



ANNUAL REPORT 2019

CLIM-DEV AFRICA SPECIAL FUND

*Powering Africa's
Access to Climate
and Weather
Information*



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Annual Report 2019

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Powering Africa's Access to Climate
and Weather Information

Acknowledgement

CDSF Partners



CDSF Funders



Africa Caribbean
Pacific Countries in
Partnership with the
European Union



CDSF Implementing Partners



Economic Community
of Central African
States/Communauté
Economique des Etats
de l'Afrique Centrale



Agrometeorology,
Hydrology and
Meteorology
Regional Centre



European
Organisation for
the Exploitation
of Meteorological
Satellite

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FOREWORD

The Clim-Dev Africa Special Fund at the African Development Bank was established in 2009, with an ambitious goal to invest in technology projects, improving climate and weather observation networks, to build Africa's access to high quality climate information. However, since then, the challenges have intensified, with more extreme weather events happening across the globe. Whilst Africa still contributes the least of any region to global greenhouse gas emissions, the continent is unequivocally in the line of fire when it comes to its vulnerability to the severe impacts of climate change and variability.

As I reflect on a decade of the Fund, in a year that opened with tropical cyclones Kenneth and Idai ravaging southern Africa and closed with a voracious plague of desert locusts in the Horn of Africa, it is clear that the mission of the Fund is more critical than ever. The year 2019 underscored the need for the Fund's investments, as extreme weather continued to test the continent's capacity to respond with data-driven, high quality, reliable climate and weather information.

Despite the challenges, the Fund successfully managed a portfolio of 15 operations, with ongoing operations subject to continuous desk supervision. In addition, one project launch mission, six field supervisions, and one midterm review were completed to ensure a healthy project portfolio. We also identified five new projects, each intended to strengthen their country or region's capacity to build resilience and support adaptation to climate change. Throughout the year, ClimDev participated in key knowledge events, strategically aligned with our mandate and geared towards promoting the use of climate information for development planning and disaster risk management. This included:

- » The 18th World Meteorological Congress: Development Partnerships Events held in Geneva, Switzerland from June 10-12, where we contributed to a special session on scaling up development partnerships for reliable forecasts, early warning systems, and climate services
- » 25th United Nations Climate Change Conference (COP 25), in Madrid, Spain from December 2-13. There, we co-organized a knowledge event on vulnerability to extreme events in Africa, with a focus on small island developing states, with the Green Climate Fund and the Africa Adaptation Initiative
- » The launch of the Alliance for Hydromet Development, a partnership of 12 international organizations including the African Development Bank, committed to joining forces in order to strengthen the delivery of hydromet services in developing countries

As we embark on the last mile towards 2030 – by when as a global community we have vowed to eliminate or lessen the impact of the 17 most pressing issues for the most vulnerable – climate change continues to challenge Africa’s hard-won economic and development gains, with a firm grasp on its pole position



Dr. James Kinyangi,
Coordinator, Clim-Dev Africa
Special Fund

ABOUT US

Climate variability continues to challenge Africa's hard-won economic and development gains, with a firm grasp on its pole position. Never before has Africa experienced the high frequency and magnitude of climate-related hazards seen in the last five years. During this period, as many as 180 million people across the continent have been affected by extreme weather events, with losses and damages of over \$22 billion.

Climate change and climate variability continue to dominate the continent's narrative as nations across Africa grapple with the threat they pose. Yet, often missing in these conversations is the critical role that climate information can and must play in Africa's response, resilience and adaptation. The Fund invests in overcoming the lack of necessary climate information, analysis, and options required by policy and decision-makers to take action to promote climate resilient development in Africa. It seeks three immediate outcomes:

1. Generation and wide dissemination of reliable and high-quality climate information in Africa;
2. Capacity enhancement of policymakers and policy support institutions to integrate climate change information into development programs; and
3. Implementation of pilot adaptation and community-based solutions and practices that demonstrate the value of mainstreaming climate information into resilient development





The Clim-Dev Africa Special Fund invests in climate and weather observation networks to build Africa's access to high quality climate information. In order to facilitate the provision of applications and products for climate services, the Fund has made significant investments in modern equipment, high-performance computing equipment, modern automatic weather observation, and Regional Advanced Retransmission Service antennas that enable access to real time data from polar orbiting meteorological satellites.

The Clim-Dev Fund has also invested in strengthening the capacity of government institutions, private sector, civil society, and communities across Africa to address climate change vulnerability and disaster risk reduction (DRR). These include improving the operational capacities of Africa's four regional climate centers and its continental climate center.

The Fund is working with African countries to mainstream policies for climate-related risk management by supporting the use and application of weather data and information to facilitate the development and refinement of weather-based risk transfer programs. The Fund is also working with the World Bank, The World Meteorological Organization (WMO), and other partners to help African countries to modernize their hydrometeorological systems.

OUR WORK



Disaster Risk Management

- » Flood and drought monitoring
- » Risk analysis
- » Investment for resilience
- » Recovery planning



Climate Forecasting and early warning

- » Ten days, monthly, seasonal forecast
- » Forecast for extreme weather (Drought, floods, cyclones).
- » Climate monitoring
- » Climate modelling and prediction



Agriculture and Food Security

- » Crop monitoring
- » Food security alerts
- » Integrated Phase Classification (IPC)
- » Resilience analysis



Environmental Monitoring

- » Forest
- » Natural habitats
- » Rangelands
- » Agriculture



Climate Change and **early warning**

- » Projections
 - » Historical data and vulnerability analysis
 - » Greenhouse gas inventories
 - » Mitigations and adatisation
-



Hydrology and **Water Services**

- » Monitoring of water resources
 - » Forecast on water resources
-



Climate Information **Dissemination**

- » Early warning alerts
 - » Co-produced products and services
 - » Digital and mobile platforms
 - » User engagement
 - » Advocacy
-

CDSF AT-A-GLANCE

CDSF PORTFOLIO



17 Project
Approved

15 ongoing



2 closed



6 Projects
Under Preparation

COUNTRIES WHERE WE WORK

Angola
Benin
Botswana
Burkina Faso
Burundi
Cabo Verde
Cameroon
Central African Republic
Chad
Comoros
Congo
Democratic Republic of the Congo
Cote d'Ivoire
Djibouti
Equatorial Guinea
Eritrea
Eswatini
Ethiopia
Gabon
Gambia
Ghana
Guinea
Guinea-Bissau
Kenya
Lesotho
Liberia
Libya
Madagascar
Malawi
Mali
Mauritania
Mauritius
Mozambique
Namibia
Niger
Nigeria
Rwanda
Sao Tome and Principe
Senegal
Seychelles
Sierra Leone
Somalia
South Africa
South Sudan
Sudan
Tanzania
Togo
Tunisia
Uganda
Zambia
Zimbabwe



DISBURSEMENTS

CDSF Cumulative Disbursements
2016-2019 In € Millions



Donor **Contributions** in **€ millions**

DONORS	EU	SIDA	NDF
	20 €	11 €	5 €



Project Types

- SAWIDRA PROJECTS
- MULTI-COUNTRY PROJECTS
- COUNTRY PROJECTS



SCALING UP CLIMATE INFORMATION INFRASTRUCTURE AND SERVICES

Clim-Dev support is critical in ensuring that African countries have access to high-resolution climate and weather data for timely and reliable weather and climate forecasts. This is especially important now that the nearly universal shutdown of the aviation and marine sectors due to the COVID-19 pandemic has resulted in the loss of access of up to 90% of this data for countries in the global south.

In Ethiopia, Clim-Dev Africa funds have helped to increase the number of automatic weather stations from 271 to 289.

Satellite and Weather Information for Disaster Resilience in Africa Program

A € 20 million grant from the European Union's (EU) Intra-Africa, Caribbean, and Pacific (Intra-ACP) Program, to the Fund has significantly strengthened severe weather forecasting capacity for Africa's continental climate center—

“

Ethiopia's ground network of stations is expected to lower the number of people affected by droughts, floods and land degradation from the current 6 million to under 2 million

”

Addressing Extreme Weather Events

The Clim-Dev Africa Special Fund is taking steps to address the proliferation of extreme weather events across the continent by increasing climate and weather observation networks and supporting the delivery of disaster early warning systems.



1 billion USD in damages



1000 Deaths

\$500,000 to support reconstruction, including the acquisition, installation and commissioning of ten (10) Automatic Weather Stations at national and provincial levels in Mozambique.

Closing the Gap in Observation for Climate Early Warning

The quantity and quality of weather observations and forecasts fall far below the minimum level required to provide early warning services. The World Meteorological Organization estimates that 54% of Africa's surface weather stations and 71% of its upper-air weather stations cannot capture and report accurate data. The greatest gap exists in both the coverage of stations and in the core capacities of regional climate centers and national hydro-meteorological services to meet the needs of user sectors and agencies. The Fund is helping to close the gap. Grants made available by the CDSF in the last 10 years have helped to address:

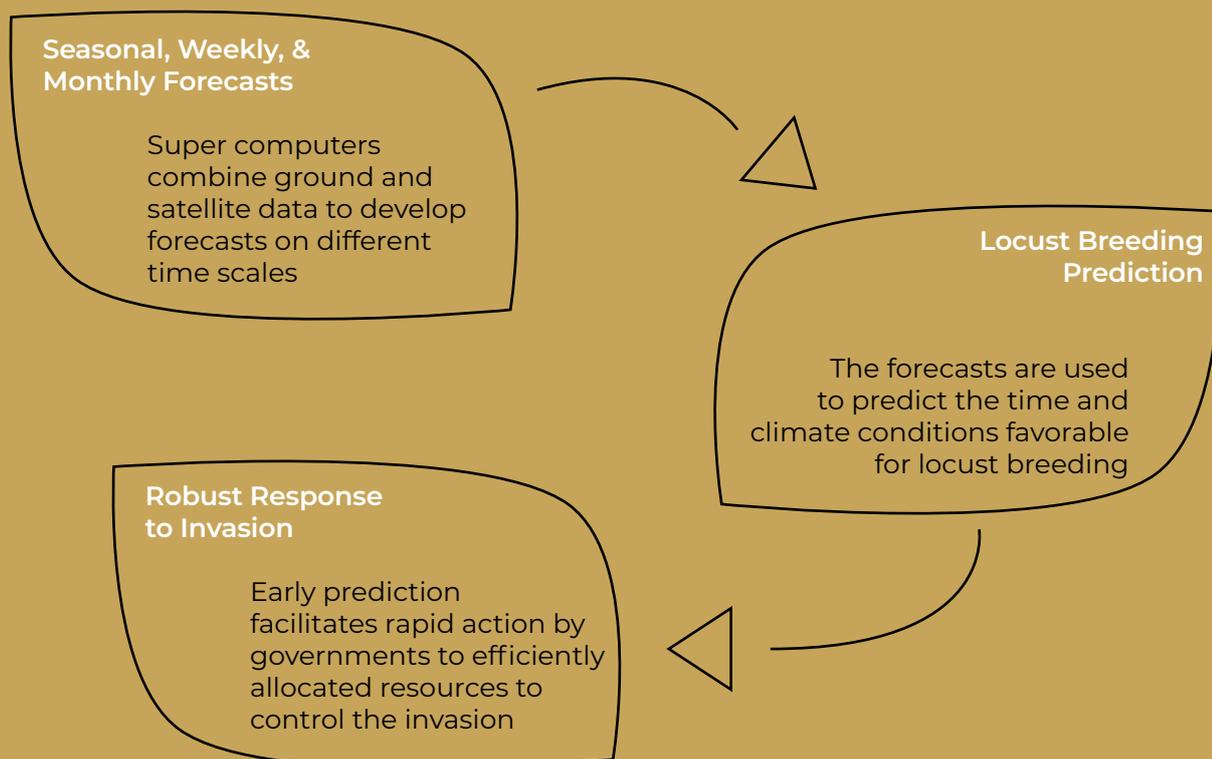
- » Weak data capacity
- » Poor climate and weather information services
- » Climate-induced public expenditure displacement

Strengthening Surveillance and Preparedness for Combating Pest Outbreaks

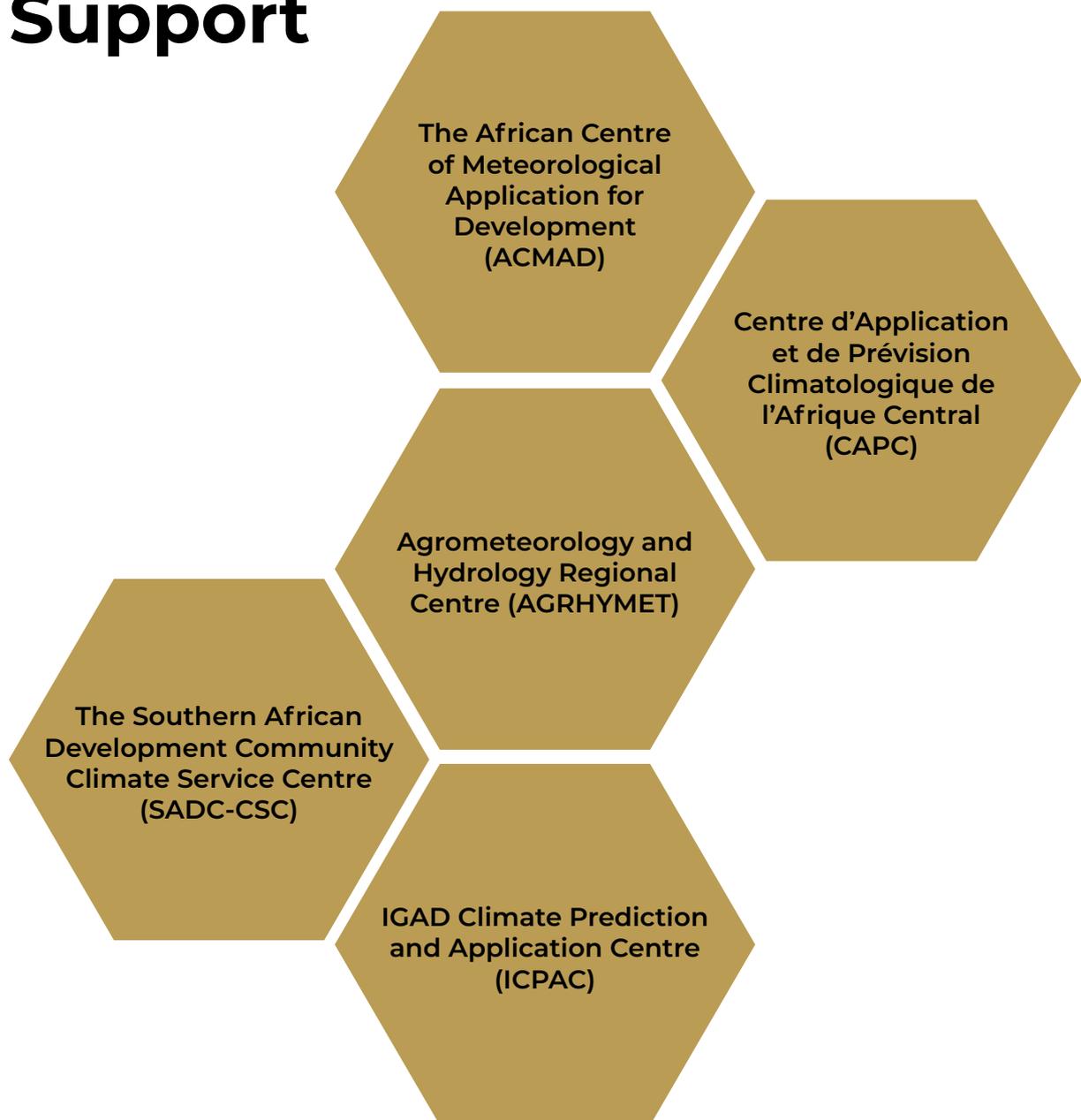
Towards the end of 2019, East Africa witnessed the most severe desert locust outbreak in decades. A typical desert locust swarm can contain up to 150 million locusts per square kilometer and travel 100 to 150 kilometers in a day, consuming enough crops to feed 35,000 people. The outbreak came on the heels of the COVID-19 pandemic, causing unprecedented threats to the food supply and livelihoods of millions of people in the region.

- » 70,000 hectares of farmland destroyed in Somalia and Ethiopia
- » 2,400 kilometers of pastureland in Kenya
- » 1.3 million hectares of grazing land, 200,000 hectares of crops and 350,000 tons of cereals destroyed in Ethiopia

The ClimDev Fund provided grants to ICPAC for the procurement of high-performance supercomputers that are instrumental in monitoring and reporting the spread of the desert locust invasions.



List of Centers
that Have
Received
CDSF
Support



The grant has similarly built the capacity of national hydrological and meteorological in the Center's respective region to predict severe weather.

Results Achieved Under the **SAWIDRA** Program



Strengthening climate and weather observation networks

Acquisition of four Regional Advanced Retransmission Service (RARS) antennas to collect data from polar-orbiting meteorological satellites

Acquisition of High-Performance Computers capable of running detailed models that can accurately predict severe weather events like hurricanes and floods



Strengthening data and climate information services

14 Hydromet Institutions provided with terminals to receive and visualize NWP model output

Specialists from Hydromet Institution in 27 countries trained on the use of the terminals and the appropriate information for disaster risk management

Installation and operationalization of NWP Weather Research Forecasting (WRF) model at ICPAC and SADC-CSC to run medium range forecasts with higher resolution.



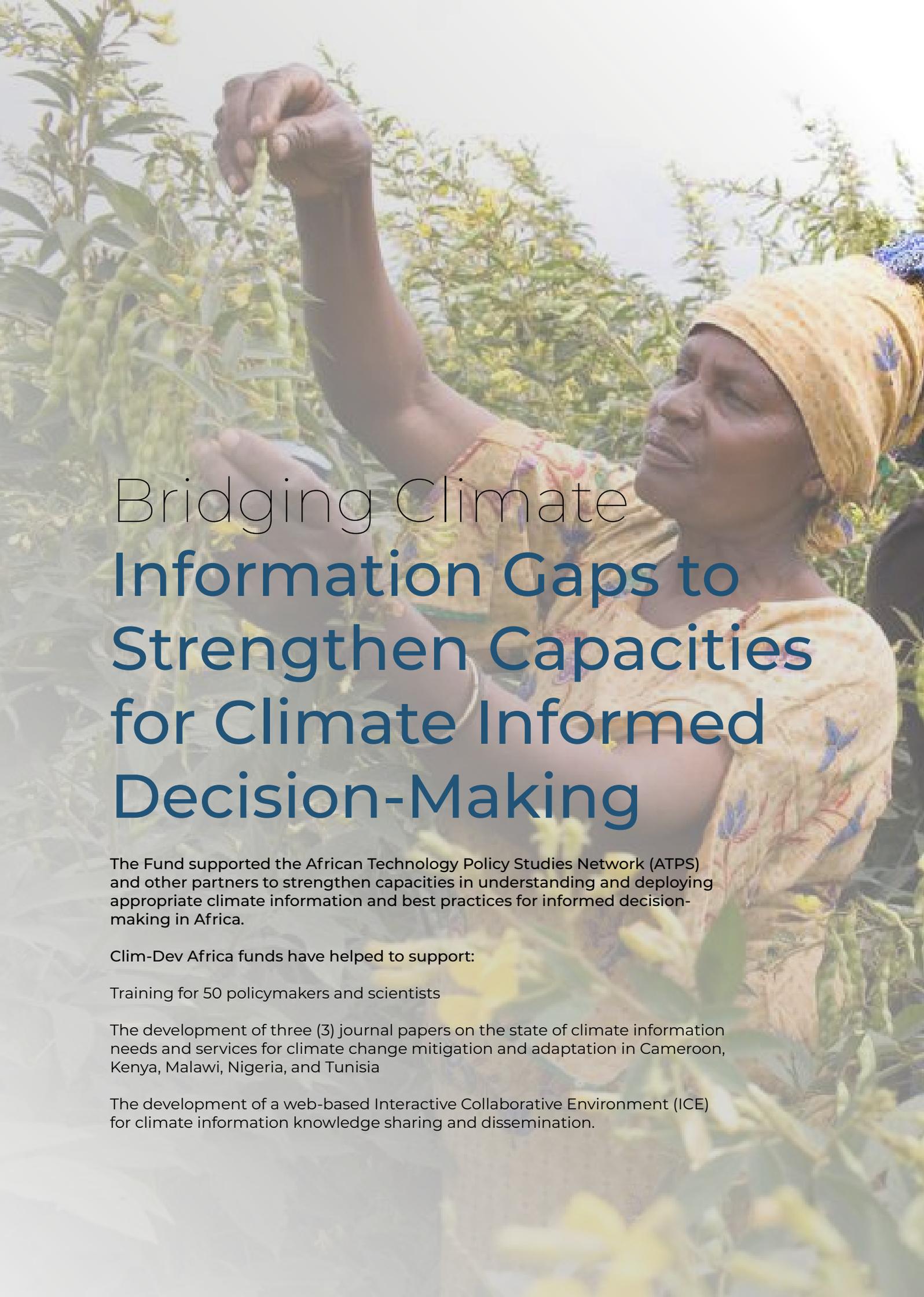
Building capacity in weather forecasting to reduce the human and material loss from disasters

200 specialists from across the continent trained in weather forecasting

Organization of Regional Climate Outlook Forums across the continent

Seventeen (17) young men and women provided with scholarships to pursue degrees in hydrology

500 droughts, floods, and extreme weather forecast bulletins produced by the Climate Centers in 2019

A woman wearing a yellow headwrap and a patterned yellow shirt is shown in profile, looking upwards and to the right. She is holding a plant stem with both hands, examining it closely. The background is a lush green field of similar plants under a bright sky.

Bridging Climate Information Gaps to Strengthen Capacities for Climate Informed Decision-Making

The Fund supported the African Technology Policy Studies Network (ATPS) and other partners to strengthen capacities in understanding and deploying appropriate climate information and best practices for informed decision-making in Africa.

Clim-Dev Africa funds have helped to support:

Training for 50 policymakers and scientists

The development of three (3) journal papers on the state of climate information needs and services for climate change mitigation and adaptation in Cameroon, Kenya, Malawi, Nigeria, and Tunisia

The development of a web-based Interactive Collaborative Environment (ICE) for climate information knowledge sharing and dissemination.



“

*LandInfo Mobile App designed
by ATP with support from the
Clim-Dev Wins Kenya's Tekeleza
Climate Information Prize*

”



Flood Disaster Risk
**Reduction in
Bunyala Busia
County, Kenya**



The Fund's investment in Kenya's Maseno University is enhancing government institutions, community organizations, and other stakeholders' ability to manage risks and disasters associated with floods in the Budalangi area of Western Kenya. It is also helping to reduce the impact of floods on local households and communities. Clim-Dev funds have helped:

- » Install two flood modeling software: MIKE FLOOD, and IDRISI
- » Conduct, hydrological, river hydraulics, geographic information system and remote sensing surveys
- » Develop a Database Management System
- » Provide three scholarships for master's studies
- » Establish a community development and outreach center to facilitate collaboration between community-based organizations and the county government

*Modified Workers drain a flooded thoroughfare
after a night of severe thunderstorms
Kisumu, Kenya.
Photo: Peter Kapuscinski / World Bank (cc)*

Support for Climate
and Seasonal Weather
**Information for
Adaptation Planning
in Northern Tanzania**



The Fund's investment in Northern Tanzania is helping to strengthen local and national institutions' capacities to manage climate impacts and reduce rural communities' vulnerability. The project specifically addressed the problem of inadequate climate information management and the weak integration of climate issues into development plans in the drought-prone areas of Mwanga and Same Districts. Clim-dev funds have helped:

- » Procure Six (6) automated weather observation stations to enhance the provision of essential climate
- » Construct two (2) mini-water supply schemes to improve water access for 5,000 people
- » Rehabilitate 1800 m of unlined traditional irrigation channel to improve productivity and increase the farmers' resilience
- » Integrate climate change issues into district plans





Renforcement des
Investissements pour
**un Développement
Résilient au Changement
Climatique au Bénin**

With support from the Fund, Benin is increasing its access to reliable climate information and building the capacity of decision-makers and communities to take account of climate risk in planning. Clim-Dev funds have helped:

- » Establish a climate information management platform
- » Train 280 users and 44 local experts on climate risk assessment and mainstreaming
- » Update two municipal contingency plans



*Women transporting their goods
Benin
Photo: RNW. Org (cc)*



Amélioration du
Réseau d'Observations
Météorologiques
afin de Renforcer
la Résilience Face
aux Changements
Climatiques au Mali



The Fund's investment in Mali is contributing to building the country's resilience to climate change by strengthening the institutional capacity of the National Meteorological Agency of Mali (MALI-METEO). Clim-Dev funds have helped:

- » Procure 400 rain gauges
- » Rehabilitate five weather stations
- » Establish a complete and reliable climatological database for the development of meteorological and climatological products
- » Train four (4) senior technicians in climatology and maintenance of meteorological equipment



INFRASTRUCTURE FOR SEVERE WEATHER **EARLY WARNING IN CENTRAL AFRICA**

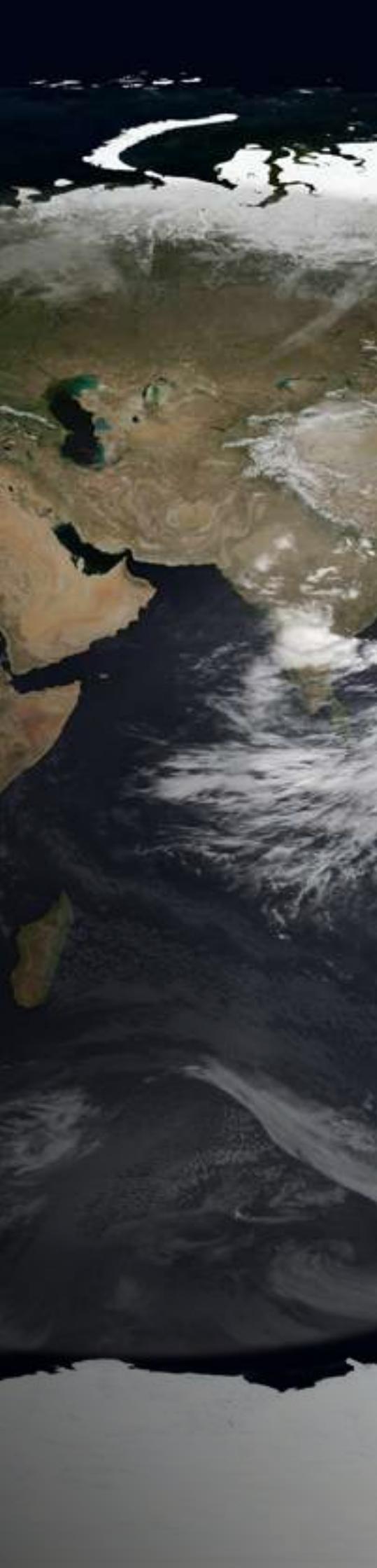
Improved capacity of Central Africa's Climate Application, and Prediction Centre to provide essential information on meteorological, hydrological, and severe weather conditions to predict natural disasters

Production and dissemination of over 350 numerical weather predictions bulletins and 26 climate reports:

- » weekly, monthly, and long-term sub-seasonal forecasts
- » weekly vigilance cards
- » Decadal of humidex, policy, and technical bulletins

Increased access to real-time reliable meteorological forecasts and tools for informed decision making

Increased capacity in numerical weather prediction for 11 countries in Central Africa



The CAPC-AC, Central Africa's first regional climate center is responsible for implementing the regions meteorological and climate policy. CAPC-AC aims to provide climate services and products to serve as resources and tools for National Meteorological and Hydrological Services (NMHS). This support is helping NMHS' provide good quality climate services to users at national levels; contribute to disaster risk reduction; and facilitate the integration of climate change adaptation in decision-making processes. With Clim-Dev Funds, CAPC-AC has procured:

- » High-Performance Computers, a fundamental equipment for weather and climate forecast
- » PUMA 2015 and MESA station for satellite data and global output models
- » Meteorological information system (MeteoFactory), which serves as the central station for climate information tailored product
- » Software required to run improved regional weather prediction for the national agencies

As part of efforts to strengthen the capacities of NHMS' in the region, the Fund has helped deliver training programs to experts on Numerical Weather Prediction across the 11 countries in the Central African region.

A person wearing a light-colored sweater and a patterned shawl is pointing their right hand towards a large haystack in the foreground. The background shows a blurred wooden structure and a dirt path. The text is overlaid on the lower half of the image.

SEASONAL WEATHER
INFORMATION
**TO IMPROVE
AGRICULTURAL
PRACTICES**



Clim-Dev Fund is helping Ethiopia strengthen its satellite-based monitoring capacity for rainfall estimation. The National Metrological Authority has embarked on an ambitious effort to replace all paper-based tools. The Agromet Case Team, in the Development Meteorology Service Directorate, is working to digitize three million pieces of data, to improve the quality of climate data and ensure the integrity of weather information products.

- » 1 million Euro Grant for Ethiopia's National Metrological Authority
- » Forecasting accuracy increased by more than 20%
- » Increased access to historical data and user-friendly communication and dissemination system
- » Strengthened adaptive capacity of key stakeholders and household climate change
- » Improved knowledge of climate risks and sustainable use of meteorological products and services

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“We are working to create awareness among the farmers on meteorological services, so that they can collect their harvests in good time and also avoid losses”

”

Gudeta Esheetu

Development agent, Oromia Region
Ethiopia National Meteorological Agency



MODERNIZING FACILITIES & EQUIPMENT **FOR REGIONAL CLIMATE CENTERS**

- » Built ICPAC into a state-of-the-art fully solar-powered hub for East Africa's climate information services
- » Increased access to essential information on weather, hydrological, and climatic conditions to take preventive measures to protect the lives, livelihoods, and properties for 200 million people in the Horn of Africa region
- » Increased capacity of ICPAC to run longer-term severe weather seasonal forecasts and trigger warnings of extreme events to the appropriate agencies

- » The Intergovernmental Authority on Development Climate Prediction and Application Center (ICPAC), a Climate Center accredited by the World Meteorological Organization provides climate services to 11 East African Countries. Thanks to support from the Clim-Dev Fund, ICPAC has been upgraded into a state-of-the-art fully solar-powered hub for East Africa's climate information services. The new facility has been fully equipped to power the Center's work on providing high quality climate and weather information for the Greater Horn of Africa.
- » Clim-Dev has strengthened ICPAC's weather observation infrastructure through the procurement of supercomputers and other equipment that enable the center to run numerical weather prediction models, instrumental for longer-term high-resolution forecast for severe weather. These forecasts help trigger relevant warnings of extreme weather events to the appropriate agencies; case in point, the alerts of the heavy rain that caused flash flooding across 16 states in Sudan in June 2019.
- » The Fund has helped ICPAC build the capacity of meteorologists, hydrologists and other weather expert in East Africa. It has also facilitated a regional knowledge-sharing platform for disseminating climate information, through, for example, the Climate Outlook Forum, an excellent climate risk and mitigation platform.

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*“African Development Bank
has been one of our most
reliable partners in our quest to
deliver climate services in the
region”*

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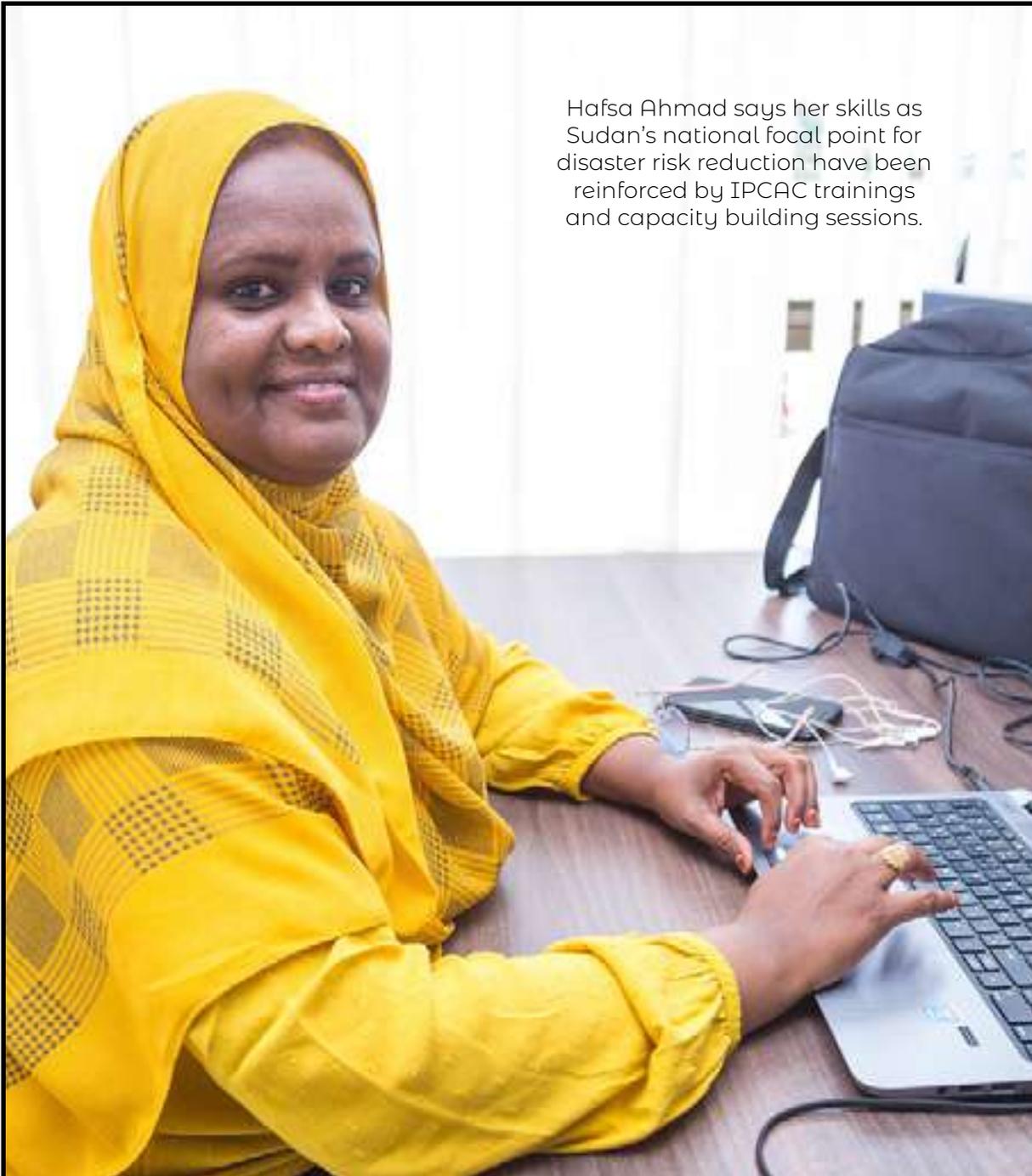
Dr Gulei Artan, Director, ICPAC

Somunesh is a hydrologist from Ethiopia. A recent two-month placement at ICPAC, in Nairobi, helped build her capacity to use the Centre's climate and weather information products, for analyzing data for real-time forecasts or drought and flood management.



Meteorologist Liban Ali, from Djibouti, spent time at ICPAC in Nairobi strengthening his capacity to build data simulation and weather prediction models, a skill that is much needed in his home country. Liban plans to continue his professional development through a regional seasonal forecasting workshop.





Hafsa Ahmad says her skills as Sudan's national focal point for disaster risk reduction have been reinforced by IPCAC trainings and capacity building sessions.





The Clim-Dev Fund supported the African Development Bank in joining the Alliance for Hydromet Development. Members of the Alliance have committed collectively to ramp up actions that strengthen the capacity of developing countries to deliver high-quality weather forecasts, early warning systems, water, hydrological and climate services. Known for short as “hydromet” services, these underpin resilient development by protecting lives, property and livelihoods. The Alliance will target four key areas:

1. Improving systematic observations for better data by strengthening country capacity for sustained operation of observational systems and seeking innovative ways to finance developing country observations.
2. Enhancing support for better adaptation, mitigation and resilience by strengthening country capacity for science-based mitigation and adaptation planning.
3. Strengthening early warning systems for improved disaster risk management by developing multi-hazard national warning systems, comprising better risk information, forecasting capabilities, warning dissemination, and anticipatory response.
4. Boosting investments for better effectiveness and sustainability by fostering programmatic approaches that go beyond individual projects, including systematically strengthening the World Meteorological Organization integrated global, regional and national operational hydromet system.

The actions of the Alliance are guided by the principles of UN agreements, including the Sustainable Development Goals, the Paris Agreement on climate change and the Sendai Framework for Disaster Risk Reduction 2015-2030. Other members of the alliance include the Adaptation Fund, African Development Bank, Asian Development Bank, European Bank for Reconstruction and Development, Global Environment Facility, Green Climate Fund, Islamic Development Bank, United Nations Development Programme, United Nations Environment Programme, World Bank, World Food Programme and World Meteorological Organization.

The Alliance was launched in December 2019 on the sidelines of COP25.

