

Accelerating the utilization of climate-smart agriculture technologies and innovations: How existing policies can foster investment decisions?

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Info Note



Key messages

- This Info Note documents AICCRA engagement and technical assistance to 12 countries in West Africa and the Sahel on how to leverage on existing policies to foster investments for scaling CSA technologies.
- At least one national policy document on climate change exists in each of the countries. Leveraging on the visions and strategic orientations of these climate policies, relevant CSA technologies and innovations were prioritized. Subsequently, need quantification was made.
- CSA technologies includes improved crop seeds varieties, livestock breeds, seeding techniques, irrigation technologies, land management practices, and crop protection as well as post-harvest technologies.
- Pathways for scaling the prioritized technologies included mainly ongoing projects and/or programmes such as FSRP, GIRAV, PROPAD, and projects in pipeline at regional or national levels.

BACKGROUND

Agriculture is critical to Africa's economic growth and development, accounting for more than one-fifth of sub-Saharan Africa's economic output. However, climate change is expected to make agricultural development more difficult in many parts of Africa (Carr et al., 2022; Trisos et al., 2022).

Adaptation and mitigation to climate change are imperative. CORAF has worked with partners in West and Central Africa to develop over 320 agricultural technologies and innovations to improve agricultural productivity and livelihoods. Technologies and innovations developed include cover crop varieties, livestock breeds and seeding techniques, as well as post-harvest applications across multiple agricultural value chains including roots and tubers, dry cereals, rice, plantains, milk, meat and fish technology and innovation (Ganyo et al., 2022).

Unfortunately, smallholder farmers in sub-Saharan Africa are faced apart of climate change challenge, the challenge of having access to funding, specifically for the acquisition of technologies and innovations that can promote the effective implementation of Climate Smart Agriculture (CSA). Yet, when these funds are available, their prompt disbursements are often impeded by cumbersome administrative processes, issues related to lack of understanding and communication between technicians, politicians, and implementers, etc. While there are policy documents that guide the development of the agricultural sector in relation to climate-smart agriculture.

We present the need of expression of 12 West and Central African countries to scale up climate smart agriculture and build on it as strategy to cope climate change. This info note highlights the climate change policy measures in West and Central African countries that can accelerate the acquisition and scaling up of

CSA technologies and innovations (T&Is) in the region, the need of expression and quantification of CSA technologies and innovations, pathways for scaling and actions to materialize the need expressed.

METHODOLOGICAL APPROACH

Policy measures are usually presented in official documents such as strategy, plan, roadmap, among other, and are the main drivers of agriculture development in West and Central African countries. To analyze these documents, a workshop was organized by CORAF with collaboration of Alliance Bioversity International and CIAT through AICCRA project. The workshop aims at facilitating the implementation of agricultural policies and investments in Climate-Smart Agriculture (CSA) in WCA. Policy documents have been first analyzed and actions and/or measures for agricultural development in WC countries have been identified. To achieve the target development objectives in the context of climate change, countries representatives with AICCRA's orientation targeted CSA technologies and innovations but also capacity building and institutional measures that could help. The workshop took place in Lome, Togo from April 11 to 12, 2023 and brought together 17 participants (Figure 1) from 12 CORAF member countries (Benin, Burkina-Faso, Chad, Gambia, Ghana, Guinea Conakry, Guinea-Bissau, Mali, Niger, Nigeria, Sierra Leone, and Togo) (Figure 2).

It aims at contributing to the operationalization of the political measures and wills mentioned in agricultural policy documents (policy, plan, strategy, roadmap, and guideline) to accelerate the scaling of CSA in WCA. Participants come from ministry of agriculture especially department of Planning and Policy and FSRP programme implementing unit (coordinators).



Figure 1: Participants to Lome workshop

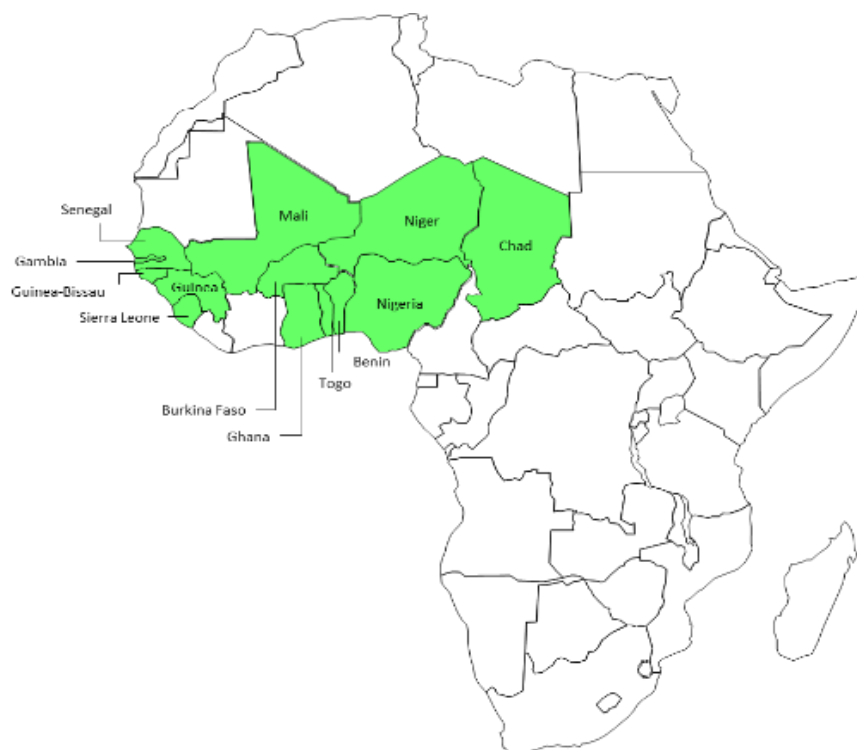


Figure 2: Countries attending the workshop in Lome

Analysis of climate change policy measures in West African countries

Climate change strongly impairs the agricultural sector in WCA. Countries integrate climate change into their agricultural development strategies. Indeed, twelve countries have at least one national climate change policy document. Adaptation and mitigation measures contained in those climate change policy documents (Policy/Plan/Strategy/Guideline/Roadmap) focus on promoting climate-smart agriculture and climate-resilient food security practices. The measures or actions cover physical investments, capacity building and institutional strengthening as levers for disseminating CSA.

Regarding physical investments, measures identified are those applying/promoting climate-smart and conservation agriculture through best agricultural practices that improve soil fertility and increase crop yields and integrate crops and livestock. The best agricultural practices as measures against climate change also include the use of innovative and adaptive approaches of irrigation that ensure better water management (water harvesting and use). The physical actions also concern investments in adequate infrastructure, social services, and agricultural mechanization.

Moreover, climate change policies highlight as measures capacity building of actors specially researchers in research centres and universities for innovation, both in science on CC, and technology to cope with CC. These specific capacity-building measures will enable to provide adequate support for instance the development of appropriate crop varieties and production practices that will enhance resilience to variability in rainfall. Therefore, countries can improve research and knowledge management capacities through training/capacity building at all levels (from institutions to farmers).

Finally, the mainstreaming of climate change into agricultural development strategies, the improvement of planning and coordination of the use of natural resources as well as the strengthening and empowering of local institutions are pursued as institutional strengthening measures to cope with CC.



Figure 3: Country representatives analyzing on policy documents

Need of expression and quantification of CSA investment actions per country

Expressions of need for the adoption and dissemination of climate-smart agriculture cover plant, animal, and fish value chains. Overall, technologies and innovations pointed out are improved crop seeds varieties (cereals, tubers and roots, vegetables, legumes), fertilizers and inoculum, agricultural equipment used along agricultural value chains, animal and fish fry and its inputs as technologies and innovations. Some immaterial needs were also point out by countries. There are trainings on SRI technology and bovine artificial insemination. CSA technologies and innovations sought are those that ensure (i) sustainable increase of agricultural productivity and food security; (ii) adaptation and building of resilience in face of climate change and (iii) reduction or elimination where possible, of greenhouse gases emissions. Table 1 shows the need and quantification of CSA T&I. The expression of quantities is contained in policy documents or derived from.

Table 1: Gender and Nutrition Sensitive Technologies presented by AICCRA anchored countries

N°	Technology/Innovation	QUANTITIES										
		Benin	Burkina	Gambia	Guinea	Guinea Bissau	Malili	Niger	Nigeria	Sierra Leone	Tchad	Togo
1		Seeds/Cuttings/fertilizers (ton)										



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1.1	Rice											
	Pre-base	2			60		25					5
	Base	50		2000	4 635	1250	1		320	1200		209
	Commercial	739			462	0	00			0		9
		4					0					281
1.2	Maize											
	Base			750	263		25					
	Commercial				1 297		00					37
					138		0					500
1.3	Fodder seed		1 550					4				
								000				
								00				
1.4	Tuber cuttings				11					60		
					292					000		
					311							
1.5	Onion						21					
							4					
							00					
							0					
1.6	Tomato			200			48					
							00					
							0					
1.7	Potato				374		95					
					747		00					
							0					
1.8	Millet and sorghum										15	
											000	
1.9	Fonio				10							
					2 666							
					300							
1.10	Soja											1819
												0
1.11	Sweet potato vine stock			7000								
1.12	Fertilizers (tons)		145 000 (NPK & urea), 585 (DAP), 30145 (phospha			5000						

			te fertilizer)									
1.1 3	Inoculum											180
2	Agricultural Equipments											
2.1	Motopomp		25 000			1000						
2.2	Weeding machines								60 000			900
2.3	Rice tillers		10000			1500			500	15 000		1070
2.4	Tractors		483			1000			700	5 000		740
2.5	Rice transplanters											1930
2.6	Pulverizers											950
2.7	Harvesters threshers			200		1500					1000	1930 (rice) 1000 (soja)
2.8	Shelling machine			200		2500						
2.9	Drilling		1210									
2.1 0	Dams		29									
3	Animal and Fishing											
3.1	Fish/veal (fry)		72 020 000		121 151 46 39 8		27 5 00 0			7 180 284		
3.2	Fish food (ton)		95									
3.3	Livestock food (ton)		17 500									
3.4	Poultry feed production unit			100								



3.5	Plucking machines (unit)			300								
3.6	Sheep/goat (animal)				8 086 863					60 000		
3.7	Cattle (animal)							15000				
3.8	Mini-dairies (unit)							317				
4		Farming techniques										
4.1	SRI (farmers)									60 000		
4.2	Boving Artificial insemination (animal)		10 000							60 000		

Pathways for scaling through on-going projects

Adopting and disseminating CSA technologies and innovations as approach to reduce climate impacts and be adapted to climate change effectively required economic investments. Investments mostly can be gotten mostly through on-going projects and programmes or those in the pipeline at national and regional levels. However, to ensure the sustainability of investments and the definitive integration of CSA into daily practices, it is desirable for states to have their own funding mechanism or source, as project funding does not guarantee the continuity of actions. Increase grants and institutional supports from governments to actors can be a strategy to operationalize the acquisition of CSA T&I and scaling CSA. On the other hand, regional monetary and economic institutions such as UEMOA in West Africa and CEMAC in Central Africa could, through an own innovative mechanism, support the CSA and CIS initiatives led by CORAF and AGRHYMET, two regional institutions that deliver CSA and CIS T&I respectively.

Next steps

- CORAF plays a central role by coordinating agricultural research and development in West and Central Africa, with focus on technologies and innovations development and scaling. To move from estimates to action, CORAF plans to (i) to initiate a dialogue with the national authorities (ii) provide an advocacy guide to be used with current programmes to facilitate the acquisition of CSA T&I.
- Also, CORAF creates enabling environment to acquire the target T&I through advocacy with on-going projects and programmes to purchase and by contracting a consultant specialist on international trade to facilitate the acquisition of the targeted technologies.
- Countries will continue the advocacy work, using a guide provided by CORAF for this purpose and including the purchase of CSA T&I in the 2024 work plans and budget.

Further Readings

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About AICCRA Info Notes

Titles in this series aim to disseminate interim research on the scaling of climate services and climate-smart agriculture in Africa, in order to stimulate feedback from the scientific community.

Photos

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Accelerating Impacts of CGIAR Climate Research for Africa (AICCRA) is a project that helps deliver a climate-smart African future driven by science and innovation in agriculture. It is led by the Alliance of Bioversity International and CIAT and supported by a grant from the International Development Association (IDA) of the World Bank. Explore our work at aiccra.cgiar.org