DOWN2EARTH PROJECT REGIONAL DECISION MAKERS WORKSHOP

REPORT

22 -23 January 2025

Addis Ababa, Ethiopia

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1. Introduction

The IGAD Climate Prediction and Applications Centre (ICPAC) is part of a consortium of eleven institutions collaborating on a four-year European Union H2020 research initiative known as the DOWN2EARTH Project. Launched in September 2020 and concluding in February 2025, this project addresses the intersecting challenges of water scarcity, food insecurity, and climate resilience within the Horn of Africa Drylands (HAD), targeting three specific regions: Isiolo County in Kenya, Mieso District in Ethiopia, and Odweyne District in Somaliland.

The Down2Earth project has aimed to enable communities to develop climate-resilient solutions by engaging them directly in adaptation strategies and supporting tools. Through a holistic approach that combines scientific innovation, policy recommendations, capacity-building initiatives, collaborative research and the development of innovative tools such as the CUWALID hydrological forecast model, Agent-Based Modelling (ABM), and the WujihaCast chatbot, the project provides decision-making tools to enhance climate adaptation at the local level.

As the project nears completion, ICPAC and partners organized a final regional workshop for decision-makers to present the project's achievements, discuss the sustainability of these tools beyond the project lifecycle, and gather feedback for the final report. This workshop served as a platform to communicate key findings, receive stakeholder insights, and strategize for the future utility of these tools in combating climate challenges in HAD. Additionally, it covered significant project activities, including research, water and climate adaptation policy analysis, community engagement, capacity-building initiatives, and participatory scenario planning (PSP). The meeting offered stakeholders an opportunity to evaluate, provide feedback on, and consider strategies to carry forward the project's key findings and tools.

This final workshop was essential in strengthening the Down2Earth project's legacy, ensuring that its tools continue to enhance resilience in the Horn of Africa Drylands, and fostering long-term collaborations for sustainable climate adaptation in the region.

i. Objectives of the Meeting

- **Present Project Achievements**: Highlight the project's products, tools, and key outcomes, and showcase their impact on climate resilience in the Horn of Africa Drylands.
- **Sustainability and Future Use**: Discuss strategies for the long-term application and sustainability of the CUWALID hydrological forecast model, Agent-Based Modeling, adaptation policy framework and WujihaCast chatbot.

- **Stakeholder Engagement and Feedback**: Facilitate dialogue with stakeholders on project findings, gather feedback for the final report, and explore opportunities for ongoing partnerships and capacity building.
- **Encourage Knowledge Sharing**: Facilitate learning and awareness of Down2Earth's tools and approaches, enabling participants to incorporate these resources into their climate adaptation strategies.

ii. Expected Outputs/Outcomes

- **Project Final Report**: A comprehensive report detailing project achievements, outcomes, and lessons learned, enhanced by stakeholder feedback.
- **Sustainability Framework**: A roadmap for the continued use and maintenance of the tools and models developed, including partnership and funding plans.
- **Stakeholder Awareness and Buy-In**: Increased understanding and ownership among key regional stakeholders of climate-resilient tools and approaches tailored to the needs of HAD.
- **Future Action Plan**: Frameworks to support the application and potential expansion of Down2Earth tools across other climate-vulnerable areas in the region.

2. Opening Session

The meeting commenced with opening remarks from the hosts as well as other participating stakeholders. Mr. Abebe who is the D2E Principal Investigator from ICPAC acknowledged the presence of high-level partners including the Directors from Ethiopia and Kenya Dr. Teshome (Director EMI) and Dr. David Gikungu (Director KMD).

He summarized the D2E project which he mentioned had run for 4 years with a budget of close to 7m Euros. He also highlighted how products delivered under the different work packages will be applicable.

He noted that with the MAM 2025 season projected to have depressed to normal rainfall for the region there was a need to continue planning on using available tools and products such as those developed under the D2E project.

Mohammed Sufi, representing the Government of Somalia and focal point of project acknowledged the contributions of the project in terms of policy, infrastructure through the provision of the 10 automatic weather stations (AWS), hydrological forecasting work, community research and support towards the establishment of a meteorological service.

Dr. David Gikungu, the KMD director noted that the project shaped how we address climate change, emphasing the importance of working together in the project. He mentioned that the project had provided a chance to explain scientific jargon. It also promoted Participatory Scenario Planning (PSP) in Isiolo thus enhancing the relevance of weather predictions for rural and local communities. The PSP bridged the gap between scientific and traditional frameworks building greater trust with the community.

He added that the the science-media engagements gave a chance for clarity and understanding of science and reporting. Such efforts help build resilience and a sustainable future through the sharing of important information.

Dr Teshome Fetene, the Director of EMI noted that climate change and seasonal shocks are projected to increase. This increased pressure will require adaptive capacity as it will cause shifts in historical patterns in Ethiopia, Kenya and Somalia. He added that the project outputs would help farmers adapt to climate change. He added that overall the project had strengthened the observation network in the region thus improving the efficiency and effective weather service delivery. Dr Teshome then went on to declare the meeting officially opened.

3. Introduction to Down2Earth Objectives and outputs and the D2E film (ICPAC)

Mr Abebe presented the project describing its aim of translating climate information to end users to support adaptation to water scarcity and food insecurity.

He also took participants through the project website to show them the various products generated under the project and how to access them. These include journal publications, blog articles,

Discussions

In terms of website maintenance, the team will ensure that the website keeps running. Awareness needs to be created for the utilization of the D2E products and needs to use such information for decision making. The infrastructure/tools from D2E will be hosted at ICPAC (Wujihacast and CUWALID) and the staff at ICPAC will be responsible for capacity development and supporting countries to use the tools by member states.

4. CUWALID hydrological forecast as a decision support tool (ICPAC)

In this session, Dr Hassaballah presented the CUWALID Model which is specifically developed for drylands for hydrological forecasting. It integrates surface and groundwater processes. It has a hydrological model called DRYP and two stochastic components – STORM and STOPET. The objective forecast is used to run the hydrological model –this is important because information on just rainfall and temperature in inadequate for stakeholders to take action for e.g. soil moisture, groundwater recharge etc thus forecasts enabling into decisionmaking. The information generated will be integrated into the East Africa Hazards Watch.

The WujihaCast Chatbot will provide information to end users in English, Amharic, Oromo, Somali and Kiswahili language. This will be in the form of text, glyphs and voice format for the information specific to the county, district and local area.

Discussions

Participants wanted to know if they would be able to download the chatbot and interact with it. They were informed that this will be possible once it is finalized as it is still in the testing phase but will be available continuously once this is finalized. They also wanted to know if the chatbot had been used by the communities and piloted to see how it works. They were informed that this had happened to some extent and that the input from the communities had informed the final configuration of the chatbot. In terms of how often the chatbot will be updated this will be done at the beginning of each season when the seasonal outlook is disseminated during GHACOF. There were also discussions on the

simplification of the messages from the chatbot where the team noted that their mandate was to provide the forecast information and it is the responsibility of the other stakeholders to try and simplify these messages for their users. The aim of the different modes was so that different user categories can be able to use this information.

5. Community engagement major findings (UEA, AA)

Presenting about the major findings from the community engagement Prof Assen and Cynthia noted that the research focus was on the climate information communities use and what sources they get this from. During the research, household interviews were conducted; FGDs were also held in Kenya, Ethiopia and Somaliland with participants selected on the basis of the criteria etc. Storyline questions were used – three storylines were used for the Mieso, Isiolo and Odweyne area and presented in different languages. The findings showed that traditional forecasters provide climate information e.g. through reading goat intestines for forecasting a method used in both Kenya and Ethiopia. It was also noted that soil moisture information is a key aspect that needs to be provided for users facing water scarcity. Even though local people have local information this is used together with the meteorological information provided by the relevant government meteorological agency.

Results from the research indicated that farmers/pastoralist use whatever information is available to them. Traditional forecasting information previously used is in decline due to a number of factors – e.g. religion where in Islam they do not believe in prediction/is forbidden. Local governments also have a great influence on the information to be provided. The choice on the source of information to use is dependent on who is trusted, what is available, the relevance and at what timescales etc.

In terms of the feedback events at the end of the research project information was shared in different places. The effectiveness of policies was discussed – with a suggestion for input as well as implementation that can be carried out. Since then, some changes have happened e.g. in terms of the constitution of the Ward Planning Committees and the Climate Change Fund Act processes in Isiolo county with the increased scrutiny and involvement of community members.

In Somaliland the feedback sessions were held in Berbera where an AWS was installed as well as in Odweyne. A validation workshop was conducted in Hargeisa where different stakeholders and government officials were engaged on the various outputs of the D2E project. Other events where the D2E information was disseminated include the Nairobi-NGO week, the Mombasa Anticipatory Action workshop convened by ICPAC and COP 29 in Baku, Azerbaijan.

6. Agent-Based Modeling for Community Resilience and Engagement (IVM)

Ileen Streefkerk from IVM discussed the topic on agent-based Modelling (ABM) remotely during the afternoon session. ABM was defined as research that underscores how individual behaviors and interactions within a community impact resilience level in a diverse environment. A detailed discussion about water harvesting, crop production, and the effects of various agricultural practices on groundwater levels and community resilience was made.

Key Points from the presentation were as follows:

- Doubling water harvesting can significantly improve milk production and reduce the distance to household water sources. However, the effectiveness on crop production may diminish if the water is already fully utilized.
- The 2023 drought highlighted the importance of effective water management strategies.
- Increased water harvesting upstream can negatively affect downstream communities, emphasizing the need for careful management practices.
- Doubling access to extension services primarily influences short-term adaptation measures (e.g., crop types, seasonal migration) rather than long-term strategies.
- The impact of commercial farming on groundwater levels is assessed by comparing scenarios with and without commercial farms, keeping other variables constant.
- Vulnerable communities need to perceive threats and have the means to take resilience, which can be limited by financial constraints or unchanging conditions.
- There are models to predict future water crises, but the effectiveness of these models depends on accurate data and understanding of local dynamics.

Q&A Session

During the session, participants engaged in a round of questions and answers, focusing on the practical applications of the ABM that was presented. The questions were asked by various participants including Abebe – ICPAC, Mary -NDMA, Philip - Ministry of Water among others.

Given that the MAM 2025 Climate Outlook for HOA predicts a drought there was a question on how the developed application would address a forecasted drought. Some suggestions included promoting drought resilient crop types and making communities more resilient. It was also explained that drought-related challenges require multi-dimensional strategies, including ecosystem restoration and land management improvements.

There was also a question on the ASAL Context and Groundwater (GW) exploitation with the increasing reliance on GW to support farmers in the ASAL region and the models predicting future crises related to finite GW resources. Additionally, how does the model account for other variables that affect groundwater like topography, human activity, and historical/geological characteristics and distinction between commercial farming and community-based scenarios.

In response, it was highlighted that the model scenarios are similar though there is a community scenario incorporated and the model addresses multiple variables but emphasizes the importance of integration due to the interconnected nature of climate, land management, and water resources. It was also mentioned that future projections need to incorporate simplified models that are easy to use but also respond to critical issues. In terms of groundwater resources the state of assessment is still incomplete and dependency on groundwater alone is unreliable thus **a**lternative solutions like wastewater and saline water treatment, coupled with water harvesting would be ideal for use during crises and such solutions are also advised by ICPAC and members states at GHACOF.

On Climate Change (CC) adaptation there was a question on how long-term climate change strategies are incorporated, particularly in simplified version and how climate change is incorporated in future projections. Here is was emphasized that drought is a complex issue requiring integrated solutions beyond land management. It was also highlighted that implementing no-regret measures, such as promoting diverse crop types, can help communities adapt to changing climate conditions.

Looking at the protection motivation theory, there was a question on how communities with no adaptive ability react to threats and adapt. It was pointed out that similar research done in Kitui County was referenced and that the model accounts for the inability of vulnerable communities to adapt, but context-specific solutions are necessary.

7. Institutional and Human Capacity Building in HAD (ICPAC)

Dr. George Otieno started by mentioning that capacity development was one of the key aims for the D2E project. The trainings on human capacity included:

1. **Python Training**. Twelve (12) staff from different departments at ICPAC were capacity build. The knowledge is being used in the model development and use in running CUWALID.

2. **Media Training.** Three national level media-science trainings with around 80 journalists were conducted in Isiolo, Addis Ababa and Hargeisa. The training aimed to enhance climate reporting more so understanding climate related terms and

issues. There has been continuous engagement between the journalists and the scientists to date. A WhatsApp group is in existence forming a platform to exchange information and articles, video clips and posts communicating climate information by the journalists is regularly uploaded on the platforms.

3. **Modelling capacity training.** This training was done in Bristol, UK, with 3 participants from ICPAC attending to work in collaboration with the Cardiff and Bristol D2E partners. A follow-up training was later conducted at ICPAC.

4. **Community Participatory Scenario Planning (PSP).** The local communities were engaged via PSP in Isiolo to discuss climate adaptation strategies by collaboratively analyzing potential future scenarios and developing context-specific plans in the project areas. This was done through collaboration with Kenya Meteorological Department in Nairobi and Isiolo, NDMA, Isiolo county government, Turkana community elders among others. Traditional forecasting was also showcased by Elders of various cultures like tossing shoes in the air, observing and reading the intestines among others.

There was a question on who the experts were between scientists and traditional forecasters. The conclusion was that all of them are experts at their own level since they use different variables to produce climate information which is equally valid.

Group Discussions were held with three groups to discuss the following:

1. Effectiveness of the approach used for capacity building
2. Suggest other ways to deliver trainings
3. What aspects of capacity would be needed to countries either institutional or human
4. Impacts/Legacy

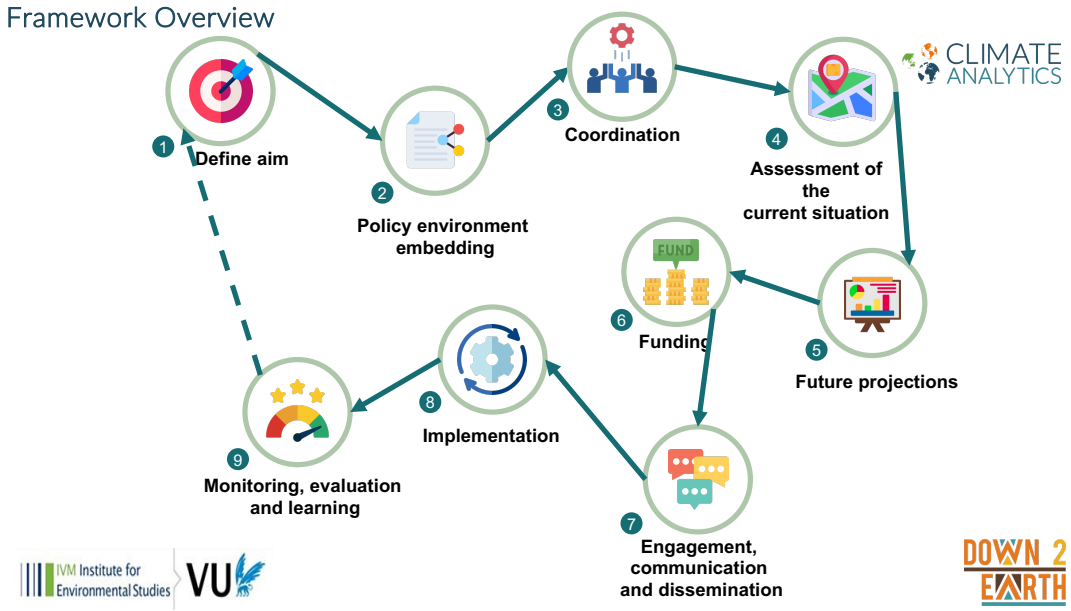
Day 1 Wrap-up

At the end of the first day there was a call to support the 3 countries with telemetric stations in the case of a project extension or another phase of the project. This would enhance data collection for future research and development. The need to consider institutional changes when they occur and engage the relevant people in the project activities in future to ensure that there is no gap was also underscored.

DAY TWO

8. Policy analysis and adaptation policy framework (Climate Analytics)

Winnie Khaemba highlighted the methodology that had been used to conduct the policy analysis which is the policy triangle with four elements including the context, content, process, and actors. To assess the efficacy of the policies, a framework looking at the governance framework, accountability, equity and legitimacy and finance was used. These assessments contributed to the development of the adaptation policy framework as well as input from the household surveys and the agent based model (ABM) that was undertaken by IVM. An overview of the adaptation policy framework was presented to the participants. The adaptation policy framework summary will be translated into the local languages including Swahili, Amharic and Somali as requested by stakeholders.



During the discussion session participants wanted to know whether there were country specific policy analyses. The presenter responded that these had been done during the policy analysis and a report is available on the project website. There were also discussions on how to fill the gap between policy enforcement and implementation whereby it was pointed out that this was the responsibility of different players and there was need for collaboration to be able to do this. There was also a question on access to climate finance citing the limited resources available for initiatives. For finance it is important to make use of international, national, sub-national and also private sector and other finance sources for the implementation of initiatives because resources are scarce and access to international climate finance is particularly challenging.

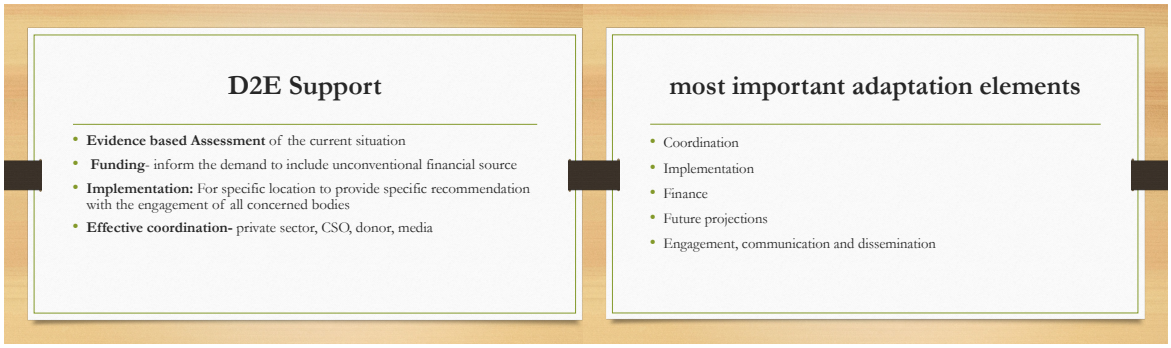
A group discussion session in three country groups addressing the following questions followed the presentation. The groups (Ethiopia, Kenya and Somalia) addressed the following questions whose responses are shown below.

1. What new policies or policy updates (1-3) are planned in your country/district/county from now to three years?
2. How can the policy analysis work support this process?
3. Which elements of the adaptation policy framework do you think are most important for this particular policies/updates?

Ethiopia

List of Policies

Country / Region	Coordinating Agency	Timeline	Policy Analysis elements	Adaptation Policy Framework Elements	Comments
Policy 1	Ministry o Planning & Developoment (MoPD)	2025-2030	NDC 3.0,	Define aim, Policy environment Embedding, Implimatation, coorditaiton	
Policy 2	Ministry of Agriculture (MoA)	Ongoing	National Watershed management proclamation for National Watershed management policy	Engagement, communication and dissemination, MEL, funding, Coordination,	
Policy 3	Ethiopian Biodiversity Institute (EBI)	Every 5 years	National Biodiversity Strategy and Action Plan (NBSAP)	Define aim, Policy environment Embedding, And MEL	



Kenya

Groupwork Template

Country / Region	Coordinating Agency	Timeline	Policy Analysis elements	Adaptation Policy Framework Elements	Comments
Policy 1 Policy Transboundary policy updates.	MoW		Within Nile basin. - 9 Countries Engaging neighbours – Water resources.	-Sustainable management of trans-boundary water resources -Reduction in conflicts	Ongoing
Policy 2 Ground water management policy –	MoW		We only have guidelines.	-Sustainable management of ground water -Regulation of ground water abstraction	Ongoing
Policy 3 Ending drought Emergencies ii	NDMA	2025	-Framwork – Provide guidelines on ending drought emergencies.		Ongoing

Policy analysis support – Processes.

1. Streamline operation of various policies - Harmonization
2. Identify existing gaps and possible actions.
3. Information and knowledge sharing among stakeholders.
4. Present an opportunity for enhanced collaboration and coordination

Important Elements of the adaptation policy framework.

1. Financing
2. Coordination
3. Enforcement
4. Resource mobilization
5. Monitoring Evaluation and learning
6. Integration into development planning.
7. Capacity building and stakeholders' engagements.

Somalia

Groupwork Template

Country / Region	Coordinating Agency	Timeline	Policy Analysis elements	Adaptation Policy Framework Elements	Comments
Policy 1 **National Transformation Plan (FGS).**	Ministry of Planning (FGS)	2029	Economic growth, human capital development, climate resilience	Implementation strategy, wider engagements, funding	Institutional capacity, decentralization , financing, coordination,
Policy 2 **National Water Resource Development Plan (FGS).**	Ministry of Water (FGS)	2035	Infrastructure development, water quality, riverine recovery, monitoring networks,		
Policy 3 **National Seed Policy (Somaliland).**	Ministry of Agriculture (Somaliland)	Periodically Revised	Seed production, Variety, Registration, and release. Seed enterprise development Seed security Regulatory framework PR and Farmers right		

9. WujihaCast Chatbot Overview and demonstration (ICPAC)

Dr Khalid Hassaballah presented the Wujihacast Chatbot being hosted on Telegram. This communicates seasonal hydrological forecast information from the CUWALID model. Information on the chatbot is in the form of aps, glyphs, text and voice notes. A demonstration of how the chat bot works was conducted and participants were able to interact with the information in the different languages and formats. Some questions arose about the update periods which will be seasonal and if the information can be accessed from all locations with a response that information for all locations in the three countries was available on the chatbot.

10. BBC Media Action Presentation (BBC Media Action)

BBC Media Action explained their role in the project noting that they had been involved in the translation of the voice notes for the chatbot, media trainings and film production. Recently, they had produced two films showing climate adaptation that they screened for the participants. From the two films screened, it was apparent that community members are aware of the different adaptation options but they are at times limited by resources for instance they are not able to afford the plastic sheet for water harvesting as it is expensive.

11. Panel Discussion: Sustainability and Long-Term Use of Down2Earth Tools

Technological challenges in developing tools and systems

Michael noted that one challenge encountered in the development of tools was coming up with an efficient way for seasonal forecasts. Multiple simulations were a challenge due to computational demand. Another one was presentation of outputs in a format that is easy to read and interpret by last metre users. The project adopted learning from stake-holders use case study to adapt to some of the challenges. Another issues was determining which resolutions to present the outputs due to complexity and diversity of the HAD areas. It is therefore important to partner with institutions for developing the legacy of the project.

In terms of technical and financial prospects for continued update of the outputs he responded that partnership with ICPAC is aimed at sustainability. It is also important to consider the aspects which can be scaled up and there is need to continue raising resources. It is also important to incorporate this into EMI, KMD etc. For funding there are

challenges in getting these – EU does not have permanent support to maintain and keep going with these initiatives.

Responsibility of ICPAC in hosting tools developed and Sustainability

Mr Abebe mentioned that ICPAC had the responsibility of provision of climate services and would host several tools like CUWALID for provision of hydrological forecasts; Wujihacast for dissemination; and the adaptation policy framework to help develop long term strategies in adaptation in the region. ICPAC will host these tools and systems in its server. Various expertise is available and has been developed at ICPAC and also within the project member states which we believe will help in maintaining and sustaining the project outputs. Furthermore, the knowledge and information developed will help improve the accuracy of the forecasts and staff will conduct national training providing more capacity to sustain gains made in the project. Additionally, ICPAC will utilize the partnerships created with trainings and activities like media training. It will also promote local radio and print media for improved uptake of climate information and useability of tools developed by the project.

To the question on how will ICPAC ensure accessibility and user-friendly tools after the project, Abebe responded that there will be support from other projects to sustain the tools that are developed and there would be a CUWALID regional training to be held in February that will contribute to sustainability. Other consortium partners are also expected to provide continued assistance for the smooth running of the tools. Finally, the partnership with the media has been vital with Whatsapp groups where journalists have been sharing their articles put out after the trainings and other project meetings.

Integration of tools into existing systems

Mary Wangui of NDMA spoke about the integration of tools into existing systems. She mentioned that the NDMA runs a robust EWS for drought thus there is no limitation in generation of information but access and useability remains a challenge. CUWALID can be integrated into drought EWS of Isiolo and the sector specifics interpretations can be provided. Additionally, the information from CUWALID through the Telegram chatbot can be presented in a localized context enriching the existing early warning bulletin by providing information in the local language. She finished by noting that through these tools the community has the opportunity to discuss the various options for adaptation based on various information being provided by CUWALID model.

On the usefulness of outputs at local level, Mary emphasized on enhancing the multi-lingual aspects of the Chatbot. For the ABM, integration of the socio-economic

information e.g market forces, gender -for instance why would women engage in certain adaptation practices, conflict and resource use - managing the multi-hazard aspects etc. Providing sector based localized information is also useful for this. Cross-tools enhancements is another way e.g. how can ABM capture policy analysis and how do the tools interface? There is also the issue of scalability in terms of whether they are designed in a way that can be piloted elsewhere. She noted that there are however issues of sustaining the partnership and ensuring continued support as well as community co-design because the feedback is critical for continuous improvement and relevance of these tools.

Application of Outputs in Ethiopia

Asaminew noted that the impact of climate change has greatly increased – in developing countries this is even more serious. He added that tools can facilitate data exchange and bring sustainability. He mentioned that they were important for creating awareness and capacity building – for farmers etc. For Mieso EMI gives them information on this and the changes from season to season. For EMI, it is critical to involve women and youth in the awareness undertakings. Downscaled information at local level which can be shared on time is also critical. He added that EMI uses various dissemination platforms including both digital and print media and radio to disseminate information. Finally he mentioned that he looked forward to using information from the project as well as strengthening partnerships especially with the academic sector.

Speaking about feedback mechanisms, Asaminew said that there is need to identify what the core needs of the communities are through FGDs e.g for women, PWDs etc. this has to be regular feedback to see how they are using the tools through surveys etc. He said that EMI conducts COFs with key stakeholders and will use the forum to interview the users to improve the service through monitoring and evaluation as well as support capacity building and awareness.

Application of Outputs in Somalia

Sufi noted that CUWALID and the chatbot can contribute even beyond the project as these are useful for the communities. Communities can have an opportunity to plan for adaptation actions based on the information provided by these tools – e.g soil moisture, surface water etc. Barriers include the fact that smart phone access is still low; the model needs to be fully operational so as to see its suitability for the region. It is also critical to get feedback from the local level and integration of indigenous and modern forecasts since merging these two is very critical and still posing a challenge.

On sustainability, Sufi noted that more interaction and feedback on D2E between ICPAC and the member states is required. Additionally, sensitization on the existence of these

tools and capacity building of staff for dissemination to enhance use especially in Somalia would be useful.

Discussions

Some overall comments made during the discussions were around the importance of minimizing the gap of local communities and the expectations of the project deliverables. The importance of downscaling the tools to users at the community level and need for localized training was also emphasized upon.

There was a question on how diverse actors utilize the tools. The response was that one way is through the chatbot but others still exist e.g the PSP but extensive resources are required for this though e.g financing county level met services to organize PSPs and other local approaches.

EMI mentioned that even though smart phone access was a challenge EMI was working with radio stations and using traditional methods with elders for climate information as well as involving youth, women etc through the cultural activities and methods.

KMD pointed out that they use many models in their work so anything that works will be fully embraced.

In a lot of cases the contexts are different. One key question was what would be the main output/benefit for the region. For sustainability it is important to mainstream before the project is phased out. There is also the decentralization to different levels so that it is easier to use. There is also need to provide a guide on how to use the tools at all levels.

Finance being a big issue there was an inquiry about whether there is any deliberate effort for ICPAC to access funds and help move this forward as well as helping other institutions to also access funds. ICPAC mentioned that it was in the process of getting accreditation with the GCF and this could be a way to channel resources to other partners.

There were suggestions to have training on the CUWALID model at subnational level and to downscale applications for use at these level so as to provide information that is specific and relevant for them.

12.Stakeholder Feedback and Developing the Sustainability Framework

During the stakeholder feedback and sustainability session a number of issues were discussed. It was agreed that there is need to ensure that all elements of the information reach the users. While it was agreed that the model was very useful and applicable there

were challenges in communication thus ICPAC has to plan action for the efficient communication of the technologies to the end users.

An example is that for instance farmers want to receive regular climate information with such platforms – voice, text etc is critical to run and communicate crop productivity information etc if crop modelling can be done. It was noted that even though CUWALID does not include crop modelling it can be used in a complementary manner. There are other systems already in place so this can be used and incorporated into other systems.

There were concerns about the sustainability of the D2E outputs but the participants were assured that ICPAC would continue using this and sharing the outputs such as those from the CUWALID model through the Wujihacast chatbot. There was also a question about whether the chatbot could support bulk SMS's with the response that another ICPAC application called Husika would take that up and disseminate climate information via SMS. For the chatbot it was also recommended that it would be good to consider monthly updates because if new information was only generated at the beginning of the season people could easily forget about it and pastoralist also need regular updates to inform their movements in search of water and pastures. Additionally, a community feedback system on the chatbot would be helpful in improving the chatbot for it to better meet the needs of the users.

Way Forward

The agreed way forward was that we maintain our networks and disseminate the project outputs that are currently available. At grassroots level people's needs are vital thus the next project should incorporate grants set aside for sustainable projects so that research and policy goes hand in hand with adaptation and mitigation projects so that the impact is felt at local level. This helps to change lives at community level (for example setting up boreholes, water pans etc).

13.Closing Session

At the closing session Dr Gikungu noted that climate is not just about rainfall so time had come to create awareness on what else is happening instead of just rainfall. Other important parameters include wind, temperature etc.

Dr Hassaballah on his part asked participants to share the details of the relevant participants for the CUWALID training in February from their respective institutions so that the right set of participants are trained.

Mr Abebe talked about how to manage climate extremes by taking advantage of when there is plenty of rain to harvest water and use when it is drier. There is also new

technology – in transport (EVs) - for the policy area we have to take this into account. He noted that feedback given is important and there is need to incorporate community projects in the future. He concluded by saying that partnership is critical in mobilizing resources to adapt to climate change.

14.Annexes

i. Agenda

Day 1: January 22, 2025

Time	Activity	Facilitator
08:30 - 09:00	Registration (Victoria Kidiavai)	
09:00 - 09:20	Opening Remarks (Abebe Tadege, Dr. David Gikungu, Mohammed Sufi, Dr. Fetene Teshome)	Dr. Khalid Hassaballah
09:20 - 09:40	Introduction to Down2Earth Objectives + D2E film (Mr, Abebe Tadege) Presentation of Project Achievements/outputs, Knowledge generated and tools developed, CUWALID, ABM, WujihaCast	
11:00 - 11:30	Coffee Break	
11:30 - 12:15	CUWALID hydrological forecast as a decision support tool (Cardiff, Bristol) Dr Khalid Hassaballah	Dr. George Otieno
12:15 - 13:00	Community engagement major findings (UEA, AA) Prof. Mohammed Assen and Cynthia Wechabe	
13:00 - 14:00	Lunch	
14:00 - 14:30	Agent-Based Modeling for Community Resilience and Engagement (IVM) Ileen Streefkerk	Winnie Khaemba
14:30 - 15:00	Institutional and Human Capacity Building in HAD (ICPAC) Dr. George Otieno	
15:00 - 15:30	Coffee Break -End of Day 1	

Day 2: January 23, 2025

Time	Activity	Facilitator
08:30 - 09:00	Recap of Day 1	Pauline Nyamu
09:00 - 10:00	Policy analysis and adaptation policy framework (Climate Analytics, IVM) Winnie Khaemba	
10:00 - 10:45	WujihaCast Chatbot Overview and demonstration (ICPAC) Dr. Khalid Hassaballah	
10:45 - 11:00	Coffee Break	
11:00 - 12:30	Panel Discussion: Sustainability and Long-Term Use of Down2Earth Tools (Prof. Michael Singer, Abebe Tadege, Asaminew Teshome, Mary Wangui, Mohamed Sufi)	TBD
12:30 - 13:20	Stakeholder Feedback and Developing the Sustainability Framework (open discussion or group discussion) (All)	Mr. Abebe Tadege
13:20 - 13:30	Closing Remarks and Next Steps (All)	
13:30 - 14:30	Lunch (end of the workshop)	

ii. List of Participants

#	Name	Institution	Country	Level	Sex
1	Asmamaw Bahir	Addis Ababa Uni / OSSREA	Ethiopia	National	M
2	Amenti Meriga	D2E Focal Point (Min of Water), Ethiopia	Ethiopia	National	M
3	Tadesse Getachew	Hydrologist, Surface water desk, Ministry of water and energy	Ethiopia	National	M
4	Asaminew Teshome	Deputy Director, Ethiopian Meteorological institute	Ethiopia	National	M
5	Mariyana Fassil Aweitu	Climate Change Expert & LIFE-AR Focal Point in Ethiopia	Ethiopia	National	F
6	Dessalegn Tebratu	Ethiopia Ministry of Environment (NAPs/NDC)	Ethiopia	National	M
7	Negus Gebre	Ethiopia Ministry of Water (Water Policies)	Ethiopia	National	M
8	Mrs Tsigereda Fikadu	CEO of Livestock and fishery development, Ethiopia Ministry of Agriculture	Ethiopia	National	F
9	Mekonnen Teshome	Journalist	Ethiopia	National	M
10	Hirut Alemu	Journalist/Met	Ethiopia	National	F
11	Adnan Ahmed	Mieso Agriculture/Climate Sector	Ethiopia	Sub-national	M
12	Mohammed Abdullah	Mieso water sector	Ethiopia	Sub-national	M
13	John Nguyo	Kenya Met, Isiolo	Kenya	Sub-national	M
14	Osman Bagaja	Director Environment and Climate change (Isiolo County)	Kenya	Sub-national	M
15	Mary Wangui	NDMA	Kenya	Sub-national	F
16	Dr David Gikungu	KMD Director	Kenya	National	M
17	Patricia Nying'uro	D2E Focal Point (Kenya Met)	Kenya	National	F
18	Philip Muraguri	Ministry of Water	Kenya	National	

19	Ressa Kombi	Ministry of Environment	Kenya	National	F
20	Mustafe Elmi	Transparency Solutions	Somalia	Regional	M
21	Nafisa Mohamoud Shirwa	Director General, Somaliland Ministry of Water Resource Development	Somalia	National	F
22	Abdirashid Jama	IGAD	Somalia	National	M
23	Mohamed Sufi	D2E Focal Point (Min of Water), Somalia	Somalia	National	M
24	Mohamed Mire	Juba Institute	Somalia	National	M
25	Mohamed Mohamoud	Min of water	Somalia	National	M
26	Abebe Tadege	ICPAC		Regional	M
27	Khalid Hassaballah	ICPAC		Regional	M
28	George Otieno	ICPAC		Regional	M
29	Winnie Khaemba	CA/ICPAC		Regional	F
30	Joseph Kiragu	ICPAC		Regional	M
32	Victoria Kidiavai	ICPAC		Regional	F

iii. Photos