InfoNote

A Roadmap for Mainstreaming Climate Risk Management in Zambia's Agricultural Education

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Key messages

- Benefits of Climate Information Services (CIS) to Zambia's farmers are limited by knowledge and capacity gaps of extension and advisory service (EAS) providers.
- National partners are adapting *Climate Risk Management in Agricultural Extension* (CRMAE) curriculum to strengthen capacity of EAS providers in Zambia to use available CIS to support farmers.
- Partners prioritized mainstreaming CRMAE-Zambia through higher education institutions as more cost-effective and sustainable than in-service training.
- Proposed CRMAE mainstreaming pathways in Zambia are: (a) the Ministry of Agriculture's seven Agricultural Training Institutes at the diploma level; and (b) universities that offer agricultural degrees.

Strengthening the capacity of agricultural extension and advisory services (EAS) to use available climate information services (CIS) to support farmers to better manage climate risks is an important part of the AICCRA project strategy to enhance agricultural resilience in Africa.

Climate Risk Management in Agricultural Extension (CRMAE) is a suite of country-specific curricula at varying stages of co-development and adoption in five countries (Ethiopia, Senegal, Kenya, Zambia, Ghana). Its four modules:

1. *Climate Basics*,
2. *Climate Information Available for Agriculture*,
3. *Understanding Climate-Sensitive Agricultural Decisions*, and
4. *Delivering Climate Services to Producers*

aim to equip EAS providers take advantage of the best available location-specific climate information and tools to better plan for and respond to a variable and changing climate. It aims to ensure this information is communicated appropriately, and integrated effectively into agricultural decision-making. This brief summarizes the process to date, of co-developing and mainstreaming CRMAE in Zambia.

Co-Design Consultation

Fifteen participants, representing the national government, agricultural extension and advisory service (EAS) providers, and higher learning institutions, met for three days in March 2023 to co-design a curriculum adapted to Zambia's needs and context, define the target audience, and formulate an implementation roadmap (Grossi et al., 2023a).

The program presented an overview of existing CRMAE resources and prior country experiences; solicited feedback about curriculum content; engaged participants in a SWOT analyses and discussions about needs, gaps and target learners; and formed a consensus vision for curriculum adoption and mainstreaming. Discussion was informed by a prior assessment of needs and pathways for integrating CIS and Climate Smart Agriculture (CSA) into Zambia's higher education curricula (Chinene et al., 2023).

Main conclusions and recommendations of the co-design consultation were:

- The CRMAE curriculum meets a gap in existing agricultural education in Zambia.
- The curriculum should target Camp Extension Officers (CEOs) in the near term.
- Expand content on livestock management and gender equality challenges.
- Transfer curriculum to national institutions including national government institutions responsible for climate and agriculture, universities, agricultural training institutions (ATIs), and select NGOs and private companies that provide EAS.
- Adapt curriculum to build sustained capacity through ATIs and select universities.

Validation and Transfer

After the CRMAE curriculum was adapted to Zambia's context and identified priorities (Dinku et al., 2024), it was transferred to national partners through a two-week validation and training-of-trainers workshop in August-September 2023 (Grossi et al., 2023b). Participants were invited who were in a position to serve as master trainers, and to further adapt and adopt the curriculum through their institutions. The 25 participants included March 2023 co-design consultation participants; and additional NGO, private-sector, producer and development organizations working in agricultural extension and development.

Plenary sessions and group learning activities provided participants with in-depth knowledge of the curriculum materials. Since the workshop served the dual purposes of validation and training-of-trainers, it dedicated time for feedback after each module. This input was vital for the International Research Institute for Climate and Society (IRI) and Zambia Meteorological Department (ZMD) teams to further refine the CRMAE-Zambia curriculum.

Participants recommended follow-up actions that overlapped and expanded on March 2023 co-design consultation recommendations:

- Develop versions for CEOs (the initial target audience), ATI students and farmers.
- Pilot training for CEOs and other EAS providers in AICCRA priority districts, with the leadership of the Ministry of Agriculture (lead), Zambia Meteorological Department (ZMD), Zambian Forum for Agricultural Extension and Advisory Services, and the AICCRA-Zambia team.
- Adapt CRMAE to revamp the curriculum of Zambia's ATIs.
- Develop systematic monitoring, evaluation and learning to continually improve training of current and future extension providers.
- Leverage complementary projects.



Mainstreaming Consultation

In response to March and September 2023 workshop recommendations, representatives of Zambian higher education institutions (universities and ATIs), national government, and AICCRA met for three days in November 2024 to to develop and endorse an action plan for integrating the Climate Risk Management in Agricultural Extension (CRMAE) curriculum within Zambia's higher education system (Hansen et al., 2024).

Workshop discussions affirmed the main conclusions of earlier consultations with AICCRA partners: that the CRMAE curriculum addresses a crucial need for knowledge and skills in practical applications of climate services, which are generally inadequate in existing university and ATI curricula.

In separate working groups, representatives of universities and ATIs formulated consensus action plans for adopting CRMAE within their own curricula and programs. Differing administrative processes and policies resulted in different action plans for universities and ATIs.



Roadmap for ATIs

For ATIs, any changes to the existing diploma curriculum require approval at a periodic national Curriculum Review, and a Training Needs Assessment that shows evidence of demand. The ATI working group proposed three avenues for integrating climate risk management into their training programs:

- Convene a workshop to initiate a joint Training Needs Assessment, and formulate a joint proposal for the Curriculum Review.
- Incorporate elements from CRMAE to supplement existing ATI courses.
- In the near term, implement CRMAE as a certificate short course to train extension officers in the field, beginning with Block Officers who already have ATI diplomas.

Roadmap for Universities

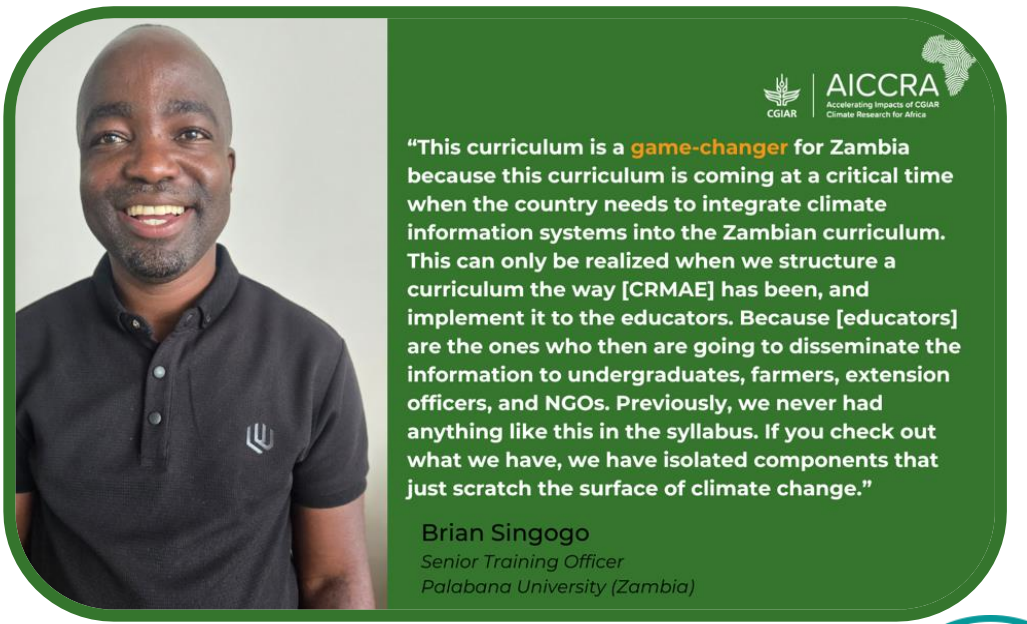
Although universities are subject to accreditation process and other national regulations, the University group's action plan reflected their greater flexibility and autonomy relative to ATIs. All participating universities articulated plans to adopt the CRMAE curriculum, but through several pathways including: a certificate short course, integrating content into specific existing courses, making room for a new course by merging existing courses or transitioning existing courses to electives, and introducing CRMAE into new or planned agricultural degree programs.

The university working group proposed four actions:

- Conduct any additional, localized needs assessments that administrators may require, beyond the assessment and consultation already completed through AICCRA.
- Identify mechanisms for curriculum integration by each university, including any existing courses to be modified.
- Work with university Quality Control Coordinators on internal approval of draft curriculum changes, by university boards and senates.
- Work with each university's Quality Control Coordinator to coordinate curriculum proposals submissions to Zambia's Higher Education Authority.

Conclusions

While the ZMD provides high-quality, localized weather and climate information, the benefits to the nation's agricultural producers is limited in part by gaps in CIS awareness, foundational knowledge and practical skills among EAS providers. A set of national stakeholders, representing representing national government agricultural and climate institutions, major EAS providers, and higher learning institutions, has been working with the AICCRA team to co-develop a curriculum and a roadmap for its implementation, to strengthen EAS capacity to support Zambia's farmers. Key steps in the process so far were: (a) curriculum needs and gap assessment, (b) co-design consultation workshop,



(c) adaptation of CRMAE for Zambia, (d) validation and training-of-trainers workshop, and (e) mainstreaming consultation workshop.

The AICCRA team had initially intended to use CRMAE-Zambia to train EAS professionals who were already in the field at a pilot scale. While national stakeholders recommended pilot training through AICCRA or other relevant project resources, they made a compelling case that the curriculum will have greater and more sustainable impact if it is adapted and mainstreamed through two main pathways:

- the Ministry of Agriculture's seven Agricultural Training Institutes at the diploma level; and
- universities that offer agricultural programs at the Bachelor's and higher degree levels.

Further reading

- Chinene VRN, Phiri E, Mweetwa AM, Yengwe J, Sinda MC, Lungu ON, Kaluba P. 2023. The Nationwide assessment for the Needs and Pathways for integration of Climate Smart Agriculture (CSA) – Climate Information Services (CIS) into the Curricula of Zambian Higher Education Institutions. AICCRA Report.
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- Grossi A, Dinku T, Hansen J. 2023a. Climate Risk Management in Agricultural Extension (CRMAE) Multistakeholder Curriculum Consultative Workshop in Zambia. AICCRA Report.
- Grossi A, Dinku T, Hansen J, Mutenje M, Kasoma Pele W, Makungwe M. 2023b. Climate Risk Management in Agricultural Extension Curriculum Validation and Training of Trainers Workshop in Zambia. AICCRA Report.
- Hansen J, Dinku T, Grossi A, Kasoma W, Makungwe M, Sinachikupo K, 2024. Climate Risk Management in Agricultural Extension Mainstreaming for Zambia's Higher Education System. AICCRA Report.

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