

Making agriculture in Africa climate-smart

From continental policies to local practices

Hanne Knaepen, Carmen Torres and Francesco Rampa¹

Key messages

There are various approaches to make agriculture “climate smart”. These can be complementary, and it is therefore an important challenge to link their best practices. African policy-makers generally promote climate-smart agriculture (CSA) and aim to mainstream this approach in agricultural policies and interventions at continental, regional and national levels. But a lack of knowledge, weak governance and insufficient financing impede smooth mainstreaming.

Moreover, despite mainstreaming efforts, “climate” and “agriculture” are treated in silos. There is also a disconnect between policies and frameworks at the global, continental, regional, national and local levels. A multi-stakeholder, bottom-up, inter-sectorial approach can overcome these challenges. At the same time, top-down frameworks such as the United Nations (UN) climate debates should give “agriculture” its deserved priority, given its relevance as “victim and vector” of climate change.

Investing in climate-sensitive agriculture is an opportunity for the private sector to make sustainable profits. But governments and financial partners should create an enabling environment and provide financial incentives to mitigate risks especially for small and medium-sized enterprises (SMEs). SMEs can better address opportunities in local markets and can better adapt climate-smart technologies to local markets.

Introduction

The Fifth Assessment Report (2014) of the Intergovernmental Panel on Climate Change (IPCC) describes **Africa as the most vulnerable continent in the world: climate change is already having a negative impact on food security, especially through agriculture**, affecting major crops, livestock production and fisheries. Agriculture in turn contributes significantly to climate change: globally, it is responsible for 18-31 percent of greenhouse gas (GHG) emissions (Vermeulen et al., 2012), with African agriculture accounting for 15 percent of the total amount globally emitted from agriculture.² The problem of climate change impacting food security is particularly relevant for Africa, knowing that agriculture is the backbone of African economies: it accounts for as much as 40 percent of the total export earnings and it employs 60 to 90 percent of the total labour force in Sub-Saharan Africa (SSA).

¹ The authors are grateful for feedback on this draft received from Dr. Paul Engel and Paulina Bizzotto Molina. The views expressed in this Briefing Note are those of the authors and should not be attributed to ECDPM. Contact author: Hanne Knaepen, hk@ecdpm.org.

² See: <http://www.fao.org/resources/infographics/infographics-details/en/c/271720/>.

The **bulk of agricultural systems in SSA are highly climate-dependent**: more than 95 percent of farmed land grows crops from rainfed agriculture. The countries in this region are already suffering from food insecurity due to low productivity because of degraded soils, droughts, floods and a lack of effective water management, among other factors. The largest proportion of food-insecure people is located in SSA, where more than a quarter of the population was undernourished in the period 2010-2012 (IPCC, 2014).

In order to feed the growing population sustainably in the context of climate change, agricultural productivity needs to grow. Africa has a great potential to increase its crop production: it has around 60 percent of the world's uncultivated arable land, suitable for crop production, and the highest margins for improving the productivity in already cultivated land. It is mandatory, however, that this **increase in production and productivity happens in a climate-smart way**. A multitude of complementary and overlapping approaches exists to achieve this. "Climate-Smart Agriculture" (CSA), for example, focuses on a sustainable increase of agricultural production, while synergistically adapting to climate change and mitigating GHG emissions (FAO, 2013).³ To make agriculture climate-smart, the coordinated use of different, complementary approaches and techniques is necessary (e.g. multi-cropping techniques, ensuring farmers' access to improved seeds, managing landscapes, etc.). In addition, a multi-stakeholder, inter-sectorial approach to policies and investments is also a prerequisite.

African policy-makers at the continental, regional and national levels are attempting to mainstream climate change into their agricultural policies, generally referring to this as "CSA", albeit with varying degrees of success. As noted by one of the participants to the 2nd Africa Ecosystem Based Adaptation for Food Security Conference (July 2015, United Nations Environment Programme (UNEP), Nairobi, Kenya): *'If there was a policy Olympics, Africa would win'*. However, when considering actual implementation, as well as the coherence between existing climate and agricultural policies, there are several **bottlenecks to making agriculture climate-smart**. These include the lack of technical knowledge among stakeholders as well as weak governance and institutional arrangements, not only in terms of poor horizontal linkages between relevant sectors (climate, agriculture, water, etc.) but also limited vertical linkages and coherence (e.g. agriculture is not prioritised on the agenda of the United Nations Framework Convention on Climate Change, UNFCCC).

The objective of this Briefing Note is to explore how to overcome these challenges, contextualising and understanding current efforts to make agricultural policies and practices in Africa climate-smart. To that end, it examines the bottlenecks of CSA practices across continental, regional and national scales in Africa. The analysis is based on a broad literature review, complemented by interviews with a wide variety of policy-makers, researchers and representatives of the private sector, mostly based in Africa. Section 1 of this Briefing Note reviews the various approaches and techniques to make agriculture climate-smart, with a special focus on CSA, since African policy-makers embraced this approach, as outlined in Section 2. Section 3 identifies the key bottlenecks to implement these policies and frameworks for the public as well as for the private sector with emphasis on the challenges for small and medium-sized enterprises (SMEs). Finally, Section 4 puts forward three recommendations to overcome these challenges through bottom-up and top-down processes and stronger private sector investments, enabled by public policy frameworks.

1. A myriad of approaches to make agriculture climate-smart

As farming systems approaches have considerably evolved during the last four decades, we find ourselves with a **myriad of "labelled" approaches towards "sustainable agriculture"** (Neely and Dixon, 2006), indicative of the specific aspects of sustainable development that each were grappling with when they came into being. These approaches have brought to light insights related to institutions and policy,

³ Tackling climate change is done through mitigation as well as adaptation measures. The IPCC defines "mitigation" as "an anthropogenic intervention to reduce the anthropogenic forcing of the climate system; it includes strategies to reduce GHG sources and emissions and enhancing GHG sinks". "Adaptation" is defined as "adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects, which moderates harm or exploits beneficial opportunities" (see: http://www.ipcc.ch/publications_and_data/ar4/wg2/en/annexessglossary-a-d.html)

participation, multi-stakeholders partnerships and people's rights, environment and agro-ecosystems as well as multidisciplinary and multisectoral mechanisms and their interdependence. This makes it increasingly difficult to tease them apart (Neely and Dixon, 2006). Some of the "labels" currently used relate to practices at farm level (for instance, sustainable intensification), whereas some others relate to comprehensive, holistic approaches (for example, CSA). Some of them promote a more "nature-driven" agriculture (like eco-intensive agriculture or agro-ecology), while some others support a more "technology driven" agriculture (like precision agriculture).

These concepts have evolved over time in line with new emerging issues and more scientific knowledge becoming available. In principle, all such approaches are **complementary**, and they can be gathered under the "**Sustainable Agriculture**" (SA) umbrella, including green agriculture⁴, CSA, agro-ecology, ecosystem-based adaptation (EbA) for food security, the landscape approach, eco-intensive agriculture and sustainable intensification, amongst others. SA, like "sustainable development", has encompassing benefits from social, environmental and economic angles. It describes farming systems that are '*capable of maintaining their productivity and usefulness to society indefinitely. Such systems must be resource conserving, socially supportive, commercially competitive, and environmentally sound*' (Ikerd, 1990). In the quest for finding the best possible options for use within African divergent contexts and scenarios, it is of utmost importance to build more complementarities among so many good available methods while seeking new knowledge and avoiding getting stuck in debates about definitions and "boundaries" of different approaches (Neely and Dixon, 2006).

In 2010, the **CSA** concept was developed by the Food and Agriculture Organisation (FAO). It '*integrates the three dimensions of sustainable development by jointly addressing food security and climate change challenges. It is composed by three main pillars: (1) sustainably increasing agricultural productivity and incomes, (2) adapting and building resilience to climate change and (3) reducing and/or removing greenhouse gas emissions, where possible*' (FAO, 2013). The focus is generally on improving the currently existing techniques, such as the usage of fertilisers and pesticides, but with better-applied efficiency and improved seeds (for instance, drought resistant seeds). There is a wide variety of "climate-smart" techniques (See Table 1), including conservation agriculture and the landscape approach⁵. Other approaches in the CSA portfolio include "agro-forestry" and "sustainable intensification". "**Agro-forestry**" is a comprehensive, climate-smart system that combines shorter-term production from agriculture activities (e.g. crops and pasture) with longer-term production by trees (e.g. timber) on the same plot of land.⁶ "**Sustainable intensification**" looks at optimising production (in quality and in quantity) relative to inputs (e.g. land water, fertiliser, labor) and improving the livelihoods of farmers, while minimising negative externalities (e.g. pollution or deforestation).⁷

Agro-ecology is seen as a science, a practice and a movement (Wezel et al., 2009). As a science, it involves the holistic study of agro-ecosystems; as a practice, agro-ecology enhances the resilience and ecological, socioeconomic and cultural sustainability of farming systems; and as a social and political movement since the 1970s, it seeks a new way to link agriculture and society. It is defined as '*the application of ecological concepts and principles to the design and management of sustainable agro-ecosystems*' (Silici, 2014). Agro-ecology can be considered as farming practices that mimic nature by, for instance, adding organic material to the soil, planting trees on cropped fields and using natural enemies to attack insect pests. According to many observers, agro-ecological approaches have proven to improve the yields, livelihoods and environment for small-scale farmers in the face of climate change (ActionAid, 2014).⁸ Some consider agro-ecology as the most effective means of adaptation: healthy soils - especially those that receive compost and manure - are rich in soil carbon, since they have captured carbon dioxide from the atmosphere (Silici, 2014).⁹ According to its defenders, it leaves room for partnerships between

⁴ The "greening of agriculture" is defined by UNEP "Towards a Green Economy" (2011) as "the increasing use of farming practices and technologies that simultaneously maintain and increase farm productivity and profitability while ensuring the provision of food and ecosystem services on a sustainable basis; reduce negative externalities (e.g. GHG emissions) and gradually lead to positive ones; [...]" (UNEP 2011: 7-8).

⁵ See: <http://www.fao.org/ag/ca/1a.html> and <http://www.landscapes.org/about/>.

⁶ See: <http://www.worldagroforestry.org/>. For an example, see Box 1.

⁷ SI and CSA are closely interlinked. The main difference is the focus in CSA on outcomes related to adaptation and mitigation. SI also contributes to adaptation (e.g. building ecosystem services, increasing farm incomes) and mitigation (e.g., through less land cover change). Therefore, SI is an useful guiding framework for sustainably raising agricultural productivity, but compared to CSA, it is not a paradigm for achieving food security overall (IIED, 2015).

⁸ For information on agro-ecology in Africa: <http://afsafrica.org/>.

⁹ See: <http://www.fao.org/about/meetings/afns/en/>.

farmers using agro-ecological methods and private sector actors who do not limit themselves to simply selling seeds and fertilisers to farmers (ActionAid, 2014). Similarly, ecosystem-based adaptation (EbA) for food security refers to the use of biodiversity and ecosystem services as part of an overall adaptation strategy to help people and communities adapt to the negative effects of climate change across all scales¹⁰.

According to FAO, **CSA is a more comprehensive development concept compared to agro-ecology**. At its launch (2010), it was however heavily criticised, especially by civil society and farmers organisations, for lacking specific indicators, thereby also for risking to focus too narrowly on mitigation instead of adaptation that is more urgent in poor developing countries. The CSA community responded to this criticism by broadening its scope.¹¹ CSA now links environmental, social and economic pillars of sustainability, and covers farm level practices, landscape level approaches, and institutional/policy level frameworks, as shown in Table 1. (Lipper et al., 2014). The CSA concept is relatively flexible and is still “work in progress”, since the approach remains context-specific and needs to be always tailored to local and regional realities. The CSA label is extensively used by internationally renowned research centres and organisations such as the World Bank, FAO, the Consultative Group for International Agricultural Research (CGIAR) and its Climate Change, Agriculture and Food Security (CCAFS) programme, the International Center for Tropical Agriculture (CIAT), the International Food Policy Research Institute (IFPRI), the UK Department for International Development (DfID), the Rockefeller Foundation, as well as African policy-makers. For such reasons, this Briefing Note will focus on, and refer mostly to, “CSA” when describing efforts to make agriculture in Africa climate-smart; but the term “climate-smart” is used here as common denominator for a variety of practices aimed at making agriculture environment-friendly and climate-resilient, as this Note does not promote one or the other approach.

Table 1 - The three pillars of CSA (compiled by Authors; adapted from WorldFish, 2015)

	Food Security (Sustainable productivity improvement)	Adaptation (Building resilience)	Mitigation (reducing GHG emissions and enhancing GHG removal)
Farm issues	<ul style="list-style-type: none"> - Sustainable intensification - Integrated farming - Improved nutrient and water management 	<ul style="list-style-type: none"> - Conservation agriculture - Adjust crop calendars - Use different crop cultivars and animal species and strains - Integrated pest, disease and weed management 	<ul style="list-style-type: none"> - Precision agriculture - Improve soil-carbon storage/Develop carbon sequestration options (conservation tillage, cover cropping, crop rotation)
Landscapes and regional issues	<ul style="list-style-type: none"> - Landscape approach - Restoration of degraded farm lands, wetlands and forests 	<ul style="list-style-type: none"> - Ecosystem-based agriculture (to improve ecosystem services) - Agro-forestry (enhance the role of forests) 	<ul style="list-style-type: none"> - Agro-ecology
Institutional and policy issues	<ul style="list-style-type: none"> - Strengthening science-policy linkages - CSA mainstreaming in agricultural development policy frameworks - Trade-offs between diversification vs. specialization - Gender, youth involvement & reduction inequalities 	<ul style="list-style-type: none"> - Enhanced weather information systems and advisory services - Empower women and the poor - Pro-poor financing, insurance mechanisms and safety nets 	<ul style="list-style-type: none"> - Incentives for pro-poor mitigation

¹⁰ Recognised by global leaders in 2012, it takes an interdisciplinary approach that looks at the interconnectivity between ecological, social-cultural, economic and institutional structures. For it to be effective, it should be integrated into decision-making processes. UNEP, FAO and AU have been promoting EbA, including through two EbA Conferences in 2013 and 2015. EbA has been applied for instance in Togo in a programme aimed at both the rehabilitation of water reservoirs in the savannah region for the benefit of women and youth, as well as boosting the cereal and vegetable production. See: <http://www.afsac2.aaknet.org/>.

¹¹ In a personal communication, Oxfam-staff clarified that ‘the challenges are not fundamentally with the concept of CSA, especially as it is outlined in the FAO CSA Sourcebook. [...]. We see a substantial overlap in the approach to CSA we are taking in the Africa CSA Alliance and agro-ecology as a science/approach/set of principles for more sustainable agriculture’ (Oct. 2015).

2. African policies to make agriculture climate-smart

2.1. A continental framework

In July 2009, at the 13th African Union (AU) Summit in Sirte, Libya, African leaders stressed the urgency of addressing the multiple objectives of food security, development and climate change, which led to the adoption of the African Union Commission – New Partnership for Africa’s Development (**AUC-NEPAD**) ‘**Agriculture Climate Change Adaptation-Mitigation Framework**’ in 2010. This was a response to the fact that the AU Maputo Declaration that launched the Comprehensive African Agriculture Development Programme (CAADP) in 2003 lacked “climate change” dimensions. The Framework outlines a set of principles, actions, roles, responsibilities, and financing recommendations to guide engagement at all levels in Africa, from continental to national, in implementing adaptation and mitigation programmes in the agriculture sector, thus also constituting an integral part of CAADP (as confirmed by interviews with relevant officials and experts).¹² The Framework includes sections on measures, policies and institutional arrangements to link climate change and agriculture and puts strong emphasis on mobilising resources while ensuring complementarities between agriculture, climate and development finance. Section 5 of the Framework, titled “Financing the scaling-up of adaptation-mitigation measures in agriculture” recognizes that the “CAADP country national agriculture investment plans will be the primary window to [...] support application of instruments developed within the context of the Framework” (AUC-NEPAD, 2010).¹³

The AU Malabo Declaration of 2014, Africa’s renewed agricultural transformation strategy that builds upon 10 years of CAADP and enhances its ambition, also announced a new “CSA target” for African countries: 25 million farming households to be using CSA practices by 2025¹⁴. This is now officially called the “**Africa CSA Vision 25x25**”, as initially put forward by NEPAD. The Vision 25x25 consists of two inter-linked components: a country action component (as further explained in Section 2.3) and a pan-African platform.¹⁵ To address the latter component, in June 2014, NEPAD launched an **Africa CSA Alliance (ACSAA)**, aiming in the first place to involve civil society organisations, but also governments, farmers’ organisations as well as private sector representatives.¹⁶ Its members are currently composed of agricultural research partners (e.g. FAO and CGIAR), the Pan-African Farmers Organisation (PAFO) and international Non-Governmental Organisations (NGOs, e.g. Care International and Oxfam).¹⁷ At the time of writing, the private sector seat has not yet been filled. The aim of the ACSAA is to empower 6 million smallholder farmers by 2021, through tailoring CSA practices specific to the country context, as key step towards achieving the Vision 25x25. Vulnerability and capacity assessments have been conducted in some countries, and the ACSAA has so far mobilised in-country partnerships in eight countries: Ethiopia, Kenya, Madagascar, Malawi, Niger, Tanzania, Uganda and Zambia. In each country, ACSAA is assisting the government to implement CSA programmes within their CAADP National Agriculture Investment Plans (NAIPs). To strengthen these partnerships, regional and continental bodies such as NEPAD have facilitated meetings between the respective governments and other local members of the ACSAA, as clarified by some interviewees.

These dynamics show that **policy-makers involved in the AU and other continental processes explicitly embrace the concept of CSA**, seen as more comprehensive compared to other approaches. As some interviewees noted, there is also a financial incentive to adhering so strongly to CSA: *‘funding*

¹² In particular, the Framework is an integral part of the CAADP “Sustainable Land and Water Management Pillar”.

¹³ This note uses the CGIAR definition of “scaling-up”: “as programmes scale-up quantitatively and functionally, they typically need to scale-up politically and organisationally. Scaling-up is [...] about how to manage projects to ensure that positive impact is maximised, while acknowledging that multiple actors and scales need to be considered” (Westermann, 2015: 14).

¹⁴ See: http://caadp.net/sites/default/files/malabo_synthesis_english_0.pdf.

¹⁵ See: http://caadp.net/sites/default/files/africa_csa_25_x25_vision.pdf.

¹⁶ In February 2015, a second continental initiative was launched to create a CSA Alliance with members solely from the public sector at national and regional level, as explained by experts at the AUC. Due to the recent launch of this Alliance, little information is available, including on what would be the respective roles and task-division between the two initiatives.

¹⁷ See: <http://africacsa.org/>.

*proposals labelled “CSA” can be submitted to the Green Climate Fund (GCF) that will include CSA as one of its four priority areas’ (as further explained in Section 4).*¹⁸

2.2. Regional frameworks

Considering the regional level in climate-smart approaches to agriculture is a “must”: climate change crosses borders and hence most of the interventions to enhance resilience and curb emissions have regional dimensions. Moreover, recent advances in remote sensing, agro-ecological systems modelling, and spatial analysis offer possibilities for looking at the issues at stake from a regional perspective, with the opportunity to add new insights to the body of local knowledge. A regional mechanism also allows cross-country spillover effects in terms of knowledge sharing on technologies or policy options.

In 2009, Heads of State and Government of the **Common Market for Eastern and Southern Africa (COMESA)** held a Summit in Zimbabwe to approve the “Regional Framework on Climate Change” that promotes the role of agriculture, forestry and land use in climate change adaptation and mitigation. As part of this, COMESA organises climate change financing training programmes. Furthermore, its Regional CAADP Compact, signed in 2014, explicitly ‘promotes climate-smart agriculture’ (COMESA, 2013). In 2015, COMESA launched a platform, with focus on countries in the Eastern as well as Southern African region, called the “COMESA Climate-Smart Agriculture Partnership”. It has been working with governments to launch national CSA Programmes in each country. Although the staff from COMESA find these dialogue exercises useful to discuss best practices among different countries and to identify complementarities between different “climate-smart” approaches, other interviewees complained that so far these processes have not yielded many results beyond the meetings themselves.¹⁹

Another programme, involving three Regional Economic Communities (RECs), was set up in 2009: the **COMESA-SADC-EAC Tripartite Programme on Climate-Smart Agriculture**. It resulted in the launch of the Southern African Development Community (SADC) Regional Climate Change Strategy and Action Plan of the COMESA Climate Initiative and the Climate Change Policy of the East African Community (COMESA-EAC-SADC, 2011).

The **Economic Community of West African States (ECOWAS)** is considered by experts close to the CSA-related policy discussions, to be a frontrunner on regional CSA policies. ECOWAS Regional Agriculture Investment Plan (RAIP) envisages a specific outcome related to climate change adaptation and mitigation.²⁰ In June 2015, ECOWAS organised a Regional CSA Forum in Bamako, Mali, that brought together various types of stakeholders to fully integrate CSA into implementation of the ECOWAP (the ECOWAS Regional Agriculture Policy). It developed the first steps towards an intervention, funding and monitoring-evaluation framework.²¹ Moreover, the West African CSA Alliance was created to bring together all actors to fully regionalise this framework. It aims at contributing to member countries’ positions with regards to the 21st Conference of Parties (COP21) of the UNFCCC (Paris, December 2015), mainstreaming climate change into NAIPs, and so forth (Le Hub Rural, 2015).

¹⁸ The GCF, launched at the Cancun Climate Conference (2010) aims to mobilise 100 billion USD by 2020. The funding aims at balancing 50/50 between mitigation and adaptation. So far, it passed its first capitalisation target of 10 billion USD. See: <http://www.climatefundsupdate.org/listing/green-climate-fund>. The GCF will focus on CSA because it will aim to contribute to agricultural development and food security. It can also involve private and community level actors (also with a focus on women). And it can encourage agribusinesses and larger producers to support mitigation and wider food security benefits (GCF, 2015: 61).

¹⁹ Various meetings among COMESA member states have been organised to discuss “sustainable agriculture”, including “conservation agriculture” and “green agriculture”, resulting in agreements and policies. This platform is mirrored on national level: some countries have set up platforms for various approaches of sustainable agriculture, all under the common denominator of “CSA”.

²⁰ ECOWAS RAIP has three specific objectives, including “the promotion of a global environment conducive to regional agricultural development” (Strategic Objective 2). Under this Objective, Outcome 2.2 relates to climate change: “Mechanisms ensuring adaptation to climate variability and change and integration management mechanisms for shared resources are introduced at regional level. “This outcome is based on three activities:” (i) strengthen regional research to adapt crop production to climate variability and change; (ii) build capacity for integrated management of shared natural resources; and (iii) implement insurance mechanisms to mitigate climate and environmental risks” (ECOWAS, 2010).

²¹ See: <https://ccafs.cgiar.org/blog/alliance-climate-smart-agriculture-launched-west-africa#.Vh1OHWSqkko>.

2.3. National policies

CSA has floated out of its specialist scientific jargon into the mainstream of policy discourse at the country-level, especially in terms of integrating climate change adaptation into agriculture frameworks and interventions, most notably the CAADP NAIPs.²²

The above-mentioned COMESA CSA Partnership resulted in countries developing **national CSA programmes**. A Ugandan researcher explained: *‘For CSA country programmes, COMESA puts together a vision, from which they [member states] can borrow. Instead of localized efforts, they provide a framework that can be used for securing funding, but also for implementation. It should be easier now to look at what is being done at the country level, if everyone uses the template’*. These programmes were co-designed by staff from the ministries of Environment and of Agriculture. They were created to align NAIPs with national climate change strategies and plans and to enhance policy options to mainstream CSA in national development plans, NAIPs and other agricultural sector policies, as an interviewee explained. As noted in Section 2.1, the ACSAA has also supported the formulation of CSA programmes in eight countries’ NAIPs.

In the same vein, the ECOWAS’ Regional CSA Forum brought together officials from different ministries with competences in areas relevant to CSA, but who traditionally do not work together, i.e. Ministries of Environment, Water, Agriculture, as well as Finances, Planning and Investment. According to a high-level participant from the AUC, **ECOWAS played a coordination role**, bringing together these various public sector stakeholders, as well as private sector actors and civil society groups.

Although it is early days to evaluate implementation, recent developments look promising, for example, in **Uganda: a “climate change department” has been put in place at ministerial level**, where the Climate Change Task Force consists of representatives from the Ministry of Water and Environment as well as the Ministry of Agriculture. Furthermore, farmers’ organisations are the agents on the ground, who are working closely with the local government, as a research project coordinator pointed out. A REC staff member noted that farmers organisations in Uganda are particularly well organised which has given them more leverage in aligning “climate” and “agriculture” agendas, when comparing to the neighbouring countries. Uganda’s National Agriculture Policy (September 2013) emphasises the need for sustainable use of agricultural resources.

A relevant **study by FAO (2012) screened the NAIPs of 14 African countries to understand their potential of generating climate change benefits**, based on reviews of financing and investment issues and the estimation of adaptation and mitigation potentials (using baseline emissions levels and identification of eligibility criteria for climate-smart activities). For example, the CSA screening of the Ugandan Sector Development Strategy and Investment Plan (DSIP, 2010-2014) concluded that all components of the Strategy contributed to “climate change adaptation”: investments in sustainable land management, soil and water conservation, irrigation and institutional aspects are evidence of the climate-smart potential of the plan. However, only one out of four investment programmes has mitigation benefits. The study also concluded that there was little consistency with the National Adaptation Programme of Action (NAPA): the key priority of the NAPA is tree planting (mitigation benefit), but this has not been mentioned in the DSIP. (Branca et al., 2012: 125-129).

Development partners (DfiD, Norway, the European Commission, among others) **are increasingly implementing CSA-projects at the country- and community level**. The FAO, for instance, with support of the European Commission, is implementing three-year projects to support Malawi and Zambia. Each project starts with research, assists with policy development and finances for climate change. It also assesses whether existing policies and institutions are supportive of CSA and how they can be linked to international policy processes such as the UNFCCC (FAO, 2013).

²² See: http://caadp.net/sites/default/files/africa_csa_25_x25_vision.pdf.

3. Challenges to make agriculture more climate-smart

3.1. Three key challenges for the public sector

In line with the “climate change momentum” at the political and public-opinion levels, CSA has become a worldwide popular label, which, as explained, has been eagerly embraced by African leaders. Nevertheless, CSA practices are novel and still very context-specific, climate change impacts are also characterised by unpredictability, and bridging the “climate” and “agriculture” policy gaps cannot be easily accomplished. In particular, a significant challenge is still the mainstreaming of CSA into all CAADP initiatives to increase agricultural production and tackle food insecurity, so as to prevent limiting CSA to isolated agricultural interventions promoted by research institutions or donors and disconnected from CAADP (Africa’s main agricultural development framework). The main bottlenecks that hamper the implementation of CSA practices can be grouped into three categories: **1) lack of knowledge; 2) lack of effective governance arrangements** (for horizontal and vertical coherence across institutions and interventions, i.e. between different sectors and between geographical levels); and **3) lack of resources**. These bottlenecks are present at all levels, but with varying degrees of persistence.

Continental level

The **shortfalls of vertical coordination between continental, regional and national levels result in implementation gaps for CSA initiatives** (like in other policy areas). This is often caused by complex bureaucratic loopholes. As some of the AUC staff members themselves noted during interviews, implementation is challenging also because of the AUC’s slow bureaucracy. The RECs may have bilateral agreements with different organisations and countries and they may not want to wait for the AUC’s systematic input and endorsement. The AUC may try to harmonise as much as possible, but ultimately the implementation responsibility lies at the national level.

Adding to this coordination challenge is the **weak capacity** of the AUC to follow up on all new information on climate change as well as on all regional and national developments and programmes on CSA. As mentioned above, its practices are context-specific and there is no elaborate “pan-African” database of CSA technologies and options. Many observers perceive AUC traction as being weak, while it could more effectively support national and regional leadership and initiatives in various ways.

Regional level

The **lack of ‘state-of-the-art’ knowledge and data** is also apparent at the REC level. As some interviewees from the RECs put it, *‘when looking at the entire food sector, we don’t have adequate data, projections on climate change, risks, etc. There is no evidence available’*. Other observers close to the regional bodies believe that RECs, like the continental institutions, are suffering from the disconnect between the different intervention levels. With small REC Secretariat teams, buried under heavy workloads, there are limited time and resources to follow-up the RECs’ CSA implementation targets at the national level and get feedback on what is happening on the ground. As an example, staff from Kenyan and Ugandan research organisations as well as from national governments explained that they were not involved with the COMESA-SADC-EAC Tripartite Programme: some claimed that *‘it was just a high-flying policy framework with a poorly designed log frame, considered to be of little use with excessively optimistic objectives and indicators’*, and others had never heard of it.

Nevertheless, African RECs are well positioned to play a coordinating role for their member states. Experts actively involved in CAADP as well as REC processes noted that *‘RECs can provide the leadership needed to overcome coordination issues, but **capacity strongly differs among RECs**’*.

Mobilizing resources to fund CSA practices is also a continuous challenge. This is partly due to the **disconnect between agriculture and climate financing sources** (see Section 4.3). However, as mentioned above, the GCF identified CSA as one of its four priority areas, now allowing African countries to directly submit proposals to the GCF. Lessons learned from the process of NAPAs and Nationally appropriate Mitigation Actions (NAMAs) in previous years showed that African countries often lack capacity to plan and submit the required documents, so the RECs can help refine their Member States’ proposals, assisting them with national investment meetings, bringing on board all actors, and so forth. This is an additional reason to support a strengthening of the RECs in the area of CSA.

National level

The same set of challenges is present at the country-level, but even to a greater extent, given that it is the actual implementation level for CSA initiatives. The **limited knowledge about CSA practices and how to evaluate agricultural performance across different spatial scales is a serious constraint**, linked to the context-specificity of CSA. As Ugandan researchers put it: *'we are not generating enough knowledge for CSA practices. [...] We are evaluated on the basis of the papers we publish. But there are no clear pathways where research crosses paths with policies and practices. The gap is great. After all, climate change is still new. People see the impact, disasters, higher temperatures, rainfall changes, floods, landslides, and so on. [...] But linking this with changes in thinking in long term planning, is still lacking.'* Being able to show results from CSA implementation is also particularly challenging.

Secondly, as noted above, **various ministries are responsible for CSA planning, but they operate in silos**, which results in conflicts in mandates. This is emblematic of situations in which a new structure or framework is added to the already existing ones at national level due to the largely external pressure to address a global issue (for instance, like gender, corporate social responsibility or youth). Therefore, in reality the related policy making process is very fragmented.

Although, as noted in Section 2, "climate change" is mentioned in many countries' agricultural policies,²³ **specific guidelines and strategies are in most cases not clarified**, as pointed out by an Ugandan researcher. A particularly serious issue is that **gender disparities are not addressed**:²⁴ *'In Uganda, over 80 percent of agricultural output is provided by women, but the policies are not in any way including them. The question remains on how they can play a leadership role to ensure food security? The women do not have access to technological knowledge; they have no assets to use; they are also not involved in marketing, value addition, etc. If policies would ensure equality for gender and youth, it would make a real difference.'*

Finally, the combined lack of information and lack of institutional cooperation results in limited budget allocations. As a local interviewee observed: *'Ministries in Uganda have a role to implement, to allocate staff, but there is no budget, especially at lower implementation levels.'* The **lack of resources is usually the first barrier for community level practitioners**. Given that gender issues are not sufficiently addressed in the policies, also the budget is too restricted to be dedicated to women farmers'. Lessons learned from the development of NAPAs and NAMAs point to the fact that funding to create documents is in most cases available, but there is a shortage of resources for implementation, hence countries only implement a limited amount of projects.

3.2. Challenges for the private sector

A number of companies have embraced for quite some time now the importance to shift to agricultural approaches that link climate change to food security through promoting sustainable agriculture. Many governments are beginning to put in place more systematically policy and financial incentives to stimulate best practices for sustainability by businesses interested in investing in agriculture. However, the "private sector" is composed of very different types of actors, with different sizes, business models and roles in agricultural value chains: from large and vertically integrated multinationals operating "from farm to fork", to banks specializing in value chain financing, to informal food traders, to family farmers. Their objectives, profitability and modus operandi also vary dramatically, and so their preparedness to change business models to contribute to achieving agriculture that is climate-smart. Despite the current "climate-smart rhetoric" therefore, the challenge to move to climate-smart food systems is still a tough one. This **challenge can only be won through the private sector, responsible ultimately for producing and trading agricultural and food products**. This requires deeper insights on what exactly the companies of

²³ In 2012, FAO screened 14 African NAIPs and concluded that 60 percent of the activities planned were expected to generate climate benefits in terms of slow-onset climate change (18 percent adaptation and 19 percent mitigation) (Branca et al., 2012).

²⁴ Women constitute 80 percent of the agricultural workforce in Africa, and climate change impacts affect them worse than men, for many reasons, including their greater dependence on natural resources, their responsibility for securing food, water and fuel for their households, their limited assets, social, cultural and political barriers that restrict their decision-making power, etc. Ensuring "gender-sensitive CSA" in African countries is therefore a major challenge (Perch, 2015).

different kind, size, and location can and should do, and also more effective as well as differentiated approaches to support them in making agriculture climate-smart.

Multinationals

Since the food prices crisis of 2007-2008, there is a renewed interest of international investors and multinationals to invest in agriculture and food systems. They are also increasingly taking up environment and climate change sustainability targets. There are several examples of **large businesses that are contributing effectively to achieving sustainable agriculture**, including some of the largest players in the global food value chains. Cargill, for instance, has launched the “Cocoa Promise”: it is the company’s global commitment to support sustainable cocoa production and to make a difference to the farming communities that rely on cocoa for their livelihoods, through the enhancement of biodiversity and conservation in local environments and the regeneration of farmlands through access to innovative technology²⁵. The company helps farmers across Côte d’Ivoire, Ghana, Cameroon, Vietnam, Indonesia and Brazil to adopt long-term sustainable practices and increase their incomes. Their network of over 1,250 farmer field schools is training over 75 000 farmers in better farming practices. As a result of this training, many of the farmer cooperatives with whom they work have achieved UTZ and Rainforest Alliance certification, providing an additional boost in their incomes through premiums paid for sustainably grown cocoa.²⁶

The challenge ahead however is whether these and other important initiatives by multinationals will have the expected positive impact on the sustainability of agriculture in the medium and long term, beyond “corporate social responsibility” and the short term income generation opportunities for the farmers involved. In September 2015, the CEO of Unilever won the ‘Champions of the Earth Award’ at the United Nations (UN) Sustainable Development Goals Summit for challenging business norms to show that sustainable, equitable and environmentally conscious business is smart business.²⁷ But **will large international companies from developed and developing countries alike follow the example and shift to greener business models** that can serve at scale the (“base-of-the-pyramid”) consumers in a profitable and sustainable way for the environment (e.g. reducing their GHG emissions)?

In addition, the **involvement of the private sector, especially multinationals, causes concern**. Recently, 350 civil society organisations signed a petition against the Global Alliance for Climate-Smart Agriculture (GACSA),²⁸ launched at the UN Climate Summit in September 2015 in New York. The GACSA is mainly criticised for having an unequal membership: about 60 percent of its members belong to the fertilizer industry (ActionAid, 2014).²⁹ Moreover, the GACSA, lacking criteria for membership, treats the private sector as a single gigantic system, with no distinction made between smallholder farmers, local SMEs, and big multinational agro-industrial firms (Aubert et al., 2015).

Small and medium-sized enterprises (SMEs)

Large scale investment in agriculture and food systems in developing countries is indeed growing, but there are different perspectives on how to combine agricultural growth objectives that are climate-smart with productivity enhancements for smallholders and SMEs, still dominating agricultural production and trade in Africa. Many observers believe that large companies and multinationals may find it easier to move to a greener business model while **SMEs face serious and basic supply side constraints, shorter-term**

²⁵ For example, Cargill works with farmers and local partners in Ghana to plant shade trees in and around cocoa plantations: they have distributed so far 46,300 shade trees covering 2,082 hectares. Through training, farmers learn that they must plant a minimum level of shade trees in order to qualify for certification as sustainable growers. Shade trees increase local biodiversity and provide habitat for many species of birds and mammals. The larger shade trees also preserve soil quality by increasing the recycling of nutrients in the field: they take up nutrients that shallow rooting cocoa trees cannot access and return them to the cocoa trees by dropping leaves and branches. See: <http://www.cargillcocoachocolate.com/wcm/groups/public/@ccc/@all/documents/document/na31657361.pdf>.

²⁶ See: <http://www.cargill.com/news/issues/sustainable-agriculture/cocoa/index.jsp>.

²⁷ See: <http://www.unep.org/newscentre/Default.aspx?DocumentID=26844&ArticleID=35460&l=en>. Unilever, the world’s third-largest consumer goods company, strongly aims at achieving sustainability targets. For example, it created the Tropical Forest Alliance with several governments, including the Netherlands and Liberia, and dozens of NGOs. It works towards eliminating deforestation from the supply chains of consumer goods companies, with initial focus on palm oil, soy, and beef products. See: https://www.unilever.com/Images/uslsp-unilever-palm-oil-report-nov14_tcm244-424235_en.pdf.

²⁸ See: <http://www.fao.org/gacsa/en/>.

²⁹ See: <http://www.climatesmartagconcerns.info/english1.html>.

profitability objectives and could find greener investments too costly. Others believe that SMEs, and especially family farmers, already practice agriculture that is climate-smart thanks to their reliance on organic inputs and multi-cropping techniques, and that, on the contrary, if they were to follow the “productivity enhancement” paradigm that would bring them to a less environment-friendly development path. Others think that it is possible to move towards the greening of agriculture by indeed better connecting SMEs (and their traditionally sustainable farming practices) with large companies and their global supply chains.

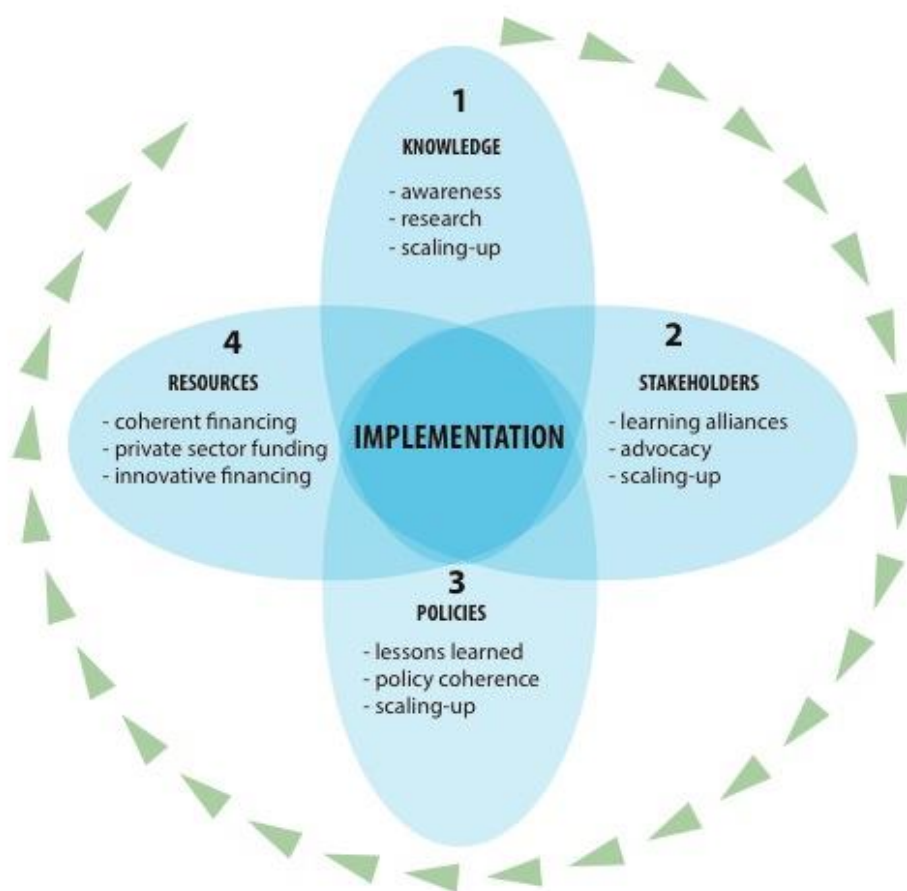
The current private sector led Business-to-Business (B2B) initiatives to support the supply and sustainability capacities of small producers and rural SMEs, especially in Africa, remain largely insufficient. This is due to a variety of reasons, ranging from the inherent risks in agricultural production (e.g. weather and environmental conditions), and the higher risks associated with smallholder production, to the higher costs of doing business in small rural markets. **The challenge ahead is to understand exactly how to scale up existing B2B best practices and increase investment in both European and African SMEs that can simultaneously improve production and food security while addressing climate change.** Different approaches will have to be used, depending on the local context and the features of the small companies involved, since also within the category of SMEs itself there are very different competitiveness conditions and business development needs.

4. The way forward for climate-smart agriculture

Feeding a world population that is, by 2025, expected to grow over a third, with SSA’s population growing the fastest (+114 percent) requires agriculture to produce more. This should happen in a sustainable, climate-proofed way, based on lessons learned from developed countries as well as other developing countries.

4.1. Work through an inclusive, bottom-up process

Success towards a solid transition to agriculture that is entirely climate-smart needs holistic, cross-scale and inter-sectorial solutions. In this regard, based on the challenges listed in Section 3, this Note presents a **four-step scaling-up process**, based on four parameters: *knowledge*, *stakeholders*, *policies* and *resources* (Figure 1). This is an iterative, cyclical process that can be best visualised as a circle composed of steps, to be undertaken mostly at national level. However, the process does not necessarily follow the steps in the exact order and it may follow a more random path. It is rather an “ideal” model that, if followed or applied properly, can lead to the successful implementation towards an agriculture that is climate-smart. Because of the flexibility of the process and the continual potential to improve, constant monitoring and evaluating across scales is key. Finally, such process should take a bottom-up approach, thereby putting emphasis on scaling up indigenous knowledge and practices, through multi-stakeholder cooperation.

Figure 1 - A four-step bottom-up process to make agriculture climate-smart (compiled by Authors)

First, implementation of CSA practices is based on **knowledge**. A critical element in supporting the spread of knowledge as well as in supporting the scaling-up of efforts is awareness among all stakeholders (i.e., their understanding of the climate problem, solutions and practices available). As discussed in Section 3, the question on how exactly to operationalise the policy targets (see Section 2) in terms of programme development as well as investment priorities and measures, often remains unanswered. Moreover, gaps in knowledge require increased research on context-specific CSA methods, based on risk profiling, vulnerability and readiness assessments, and these should then be scaled-up in order to be rapidly disseminated to other parts of Africa. In addition, indigenous knowledge should feed directly into research findings. In this regard, efforts are needed to build an “African CSA approach”, based on mapping of successful initiatives and the identification of specific projects that can work in different areas in Africa with similar ecological conditions and climatic impacts.³⁰

Second, only a **multi-stakeholder approach**, involving all actors, ranging from businesses to civil society to farmers, can offer an effective way forward for CSA implementation. Through alliances, gatherings, conferences, organisations, these actors should be offered the platforms to communicate approaches and to scale-up indigenous knowledge (CGIAR calls these platforms “learning alliances”; see below). These type of stakeholder engagement processes can concretely bring together ministers and their staff with different, yet CSA-related portfolios and lead to cost-benefit analyses, identifying CSA investment opportunities for SMEs. That said, tackling climate change is in the first place a community-level effort. Scaling-up local capacities for adaptation, mitigation and resilience-building, requires strengthened multi-stakeholder cooperation. Engagement with the private sector is key (see 4.3). Women and youth should be involved as well.

³⁰ Starting points for this could be: the CGIAR’s CCAFS compiling a virtual library of some 1300 peer-reviewed studies on widely-promoted CSA practices; FAO published a ‘Climate-Smart Agriculture Sourcebook’ that presents a matrix with ratings of CSA practices (FAO, 2013).

Third, governments are in the position to create an enabling environment, by mainstreaming climate change into agricultural **policies**.³¹ These policies should be based on mapping of lessons learned to be disseminated to other parts of the country or region. On the basis of a better-coordinated governance structure and institutional arrangements, programmes are then designed, putting forward concrete guidelines for implementation. The public sector should also offer an enabling environment for the private sector to make climate-smart investments in agriculture. In this light, the FAO (2011) issued “Save and Grow: A policymaker’s guide to the sustainable intensification of smallholder crop production”. It suggests that carefully evaluating (financial) incentives and laws is necessary to strengthen policy coherence between climate and agriculture policies, and to better integrate the private sector into efforts for developing inputs for the greening of agriculture (FAO, 2011).³²

Fourth, adequate **funding** can overcome implementation gaps in CSA. The way forward is linking climate and agricultural financing (as further outlined in Section 4.2) and making use of innovative financing sources. At the same time, investments in climate-friendly agriculture are an opportunity for the private sector (as explained in Section 4.3).

The CGIAR’s CCAFS “Learning Alliances” provide concrete examples of how this four-step scaling-up process could work. In Uganda, for example, they link diverse actors ranging from researchers to policy-makers to private sector actors through multi-stakeholder platforms and policy making networks, to bring lessons-learned from community-level to government-level. This is then paired with capacity enhancement, learning, and innovative approaches to support decision making of farmers.³³ This four-step scaling-up process is already being put into practice in some parts of Africa: the CCAFS team is working together with NEPAD, the RECs and the African CSA Alliance to develop a guide to scale up CSA, relying on a similar comprehensive approach.

4.2. Break climate change and agriculture silos from top to bottom

Climate change has been incorporated into the agricultural policy agendas in Africa. On paper at least. Whereas Section 4.1 discussed how scaling-up can be improved along the lines of bottom-up dynamics, this part looks at the potential that more top-down dynamics can offer: international frameworks can break silos between climate and agriculture agendas, at least in terms of offering an adequate structure.³⁴

“Agriculture” has suffered neglect on the fringes of the UNFCCC negotiations.³⁵ Many efforts to get it in via various negotiation streams or programs, including the Clean Development Mechanism, have encountered stiff barriers (Campbell et al., 2014). These barriers are diverse, ranging from the complexity and lack of globally agreed definition of the “agriculture sector” to gaps in scientific and technical knowledge of the impact of climate change on agriculture (Kibo Consulting, 2014). Although there has been progress in recent years in putting agriculture on the agenda, including agreement to have discussions under Subsidiary Body for Scientific and Technological Advice (SBSTA) discussions in 2015, getting agriculture a real place at the table means taking a multi-pronged approach. There are some promising evolutions. Most notably, the Lima Paris Action Agenda aims to create a broad multi-stakeholder platform to provide a solid ground for the implementation of the expected Paris Agreement, and “agriculture” is among the targeted sectors by this Action Agenda (Aubert, 2015).

³¹ Apart from this type of “regulatory measures”, the public sector can also “force” companies to engage in CSA (ex: by monitoring amounts of pesticides used, etc.) For example, in Europe, the vast majority of agricultural practices is under government regulations so as to avoid contamination, and so forth.

³² Other FAO recommended policies include “market smart” subsidies, aimed at green input markets; stabilisation of agricultural output prices; ensuring farmers’ access to quality seeds of different varieties, promoting diversified production systems, etc.

³³ See also: <https://ccafs.cgiar.org/publications/learning-alliances-approach-building-multistakeholder-innovation-systems#.Vkl3OmSrQ6U>

³⁴ This Section discusses the global climate negotiations, but it does not look at other regimes, such as the global trade regime or the post-2015 Sustainable Development Goals (SDGs) that aim at creating a balance of top-down and bottom-up approaches, emphasising that knowledge should point in all directions. “Food security”, “agriculture” and “climate change” priorities run as red lines throughout the SDGs’ targets. See: Rural 21, 2015.

³⁵ Since 2005, a number of activities to strengthen the position of agriculture on the UNFCCC agenda have taken place (Kibo Consulting, 2014, pp. 4-7). At COP 17 (2011) in Durban, South Africa, agriculture was for the first time mentioned in a COP decision. The common agreement was that it would be on the agenda of the next session of the UNFCCC SBSTA (May 2012), with a decision to be taken at COP18 in 2012 (Branca et al., 2012).

Various motivations exist for promoting climate and agriculture synergies on the UNFCCC agenda.

These include the fact that market-friction instruments can shift towards mitigation, thereby impacting supply and demand, or the fact that agricultural support services can increase the efficiency of agriculture, improving the resilience of farmers (Kibo Consulting, 2014). The most convincing argument, brought up during the interviews, was that the integration of “agriculture” on the UNFCCC agenda could be translated into agriculture projects being able to apply for climate funding.³⁶ As noted before, the GCF prioritises CSA.

In some cases, such cross-sectorial synergies are already made, for instance through the “Fast Start Financing Mechanism”³⁷ and the “Adaptation for Smallholder Agriculture” Programme from the International Fund for Agricultural Development that channels climate finance to smallholder farmers so that they are able to access the information tools and technologies that help build their resilience to climate change.

The study conducted by Kibo Consulting suggests **five options of mainstreaming agriculture on the COP21 agenda** (page 17-22), but concludes that given the short timeframe, efforts so far can only “set the direction” for agriculture to be integrated in the UNFCCC agenda. It is key that UNFCCC Parties discuss agriculture adaptation at the same level of mitigation activities. In June 2015, the SBSTA concluded that this would require scientific work in the areas of extreme weather events, assessments of the vulnerability of agricultural systems and adaptation measures. It would also entail the identification of agricultural practices and technologies to enhance productivity in a sustainable way (UNFCCC, 2014). These are steps in the right direction. Moreover, the Intended Nationally Determined Contributions (INDCs)³⁸ can serve as the ideal platform through which Africa can make the statement that agriculture should have priority in the 2015 agreement.³⁹ Kenya, for instance, has integrated CSA into its INDCs: the country’s CSA Framework Programme (CSA-FP) aims at guiding investments into climate resilient and low-carbon agriculture. Since July 2015, the CSA-FP has been integrated into the INDCs.⁴⁰ Uganda, in its INDCs, stresses that CSA will be scaled up to increase resilience (adaptation) at the grassroots level (Uganda Ministry of Water and Environment, 2015).

Finally, the “**Principles for Responsible Investment in Agriculture and Food Systems**” (RAI principles) provide another example of a top-down mechanism: they were approved by the Committee on World Food Security (CFS) in 2014. Principle 6 (“Conserve and sustainably manage natural resources, increase resilience, and reduce disaster risks”) links responsible investment in agriculture to taking measures, as appropriate, to reduce and/or remove GHG emissions. While these principles are voluntary (thus non-binding), the RAI principles mark the first international agreement on investment in which no party (including the private sector, who has a representative seat in the CFS) has objected to explicit language on reducing emissions.⁴¹

4.3. Link climate and agricultural financing, including through coordinated and accountable private sector investments

The UN Financing for Development (FfD) Conference, held in Addis Ababa (Ethiopia) in July 2015, made extensive reference to OECD Statistics showing that Official Development Assistance (ODA) has been decreasing and that, despite ODA’s catalytic role in financing development, other resources, most notably from the private sector, will need to be increasingly mobilised. At the same time, the momentum for “green finance” was built up at the FfD Conference.⁴²

A central issue when discussing the financial incentives for sustainable business practices in agriculture is the relation between available resources and financing mechanisms for both agricultural development and for climate change adaptation and mitigation. There are no doubts about the increasing availability of public and private climate financing: between 2008 and 2013, 1 billion USD per year was spent by multilateral climate funds, and the GCF will channel very large amounts in the future through both public and private

³⁶ See: <http://www.fao.org/climatechange/epic/resources/video/en/>.

³⁷ Spending on adaptation of agriculture through the Fast Start Fund Mechanism (which included bilateral aid) has increased from 155 million USD to 613 million USD between 2010-2012 (Hoogzaad et al., 2014).

³⁸ The INDCs are the post 2020 climate actions that countries intend to take up under the new international agreement in Paris 2015 (<http://www.wri.org/indc-definition>).

³⁹ See: http://cdkn.org/2015/07/agriculture_priority_cop21/.

⁴⁰ See: <https://cgspace.cgiar.org/rest/bitstreams/59906/retrieve>.

⁴¹ See: <http://www.fao.org/cfs/cfs-home/resaginv/en/>.

⁴² See: <http://www.un.org/esa/ffd/ffd3/>.

sector windows.⁴³ There are concerns, on the other hand, that **public agriculture financing may be decreasing**⁴⁴, and according to some observers this is **due to some extent to a shift of the same resources from agriculture to climate**. However, it is hard to generalize, given the limited information available on how exactly certain funds are used on the ground and the difficulty of assessing sometimes whether a specific initiative is about only the agriculture or the climate sector, or both (Campbell et al., 2014).⁴⁵

Innovative financing mechanisms that link and blend climate and agricultural finance from public and private sectors are currently being explored.⁴⁶ It is evident that SMEs, and especially African SMEs, still need support from financial partners because of their vulnerability. The niches for SMEs should be well understood: they are well positioned to address opportunities in local markets and they play an important role in adapting existing technology to local conditions (Schuite, 2015), as illustrated in Box 1. However, the lack of access to finance, the lack of economies of scale and of operational efficiency are just a few of the bottlenecks that can be overcome by **risk mitigation actions by the public sector**. Multinationals, as well as local and regional banks and multilateral development financial institutions can assist. Moreover, Europe-based SMEs are starting to launch B2B initiatives to invest in African agricultural SMEs, thereby promoting sustainable practices.⁴⁷ One guiding principle however should always be to maintain transparency and fairness in B2B joint ventures between European and African countries, since recent experiences often could not improve the imbalanced relationships between African smallholders and foreign buyers.

Box 1 – Example of an African SME making its agriculture practices climate-smart

Zambia's COMACO, developer and owner of the "it's wild" brand⁴⁸ uses agroforestry and conservation agriculture to improve the resilience of the farmers from whom they source their raw materials. They promote agroforestry and conservation agriculture among their farmers using innovative methods to ensure compliance, and buy groundnuts (with which they produce peanut butter), soybeans (for the production of soy chunks), honey, etc. All their raw materials come from farmers who practice conservation agriculture or agroforestry or a combination of both. They also produce, process and market rice, dried fruit (mango particularly), as well as poultry feed. COMACO currently works with 132 000 smallholders across Zambia. Their founder and CEO is a Zambian national, who started the company as a way of boosting smallholder income to reduce wildlife poaching.

The **European Commission is also explicitly recognising the importance of the private sector (both local and international) for sustainable development**, including in agriculture. In May 2014, it launched its Communication "A Stronger Role of the Private Sector in Achieving Inclusive and Sustainable Growth in Developing Countries", with the objective of *'harnessing the potential of the private sector as a financing partner, implementing agent, advisor or intermediary to achieve more effective and efficient delivery of European Union [EU] support, not only in the field of local private sector development, but also in other areas of EU development cooperation such as [...] sustainable agriculture and agribusiness [...].'*⁴⁹ In this context, the EC is designing a specific Agriculture Financing Initiative (AgriFI) for Africa aimed at mitigating risks using public funds to encourage project promoters and attract private finance to viable investments that would not materialise otherwise. It will do this through the provision of risk capital, guarantees or other risk-sharing mechanisms. Hence, EU support will contribute to "de-risking" investment and closing the financing gap, with a focus on medium, small and micro enterprises (Ridolfi, 2015). Even more explicitly related to climate-smart investments is the EU's new Africa Investment Facility that supports "green" capital

⁴³ See: <http://www.climatefundsupdate.org/>

⁴⁴ OECD-DAC Statistics show a slow upward trend (www.oecd.org/development/stats/agriculture.htm) while others have noted that "trends in indicators of government spending on ODA to, and FDI in agriculture are discouraging for Sub-Saharan Africa" (<http://www.fao.org/3/a-an108e.pdf>).

⁴⁵ Campbell et al., argue that very little analysis has been undertaken on climate-finance spending on agriculture (Campbell et al., 2014).

⁴⁶ The Global Agriculture and Food Security Programme (GAFSP), for instance, links public and private sector initiatives in agriculture. It is a multilateral mechanism that aims to improve incomes and food and nutrition security in low-income countries by boosting agricultural productivity. Eleven development partners have pledged 1.5 billion USD to the Public and Private Sector Windows of the GAFSP. "CSA" is considered a cross-cutting theme for GAFSP projects and about a third of GAFSP investments are contributing to adaptation and/or mitigation. Projects in Liberia and Sierra Leone even address both. See: <http://www.gafspfund.org/>.

⁴⁷ See for instance: durabilis.eu.

⁴⁸ See: <http://itswild.org/>.

⁴⁹ See: https://ec.europa.eu/europeaid/sectors/economic-growth/private-sector-development_en.

investments. This Facility aims at increased investment in inclusive and sustainable agriculture, through the promotion of public and private investment for a responsible value chain, smallholder and agribusiness development. The European Commission estimates that EU grants could leverage total investments of up to 100 billion EUR from additional public and private sources in blending facilities (EU, 2015).

A study by the European Commission on “SMEs, Resource Efficiency and Green Markets” (European Commission, Flash Eurobarometer 381, Dec. 2013) of more than 11 000 European SMEs shows that environmental awareness is high among SMEs in Europe, with the bulk (63 percent) referring to cost savings as the key reason to take action. Moreover, the number of “green jobs” in the EU has increased from 2.9 to 4.2 million between 2002 and 2011, including by 20 percent during the years of economic downturn. The EU even estimates that up to 20 million jobs could be created in the EU by 2020 in the green economy sectors (European Commission, 2013). In other words, **tackling climate change will create new economic opportunities** in Europe and all over the world. This is especially relevant for Africa, also in view of its growing population, of which a large proportion will continue to work in the agricultural sector.

This Briefing Note summarised current efforts to make agricultural policies and practices in Africa climate-smart, examining the key bottlenecks to CSA policy-making and implementation across continental, regional and national levels. With the aim of contributing to the international debate on how to overcome such challenges, the Note highlighted several opportunities to improve governance and institutional arrangements, as well as knowledge and financial incentives to create space for gradual changes, towards a climate-smart agriculture “revolution” in Africa. ECDPM will continue to work with African and European partners to improve policy-relevant evidence and to facilitate multi-stakeholder dialogue around this important topic.

Acronyms

ACSAA	African Climate-Smart Agriculture Alliance
AU	African Union
AUC	African Union Commission
B2B	Business-to-Business
CAADP	Comprehensive African Agriculture Development Programme
CCAFS	Climate Change, Agriculture and Food Security
CFS	Committee on World Food Security
CGIAR	Consultative Group for International Agricultural Research
COMESA	Common Market for Eastern and Southern Africa
COP	Conference of the Parties
CSA	Climate-Smart Agriculture
CSA-FP	Climate-Smart Agriculture Framework Programme
DfID	Department for International Development (UK)
DSIP	Development Strategy and Investment Plan
EAC	East African Community
EbA	Ecosystem-based Adaptation
EU	European Union
ECOWAP	ECOWAS Agricultural Policy
ECOWAS	Economic Community of West African States
FAO	Food and Agriculture Organisation
FfD	Financing for Development
GACSA	Global Alliance for Climate-Smart Agriculture
GAFFSP	Global Agriculture and Food Security Programme
GCF	Green Climate Fund
GHG	Greenhouse Gas
INDC	Intended Nationally Determined Contribution
IPCC	Intergovernmental Panel on Climate Change
NAIP	National Agriculture Investment Plan
NAMA	Nationally Appropriate Mitigation Action
NAPA	National Adaptation Programme of Action
NEPAD	New Partnership for Africa's Development
NGO	Non-Governmental Organisation
ODA	Official Development Assistance
RAIP	Regional Agriculture Investment Plan
RAI Principles	Principles for Responsible Investment in Agriculture and Food Systems
REC	Regional Economic Community
SA	Sustainable Agriculture
SADC	Southern African Development Community
SBSTA	Subsidiary Body for Scientific and Technological Advice
SME	Small and Medium-sized Enterprises
SSA	Sub-Saharan Africa
UN	United Nations
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change

Bibliography

- ActionAid. September 2014. *Clever Name, Losing Game? - How Climate Smart Agriculture is sowing confusion in the food movement*. <http://www.actionaid.org>.
- Aubert, P.-M., M.u Brun and S. Treyer. 15 July 2015. *Ensuring Transparency and Accountability of the Global Alliance for Climate Smart Agriculture in the Perspective of COP21*. (IDDRI Policy Brief N. 3). Paris: France.
- AUC-NEPAD. 2010. *The AUC-NEPAD Agriculture Climate Change Adaptation-Mitigation Framework*. www.donorplatform.org
- Branca, G., T. Tennigkeit, W. Mann and L. Lipper. 2012. *Identifying opportunities for climate-smart agriculture investments in Africa*. Rome: FAO.
- Campbell B, G. Wamukoya, J. Kinyangi, L. Verchot, L. Wollenberg, S.J. Vermeulen, P.A. Minang, H. Neufeldt, A. Vidal, A. Loboguerrero Rodriguez and M. Hedger. 2014. *The Role of Agriculture in the UN Climate Talks*. (CCAFS Info Note). Copenhagen, Denmark: CGIAR Research Program on CCAFS. www.ccafs.cgiar.org.
- COMESA. 2013. *COMESA Regional CAADP Compact*.
- COMESA-EAC-SADC. 2011. *Programme on Climate Change Adaptation and Mitigation in the Eastern and Southern (COMESA-EAC-SADC) Region*.
- ECOWAS. 2010. *ECOWAS Regional Investment Plan for the implementation of the mobilizing programmes*.
- EU. 2015. *Catalysing Private Investment and Resources for Development - the EU's Role*. https://ec.europa.eu/europeaid/policies/innovative-financial-instruments-blending_en.
- European Commission. 2013. *Flash Eurobarometer 381: SMEs, Resource Efficiency and Green Markets*. (Report.) European Commission, Directorate-General for Enterprise and Industry and co-ordinated by the Directorate-General for Communication.
- FAO. 2013. *Climate-Smart Agriculture - Sourcebook on Climate-Smart Agriculture, Forestry and Fisheries*. Rome: FAO. <http://www.fao.org/climate-smart-agriculture/72611/en/>.
- FAO. 2011. *Save and Grow, a policy-makers guide to the sustainable intensification of smallholder crop production*. Rome: FAO. <http://www.fao.org/ag/save-and-grow/>.
- GCF. 2015. *Analysis of the Expected Role and Impact of the Green Climate Fund*. www.gcfund.org.
- Hoogzaad J., J. Holberg and F. Haupt. 2014. *The geographical distribution of climate finance architecture*. Amsterdam and Washington DC: Climate Focus. http://www.climatefocus.com/sites/default/files/the_geographical_distribution_of_climate_finance_for_agriculture_0.pdf
- IIED. March 2015. *Sustainable Intensification Revisited*. (IIED Briefing). <http://pubs.iied.org/17283IIED.html>.
- Ikerd, J. 1990. *Sustainability Promise*. In: *Journal of Soil and Water Conservation*. 45: 4.
- IPCC. 2014. *Summary for Policymakers. Climate Change 2014: Impacts, Adaptation, and Vulnerability. Part A: Global and Sectoral Aspects*. (Contribution of Working Group II to the Fifth Assessment Report of the IPCC). Cambridge, UK and New York, USA: Cambridge University Press.
- Kibo Consulting, UK Met Office. 2014. *Options for Agriculture in the 2015 International Climate Change Agreement*. (Report requested by DfID). <http://www.evidenceondemand.info/>.
- Le Hub Rural. 15-18 June 2015. *High Level Forum of Climate-Smart Agriculture Stakeholders in West Africa: For the adoption of the ECOWAP/CAADP Intervention Framework for CSA and the launching of the associated West Africa CSA Alliance (WACSAA)*. www.hubrural.org.
- Lipper, L., Thornton, P., Campbell, B. M., Baedeker, T., Braimoh, A., Bwalya, M., Caron, P., Cattaneo, A., Garrity, D., Henry, K., Hottle, R., Jackson, L., Jarvis, A., Kossam, F., Mann, W., McCarthy, N., Meybeck, A., Neufeldt, H., Remington, T., Sen, P. T., Sessa, R., Shula, R., Tibu, A., Torquebiau, E. F. 2014. *Climate-Smart Agriculture for Food Security*. In: *Nature Climate Change*. 4(12): 1068-1072.
- Neely C.L. and J.M. Dixon. 2006. *Farming Systems and its Cousins: Including and Transcending to make a difference*. In: *Changing European Farming Systems for a Better Future: New Visions for Rural Areas*. H. Langeveld and N.G. Röling (eds.). Wageningen: Wageningen Academic Publishers.
- Perch, L. 2015. *Making climate-smart also people-smart*. In: *GREAT insights Magazine*. 4(2). February/March 2015.

- Ridolfi, R. 2015. *Engaging with business for agricultural growth: Opportunities and risks*. In: GREAT Insights Magazine. 4(5). August/September 2015.
- Rural 21. 2015. *Food and nutrition security in the SDGs – where are we heading?*
http://www.rural21.com/uploads/media/rural2015_01-S10-12.pdf.
- Schuite, G. J. and D. Forcella (Enclude BV). 2015. *Green Inclusive Finance - Status, Trends and Opportunities!*. (Report requested by NpM, Hivos and FMO).
- Silici, L. 2014. *Agro-ecology: What it is, what it has to offer, and how agro-ecological practices could be more widely adopted*. (IIED Issue Paper). London: IIED.
- Toenniessen, G., A. Adesina, and J. De Vries. 2008. *Building an Alliance for a Green Revolution in Africa*. N.Y.: Acad. Sci. 1136: 233-242.
- Uganda Ministry of Water and Environment. 2015. *Uganda's Intended Nationally Determined Contribution (INDC)*. October 2015. <http://www4.unfccc.int/submissions/indc/>.
- UNEP. 2011. *Towards a Green Economy: Pathways to Sustainable Development and Poverty Eradication. A Synthesis for Policy Makers*. www.unep.org/greeneconomy.
- UNFCCC. 2014. *Issues related to Agriculture, Draft Conclusions Proposed by the Chair*. Bonn: SBSTA 40th Session. <http://unfccc.int/resource/docs/2014/sbsta/eng/l14.pdf>.
- Vermeulen S.J., P.K. Aggarwal, A. Ainslie, C. Angelone, B.M. Campbell, A.J. Challinor, J.W. Hansen, J.S.I. Ingram, A. Jarvis, P. Kristjanson, C. Lau, G.C. Nelson, P.K. Thornton, E. Wollenberg. 2012. *Options for support to agriculture and food security under climate change*. In: Environmental Science and Policy 15: 136–144.
- Westermann, O., P. Thornton, W. Förch. 2015. *Reaching more farmers - innovative approaches to scaling up climate smart agriculture*. (CCAFS Working Paper no. 135). Copenhagen, Denmark: CGIAR. www.ccafs.cgiar.org.
- Wezel, A., S. Bellon, T. Dore, C. Francis, D. Vallod and C. David. 2009. *Agroecology as a science, a movement and a practice. A review*. In: Agronomy for Sustainable Development. 29 (4): 503-515.
- WorldFish. 2015. *Why Climate-Smart Agriculture*. (Presentation given at the Regional Asia-Pacific Workshop on Climate-Smart Agriculture.) http://www.slideshare.net/worldfishcenter/fao-csa-keynote218jun2015lee_

ECDPM Briefing Notes

ECDPM Briefing Notes present policy findings and advice, prepared and disseminated by Centre staff in response to specific requests by its partners. The aim is to stimulate broader reflection and debate on key policy questions relating to EU external action, with a focus on relations with countries in the South.

This publication benefits from structural support by ECDPM's following partners: The Netherlands, Belgium, Denmark, Finland, Ireland, Luxemburg, Portugal, Sweden, Switzerland, Austria and the United Kingdom.

info@ecdpm.org
www.ecdpm.org
KvK 41077447

HEAD OFFICE
SIÈGE
Onze Lieve Vrouweplein 21
6211 HE Maastricht
The Netherlands *Pays Bas*
Tel +31 (0)43 350 29 00
Fax +31 (0)43 350 29 02

BRUSSELS OFFICE
BUREAU DE BRUXELLES
Rue Archimède 5
1000 Brussels *Bruxelles*
Belgium *Belgique*
Tel +32 (0)2 237 43 10
Fax +32 (0)2 237 43 19

