Summary Report of CIS/CSA training and technical assistance provided under AICCRA Zambia

Keagan Kakwasha and Inga Jacobs-Mata

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AICCRA
Accelerating Impacts of CGIAR Climate Research for Africa

Executive summary

AICCRA Zambia has conducted several trainings to increase the number of beneficiaries accessing and using enhanced climate information services and climate smart agriculture innovations. A total of 306 (41% females) participated in the CSA CIS trainings in 2022 (Figure 1). Majority of the trainings (except for the internship innovation programme) were one off (short term) training events targeting researchers, producers, agribusinesses, and policy makers. The trainings included gender and social inclusion specially aimed at increasing the number of women beneficiaries accessing enhanced climate information services and climate smart agriculture technologies. The project created a multistakeholder platform bringing together various stakeholders from different sectors such as the universities and research institutions, government, non-governmental organizations, including CGIAR center and many others. This report summarizes some of the trainings that were conducted during the year under review.

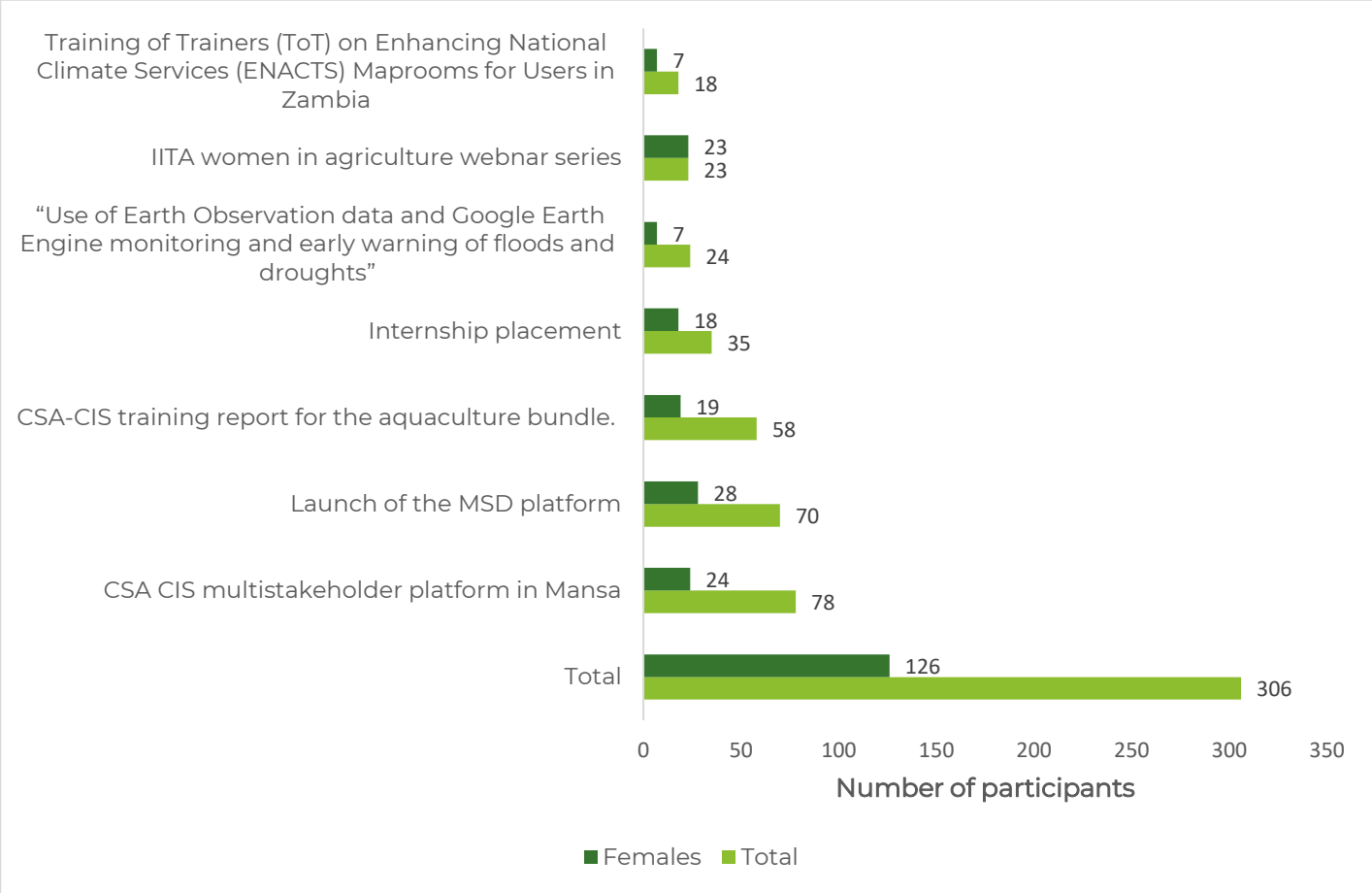

Figure 1: **Report of CIS/CSA training provided under AICCRA Zambia**

Use of Earth Observation data and Google Earth Engine monitoring and early warning of floods and droughts" June 6 – 8 2022, Lusaka, Zambia. This was a one off training event targeting national scientist researchers (NARS) with interest in flood and drought indicators in the framework of climate change. The main objective of this training was to introduce learners to tools used in earth observations data and Google Earth Engine monitoring and early warning of flood and droughts. The training provided greater insights into the potential of open source satellite data and its application in water resource management. Further, the participant given skills on how to apply the tools namely Google Earth Engine, Python, and related remote sensing software. A total of 24 participants were represented from 8 institutions (WARMA, ZMD, Ndola City Council, IAPRI, Mulungushi University, ZRCS, NRSC and ZAMSTATS). Some of the materials used in the training can be accessed here. Figure 1 shows participants who participants who participated in the visualizing data using ODK

Figure 2. Field activities – All participants in the training program collected data using the ODK app and uploaded the data to the IWMI's ODK server.

Training of Trainers (ToT) on Enhancing National Climate Services (ENACTS) Maprooms for Users in Zambia https://hdl.handle.net/10568/126768.

A five-day training of trainers (ToT) workshop was implemented from November 7 to November 11, 2022, in Lusaka, Zambia by the International Research Institute for Climate and Society (IRI) in collaboration with the Zambia Meteorological Department (ZMD) and the International Water Management Institute (IWMI). The workshop, which was organized as part of the World Bank's Accelerating the Impact of CGIAR Climate Research for Africa (AICCRA) project, brought together 18 participants from the Zambia Meteorological Department (ZMD) alongside the Zambia Agriculture Research Institute (ZARI), the Ministry of Green Economy and Environment (MGEE), the Water Resources Management Authority (WARMA), the Ministry of Agriculture (MoA), the International Water Management Institute (IWMI), and the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) to be trained on ZMD's existing suite of free online ENACTS Maprooms. The major objective of the workshop was to ensure that each of these institutions that play an important role in promoting the use of climate information and services and broader resilience of the agricultural sector are aware of and have the capacity to train users within Zambia on the best-available climate information products for decision-making. The ENACTS maproom products, which are freely available through ZMD's website, provide location-specific (4 km grid) historical, monitoring, and forecast information that is important for activities related to planning, monitoring, and response for the agricultural sector and wider food system.

"Climate information is very very critical in Zambia. When ZMD produces information and shares it with the agricultural sector, it has to be relevant, and it has to be user-friendly. And, for people to have the demand for it, they need to understand it. We need to transform it." — Loveness Nikisi, Meteorologist, Zambian Meteorological Department

Data Library Maintenance and Maproom Development Training with Zambia Meteorology Department. https://hdl.handle.net/10568/126853. The ENACTS initiative is supported by multiple tools, which include the following: the Climate Data Tool (CDT) for data organization, quality control, analysis, and visualizations; the Automatic Weather Stations (AWS) Data Tool (ADT), for accessing, processing, and visualizing data from different

types of AWS networks; the PyCPT (python version of IRI's Climate Predictability Tool) for seasonal and sub-seasonal rainfall predictions; and the IRI Data Library and Maproom for creating web-based interactive climate information products accessible by anybody. Maprooms are powerful and freely accessible online visuals of climate data tailored to the agricultural and other sectors, play a large role in making climate information more accessible and usable. By translating past, present, or future conditions into expected impacts and management advisories, they are meeting the needs of different decision-makers for location- and sector-specific information for adaptation in Africa. A staff member from the International Research Institute for Climate and Society travelled to Zambia to train the Zambia Met on how to use the Python Maprooms from October 22 – November 5, 2022.

CSA CIS multistakeholder platform. The MSD launch meeting was co-organized by the International Water Management Institute (IWMI), the international Institute of Tropical Agriculture (IITA), the World Fish and the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT). The specific objectives of the CSA-CIS multi-stakeholder dialogue space included: Exchanging experiences and expertise on climate-smart agriculture and climate information services (CSA-CIS) innovations across public, private and research sectors; sharing insights into the existing multi-stakeholder platforms and processes in the agricultural, livestock, fisheries and water sectors in Zambia; identifying interests, common goals, commitments and gaps in the CSA MSP space in Zambia; co-designing with participants the agenda for the AICCRA-Zambia MSD Space; developing a framework for operationalizing, monitoring, evaluating and learning of the AICCRA Zambia MSD space, and exploring the most feasible pathways for sustainable and inclusive CSA-CIS scaling in Zambia.

CSA-CIS MSD workshop report focusing on aquaculture. WorldFish, in collaboration with the International Water Management Institute (IWMI), hosted a multistakeholder dialogue (MSD) platform at a workshop held in Mansa, Luapula Province, on April 28, 2022. A total of 78 participants, 31% of whom were women, attended the workshop. The

Accelerating the Impact of CGIAR Climate Research for Africa (AICCRA Zambia) project launched an MSD in February 2022 to share ideas on how to scale climate-smart aquaculture (CSA) and climate information services (CIS). The workshop in Mansa was one in a series of meetings planned for the AICCRA Zambia CSA-CIS MSD platform. This particular MSD workshop focused on aquaculture, especially issues related to (i) financing for smallholder farmers and small- and medium-scale enterprises (SMEs) in the face of climate change, (ii) benchmarking and credit worthiness of a smallholder fish farmers, and (iii) sharing practical experiences from integrated fish farms, the Aquaculture Development Association of Zambia (ADAZ) and banks. In addition, participants also made a field visit to an integrated fish farm in Samfya District, Luapula Province.

CSA-CIS training report for the aquaculture bundle. Training on climate-smart aquaculture (CSA) and climate information systems (CIS) targeted small- and medium-scale entrepreneurs (SMEs) offering aquaculture-related goods and services and fisheries extension officers. WorldFish hosted the training, with facilitators from the organization as well as Alliance Bioversity and the International Institute of Tropical Agriculture (CIAT). The main focus was on integrated aquaculture-agriculture systems (IAAS) under CSA Bundle 2 (integrated aquaculture systems) of the Accelerating the Impact of CGIAR Climate Research for Africa (AICCRA Zambia) project. A total of 58 participants, 34 percent of whom were women, took part in the CSA and CIS training.

CSA training. The CSA training introduced participants to basic climate change concepts and also adaptation and mitigation strategies in the face of climate change risks. It introduced climate-smart agriculture, especially climate-smart approaches in aquaculture. Experts from WorldFish introduced participants to IAAS under the auspices of climate change. The training covered key concepts such as climate, weather, climate change, resilience, mitigation, vulnerability, gender, and the importance of IAAS. The training included climate change games and role-playing activities involving decision-making on site selection, fish species and integrated aquaculture. These games were used to help participants understand the concepts and make climate-related decisions on fishstocking, site selection, fish species and other crops based on the probability of receiving average rainfall, flooding or drought. Results of the games showed participants why access to CSA practices and CIS services is important since farmers without access make ill-informed decisions and suffer as a result of climate-related disasters.

By the end of the training, SMEs and extension agents could define and differentiate climate, weather, climate change, adaptation, mitigation and resilience, as well as other terms. The participants appreciated this gameplay because it gave them a practical scenario of what they go through and called on the facilitators to carry on with their work of enhancing farmers' access to CIS and climate-smart agriculture technologies to improve water, food and energy security in the country. Furthermore, participants toured one farm practicing IAAS to expose them to CSA technologies discussed in the training sessions.

CIS training. CIS training introduced climate-information concepts and services related to aquaculture and agriculture value chains. The participants were given an opportunity to understand the value of weather and climate services to fish value chain actors. The session further provided an analysis of climate change, climate

variability and other associated weather and climate factors. Practical sessions involved reading weather pattern graphs that showed minimum and maximum temperatures, and calculating probabilities of various weather events and their relevance to decision-making in agriculture and aquaculture. Data Art for Climate Action (DACA), a climate advisory tool accessible on Google Play for Android phones, was used as a practical example for accessing and reading climate information for decision-making. DACA has various climate advisories, such as recommended bean variety for a particular place in any the coming season, the probability of exceeding the length of a given growing season, and the probability of exceeding a given seasonal rainfall total, as well as many others. At the end of the CIS session, participants could read and interpret climate change or climate variability graphs.

Gender equality and social inclusion. The training also focused on GESI, in which the facilitators introduced concepts so that SMEs could (i) understand what GESI is and can distinguish between gender and sex, (ii) familiarize themselves with core GESI concepts and (iii) become sensitized to power relations and to the marginalization different members of society experience and how this could affect resilience and adaptation to climate change. Emphasis was placed on SMEs and extension agents to ensure that CSA approaches and access to CIS do not exacerbate or perpetuate gender and other social disparities and instead reduce disparities and empower women, girls and disadvantaged groups in society.

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About AICCRA

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.

Discover more at aiccra.cgiar.org