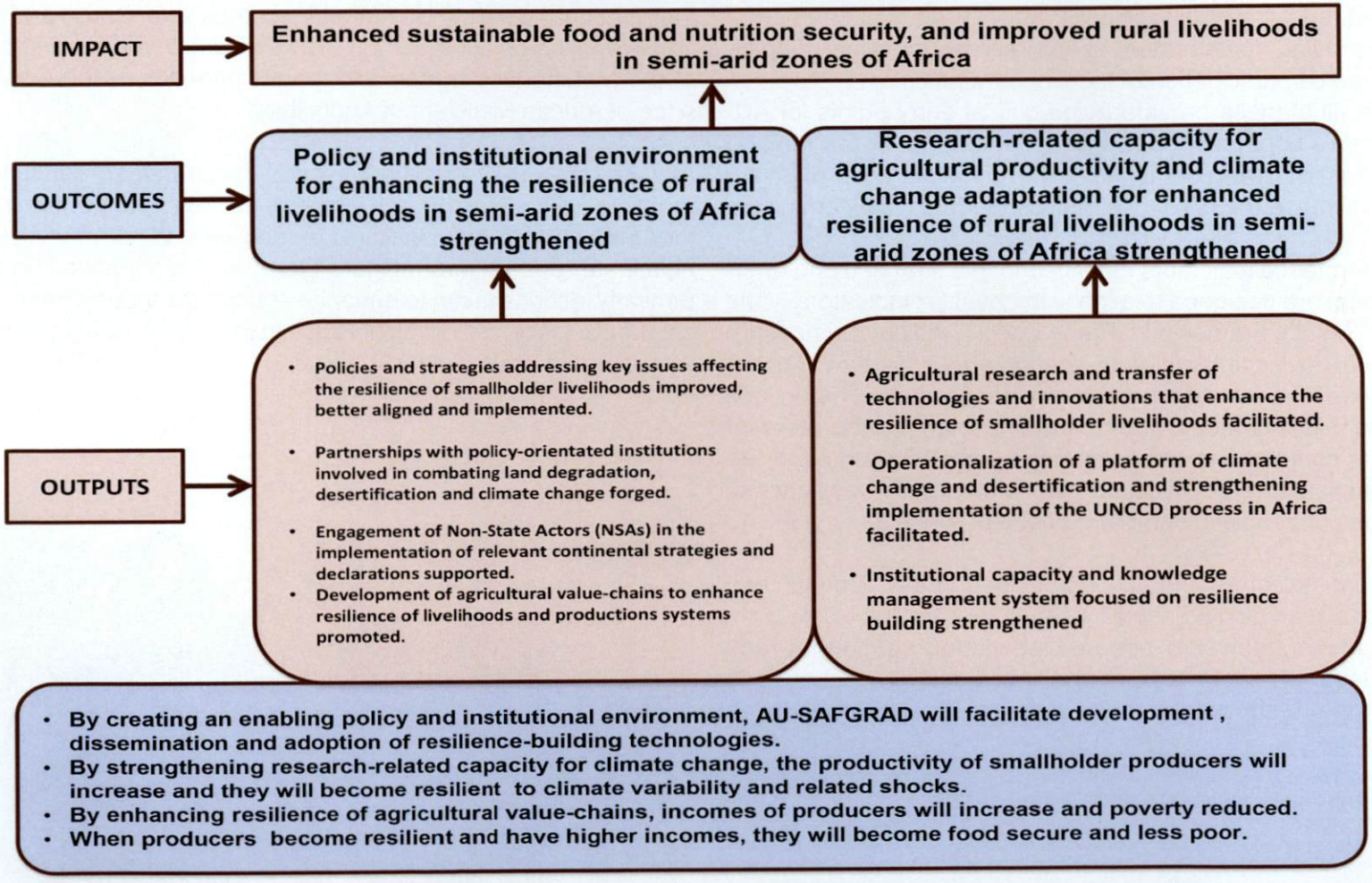
4.4.1 Aligning the Strategic and Operational Plan (2019 – 2023) with existing strategic frameworks and initiatives

In implementing this strategic and operational plan, AU-SAFGRAD is fully aware that the Agenda 2063 and its ten years action plan and Malabo Declaration are the framework documents that spell out the political vision for transforming Africa's agriculture and livelihoods. To demonstrate contribution to this vision, it will align the activities, outputs and outcomes with the goals and targets of the agenda 2063; Malabo Declaration and the CAADP Results Framework. The instruments used for this alignment are the ten years action plan of agenda 2063 and CAADP Programme of Work (PoW), which are an Implementation Strategies and Roadmaps of the AUC, NEPAD Agency and RECs for operationalizing the Agenda 2063 and Malabo Declaration on African agricultural transformation. Actions will also be aligned with those of other relevant regional, continental and global frameworks and initiatives such as the United Nations Sustainable Development Goals (UNSDGs); the UNCCD; the UN Integrated Strategy for the Sahel; and the regional initiatives of FAO and RECs.

The PoW outlines a number of priority actions to guide implementation at multiple levels and across sectors. It identifies a set of outputs and outcomes that are to be achieved at various levels over a ten-year horizon (2015 – 2025). These provide guidance as to the type of actions required to achieve the goals and targets outlined in the Malabo Declaration and CAADP Results Framework. The PoW gives AU members states, RECs and AU technical support institutions including AU-SAFGRAD, the opportunity to develop their own work programmes and strategies that outline priority actions, outputs and outcomes that are in coherence, synergy and alignment with the PoW. There are four (4) relevant thematic areas identified in the PoW for transforming agriculture namely,

- Enhancing support to smallholders towards sustainable intensification in order to facilitate their transition into modern family farms;
- Strengthening the position of farmers, women and youths in value-chains and promoting access to regional markets;

Figure 4.4 AU-SAFGRAD's Theory of Change and Impact Pathway



- Increasing resilience of livelihoods and systems through coping and a_çdaptation mechanisms at production level and reducing risks to shocks; and
- Improving management of natural resources including increased participation of local communities.

Although all of these areas provide critical entry points for AU-SAFGRAD's contributions to the commitments of the Malabo Declaration, its direct contributions will be measured through actions to increase the resilience of livelihoods and systems.

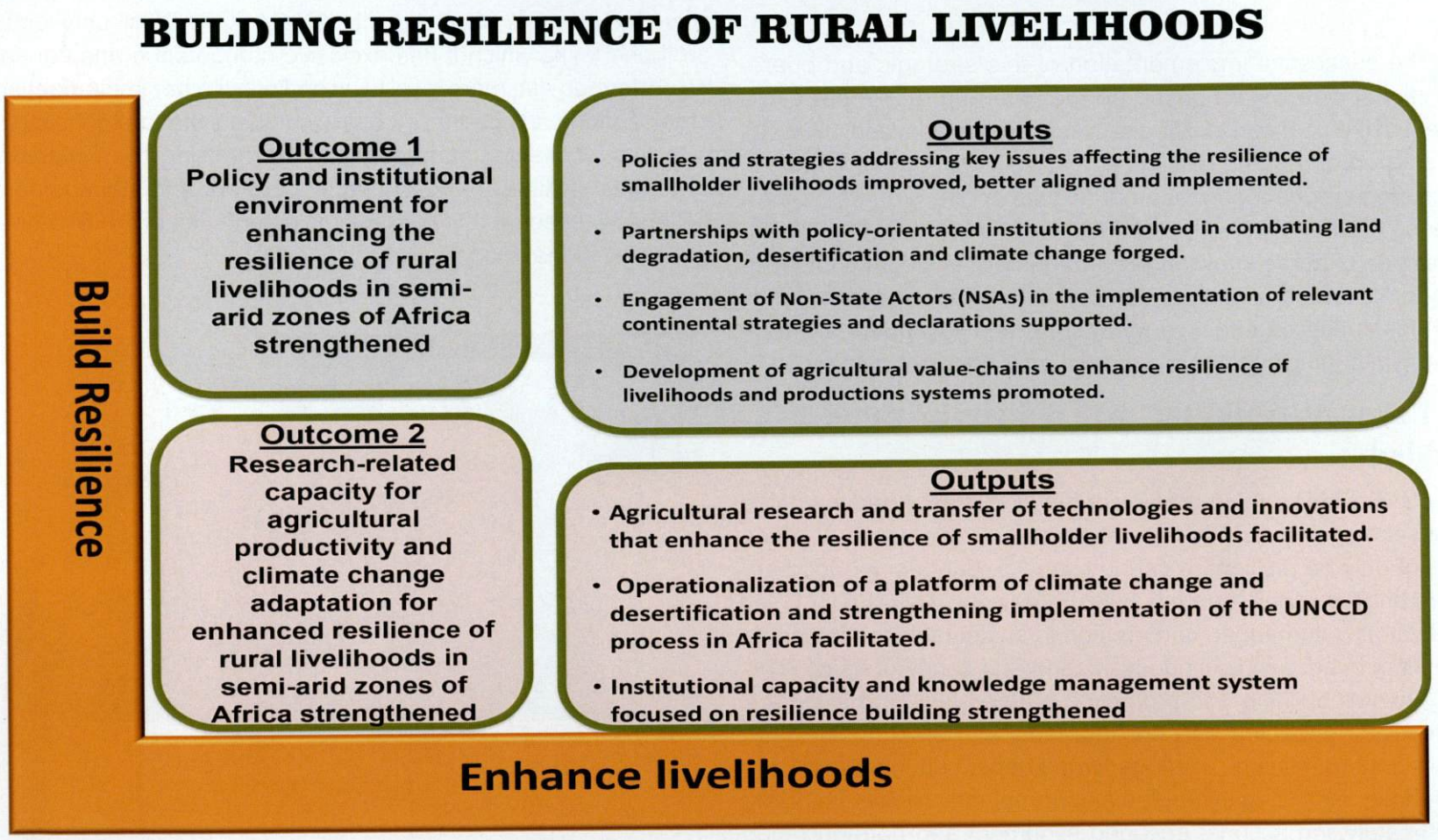
The performance indicators identified in this strategic and operational plan are designed to align with Level 3[32] indicators of the CAADP Results Framework. These Level 3 indicators measure AU-SAFGRAD's contribution to *strengthening systemic capacities for effective execution and delivery of results*. The actions identified in this strategic and operational plan are therefore intended to contribute to strengthening system capacities for effective implementation of actions that enhance the resilience of livelihoods of people in semi-arid zones of Africa.

Aside from indicators, the actions outlined in this strategic and operational plan also contribute to and complement existing initiatives and frameworks adopted at global, continental and rgional level that help to build the resilience of livelihoods in Africa. Annex 2 shows how these actions are aligned with these initiatives and frameworks. For example, AU-SAFGRAD's action to support countries to integrate climate change measures in their national policies will not only contribute to Goal 13 of the SDGs and the objectives of UNCCD, but also to the commitment of the Malabo Declaration and the six priorities of the Conference of African Ministers of Agriculture.

Actions taken to promote adoption of climate smart agriculture practices will contribute to the efforts of FAO's Regional Office for Africa to build the capacities of families and communities to anticipate, absorb and mitigate the effects of climatic shocks. Similarly, actions taken to enhance agricultural value-chains will contribute to the objectives of RECs to improve social protection of vulnerable households.

[32] The CAADP Results Framework has three levels of performance indicators namely, agriculture's contribution to economic growth and inclusive development (level 1); agricultural transformation and sustained inclusive agricultural growth (level 2); and strengthening systemic capacity for effective execution and delivery of results (level 3). Indicators for measuring AU-SAFGRAD's contributions to CAADP at country, regional and continental levels are aligned with the level 3 performance indicators of the CAADP Results Framework.

Figure 4.5 Outcomes and outputs for building resilience and enhancing livelihoods (output 1 to be revised) Policies and strategies addressing key issues affecting the resilience of smallholder livelihoods facilitated, aligned.



5.0 OPERATIONALIZING THE STRATEGIC AND OPERATIONAL PLAN (2019 – 2023)

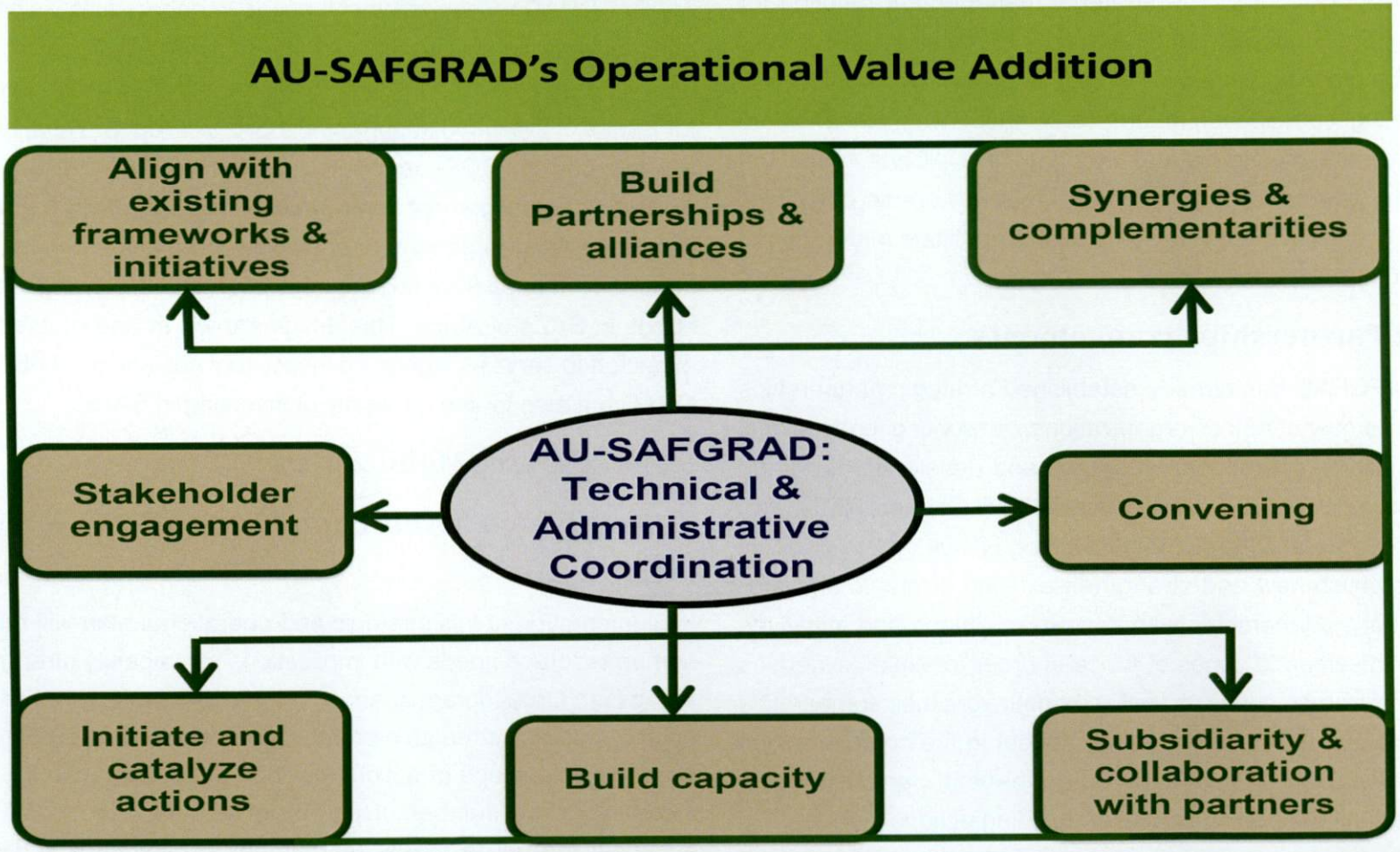
The successful implementation of this strategic and operational plan will be based on the following: (i) Proper alignment of the plan with existing strategic frameworks and initiatives in support of building resilience in semi-arid zones of Africa; (ii) ensuring proper coordination of actions on the ground; (iii) brokering partnerships with stakeholders and partners; (iv) developing an effective knowledge management and communication system; (v) mobilizing adequate human and financial resources; (vi) instituting an effective Monitoring and Evaluation system; and (vii) putting in place a good risk management system.

5.1 How AU-SAFGRAD will deliver its value-added

AU-SAFGRAD's value-added contribution is expected to enable households and rural communities in semi-arid zones of Africa to not only be resilient to various shocks, but become food secure and less poor. Figure 5.1 illustrates how AU-SAFGRAD will deliver its value-added contribution to sustainable food security and improved rural livelihoods in semi-arid zones of Africa. This will involve building and promoting partnerships and alliances; effectively engaging and collaborating with stakeholders and partners; convening meetings, workshops, seminars and conferences; exploiting synergies and complementarities; initiating and catalyzing actions; ensuring alignment and harmonization of actions; and helping build capacity.

The implementation of the strategic and operational plan will involve the principle of subsidiarity. AU-SAFGRAD will only focus on those tasks which it has exclusive competence and cannot be performed at a more local level and allow other implementing organizations and partners to carry out tasks that are consistent with their implementation capacity. Harnessing the collective synergies of AU-SAFGRAD and its partners and stakeholders will ensure effective and efficient implementation of the Strategic and Operational Plan.

Figure 5.1 AU-SAFGRAD's operational value-added contribution to building the resilience of livelihoods.



5.1.1 Coordinating implementation

The function of coordinating implementation will be vested in AU-SAFGRAD staff. The strategic management function for 'rolling' the Strategic and Operational Plan forward each year over the planning period will include strategic review; planning; budgeting; coordination of, and consultation with, stakeholders and partners; monitoring and reporting. This will ensure that not only the plan remains relevant and focused on the objectives defined for its five-year life span but also facilitate mid-term and end of term evaluation tasks.

5.1.2 Partnership arrangements

AU-SAFGRAD has already established strategic partnerships with a number of African organizations, networks of professional associations, international research and development organizations, including UN agencies and CGIAR Centres, RECs, civil society organizations (CSOs) including NGOs. AU-SAFGRAD will establish new and strengthen existing strategic and programmatic partnerships with key organizations and initiatives active in semi-arid zones of Africa in order to exploit synergies and complementarities as well as benefit from their comparative advantages. Partnerships will be sought in the context of joint implementation of actions of mutual benefit, particularly with new donors supporting resilience-building actions in Africa.

5.1.3 Knowledge management, networking and communication

AU-SAFGRAD recognizes that it needs to enhance its visibility and, above all, better position itself as a leading AU organization entrusted with the responsibility of coordinating and advocating for issues of livelihood importance in SAZs of Africa. Thus, during the current SOP period, AU-SAFGRAD will develop a *Knowledge Management and Communication Strategy* that will define the Office's general orientations and actions it plans to undertake in support of building resilience and improving livelihoods in SAZs of Africa. This document will in and of itself is expected to serve as a good advocacy tool not just for AU-SAFGRAD but also for the necessity of investing in SAZs.

5.1.4 Resource Mobilization

5.1.4.1 Human Resource and Capacity Development Needs

Implementation of this strategic and operational plan will have human resource needs with implications for capacity strengthening (see Organogram in Annex 3). Judging from the existing human resource strength currently available at AU-SAFGRAD, the scale and scope of actions outlined in this plan call for an increase in the number of professional staff. This is to be achieved through a mix of recruitment, deployment and re-

skilling. At the level of the AU Heads of State and Government decisions have been taken to strengthen the relevant AU entities with the requisite human resources. The exact profile of experts needed to man this SOP has to be determined after a thorough organizational assessment of staff capacity and resource availability. At any rate, considering the demands of the SOP for more and better equipped professionals who would provide leadership in, for instance, resilience building and Climate Smart Agriculture, and given the lengthy process involved in the recruitment of professional staff at the AUC Headquarters, implementation of actions in these areas may, in the short-term, rely on specialized experts or consultants. On the other hand, opportunities for engaging AU Volunteers and/or Interns on secondment from development partners will be explored.

5.1.4.2 Funding Options and Financial Resource Mobilization

AU-SAFGRAD relies both on internal and external funding sources to facilitate implementation of its programmes. It receives an internal budget from the AUC Headquarters in Addis Ababa, Ethiopia to support its human resource, administrative and office coordination costs. Also, AU-SAFGRAD receives financial resources from Member States and development partners to support its programmes. However, AU-SAFGRAD needs more funding for its core and field operations so that it can implement its planned activities and respond adequately to emerging issues.

During the course of this strategic and operational plan, AU-SAFGRAD will diversity its funding base by identifying potential target funders interested in supporting resilience-building activities in semi-arid zones of Africa. AU-SAFGRAD will build relations and establish partnerships with these entities. It will strengthen current relationships and, where appropriate, establish MoUs with potential new partners during the course of this strategic and operational plan. AU-SAFGRAD will intensify its resource mobilization drive by identifying funding opportunities and developing project proposals that respond to calls for proposals from potential funding organizations.

Based on the good foundation it placed on partnership nurturing, AU-SAFGRAD will develop a resource mobilization strategy that will, *inter alia*, explore new and innovative resource mobilization avenues within the changing international development space; strengthen cooperation with governments, regional, continental and international organizations; and develop and strengthen partnerships with bilateral, multilateral and other partners across the world. The resource mobilization approach will also reflect preference for employing procedures outlined by the AUC Headquarters in order to improve and facilitate better alignment of resources to AU-SAFGRAD's own priorities.

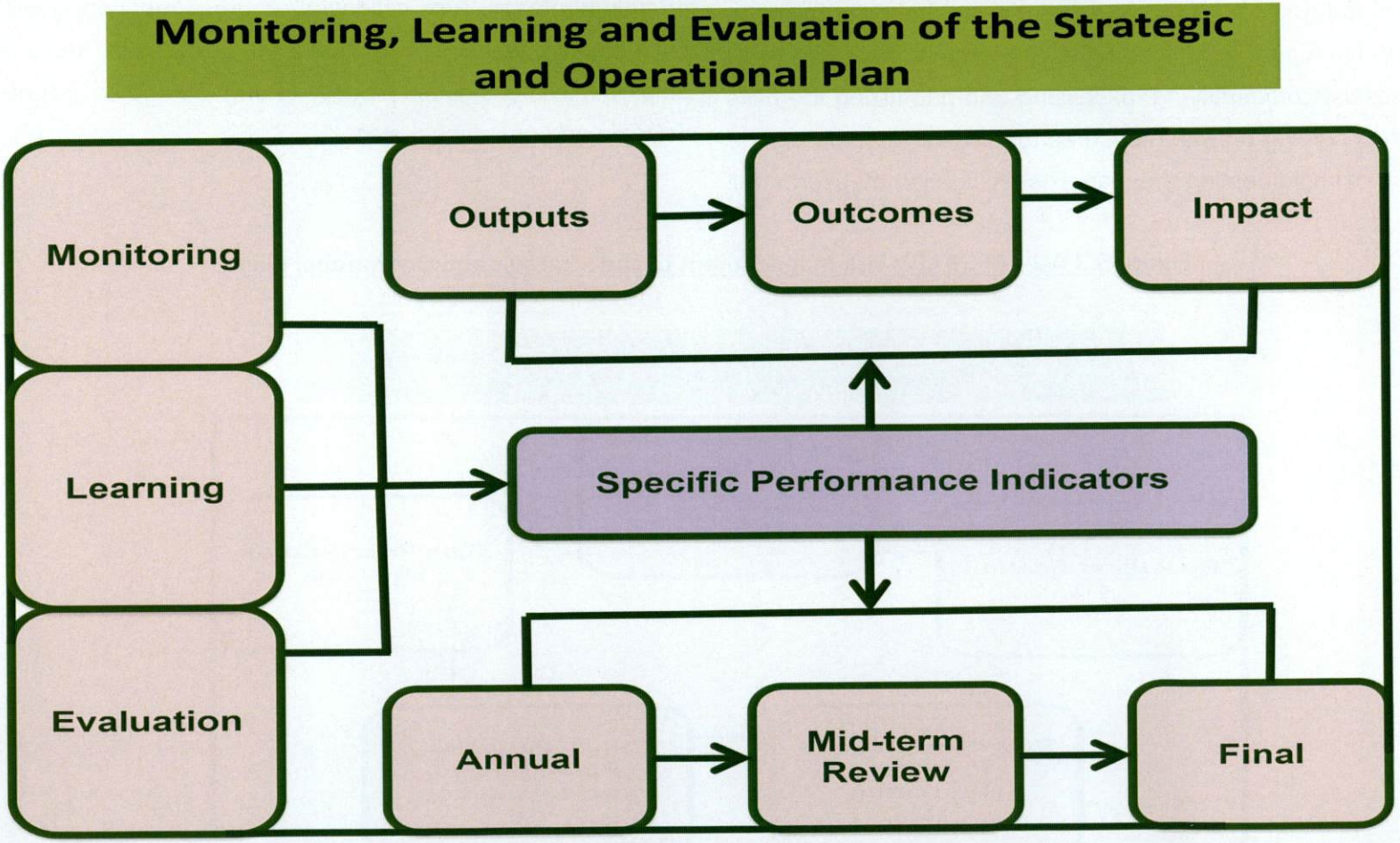
5.1.5 Monitoring, Learning and Evaluation

The implementation of the strategic and operational plan will be closely monitored and evaluated. Monitoring and evaluation will help ensure accountability and – together with lessons learned – provide evidence to guide adjustments to AU-SAFGRAD's work. Establishing a Monitoring, Learning and Evaluation (M&E) system is therefore an essential component of the plan.

As depicted in Figure 5.2 the 'monitoring' component will measure the achievement of outputs, while it may be easy to measure and track outputs, attributes of outcomes and impact are sometimes hard to measure, and are subject to slow progress and sudden reversals; sometimes as a result of unforeseen circumstances. The 'evaluation' component refers to the annual, mid-tem and final evaluations which would help in analyzing the level of achievement of various activities based on the monitoring indicators. The mid-term review will be undertaken in mid-2021 to take stock of progress and consider whether the strategic objectives are still valid or need to be adjusted in light of changing economic and socio-political contexts. The final evaluation will be done when the plan comes to an end in December of 2023. On the other hand, the 'learning' component is an on-going activity and benefits from the monitoring processes in place and much of the evaluation undertakings. In general, an explicit recognition of *learning* has the advantage of pursuing both monitoring and evaluation in ways that can facilitate packaging of lessons to inform AU-SAFGRAD decision-making organs for necessary actions and advise other partners to take note of AU-SAFGRAD's experience.

The Results Based Management Framework presented in Annex 1 will be used to measure and track progress towards achievement of objectives. Annual work plans and budgets will be produced at the beginning of every year and AU-SAFGRAD will prepare progress reports on the implementation of the work plans focusing on the predetermined performance indicators under each objective. Performance will also be monitored using indicators identified during the implementation to capture additional and recurring outputs. AU-SAFGRAD will continue to actively seek feedback, through surveys and direct engagement with partners, stakeholders and beneficiaries, to understand where further action is most needed.

Figure 5.2 Monitoring, learning and evaluation of the Strategic and Operational Plan



5.1.6 Risks and Risk Management

Implementation of any strategic plan of development organizations in today's world is often subject to a number of risks. As depicted in Figure 5.3 AU-SAFGRAD's risk management strategy consists of identifying, assessing and prioritizing the risks and then coming up with measures to mitigate them during the course of implementing the plan. Risk mitigation measures will be applied during the planning and implementation process by developing actions to enhance opportunities and reduce threats to implementation. Risk mitigation progress monitoring will involve tracking identified risks, identifying new risks, and evaluating effectiveness of risk process throughout the course of the strategic and operational plan.

Figure 5.3 AU-SAFGRAD's risk management of the Strategic and Operational Plan

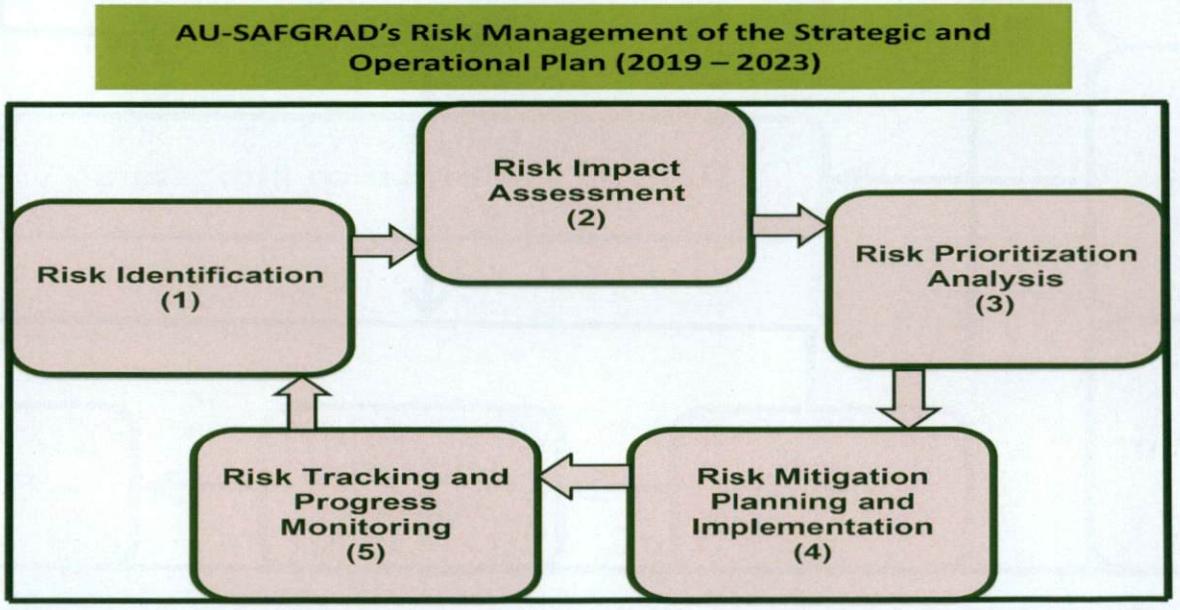


Table 5.1 summarizes some of the potential risks that are likely to affect implementation of the SOP and how they will be managed.

Table 5.1: Risk analysis

No.	Risk	Risk level	Mitigation measures
1.	Financial risk	Moderate	▯ AU-SAFGRAD to participate effectively in budget planning meetings at the AUC Headquarters. ▯ Engage in strategic partnerships and synergies to leverage additional funding from partners. ▯ Adopt cost-recovery and cost-sharing measures.
2.	Operational and capacity risks	Moderate	▯ Request for additional staff complement from AUC Headquarters. ▯ Expanding AU-SAFGRAD's network of strategic partners and incorporating technical support in the partnership arrangements that it will broker. ▯ Explore opportunities for staff exchange with partners. ▯ Engage consultants.
3.	Implementation risk	Low	▯ Consult political decision-makers and partners in order to build country-level support. Learn ▯ lessons of what works best in different contexts.

5.1.7 Dissemination of information

Information and Communication Technologies (ICT) are fundamental to building resilience and enhancing livelihoods. As a tool for implementation, use of ICT will underpin the achievement of the objectives of this strategic and operational plan. A system for information and communication technologies, based mainly on SAFGRAD's current website, will be established linking resilience-building initiatives operating in semi-arid zones of Africa. It will focus on information generation and dissemination as a key element in the implementation of this strategic and operational plan. The website will be updated and, to the extent possible, provide synthesized information on progress towards the delivery of the outputs of the SOP as well as other issues of importance to improving livelihoods in SAZs.

Knowledge management is a key strategic asset through which AU-SAFGRAD will leverage institutional knowledge in order to improve its future performance. Measures will be taken with regard to the development and the implementation of a tailored knowledge management strategy which will enable the establishment of efficient mechanisms of creation, sharing, collection and conservation of knowledge.

5.1.8 Estimated Budget

To fully implement this Strategic Plan, the indicative budget projection for the period 2019 - 2023 is **USD 7.146 million**.

Detailed annual indicative budget breakdown on output bases are provided in annex 4.

6.0 CONCLUSION

AU-SAFGRAD's Strategic and Operational Plan (2019 – 2023) has been developed taking cognizance of the lessons and experiences gained from implementing its previous strategic plan. The new SOP has also reviewed substantive issues pertaining to the situation of semi-arid zones of Africa with the view to anchoring the focus of the Office in the ensuing four years on themes that resonate with the situation on the ground.

This new strategy is also informed by SWOT and Stakeholder Analyses that have helped AU-SAFGRAD to position itself more explicitly and strategically and makes good use of the opportunities that the external environment presents for effective plan implementation. A cause-and-effect analysis was also undertaken to identify the core problem that is having an overall negative impact on rural livelihoods in semi-arid zones of Africa. The immediate and remote causes of the core problem were identified and these and the analyses referred to earlier were used as bases for identifying a range of activities and corresponding deliverables as well as the outcomes these outputs are expected to generate.

Considering the leading issues in semi-arid zones and the scope of AU-SAFGRAD's mandate, two strategic objectives, which in log frame parlance, are considered as *outcomes* have been identified: *strengthen the policy and institutional environment for enhancing the resilience of rural livelihoods in semi-arid zones of Africa*; and *strengthen research-related capacity for agricultural productivity and climate change adaptation for enhanced resilience of rural livelihoods in semi-arid zones of Africa*. These strategic objectives/outcomes reinforce one another and jointly contribute to building the resilience of livelihoods and the overall goal of sustainable food and nutrition security and improved rural livelihoods. The way in which outcomes, outputs and activities for each of these goals will translate into impact were encapsulated in the AU-SAFGRAD's theory of change.

The strategic and operational plan recognizes CAADP and its offshoot, the Malabo Declaration, as a preeminent framework that spells out the political vision for transforming Africa's agriculture and livelihoods. In addition, the Plan recognizes the need for aligning its activities and outputs other relevant regional, continental and global frameworks and initiatives such as the United Nations Sustainable Development Goals (UNSDGs); the UNCCD; the UN Integrated Strategy for the Sahel; and several regional initiatives enunciated by FAO and RECs.

This SOP Plan recognizes that successful implementation is contingent on a range of factors including proper coordination of actions on the ground; brokering partnerships with stakeholders and partners; developing an effective knowledge management and communication system; mobilizing adequate human and financial resources; instituting an effective monitoring, learning and evaluation system; putting in place a good risk management system; and institution of mechanisms that would help AU-SAFGRAD disseminate purpose-tailored information effectively.

ANNEXES

ANNEXES

Annex 1. Results-based logical framework

RESULTS CHAIN	Key Performance Indicators	Means of Verification	Assumptions
IMPACT Sustainable food and nutrition security of rural livelihoods in semi-arid zones of Africa improved	• Food security status (% of population that is food insecure) • No. of resilient households below the food poverty line • No. and % of households in different income groups, particularly of groups considered vulnerable • No. and % of rural households with sustained climate-resilient livelihoods as measured by the Household Resilience Index (HRI) • No. of people depending on relief assistance	• World Bank Survey Reports • UNDP Human Development Index • Household survey reports • UNCCD, UNDP, FAO and country National Bureau Statistics • Bi annual review reports	• Peace, no internal or external conflicts • Good governance • No major natural disaster (droughts, floods)
OUTCOME 1 Policy and institutional environment for enhanced resilience of rural livelihoods in semi-arid zone of Africa strengthened	• No. of countries and regional organizations having resilience and livelihood relevant policies • No. of countries and non-state actors engaged in inclusive multi-stakeholder policy development and review processes • No of frameworks and guidelines for policy formulation • No. of resilience policy capacity building training sessions at national and regional levels	• Ministry (Agriculture, Economy and Planning, Trade, Environment, Science and Technology) reports •	• Consistency with other policies
OUTCOME 2 Research-related capacity for agricultural productivity and climate change adaptation for enhanced resilience of rural livelihoods in Semi-Arid zones of Africa strengthened	• Annual increases in the number of agricultural producers adopting specific technologies • No. of innovative technologies adopted and applied by smallholder producers and agro-processors • No of climate change approaches mainstreamed in NAIPs and RAIPs • No of experts trained to participate in UNCCD negotiation meetings and Number of UNCCD processes supported • No of young researchers trained	• Ministry (Agriculture, Economy and Planning, Trade, Environment, Science and Technology) reports	• Consistency with other policies
OUTPUTS AND ACTIVITIES			
OUTPUT 1: Policies and strategies addressing key issues affecting the resilience of smallholder livelihoods improved, better aligned and implemented			
Activities		**OVIs**	
1.1 Strengthening capacity for better policy formulation and implementation		• No. of stakeholders trained/ shared knowledge and experiences	

1.2 Undertaking advocacy to inform policy and policy implementation processes	• No. of sensitization meetings and dialogues held with relevant stakeholders. • Website regularly updated to facilitate information dissemination • No. of advocacy materials (posters, policy briefs, technical briefs, leaflets, fact sheets, audiovisual materials) produced and disseminated
OUTPUT 2: Partnerships with policy-orientated institutions involved in combating land degradation, desertification and climate change forged	
Activities	**OVIs**
2.1 Joint develop frameworks and guidelines for policy formulation, review and coherence	• No. of frameworks and guidelines documents supported; • No. of paper(s) on resilience building drafted
2.2 Strengthening partnerships to connect policy makers with policy researchers	• No. of MoUs and Partnership Agreements signed by AUC • No. of meetings/side events co-organized • No. of experts facilitated to participated in various events
OUTPUT 3: Engagement of Non-State Actors (NSAs) in the implementation of relevant continental strategies and declarations supported	
Activities	**OVIs**
3.1 Facilitating inclusive multi-stakeholder engagement with national and regional policy formulation and revision processes	• No. of multi stakeholders engaged with national and regional revision process
3.2 Support the Network of Non-State Actors Coalition aligned to CAADP to participate in the Biennial Reviews	• No. of NSAs participated in Biennial Reviews
3.3 Support NSAs to promote the use of the AU Land Policy and Pastoral Policy Frameworks in the development of NAIPs and RAIPs	• No. of NSAs involved in the domestication of policy frameworks • No. of reports of NAIP and RAIP activities implemented
OUTPUT 4: Development of agricultural commodity value-chains to enhance resilience of livelihoods and production systems promoted	
Activities	***OVIs***
4.1 Promoting and enabling environment for development and growth of commodity value-chains	• No. of RECs facilitated to develop its regional value chains • No. of framework and guidelines documents supported • No. of policies and strategies containing value-chain development approaches implemented • No. of research and development organizations supported

4.2 Strengthening the capacity of commodity value-chains actors	• No. of actors trained • No. of training materials for specific commodity value-chains produced and disseminated • No. technologies and innovations for enhancing specific commodity value-chains documented and dissiminated
OUTPUT 5: Agricultural research and transfer of technologies and innovations that enhance the resilience of smallholder livelihoods facilitated	
Activities	***OVIs***
5.1 Support commodity-based 'Innovation Platforms' to incorporate issues of resilience building, including mainstreaming of CSA	• No. of researchers/ scientists engaged in the innovative platforms • No. of exchange visits organized; • No. of frameworks developed
5.2 Strengthen collaboration and partnership between the NARS and the CGIAR Organization and other research institutions in order to facilitate implementation of resilience-building activities	• No. of meetings between NARS and CGIAR Organization held
5.3 Enhance the capacity of African young researchers/relevant stakeholders on the challenges of land degradation, desertification, and climate change adaptation	• No. of young researchers and other stakeholders trained and having the required skills
5.4 Building resilience through the promotion and adoption of improved agricultural technologies among small holders in semi-arid zones of Africa	• No. of frameworks developed
OUTPUT 6: Operationalization of a platform of climate change and desertification and strengthening implementation of the UNCCD process in Africa facilitated	
Activities	***OVIs***
6.1 Support a platform of climate change and desertification in Africa	• No. of experience sharing meeting organized • No. of science and technology correspondents trained • No. of Centers of Excellence on climate change/desertification supported • No. of science-policy interface meetings organized

6.2 Mainstream land degradation, desertification, climate change and risk management approaches into NAIPs and RAIPs	• No. of NAIPs and RAIPs having land degradation, desertification and climate adaptation mainstreamed in them • No. of framework and guideline documents outlining how to mainstream CSA in national and regional policies and plans supported
6.3 Strengthen research- and training-related capacity for Land Degradation at the Conference of Parties (CoP) of the United Nations Convention to Combat Desertification (UNCCD)	• No. of the preparatory meetings of the CoP facilitated • No. of science and technology correspondents participated in the preparatory meetings of CoP • No. of stakeholders engaged in the green economy polices • No. of communications tools on green economy developed
OUTPUT 7: Institutional capacity and knowledge management system focused on resilience building strengthened	
Activities	***OVIs***
7.1. Increase the number of staff of AU-SAFGRAD who will, in collaboration with partners and stakeholders, develop and manage projects that effectively address the broad areas of resilience building in SAZ.	• No. of additional staff hired • No. of staff contracted and/or seconded to AU-SAFGRAD
7.2 Support knowledge management, including the documentation (by national and regional research organizations and advisory service institutions) of CSA best-practice experiences and lessons that help build resilience and facilitate their widespread dissemination and scaling-up across SAZ	• No. of documents published and disseminated • No. of stakeholders participated in the relevant events • No. of advocacy materials (posters, policy briefs, technical briefs, leaflets, fact sheets, audiovisual materials) produced and disseminated
7.3 Facilitating farmers' organizations, livestock associations and forest-based organizations to use information and knowledge on CSA best practices to promote sustainable crop, livestock and forestry production to help build their resilience	• An Information sharing platform established • No. of advocacy materials (posters, policy briefs, technical briefs, leaflets, fact sheets, audiovisual materials) produced and disseminated

NB: The two outcomes will be achieved by yearly implementing one or more activity/activities under each output based on the budget avalibility.

Annex 2.

Alignment of AU-SAFGRAD's Strategic and Operational Plan (2019 – 2023)

with relevant resilience building frameworks and initiatives

Relevant resilience-building initiatives and frameworks	Contributions of AU-SAFGRAD's Strategic and Operational Plan (2019 – 2023) to objectives and targets of global, continental and regional resilience-building initiatives and frameworks
UN Sustainable Development Goals: • Goal 2: End hunger, achieve food security and improved nutrition and promote sustainable agriculture • Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries; Integrate climate change measures into national policies, strategies and planning • Goal13: Combat climate change and its impacts • Goal 15: Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss	• Developing frameworks and guidelines for mainstreaming CSA in national and regional policies, strategies and programmes that help to build the resilience of smallholder producers and their communities. • Assisting governments and regional organizations to come up with policies, regulations and incentive measures to govern the adoption and use of innovative CSA practices • Facilitate integration of CSA strategies into national and regional development plans
UN Integrated Strategy for the Sahel Integrating humanitarian and development plans and interventions to build long-term resilience of Sahelian people • Mapping of local knowledge of livelihoods and local coping and resilience-enhancing mechanisms • Mapping livelihoods and the capacities of economic actors at the national level and provide support to sustainable livelihoods and the creation of employment. • Promoting alternative livelihoods through the development of value chains	• Map out stakeholders/actors along specific commodity value-chains based on their roles and opportunities offered along the value-chains • Provide institutional support to national and regional farmers' organizations and livestock associations to establish agricultural value chains

Relevant resilience-building initiatives and frameworks	Contributions of AU-SAFGRAD's Strategic and Operational Plan (2019 – 2023) to objectives and targets of global, continental and regional resilience-building initiatives and frameworks
FAO Regional Office for Africa • Promoting resilience, disaster risk reduction and management (DRR/DRM) in West Africa and the Sahel region. • Building the capacity of families, communities and institutions to anticipate, absorb and mitigate the effects of disasters and crisis and to ensure a timely, efficient and sustainable recovery.	• Strengthen the capacity of national and regional institutions to undertake policy reforms and to adopt, and improve policy practices that enable families, communities and institutions to prepare, mitigate and respond to the effects of disaster and crises in semi-arid areas of West Africa and the Sahel region.
African Union – • **Agenda 2063: on A prosperous Africa based on inclusive growth and sustainable development** • **Malabo Declaration: on Accelerated Agricultural Growth and Transformation for Shared Prosperity and Improved Livelihoods**[33]	• Strengthen the policy and institutional environment for enhancing the resilience of rural livelihoods in semi-arid zones of Africa • Strengthen research-related capacity for agricultural productivity and climate change adaptation for enhanced resilience of rural livelihoods in semi-arid zones of Africa. • Advocate for adoption of best practice policy options that promote investments to build resilience
African Development Bank, Technologies for African Agricultural Transformation (TAAT). It is an important pillar of AfDB's Feed Africa Programme, which is aimed at modernizing Africa's agriculture through mobilizing 'proven' and sustainable agricultural development technologies. The TAAT serves as the critical linkage between CGIAR research capacity, and	• Advocate for prioritization of research results relevant for SAZs in the implementation of TAAT.

[3] See Declaration Assembly/AU//Dec.517-545 (XXIII); Assembly/AU//Decl.1-4 (XXIII); Assembly/AU//Res.1(XXIII) of the Twenty-Third Ordinary Session of 26 – 27 June, 2014. Malabo, Equatorial Guinea.

Relevant resilience-building initiatives and frameworks	Contributions of AU-SAFGRAD's Strategic and Operational Plan (2019 – 2023) to objectives and targets of global, continental and regional resilience-building initiatives and frameworks
the proven technology it generates. TAAT envisages effective technology transfers and up/out scaling, improved knowledge management in the application of STIs in agriculture, increased domestic capacity to sustain the gains of TAAT and desirable policy changes to facilitate the above-noted deliverables.	
CAADP Business Plan, Programme of Work and CAADP 2015 – 2025 Results Framework • Improving resilience and sustainability: ○ Increased resilience of livelihoods and systems not only through coping and adaptation mechanisms at production level, but also by promoting risk and shock reduction measures. ○ Improved management of natural resources for sustainable agriculture	• Support inclusive and participatory policy and institutional reforms and policy practice processes to improve agriculture, enhance resilience of rural livelihoods and improve sustainable natural resource management in semi-arid zones of Africa. • Facilitate capacity building for evidence-based planning, policy reform and policy practice to build resilience of rural livelihoods in semi-arid zines of Africa. • Promote access to data, information and knowledge to support planning and policy planning processes for building resilience of livelihoods in semi-arid zones of Africa. • Facilitate sound and objective policy reviews to support policy reform processes • Promote the uptake of resilience building research and related evidence in decision-making • Strengthen partnerships to connect policy-makers with policy research results • Mainstream climate change and risk management approaches in NAIPs and RAIPs
Great Green Wall for the Sahara and Sahel Initiative (GGWSSI) • Improve resilience to climate change, land degradation and drought	• Facilitate sharing of information for climate early warning and response in the Sahara and Sahel

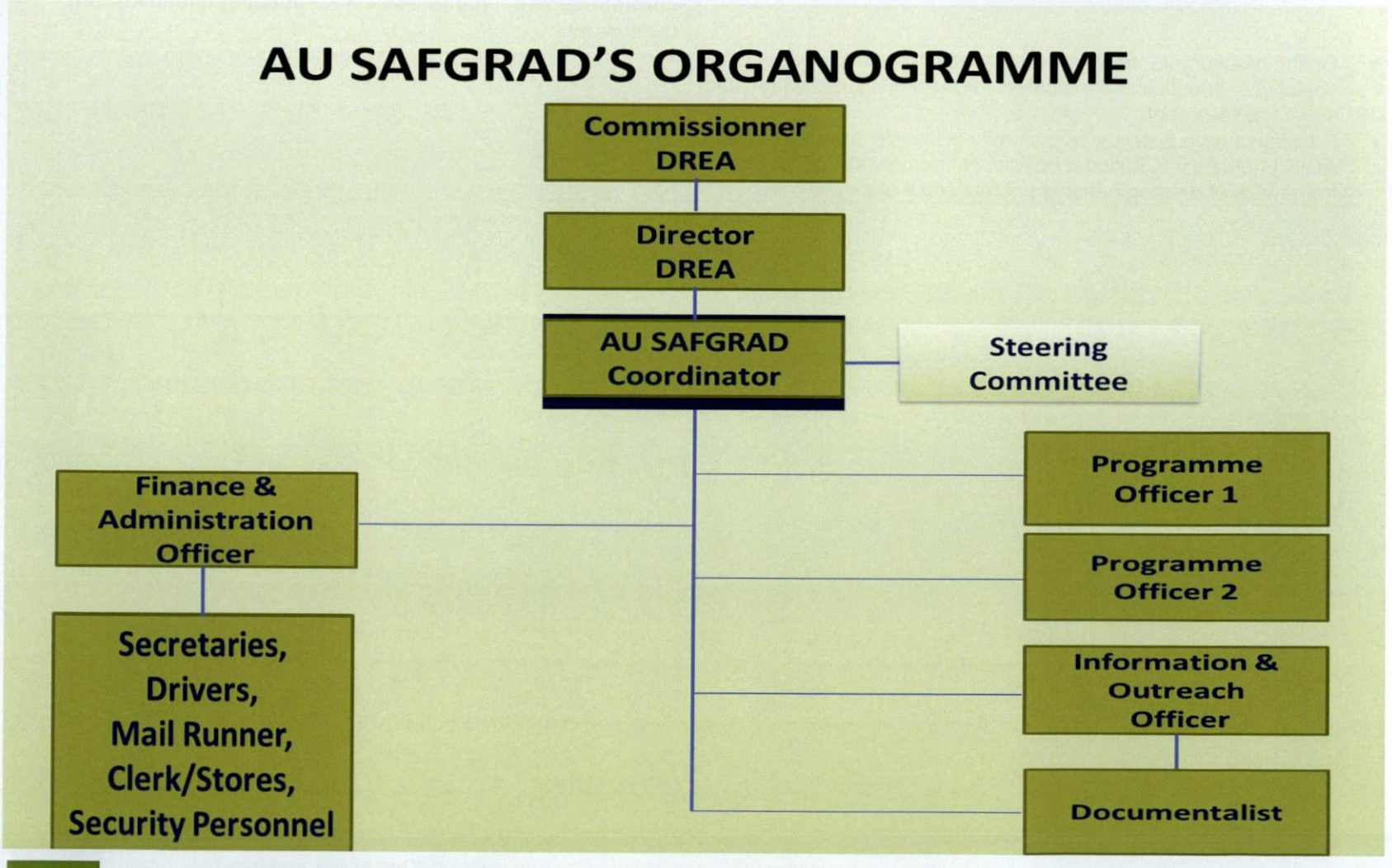
Relevant resilience-building initiatives and frameworks	Contributions of AU-SAFGRAD's Strategic and Operational Plan (2019 – 2023) to objectives and targets of global, continental and regional resilience-building initiatives and frameworks
• Improve living conditions in arid zones of Africa and reduce their vulnerability to climate change, climate variability and drought • Improve and boost resilience of their ecosystems	• Strengthen capacity of Non-State Actors in governance of climate change, desertification & land degradation in the Sahara and Sahel
Regional Economic Communities e.g., IGAD's Drought Disaster Resilience and Sustainability Initiative (IDDRSI)[34] IGAD's plan and commitment to end drought emergencies and to build drought disaster resilient communities, institutions and ecosystems in arid and semi-arid lands (ASALs) of the IGAD region by 2027. • Livelihood support and basic social services Disaster risk management, preparedness and effective response	• Support existing and new multi-stakeholder innovation platforms to promote adoption of innovations that increase productivity and promote access to markets. • Support networks and partnership arrangements that encourage the exchange of data, information and knowledge on resilience building, sharing of lessons learned on cross-border experiences, and on best practice policies and approaches that promote resilience building.
AGiR – Global Alliance for Resilience – Sahel and West Africa (led by ECOWAS, CILSS)[35] Structurally reduce food and nutritional vulnerability in a sustainable manner by supporting the implementation of Sahelian and West African policies. • Sustainably improve agricultural and food production, the incomes of vulnerable households and their access to food • Improve social protection for the most vulnerable households & communities in order to secure their livelihoods	• Promote adoption of innovative productivity-enhancing technologies • Connecting all actors along commodity value chains, facilitating linkages between farmers and markets along the value-chains, and promoting interactions between farmer-based organizations and processor-based organizations. • Facilitate integration of smallholder farmers in high-value food chains in semi-arid zones of Africa • Promote enabling environment for development and growth of commodity value-chains

[4] IDDRSI was established by IGAD and the East African Community (EAC) Heads of State and Government at a Summit convened in Nairobi, Kenya in September 2011 to enhance drought disaster resilience and sustainability in the IGAD region. For more on this see: http://resilience.igad.int/index.php/about-iddrsi/background

[5] This initiative was launched in 2012 in Ouagadougou, Burkina Faso as a Global Alliance to foster improved synergy, coherence and effectiveness of resilience initiatives in West Africa and the Sahel region. The Alliance operates under the political and technical leadership of ECOWAS, UEMOA and CILSS and it is based on existing platforms and networks in the Sahel and West Africa.

Relevant resilience-building initiatives and frameworks	Contributions of AU-SAFGRAD's Strategic and Operational Plan (2019 – 2023) to objectives and targets of global, continental and regional resilience-building initiatives and frameworks
• Define measurable, general targets and fine-tune specific objectives, priorities and indicators for monitoring, evaluation and impact assessment; • Foster inclusive dialogue at the national level in order to translate AGiR priorities into national operational frameworks within the framework of existing national policies and plans;	

Annex 3: Organizational Structure of AU-SAFGRAD (ORGANOGRAMME)



Annex 4:

Budget estimates for implementing AU-SAFGRAD's Strategic and Operational Plan (Thousand US$)

Outputs and Activities	Annual Budget Estimate (US$)					Total
	2019	2020	2021	2022	2023	
IMPACT: *Sustainable food and nutrition security of rural livelihoods in semi-arid zones of Africa improved*						
OUTCOME 1: *Policy and institutional environment for enhanced resilience of rural livelihoods in semi-arid zone of Africa strengthened*						
OUTPUT 1: Policies and strategies addressing key issues affecting the resilience of smallholder livelihoods improved, better aligned and implemented	98	260	190	140	190	878
OUTPUT 2: Partnerships with policy-orientated institutions involved in combating land degradation, desertification and climate change forged						
OUTPUT 3: Engagement of Non-State Actors (NSAs) in the implementation of relevant continental strategies and declarations supported	100	260	190	190	150	890
OUTPUT 4: Development of agricultural commodity value-chains to enhance resilience of livelihoods and production systems promoted	*115*	*245*	*210*	*200*	*185*	955
OUTCOME 2: *Research-related capacity for agricultural productivity and climate change adaptation for enhanced resilience of rural livelihoods strengthened*						
OUTPUT 5: Agricultural research and transfer of technologies and innovations that enhance the resilience of smallholder livelihoods facilitated	127	215	180	220	200	942
OUTPUT 6: Operationalization of a platform of climate change and desertification and strengthening implementation of the UNCCD process in Africa facilitated	80	226	206	226	206	944
OUTPUT 7: Institutional capacity and knowledge management system focused on resilience building strengthened	0	447	390	460	390	1687
Grand Total	***520***	***1933***	***1556***	***1626***	***1511***	**7146**

EMPOWERING WOMEN

2018-01

AU-SAFGRAD Strategic and Operational Plan (SOP) 2019 - 2023

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