



Empowering Smallholder Farmers in Zambia's Climate Hotspots through Climate-Smart Innovations

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Short impact statement

AICCRA Zambia has significantly empowered smallholder farmers in Eastern Province of Zambia by equipping them with validated climate-smart agricultural (CSA) practices and enhanced climate information services (CIS) to adapt to climate change. Field discussions with farmers revealed that those who adopted AICCRA's climate-smart solutions such as drought-resistant seed varieties, conservation agriculture, agroforestry with *Gliricidia*, and agro-advisories on better planting timing achieved improved yields, even during challenging seasons.

In Eastern Province, COMACO directly trained 175,000 farmers through its cooperative model, with 130,000 (50% women) adopting climate-smart agriculture practices. All farmers have access to enhanced climate information services through the climate-smart radio program, broadcast twice a week from 15:00 to 15:30 hours, with a repeat airing from 20:00 to 20:30 hours. The program receives calls from farmers, including those across the borders in Malawi and Mozambique.

The success of this initiative underscores the importance of collaborative efforts in addressing climate challenges and improving livelihoods in vulnerable regions. Farmers have expressed appreciation for the timely and practical information provided, which has led to better planning and increased yields.

Introduction

AICCRA Zambia is scaling access to and use of climate-smart services and innovations to help farmers in Zambia's climate hotspots zones safeguard their livelihoods in the face of climate change. AICCRA is Accelerating Impacts of CGIAR Climate Research for Africa. Climate change is threatening Zambia's crops, aquaculture and livestock systems, impacting agriculture businesses and undermining livelihoods.

Smallholder farmers face significant challenges due to the growing impacts of climate change. Unpredictable rainfall patterns, prolonged droughts, and limited access to climate information have severely affected agricultural productivity and household resilience. To address these challenges, AICCRA partnered with agribusinesses to promote climate-smart agricultural (CSA) practices and enhanced climate information services (CIS) to enhance farmers' capacity to adapt to and mitigate the impacts of climate change.

This brief presents results from Community Markets for Conservation (COMACO), one of the agribusinesses that participated in the AICCRA project.

Intervention description

Since 2021, the International Water Management Institute (IWMI) and COMACO have collaborated to scale validated climate-smart agriculture (CSA) and enhanced climate information services (CIS) innovations. These efforts aim to address the challenges faced by smallholder farmers and build their resilience to climate shocks. COMACO is working with over 230,000 registered farmers across the Eastern, Muchinga, and Central provinces, all of whom have signed conservation agreements as part of a mission to secure better livelihoods and promote sustainable stewardship of natural resources.

In Eastern Province alone, COMACO works with 175,000 farmers and 62 multipurpose cooperatives practicing climate-smart agriculture to enhance productivity and sustainability. These cooperatives have formed a federation known as the Chitetezo Cooperative Federation (CCF), with support from the Accelerating Impact of Climate Research for Africa (AICCRA) project.

Capacity Building through Demonstration Plots

A robust training structure was established, involving cooperatives, principal lead farmers, senior lead farmers, and producer group trainers. This cascading model ensured that over 230,000 farmers received relevant and actionable CSA and CIS information. With technical support from AICCRA, COMACO established demonstration fields showcasing climate-smart agricultural (CSA) technologies such as conservation agriculture, composting, and natural pest control using plants like *Gliricidia sepium*. Farmers were trained in practical methods to improve soil health and crop resilience. Host farmers demonstrated the application of compost manure and the use of *Gliricidia* to enrich and maintain healthy soils. Key interventions included agroforestry with *Gliricidia*, minimum tillage through ripping, retention of crop residues, creation of firebreaks, and the use of compost manure.



Host Elizabeth Daka explained to other farmers how soybeans performed in rip lines where compost manure was applied, as most farmers were accustomed to planting this crop in ridges. She also encouraged women and youth to take the lead in farming practices to support their families by producing their own food, even during challenging times brought about by drought.



The host farmer showcases yield from the MGV 8 groundnuts seed variety, a medium-maturing, disease-resistant seed variety. The lead farmer further emphasizes the advantages of planting in rip lines, such as improved water retention, which allows the crop to thrive even during dry spells.

Climate Information Services

Radio Programs. In partnership with AICCRA, COMACO, through the Chitetezo Cooperative Federation, hosted the launch of the Zambia Agri-Smart radio show in Chief Chikuwe’s area of Kasenengwa District. Since then, COMACO has been running weekly and bi-weekly radio programs to provide farmers with easier access to validated climate-smart agriculture (CSA) technologies, including land preparation, seed selection, pest management, and more.

WhatsApp platforms have facilitated real-time weather updates and enhanced communication among stakeholders. Additionally, the *Munda Makeover* segment highlighted farmers’ challenges and demonstrated how climate-smart agriculture and agribusiness solutions could address them. This content was produced by a media company in collaboration with multiple partners in Zambia. Table 3 presents the weekly topics covered during the radio program broadcasts.

Furthermore, farmers were trained to use rain gauges and interpret weather forecasts. Through these efforts, farmers received timely and accurate climate data to inform their planting decisions.

Table 3: Weekly Agri-Smart radio show

Radio Station	Duration	Per Week	Programs	Airtime	Grilicidia Company		Feedback Platforms	
					Programs	Minutes	SMS	Direct Calls
Breeze Fm	1 Hour	2	31	1860	45	675		
Explorer FM petauk	30 minutes	Nil	Nil	Nil	35	Nil		
Mphangwe FM	45 minutes	Nil	31	930	Nil	Nil		
Chikaya FM	30 minutes	Nil	Nil	Nil	35	525		
Mnkhanya FM	30 minutes	Nil	Nil	Nil	35	525		
Explorer Nyimba FM	30 minutes	Nil	8	240	35	525		
Kwenje FM	15 minutes	Nil	Nil	Nil	35	Nil		
TOTAL			70	3030	220	2250	246	237
								482
Total Feedback for the first quarter 2023								
Topics covered in January	1	week 1	Hardening,rootpruning and encouraging agro-forestry for 4 and 9 January 2023					
	2	week 2	Together with gliricidia for the better future for 11 and 16 th January 2023					
	3	week 3	Gliricidia management and current activities 18 and 23 January 2023					
	4	Week 4	Final gliricidia transplanting and general conservation farming 25 and 30 January 2023					
Topics covered in February	5	week 1	crop management and agro-forestry for 1 and 6 February 2023					
	6	week 2	Final Grilicidia transplanting and bee keeping for 08 and 13 February 2023					
	7	week 3	Farming with agro-forestry and transformation 15 and 20 February 2023					
	8	Week 4	Seed growers and Crop management for 22 and 27 February 2023					
Topics covered in March	9	Week 1	Agro-forestry management and Organic farming for 01 and 06 March 2023					
	10	week 1	Benefits of grilicidia fields for 08 and 14 March 2023					
	11	week 2	Poachers on indigenous trees and conservation for 15 and 20 March 2023					
	12	week 3	GIS activities and Protection of natural resources for 22 and 27 March 2023					
	13	Week 4	Indunas on community conservation benefits and conservation farming #compost for 29 march and 03 April 2023					
Topics covered in April	14	Week 1	CHIKUWE AND NYAMPCHANDE CFMGs and COOPERATIVE CURRENT ACTIVITIES for 5th and 10th APRIL 2023					
	15	week 2	Cooperatives preparedness and Grilicidia management for 12 and 17 April 2023					
	16	week 3	Conservation activities and Family Budgeting for 19 and 24 April 2023					
	17	week 4	Post Harvest, Marketing and Family Budgeting for 19 and 24 April 2023					
	18	Week 5	Marketing and conservation benefits for 26 and 1 May 2023					
Weekly Reminders	Farmer Registers update, Community protection, Bush fires,Marketing, Post production, Grilicidia management, Harvesting process, production handling, pest management, benefits of agro-forestry, Farmer register, forestry conservation, etc.							

Source: COMACO 2023

Results of the Intervention

Enhanced Productivity

Field discussions with farmers revealed that those who have adopted AICCRA's climate-smart solutions such as drought-resistant seeds, conservation agriculture, agroforestry with *Gliricidia*, and the use of agro-advisories such as better planting timing have achieved improved yields, even during challenging seasons. In Eastern Province, COMACO directly trained 175,000 farmers through its cooperative model, of which 130,000 (50% women) have adopted climate-smart agriculture. All farmers have access to enhanced climate information services through the climate-smart radio program, which is broadcast twice a week from 15:00 to 15:30 hours, with a repeat airing from 20:00 to 20:30 hours.

"We harvested more because we planted early maturing seed varieties and used manure," A female smallholder farmer. Elinat Phiri shared her experience.

"We usually have a live radio program, and we can tell that our farmers are listening because we ask them whether they are COMACO farmers or not during call in. We even receive calls from farmers across the borders such as Malawi and Mozambique." Explains the COMACO Representative.

Improved Knowledge and Resilience

Over 50% of host farmers trained were women, promoting gender equity and strengthening household decision-making. Farmers demonstrated improved resilience by adapting to climate variability with informed actions. Training sessions on making compost and using rip lines were particularly impactful.

"We are now able to know exactly the millimetres of rain needed for plant germination" explains Elizabeth Daka.

"I learned how to make rip lines and compost manure, which has made farming more affordable," shared Elinat Phiri

Conclusion

The AICCRA initiative has significantly empowered smallholder farmers in Eastern Province by equipping them with validated CSA and enhanced CIS to adapt to climate change. Its success underscores the importance of collaborative efforts in addressing climate challenges and improving livelihoods in vulnerable regions. Farmers have expressed appreciation for the timely and practical information provided, which has led to better planning and increased yields. By fostering inclusive and sustainable practices, the project has enhanced agricultural productivity and household resilience, setting a strong foundation for long-term development in the country.

Acknowledgement

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