

ANNUAL REPORT



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ACKNOWLEDGMENTS

This report was prepared by CIWA Team comprised of Alexandra Wilson, Charles Gilman, Christine Ochieng, K. Anna Kim, Noosha Tayebi, and, Tushita Mukherjee under the guidance of CIWA Program Managers Erwin De Nys and Ai-Ju Huang. In addition, contributions were made by the following Bank staff and consultants: Catherine Tovey, Maria Angelica Sotomayor, Yogita Mumssen, Anders (Lars) Jagerskog, Anna Cestari, Angelica Ospina, Arik Karani, Carine Durand, Ellen Hagerman, Fook Chuan Eng, Francois Bertone, Jacqueline Marie Tront, Laura Bonzanigo, Yeli Mariam Sou, Marie-Laure Lajaunie, Nathan Engle, Nicolas Salazar-Godoy, Palesa Mokorosi, Pierre Lorillou, Pierrick Fraval, Sanjay Pahuja, Seydou Traore, Tesfaye Bekalu Wondem. Document design (including front and back covers, and internal layout) was created by Scriptoria.

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ACRONYMS

AC	Advisory Committee
AFD	French Development Agency
AfDB	African Development Bank
AMCOW	African Ministers' Council on Water
ANBO	African Network of Basin Organizations
APAGroP	AMCOW Pan-African Groundwater Program
ASA	Advisory Services and Analytics
CIWA	Cooperation for International Waters in Africa
СОМ	Council of Ministers
СОР	Conference of the Parties
COVID-19	Coronavirus Disease 2019
cso	Civil society organization
CUVECOM	Cuvelai Watercourse Commission
DRC	Democratic Republic of the Congo
DSS	Decision Support System
ENTRO	Eastern Nile Technical Regional Office
EU	European Union
FCS	Fragile and Conflict-affected Situations
FCV	Fragility, conflict, and violence
FFEW	Flood Forecasting and Early Warning
FY	Financial Year
GESI	Gender equality and social inclusion
GIS	Geographic information system
GIZ	German Agency for International Cooperation
HES	Hydroelectric Station
НоА	Horn of Africa

HoA-GWI	Horn of Africa Groundwater Initiative
IDA	International Development Association
IGAD	Intergovernmental Authority on Development
IWMI	International Water Management Institute
IWRM	Integrated Water Resources Management
LCBC	Lake Chad Basin Commission
LIMCOM	Limpopo Watercourse Commission
LRA	Luapula River Authority
LVBC	Lake Victoria Basin Commission
MDTF	Multi-Donor Trust Fund
MOU	Memorandum of Understanding
NBA	Niger Basin Authority
NBD	Nile Basin Discourse
NBDF	Nile Basin Development Forum
NBI	Nile Basin Initiative
NCCR	Nile Cooperation for Climate Resilience
NCORE	Nile Cooperation for Results Project
NDF	National Discourse Forums
NEL	Nile Equatorial Lakes
NELIP	Nile Equatorial Lakes Investment Program
NELSAP-CU	Nile Equatorial Lakes Subsidiary Action Program Coordination Unit
Nile-Sec	Nile Basin Initiative Secretariat
NRBMP	Niger River Basin Management Project
OKACOM	Permanent Okavango River Basin Water Commission

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PMU	Program Management Unit
РРР	Public-Private Partnership
RBO	River Basin Organization
REC	Regional Economic Commission
SADC	Southern African Development Community
SADC-GMI	Southern African Development Community Groundwater Management Institute
SAPP	South Africa Power Pool
SDG	Sustainable Development Goal
SNEL	La Société Nationale d'Electricité
SWAP	Sector Wide Approach
TAC	Technical Advisory Committee
ТВА	Transboundary Aquifer
UN	United Nations
UNECE	United Nations Economic Commission for Europe
UNESCO	United Nations Educational, Scientific and Cultural Organization
VBA	Volta Basin Authority
WASH	Water, Sanitation and Hygiene
WRD-SEM	Water Resources Development and Sustainable Ecosystems Management
YP	Young Professional
ZAMCOM	Zambezi Watercourse Commission
ZESCO	Zambia Electricity Supply Corporation
7 P A	Zambezi River Authority



FOREWORD

Managing water resources in a transboundary setting continues to be highly complex, and peaceful relations and cooperation often rest on the ability to sustainably and equitably manage those resources. Well-managed water resources are critical to protecting the health of vulnerable populations, improving agricultural productivity, managing extreme weather shocks, and contributing to energy security. As the Cooperation in International Waters in Africa (CIWA) program enters its tenth year, we look back on the ways CIWA projects have worked to untangle complexities and navigate unique political economies, using lessons learned to achieve stronger programming and impact on the ground. In that way, the CIWA program continues to support riparian governments by learning and adapting in order to create a collaborative atmosphere to equitably share the benefits of transboundary water resources.

Many regions of Africa are highly vulnerable to the impacts of climate change, which lead to prolonged, extreme, and variable floods and droughts. These impacts are not going to stop at national borders, which is why every CIWA project addresses climate change issues though improving situational awareness regarding water and weather. The data, information systems, and knowledge products generated in collaboration with regional institutions are the cornerstone of making better climate-sensitive planning decisions and responding to shocks early and effectively. At the heart of resilience is the awareness of conditions on the ground, and several CIWA projects - including in the Southern African Development Community (SADC), Lake Chad, the Nile River Basin, and the Niger River Basin regions - are working to establish that awareness through a knowledge base that is sufficient, accurate, accessible, and used by riparians. CIWA has long supported work on surface water but continues to pivot to groundwater monitoring and use.

CIWA is committed to helping our clients and partners achieve the Sustainable Development Goals (SDGs). In particular, CIWA's core mission is directly aligned to SDG-6 and its projects address barriers to cooperative transboundary water resources management and development, supporting critical decision-making on water allocation and use which are fundamental to sustainable development. The path to achieving Africa's targets for SDG-6 calls for collaborative work on

transboundary water resources, collectively addressing the challenges associated with the resources and sharing the benefits equitably.

We know that challenges faced in the water sector cannot be approached in isolation. Climate change, for example, affects and often exacerbates core problems of gender equality and social inclusion (GESI), fragility, conflict, and violence (FCV), and human capital and economic development, which all play critical roles in influencing decisions around water. While we are making impactful headway toward maximizing the potential of the shared water resources in the region, there is work to do on these cross-cutting issues through projects and analytical work.

Our commitment to FCV-affected regions is deepened as CIWA renews and expands support in four high priority FCV-affected regions: the Horn of Africa (HOA), West and Central Sahel, Lake Chad, and the Great Lakes. CIWA is developing a cohesive response to address systemic and structural constraints faced by refugees, asylumseekers, returnees, internally displaced people, host communities, and migrants by building platforms for international cooperation.

In addition to scaling up our efforts in GESI, CIWA is updating and expanding its communication and outreach plan by not only optimizing the most impactful ways to capture and report on CIWA's program achievements but also by stepping up our role as a resource that facilitates and guides dialogue and knowledge exchange. CIWA

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is enhancing communications by creating a cohesive strategy, revamping its website, and initiating new tools and products to connect with a broader audience and raise awareness on the importance of transboundary cooperation on water resources in Africa.

This year, we also reflect on the effects of the Coronavirus Disease 2019 (COVID-19) pandemic on CIWA itself, its partners, clients, and beneficiaries. A primary focus of the World Bank Water Global Practice is hygiene and sanitation, and upstream of a safe water supply are all the complexities of water resources management. Building in greater resilience to deal with a similar pandemic in the future forces us to look at the quantity, quality, and allocation of our water resources. The CIWA program is therefore driving forward with its activities with an even greater sense of urgency and motivation.

At the program level, CIWA assessed the extent of the impact of COVID-19 on the ongoing activities under implementation and preparation. While the activities of some CIWA projects have been affected due to the closing of borders and suspension of mission travel, there have been few significant delays in program timelines. Task teams are working relentlessly to advance all planned activities through virtual and online consultations when possible, and we are actively utilizing effective contingency planning to continue support during the pandemic.

We are grateful to the efforts of the former Program Manager, William Rex, and the resolute support of our partners, who have immensely contributed to the expansion of CIWA's activities this year. Though we have much to achieve, we will build on our technical and operational abilities through a robust, innovative, and coordinated approach. The pressure to manage and equitably share precious water resources calls for urgent and coordinated actions and CIWA is at the forefront. We are confident that this one-of-akind partnership will help alleviate the water crisis by embracing integrated approaches, innovative techniques, and state-of-the art technologies.

Sincerely, Erwin De Nys and Ai-Ju Huang Program Managers

CIWA IN FY**2020**: A SNAPSHOT

CIWA's key active geographical support in FY2020¹

^{*} Sustained support to priority basins in four basins: Niger, Nile, Volta, and Zambezi;

¹ All results in the Snapshot are cumulative and reflect the current performance inclusive of Financial Year 2020 (FY20).

[&]quot;Strategic support includes high-impact engagements for propelling cooperation in areas outside CIWA's priority basins: Lake Chad, Horn of Africa, Luapula, and Great Lakes.

28.96 MILLION

people that will or have **directly benefited** from all **potential and mobilized investments** influenced by CIWA

INFORMATION For understanding risks, better decision-making, and monitoring strategic analyses and compliance basins with **data** knowledge products used and information tools to illustrate the evidence base in the public domain for cooperation INSTITUTIONS To build trust, coordinate planning, and WEST AND manage shared **EAST SOUTHERN** resources **AFRICA AFRICA CENTRAL AFRICA US \$6.34 US \$10.54** INVESTMENTS BILLION BILLION To manage watersheds, develop groundwater, build storage, etc. value of **potential** value of mobilized investments influenced investments influenced by CIWA by CIWA

HIGHLIGHTS OF THE YEAR

- The Nile Cooperation for Results (NCORE) project expanded geographic and technical coverage of flood and drought information systems and dam safety management while advancing the Nile Equatorial Lakes Investment Program (NELIP) through the second stage.
- The Southern African Development Community Groundwater Management Institute (SADC-GMI) launched 14 sub-grant pilot projects, 5 of which have been completed. The projects addressed the integration of groundwater database systems, groundwater exploration, groundwater monitoring, and promotion of hygiene and sanitation practices.
- The Great Lakes Water Quality project completed its first phase to analyze the drivers of water pollution and will begin working with the Decision

Support System (DSS) of the Nile Basin Initiative (NBI) to model investment scenarios.

- CIWA support to the Lake Chad Basin Commission (LCBC) led to multiple broad follow-on investments and produced the Groundwater Resources Diagnostic – the most comprehensive basin-wide conceptual groundwater model, including numerical groundwater models for the Komadougu-Yobe and Chari-Logone river sub-basins.
- Strengthening Resilience in the Horn of Africa technical began assistance diagnostic а of transboundarv resilience investments. building the knowledge base for future regional and national investments in the region.

OVERVIEW OF THE YEAR EAST AFRICA

EAST AFRICA

Nile Basin

Nile Cooperation for Results Project (NCORE)

Context

Transboundary waters can be a source of both conflict and collaboration, therefore cooperation among the 11 Nile riparian states helps reduce tensions, prevent conflict, and spur development. Thus, transboundary cooperation is a powerful approach to maintain peace. The experience from the Nile and transboundary basins across the world has underlined the value of working together through basin institutions for facilitating dialogue and fostering sustainable water resources management, even throughout difficult periods.

Since 2012, the CIWA-funded Nile Cooperation for Results Project (NCORE) has supported the Nile Basin Initiative (NBI) to become a sustainable regional institution that advocates for cooperative water resource management and development and provides advisory, analytical, and technical services; a platform for dialogue and cooperation; and regional investment support to countries. NBI is composed of three entities: the Nile Basin Initiative Secretariat (Nile-Sec), the Nile Equatorial Lakes Subsidiary Action Program Coordination Unit (NELSAP-CU), and the Eastern Nile Technical Regional Office (ENTRO). Nile-Sec is the executive arm and strengthens member states' institutional and technical capacities and provides shared knowledge bases to support decision-making and action. ENTRO and NELSAP-CU are regional centers that support identification, negotiation, and implementation of cooperative investment projects with a focus on mutual and sustainable benefits for the countries involved.

Cooperative development and management of shared Nile waters can generate substantial shared benefits to help unlock the full productive potential of the Nile Basin for more prosperous growth. Cooperative water management is helping Nile countries to reduce future climate and water-related risks such as flood, drought, water pollution, and loss of critical ecosystems that support biodiversity. Though much work remains, NBI has already transformed how riparian countries view Nile resources, deepening commitment to incorporating transboundary perspectives within national-level planning, management, and development.

Progress

With CIWA's interventions, NBI has identified, prepared, or supported mobilization of multiple regionally significant investments. One such investment is the Kabuyanda multipurpose project in Uganda's Kagera Basin, which is now part of the World Bank's national International Development Association funding (through the Uganda Irrigation for Climate Resilience project). NBI also advanced NELIP through the second multi-stakeholder workshop. NELIP will be a suite of multi-sector investment projects implemented by the Nile countries on a joint basin-wide investment strategy (i.e. project prioritization is performed by analyzing the condition of the entire system with all potential investments in place instead of prioritizing single investments).

Because strategic planning is a key feature to ensure cooperative management of the basin, the NBI is establishing regional inter-sectoral coordination mechanisms and linking them to the NEL member states' Sector Wide Approach to Planning (SWAP). This will strengthen the regional inter-sectoral coordination of project identification, preparation, and implementation and link it to the SWAP in each country, thereby encouraging regional projects to be incorporated into National Sector Programs. SWAPs help to broaden national ownership over public policy and sector resource allocation by bringing together government, non-state actors, and development partners to implement a common agenda and thus provide a means for better collaboration.

NBI's work in dam safety capacity building is improving the technical capacity of dam safety regulators and operators and supporting the institutionalization of dam safety in Eastern Africa. Capacity for dam safety management is critical for ensuring the safety of downstream communities, infrastructure, and ecosystems, and for sustaining critical services that dams provide, including power generation, irrigation water, potable water, and enhanced drought and flood resilience. Risks associated with these structures must be periodically reassessed as conditions can change. Regional dam safety capacity building is transboundary in nature: the failure of one dam can have immediate impacts on downstream dams negative and communities. Conversely, with better coordinated dam

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safety systems, optimized cascades can be leveraged for synergistic gain in risk mitigation, and in some cases, greater efficiency of dam services.

NBI continues and expands flood forecasts, early warnings, and preparedness activities to prevent human suffering. Climate and weather shocks were one of the leading causes of acute food crises and malnutrition in 2017, affecting 39 million people in eight of the Nile countries. Seasonal floods happen in almost all Nile countries every year. Damage and socioeconomic losses from these disasters are growing rapidly; the ongoing rainy season of 2020 is responsible for enormous damage in Ethiopia, Sudan, and South Sudan, affecting over 2.5 million people as the Nile River has reached its highest level in 100 years. NBI continues to issue regional flood forecasts in the Eastern Nile region by improving and scaling up flood preparedness and early warning activities. The goal is to reduce human suffering by enhancing regional collaboration and national capacity in flood risk management. Activities include flood risk mitigation, forecasting, early warning systems, and emergency preparedness.

Through its activities, NBI advocates for and supports a broad range of transboundary water cooperation. This includes basin-wide governance meetings, technical advisory committee meetings, and knowledge-exchange events and learning visits. NBI activities provide a useful platform to engage, consult, discuss, and learn about Nile-related issues. This year included the annual Nile Day celebrations for countries to acknowledge and share their contribution toward collaborative transboundary water management. The Nile Day theme for 2020 was "Joint Investments on the Nile for Regional Transformation", highlighting the needs and opportunities for cooperation around Nile water. These platforms bring together relevant ministers, development partners, basin officials, civil society organizations (CSOs), and other stakeholders to celebrate progress in advancing cooperation in the Nile Basin.

By fostering a network among young professional women and men, NBI is furthering the emergence of a shared understanding of the resource base – its potentials, risks, and future. NBI's internship programs have successfully fostered cooperation in the Eastern Nile and expanded ENTRO's professional network. The program leverages relationships with universities and water-related ministries in active member states. In the past year, program participants contributed to flood and drought forecasting models, early warning systems, and DSS model expansion, and they have been indispensable for implementing the Integrated Knowledge Portal.

NBI continues to implement the institutional Climate Change Strategy (adopted in 2013) and is engaged in efforts to support riparian climate change resilience from a transboundary perspective. NBI produces a quarterly monitoring bulletin that provides a shared understanding of the spatial distribution of seasonal patterns (e.g. rainfall and evapotranspiration) using satellite data.

NBI addresses gender equality through both efforts toward equity in its activities and building inclusive institutional frameworks. The existing NBI Gender Strategy has expired and the new gender strategy (to be approved by the Council of Ministers) will coincide with a new CIWA project (Nile Cooperation for Climate Resilience, see below). It will leverage NBI's successes and lessons learned in (i) gender-sensitive monitoring and evaluation, using improved strategies to collect sex-disaggregated data and including more emphasis on performance monitoring in institutional inclusion (through new prioritization of women's representation and leadership); and (ii) investment preparation, by continuing to build experience with the World Bank's standards for engaging women stakeholders in affected communities and considering the impacts of investments

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on women's lives and livelihoods in addition to the average effects. This also includes better leveraging and anticipation of the complementary roles of partner institutions such as the Nile Basin Discourse (NBD). While many aspects of the previous Gender Strategy will be carried forward and built upon, one major addition will be NBI beginning to systematically address gender gaps in its own institutions and priorities and beginning to anticipate opportunities for social inclusion at the inception of activities.

"As a professional working in the water sector, I see a low female presence. This internship program has a robust gender approach, where women are highly encouraged to apply. As a participant myself seven years ago, this opportunity changed me and helped me in charting a better career path."

Amna Omer Internship Program Coordinator of ENTRO

NBI continues to track gender representation in its training and dialogue events with specific gendersensitive indicators and NBI activities such as the Internship/Young Professional Program that actively target the recruitment of women.

Key Achievements

- NELIP member states approved the preselection of 26 priority investments valued at US\$2.73 billion. These would result in over 4 million direct beneficiaries (40 percent located in FCV states - Burundi, the Democratic Republic of the Congo, Sudan, and South Sudan), generate over 400 MW of power, and improve irrigation across 250,000 ha. Previously prepared studies - for the Mara Valley and Ngono Multipurpose projects in Tanzania, the Sio-Sango Water Resources Development project in Kenya, and the Kabuyanda Water Resources Development project in Uganda's Kagera Basin - were included in NELIP. The third regional workshop for validation of the NELIP proposal took place in August virtually due to the COVID-19 pandemic.
- Countries continue to use the Nile Basin DSS for comprehensive climate-resilient water resources development planning. With CIWA's support, Nile-Sec provided training and support to member states to apply recently added modelling tools, such as those enabling climate change and trade-off analyses. The user base continues to grow and is actively mentored by technical experts at NBI. Partnerships with nine East African universities and seven ministries have been launched to train university staff and students to utilize NBI data resources.
- NBI developed new water balance models through the "Water Accounting+" tools in the NEL subregion, providing more accurate hydrological impact assessments of projects using satellite-based rainfall and evapotranspiration data. NBI conducted capacity building for Technical Advisory

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Committee (TAC) members in November 2019, which focused on hands-on exercises of satellite-based flood mapping using the Google Earth Engine.

- Both ENTRO and NELSAP-CU hosted five-day in-person regional workshops on satellite-based flood mapping. Over 40 government officials joined NBI experts to learn how to program cloud-based remote sensing using the Google Earth Engine.
- Over 500 Nile Basin citizens and friends of the Nile participated in the 14th NBI Strategic Dialogue 2020 Khartoum, Sudan to commemorate the establishment of NBI. Nile TAC Members from Ethiopia, Kenya, Rwanda, South Sudan, Sudan, Tanzania, and Uganda, a delegation from Egypt, the NBI Centers, and many development partners, including the World Bank, attended the event.
- ENTRO continues to enhance its rainfall forecasting system and expand its geographical coverage. The flood models built for Flood Forecasting and Early Warning (FFEW) have been improved through technical assistance on flood mapping using satellite images and historical flood maps.
- For the ninth consecutive year, seasonal and weekly bulletins helped people plan cropping, property damage, and minimize reduce disruption of productive activities. Daily and weekly Forecast Reports were provided for the Lake Tana and Tekeze Floodplains (Ethiopia), Blue and Main Nile System and Atbara Floodplains (Sudan), and Baro Akobo Sabat floodplains in the Gambella (Ethiopia). These forecasts have been used by governmental authorities and relief agencies (e.g. the International Federation of Red Cross and Red Crescent) to better understand the size and extent of flood events. The early warnings were disseminated by national and local government through formal communication channels such as TV, radio, and newspaper. Besides formal channels, alerts

were also shared with various citizen groups via social media, e.g. WhatsApp and Facebook, by NGOs and individuals. The next phase project, NCCR, will conduct in-depth analysis to assess the public recognition of the FFEW, and take necessary measures to enhance its visibility on the ground.

- The dam safety program held a series of dam safety workshops, including field visits for practical, hands-on learning. NELSAP hosted training events in Uganda and Kenya to formulate a program of dam safety capacity building that leverages ENTRO's experience and can be scaled-up in the NEL region. Training included key tenets of dam safety management including surveillance (instrumentation, monitoring and inspections) and emergency preparedness (identifying potential failure modes, dam break analysis, early warning systems, and emergency preparedness plans). Trainings also targeted the institutional aspects of dam safety management, including dam safety regulatory frameworks, roles and responsibilities of regulators in assurance of dam safety, and enforcement of dam safety.
- Under NCORE, 130 interns have completed the young professional program at ENTRO across 14 cohorts. In the most recent three cohorts, women comprised 38 percent of participants on average, an increase from 24 percent in the first three cohorts.
- CIWA continued work to address the drivers of instability in fragile and conflict-affected situations through capacity-building. Representatives from the four FCV Nile countries - the Democratic Republic of the Congo (DRC), Burundi, South Sudan, and Sudan - have benefited from NBI's initiatives through technical training on water allocation and economic modelling, dam safety, mapping soil erosion, sediment modelling, and flood forecasting. South Sudan, Sudan, and Ethiopia benefited from the FFEW activities, which focus on flood plain management, mitigation planning, and information and communications systems.

Nile Basin Discourse (NBD)

Context

The NBD, with its secretariat in Entebbe, Uganda, is a network of over 600 CSOs from all 11 Nile Basin states (Burundi, DRC, Egypt, Ethiopia, Eritrea, Kenya, Rwanda, South Sudan, Sudan, Tanzania, and Uganda) through the National Discourse Forums. NBD is an independent voice, connecting the inhabitants of the Nile Basin with governments and intergovernmental organizations, and enriching transboundary programs and policies.

Since 2013, NBD, through its CIWA-funded project, Engaging Civil Society for Social and Climate Resilience in the Nile Basin, has contributed to the sustainable socioeconomic development of the basin through equitable use and shared benefits of the common Nile Basin water resource. NBD works toward that goal by facilitating sustained civil society engagement in Nile Basin cooperation and development programs, processes, and policies.

Progress

The NBD project obtained a two-year extension and additional financing, beginning just before the onset of the COVID-19 pandemic. The extension is focused on (i) strengthening the secretariat to enable it to implement strategies for communication and outreach, financial sustainability, and monitoring and evaluation, (ii) coordinating community outreach for transboundary projects financed by the African Development Bank (AfDB) involving the DRC, Ethiopia, South Sudan, and Uganda, estimated to directly benefit over 3.8 million people, and (iii) providing training to empower women and youth as climate resilience champions in the Nile Basin. In the past year, NBD has revamped its e-publications, annual reports, and factsheets and disseminated news to its subscribed audiences with a response and/or feedback rate of over 50 percent. NBD is reviewing its operating procedures to ensure that engagement with communities upholds suitable measures as required by governments with regard to curbing the spread of COVID-19.

NBD contributed to program and policy discussions at different international platforms. This included the Horn of Africa Climate Security Working Group coordinated by Friedrich-Ebert-Stiftung in cooperation with the Pan African Climate Justice Alliance and the Stockholm Forum on Peace and Development organized by the Stockholm International Peace Research Institute. NBD also participated in policy makers' discussions coordinated by the International Hydropower Association and advocated for gender equality in the governance of shared waters, hydropower's role in achieving the SDGs, and methods for ensuring women's active participation and provision of equal opportunities at all levels of decision-making.

Key Achievements

- NBD organized several training programs for its members, such as the peer-to-peer capacitybuilding caravans on Water, Sanitation and Hygiene (WASH) programs. This initiative was undertaken through the Women and Water in Communities for Change project in the Mabamba Bay wetlands of Lake Victoria, Uganda. This practical, behavioral change, and learning caravan and exchange among key local community members in Uganda is empowering women and youth as leaders, entrepreneurs, and sustainability change agents who are transforming communities.
- The Mara Mori Catchment Forum, copartnered by NBD, is improving communication and outreach. As part of this Forum's agenda, NBD and the IHE-Delft-Coca Cola Foundation have initiated the project, "Women and Water in Communities for Change", which is reaching

out to the women of the Mara Wetlands (Tanzania) and encouraging knowledge exchange and sharing of regional best practices in climate risk resilience and entrepreneurship.

- NBD, in partnership with the Network for Water and Sanitation, facilitated communities from three villages of Mabamba Bay (Lubya, Nakasozi, and Ziba) to hold a community learning, knowledge development, and best practice exchange caravan in Uganda from November 2019 to January 2020.
- In December 2019, NBD contributed to the United Nations Economic Commission for Europe (UNECE)/World Bank global discussions on the exchange of data and information in transboundary basins and provided inputs in the UNECE Working Group on monitoring global citizen data.
- As part of its outreach activities, NBD attended the 14th Annual Regional Nile Day 2020 celebrations and reached out to basin citizens, advocating for the benefits of cooperation. As in previous years, NBD facilitated the attendance and participation of CSO representatives, including women's groups, from several member states. Dialogues like Nile Day are a critical platform for network coordination and taking stock of the situation.

Nile Cooperation for Climate Resilience (NCCR)

Context

In less than two decades, Nile countries have transitioned from little dialogue or collaboration on water resources to an environment characterized by increased trust and understanding underpinning active cooperation on the transboundary resource. NBI's information services, analyses, and tools provide a solid technical foundation for water resources management and development, including a shared knowledge base to enable countries to understand the implications of their actions and opportunities for managing risks and realizing joint opportunities through investments. The improved capacity of both the NBI institutions and national counterparts have significantly improved both the willingness and ability of the countries to work together, even if broader political developments have at times hampered cooperative processes. Without the cooperation of NBI, NBD, and the Lake Victoria Basin Commission (LVBC) over the last two decades, cooperative decisions regarding Nile waters would not only be largely absent but national-level decisions would also be much less informed. Furthermore, we owe to their cooperation the increased number of investment opportunities and improved links between countries, which reduces the risk for conflict.

While Nile countries have solidified gains achieved through previous World Bank-supported projects and prioritized the provision of a key public good, the situation in the basin – with increasing population pressure; high numbers of people in poverty who lack resilience to droughts and flooding, particularly women and children; sub-optimal allocation of limited resources; competing national interests; continued environmental degradation; and simmering instability and conflict – underscores the need for consistent support. The region still needs to capitalize on economies of scale for transformational infrastructure and respond collectively to the challenges of climate change.

Progress

The proposed NCCR project will build on a solid, longterm technical engagement with NBI, LVBC, and NBD. The new project will be an important continuation of a strategic long-term World Bank engagement that can contribute to addressing the still-fragile situation in the basin. The project will scale up actions and engagements to leverage the success of regional organizations by mobilizing countries around cooperative action and supporting countries that have expressed interest in the need for further engagement. The project will be delivered through regional processes and will continue to sustain the platform for dialogue and trust-building, strengthen the capacity of member states, and promote stakeholder engagement.

The NCCR project will generate inclusive technical dialogue among a diverse set of participants, with the goal of sharing development benefits equitably. Stakeholder consultations and analyses of progress against established targets have illuminated several

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touchpoints and, considering current trajectories, the NCCR will address several strategic issues, as follows:

- The NCCR is designed to build on the major successes achieved during NCORE, including work on regionally oriented dam safety, flood and drought early warning systems, and identification and prioritization of investments to address water quality hotspots.
- The project will provide support for a basin-wide platform for cooperation, encouraging inclusivity and outreach to all riparians, given that there is currently a broad spectrum of participation. The project anticipates that a focus on generating participation will manifest a greater emphasis on demonstrating the value and benefits of NBI's work to a wide range of stakeholders.
- The proposed project will support implementation through NBI with LVBC and NBD. LVBC is a regional institution of the East Africa Community mandated to coordinate the development and management of Lake Victoria basin resources. LVBC will partner with NBI on issues of water quality, while NBD will strengthen NCCR's Platform for Cooperation and Dialogue.

Next Steps

Preparation is under way, and the project is expected to begin implementation in 2021.

Great Lakes Water Quality

Context

Lakes and their watersheds are complex systems and have unique dynamics and reactions to stress. In the Great Lakes region of East Africa, improving lake management for water quality is required for food security, resilient livelihoods, human capital, and stability. This region is strategically vital because of its high population density thanks to high soil fertility and a wet climate, and – particularly around Lake Victoria – the presence of fisheries, which are a haven for those lacking other resources.

Many of the 11 Great Lakes countries (Burundi, DRC, Ethiopia, Kenya, Malawi, Mozambique, Rwanda, South Sudan, Tanzania, Uganda, and Zambia) suffer from extreme poverty and low average human capital. Eight of the poorest are landlocked and heavily dependent on transboundary and/or regional lakes for economic activity. Decades of entrenched conflict and worsening climate impacts on regional natural resources have crippled development and resulted in extreme levels of forced displacement, including refugees, internally displaced people, and migrants.

The new CIWA-funded Great Lakes Water Quality analytics project aims to advance the water quality knowledge base that will form the foundation of investments to improve stability, human capital, and climate resilience in a priority Great Lakes sub-region, selected based on key water quality drivers and potential impact of intervention. This activity will contribute to regional processes, information sharing, capacity building, and analytics on water quality challenges in the Great Lakes of Africa.

Without the cooperation of NBI, NBD, and the Lake Victoria Basin Commission (LVBC) over the last two decades, cooperative decisions regarding Nile waters would not only be largely absent but national-level decisions also much less informed.

Progress

The Great Lakes Water Quality project employs a phased approach to unpack the complexities of the water resource problems faced in the region. This phase focused on analyzing the drivers of water pollution and how they intersect with fragility, human capital, and climate resilience using remotely sensed data on water quality parameters, and extensive multi-sector consultations with teams spanning agriculture, urban, environment, water, and health practices.

Based on analyses in the first phase, priority sub-basin locations have been selected for further analytical and technical assistance in collaboration with NBI. The current project focuses on the countries around Lake Victoria, Lake Albert, Lake Edward, and Lake Kivu. In the next phase, the project team will implement (i) technical assistance to support regional processes, information sharing, and capacity building related to water qualitybased decision-making by partner agencies, and (ii) policy reviews and analyses to prioritize future Bank investments.

Next Steps

The technical assistance will help to increase the capacity of the Nile Basin institutions to analyze and identify investments to address water quality hotspots and to undertake a multi-criteria decision analysis to prioritize investment options. Policy analyses will aggregate lessons from past initiatives on lake restoration and provide recommendations for continued water quality-related support. The analyses will include specific recommendations to address GESI issues (a key development challenge in the region) pertaining to specific investments and their potential implementation (i.e. identifying the specific ways that investment preparation needs to incorporate GESI actions to achieve equitable benefits).

Key results from the analytic will include consolidated operational recommendations, recommendations for policy actions on regional and country-specific opportunities to support continued progress, and recommendations for utilizing the project's data and conclusions in ongoing operations and multi-sector financing.

Fragility, conflict, and violence (FCV) and CIWA

CIWA continues to expand and deepen its support to countries affected by FCV, and to deliver FCV-sensitive support to water-linked operations in Africa. In 2020, the World Bank Group launched its 2020–2025 Strategy for FCV. The current strategy evolved from a focus on post-conflict reconstruction to addressing challenges across the full spectrum of fragility. Its objective is to enhance the World Bank Group's effectiveness in supporting countries in addressing the drivers and impacts of FCV and strengthening their resilience – especially for their most vulnerable and marginalized populations. Water security undoubtedly plays a critical role in the FCV agenda.

This renewed and enhanced effort to support FCVaffected clients is articulated in four pillars: Pillar 1 -Preventing violent conflict and interpersonal violence; Pillar 2 – Remaining engaged during crises and active conflicts; Pillar 3 - Helping countries transition out of fragility; and Pillar 4 - Mitigating the spillovers of FCV to support countries and the most vulnerable and marginalized communities that are impacted by crossborder crises. In FY21, FCV countries are classified following the revised List of Fragile and Conflictaffected Situations (FCS), which evolves from the outgoing Harmonized List of Fragile Situations. The current FCS includes 39 countries classified in three categories: (a) High-intensity Conflict (4); (b) Mediumintensity conflict (13); and (c) High institutional and social fragility (non-small states and small states) (15). Of the 29 FCV countries, 21 are in Africa.

CIWA remains meaningfully engaged in four high priority FCV-affected regions: the Horn of Africa, West and Central Sahel, Lake Chad, and the African Great Lakes region. Special attention is being and will continue to be devoted to the water-linked challenges that stem from forced migration. Africa hosts the world's largest number of refugees, asylum-seekers, internally displaced people and returnees, and CIWA is cognizant of the need to deliver responses that contribute to the needs of these vulnerable groups and their host communities.

Through analytical work and projects, in coordination with the FCV Group, and in light of the FCV Strategy, CIWA will continue to deepen its work on the water-FCV-development nexus and to expand the knowledge base on the intersections between FCV, development, and transboundary waters in Africa.

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Niger Basin

Niger River Basin Management Project (NRBMP)

Context

The Niger Basin spreads across nine West African countries: Benin, Burkina Faso, Cameroon, Chad, Guinea, Côte d'Ivoire, Mali, Niger, and Nigeria, and each of these is a member of the Niger Basin Authority (NBA). Seven of the nine countries are on the World Bank's FY21 List of FCS. These countries are highly vulnerable to weather shocks, climate change, and food insecurity, and recent conflicts in the region have crippled human capital, wellbeing, and economic growth. Burkina Faso, for example, is home to the world's fastest-growing humanitarian crisis. Addressing the growing uncertainty in water availability and quality in the basin is critical to improving resilience and stability.

The *Climate Risk Assessment of the Niger Basin* (2013) indicated that large-scale storage infrastructure would significantly improve climate resilience and stability in the basin. Large dams contribute to climate change resilience by creating water storage and providing economic stability, reliable power supply, and resistance to weather hazards. However, the development of three large dams in the upper basin could significantly change river

flows downstream, and their potential impacts call for strong transboundary coordination on water resources management between countries.

Progress

Developing infrastructure is critical to address the region's water-shock driven instability, and in the Niger Basin, capacity-building activities have formed a strong foundation for decisions for future infrastructure investments. The NRBMP, which closed in FY20, engaged NBA and other partners to build the former's institutional and technical capacity by establishing a regional platform for inclusive cooperation, providing improved tools for decision support, and consolidating the legal framework for joint investment.

Thorough analysis and decision-making determined that the proposed site for the Fomi Multipurpose Dam in Guinea – what was to be the early flagship investment in the basin – was not suitable for investment. The feasibility studies and environmental and social impact assessment results (completed in December 2017 under the Water Resources Development and Sustainable Ecosystems Management program, or WRD-SEM) revealed significant environmental and social constraints at the original site. Based on this, CIWA financed an evidence-based decision-making process that concluded that there was a need to identify an alternative location for infrastructure providing similar benefits. As feasibility studies for the alternative location were beyond the scope of NRBMP, the project

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shifted the focus to supporting NBA in developing and advocating for improved information and decision support procedures regarding transboundary infrastructure projects. While the World Bank continues to support both implementation of the Kanauji dam – construction of which started in the last fiscal year – as well as NBA through the Bank-financed Niger Basin WRD-SEM program, CIWA's role in the Niger Basin has for now concluded.

Project support to NBA's data observatory and DSS formed the foundation for expanded information systems. The support to the observatory and DSS was used to optimize large dam investments in the Niger Basin but has also served to underpin hydrologic models for evidence-based infrastructure planning and management, flood forecasting (such as the Guinean Flood Forecast), and other issues. While the current capacity for flood forecasting is improved it is still insufficient and often municipal flash floods are multifaceted issues that will require joint efforts in forecasting, governance, and drainage rehabilitation.

CIWA and its partners have helped give greater prominence to issues such as social and environmental evidence-based responsibility, sustainable infrastructure, and collaborative approaches for sharing the benefits of water resources. In 2008, NBA member states signed a Water Charter, giving legal status to the 2004 Paris Declaration, which codified NBA's role in Niger River Integrated Water Resources Management (IWRM). The development and adoption of Annex 2 of the Water Charter (Relating to the Water Regulations for the Coordinated Management of the Structuring Dams) was a focus of NRBMP. With the commissioning of large infrastructure in the Niger Basin, most of which are transboundary, NBA ensures a regional approach and facilitates decisions based on new legal instruments, improved data tools, operational efficiency, and shared financial benefits.

The Niger River Basin Management Project helped develop a legally binding tool – the Niger Basin Water Charter – to regulate the coordinated management of large dams in the basin. All nine member states have endorsed the charter, and CIWA supported NBA to develop rigorous water resource information, decision methodology, and greater unity and consensus among the nine states.

Key Achievements

- The Water Charter now includes Annex 2 on integrated (transboundary) management of water resources, allowing for management of water releases based on country requirements and data that transcend national borders. NBA manages the information systems for coordinated water release management.
- The NBA TAC approved the feasibility study for a mechanism of royalty-based financing related to hydropower in October 2019. The mechanism would be a regional taxation system for hydroelectricity and could be managed by NBA.
- Through CIWA's analytical support, NBA has developed an advanced model for ecosystem services in the Inner Niger Delta, a vast wetland in Mali. The model will make it possible to infer the evolution of water height over time as a function of inflow, including when influenced by an upstream reservoir (such as a large dam).
- CIWA support through NRBMP, together with other partners, helped build NBA's institutional and technical capacity by establishing a regional platform for inclusive cooperation, providing improved tools for decision support, and consolidating the legal framework for joint investment. The CIWA financed decision-making process around the significant environmental and social risks associated with the Fomi dam's chosen site and design led to a consensual decision to find a new site. The methodology developed, based on this experience, will help NBA maintain that role in similar future exercises.
- While CIWA's support through NRBMP did not specifically focus on the Kandadji dam, institutional and technical capacity built through NRBMP helped NBA obtain an extension of the Kandadji project to 2026. The extension includes sustained strengthening of NBA through the implementation of the priority actions that were identified through the CIWAfinanced institutional audit.

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Volta Basin

Volta River Basin Strategic Action Program Implementation

Context

Six countries – Benin, Burkina Faso, Côte d'Ivoire, Ghana, Mali, and Togo – share the Volta River Basin, which covers an area of about 400,000 square kilometers. The basin is mainly in Burkina Faso and Ghana – 43 percent and 42 percent of the total basin area, respectively. Recognizing the importance of coordinated management of the shared water resources of the Volta, the six riparian countries established the Volta Basin Authority (VBA) in 2009. VBA's establishment was a turning point in transboundary water cooperation for the Volta River Basin and began to address its environmental and water challenges by enhancing coordination and information sharing.

Progress

The Volta River Basin Strategic Action Plan Implementation Project was launched in 2015 to improve VBA's capacity to promote transboundary water resources management. The Strategic Action Plan was developed to provide direct environmental and livelihood benefits through the implementation of priority actions and institutional development.

The Water Charter facilitates dialogue and cooperation between member states, promotes sub-regional integration and economic cooperation, specifies regulations on water quality and the environment, and strengthens solidarity and collaboration on flood management.

During the project, VBA facilitated ratification of a Water Charter to strengthen the legal and institutional framework for sustainable management of basin water and associated environmental resources. The Charter facilitates dialogue and cooperation between

member states; promotes sub-regional integration and economic cooperation; specifies regulations for water quality, water usage, and the environment; strengthens solidarity and collaboration on flood management; and defines the participation modalities of water users in decision-making.

VBA helped build the capacity of national institutions to sustainably implement the Strategic Action Plan by facilitating dialogue, communication, and project monitoring. VBA assisted in increasing stakeholder involvement to ensure political support; enhancing financial mechanisms; improving technical, administrative, and institutional capacities; increasing data management and sharing; promoting coordination; and streamlining responsibilities between different organizational scales. Prior to developing a Communications Strategy and Plan, VBA launched an assessment to understand stakeholder views.

VBA imparted knowledge and built capacity by training over 200 CSOs across six countries and offering minigrants to projects in forestry, biodiversity, and other environmental sciences. It also provided a platform for over 100 participants in the Organization of the Stakeholders' Forum.

CIWA funding also enabled VBA to disseminate a multitude of knowledge products to support decisionmaking. These range from regional planning documents to more technical studies on water resources management, climate risks, and water economic infrastructure in the region. The materials reached a wider audience thanks to an improved VBA website, direct interactions, and participation in international workshops.

The CIWA project in the Volta River Basin closed in August 2019 and the implementation completion report was finalized in 2020.

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Key Achievements

- The Water Charter was endorsed by the Expert Committee and approved by the Council of Ministers. VBA's crucial role in validating and endorsing the Volta Water Charter paved the way for integrated and coordinated basin management. VBA subsequently organized national workshops for increasing awareness on the Water Charter.
- The CIWA-supported diagnostic of VBA stakeholders led to the creation and full adoption of their Communications Strategy and Plan. It defines key stakeholders, messages, channels, and tools and establishes guidelines for a platform for exchanging information and harmonizing data among stakeholders. The plan has helped VBA more effectively communicate the basin's needs, resources, and trends in line with a changing climate.
- In Benin, Côte d'Ivoire, Ghana, and Togo, the project raised awareness on the impacts and risks of deforestation (i.e. desertification and the erosion of riverbanks) across 200 hectares. The initiative strengthened CSO capacity for watershed development by providing training and organizing stakeholder forums. In Burkina Faso, the project resulted in the stabilization of five kilometers of the banks of Kou River as well as capacity building and the distribution of best practice information to 90 smallholder farmers in Mali.

Lake Chad

Lake Chad Dialogue

Context

The Lake Chad Basin – shared by Cameroon, Chad, Niger, and Nigeria – has one of the highest global concentrations of extreme poverty and is experiencing protracted high intensity conflict that has spilled into the entire region. Conflicts have caused large-scale forced human migration, food insecurity, and worsened access to basic services. Recurring climate shocks have resulted in tremendous uncertainty about the future of the lake, and rapid demographic growth and weak governance aggravate the region's fragility, threatening the region's vulnerable populations and already endangered ecosystem. CIWA has leveraged its experience and achievements in the region to address key dimensions of the World Bank's strategy with regards to water, including enhancing regional dialogue, addressing knowledge and institutional capacity gaps, and opening new opportunities to regional shared benefits (such as power, livelihoods, and stability) through its projects. The Bank's engagement strategy in the Lake Chad region is to shift from an emergency response to early recovery and development activities.

To date, CIWA-supported interventions have aimed to strengthen the national and regional impetus for cooperation in the basin by assessing the socioeconomic potential for cooperative management and basin development, and providing necessary tools and technical knowledge to support decision-making processes for facilitating collaborative action. The Lake Chad Dialogue technical assistance project was undertaken through collaboration with the Lake Chad Basin Commission (LCBC) to address knowledge gaps in the region's hydrogeology and climate change impact, and has set the scene for a long-term, sustained water resources management and development engagement in the Lake Chad Basin.

While there is no proof that Lake Chad is disappearing, its sustainability is threatened by increased evaporation due to climate change, withdrawals from the Chari-Logone to develop large-scale irrigation, and oil industry expansion. Productivity in the Lake Chad area depends on the annual flood as it is the source of diverse agricultural systems (fishing during high tide, agriculture, and pasture lands during the tide recession). The current system of family farming based on mobility, multi-activity, and multi-functionality, although resilient to climate and hydrological variability, has been threatened by Boko-Haram's actions. Restoring peace, coupled with strengthening the current system, is necessary for Lake Chad's regional development.

Progress

In recent years, LCBC has secured multiple investments for basin development and set the stage for a regional cooperation platform. Enabling this progress was the Lake Chad Development and Climate Resilience Action Plan, prepared and disseminated at the 2015 Conference of the Parties, or COP 21 meeting, in Paris. A multidisciplinary team composed of World Bank staff and top Lake Chad experts prepared the Plan based on a thorough diagnostic of the area. Critical evaluation covering the hydrology, ecological services, and social services of the proposed investments improved stakeholder commitment and attracted partner financing.

Lake Chad Dialogue helped member states and LCBC better understand the lake's characteristics and dynamics. The project also defined the development plan framework, enabling countries to conduct a strategic review of development options. Using the framework will help identify strategic and bankable investment opportunities with shared benefits and specific projects to enhance livelihoods and reduce the vulnerability of the populations dependent on the lake's resources.

The technical assistance enabled riparian member states to make informed decisions for optimal resource utilization at the basin level and build and improve hydrological data, forecasting, knowledge, and tools. Key project outputs included strategic and economic studies that support the case for cooperation among riparian countries, inform donor coordination, and organize regional policy dialogue and stakeholder consultations. These were complemented by capacitybuilding activities to facilitate the use of newly introduced hydrological tools and create ownership at the basin level. CIWA's support to LCBC helped it secure financing from the World Bank and other partners for multiple new projects, including the recently approved US\$170 million Lake Chad Region Recovery and Development Project.

CIWA's support to LCBC helped it secure financing from the World Bank and other partners for multiple new projects, including the recently approved US\$170 million Lake Chad Region Recovery and Development Project. While the Lake Chad Dialogue technical assistance project closed in FY20, CIWA and the Bank continue to support the basin and LCBC through additional projects. In particular, the World Bank water team is exploring a Bank-executed CIWA-financed technical assistance project for LCBC and national agencies to support their efforts on critical basin-level water challenges. There is preliminary agreement with LCBC to support efforts on: (i) understanding the current state of water resources and their use in the basin; (ii) design of regional mechanisms for flood and drought management; (iii) strengthening the water resourcesrelated data and analytics in LCBC's Knowledge Management Platform; and (iv) strengthening communications and outreach on water resources in the basin. Discussions are also ongoing and/or planned with country-level counterparts to explore support for relevant water resources management activities located within the Lake Chad basin.

Key Achievements

- LCBC's 10-year, multi-sectoral Lake Chad Development and Climate Resilience Action Plan pipeline includes investments worth over US\$1 billion distributed across seven priority themes: facilitating transport and trade, improving living conditions through access to public services, supporting producers and value chains, securing access to resources and conflict management, the preserving environment, improving water resources management, and improving information and participation. LCBC's adoption of the Plan, its presentation by the Heads of States at COP 21 demonstrated ownership and commitment at the highest level of government.
- Several development partners are financing different parts of the Plan – the World Bank is co-financing the Lake Chad Basin Sustainable Development Programme (PRODEBALT) with AfDB and other partners, and the German Agency for International Cooperation (GIZ) is providing technical assistance to LCBC on water resources information and capacity building.

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- The Groundwater Resources Diagnostic integrated a broad range of groundwaterrelated data in the basin. This resulted in an updated database, the development of a basin-wide conceptual groundwater model, and preliminary numerical groundwater models for the Komadougu-Yobe and Chari-Logone river sub-basins.
- LCBC secured concrete investments and developmental actions by improving its knowledge, strengthening capacity, and providing thorough analytical studies. For example, LCBC now has a remote sensingbased monitoring platform for surface waters to provide a baseline of surface water information as well as a groundwater data diagnostic and analysis, an updated conceptual model, and a preliminary numerical model.

Improving Water Resources Management in West and Central Sahel

Context

The Sahel is one of the poorest and most conflictaffected regions of the world, historically burdened by numerous social, environmental, and economic hardships at the country, basin, and regional level. According to the UN, the Sahelian region also has the world's highest levels of gender inequality. Women's profound political, economic, and social exclusion is both exacerbated by and contributes to dynamics of fragility in the region, including rapid population growth and underdevelopment.²

The region as a whole is experiencing high poverty rates – up to 80 percent of inhabitants live on under US\$2/ day, the population is expected to double by 2045, water storage capacity has decreased by 5 to 10 percent since 1990, and average temperatures have risen by one degree Celsius since 1970. Droughts have increased while the rainy seasons have become shorter, more inconsistent, and more severe, leading to devastating events such as the floods in Niger in 2016 and 2019.

Climate change continues to affect human and natural systems in many ways, namely by disrupting the food and water supply, which in turn reduces economic opportunities, decreasing the productivity of agriculture, and generally eroding livelihoods. These factors have collectively contributed to the possibility that unless major changes are implemented, the region could experience extreme water stress and scarcity, dependency on stressed water bodies, and social and political instability.

Unless major changes are implemented, the region could experience extreme water stress and scarcity, dependency on stressed water bodies, and social and political instability.

With its limited perennial surface water, the Sahel largely relies on its groundwater resources. Transboundary aquifer inventories have made progress and highlighted that most of the groundwater in the Western Sahel is international (shared by at least three countries). Thus, it is essential to improve and enhance cooperation in the development and management of this shared water resource.

Progress

CIWA is developing a framework and a series of replicable methods for creating a cohesive water management policy and a pipeline of investments for the region. The newly approved, Bank-executed Improving Water Resources Management in West and Central Sahel Technical Assistance initiative is designed to strengthen water resources management in the region by identifying pragmatic investments and policy actions. The initiative will address the critical knowledge and capacity gaps in knowledge management, gender empowerment, and addressing challenges related to fragility, conflict, and violence.

The activities designed in this initiative will factor in how to successfully stem the tide of conflict, fragility, and climate change while increasing resilience and sustainability. Water scarcity, stress, and recurrent drought will increase the inter-dependency of populations upstream and downstream at both catchment and country levels. Therefore, local agitation,

² Castillejo, C. "Gender Inequality and State Fragility in the Sahel", FRIDE Policy Brief, No. 204, June 2015.

interstate and cross-border tensions, political instability, and conflict and displacement are also likely to ensue.

The West and Central Sahel initiative will support a dialogue with the G5 Sahel countries (Burkina Faso, Chad, Mali, Mauritania and Niger). The aim of the dialogue will be to develop a pragmatic approach and engagement options for supporting the region in the sustainable management and mobilization of transboundary water resources as a necessary foundation for broader socioeconomic development.

The project team will undertake a retrospective study on regional transboundary engagements in West and Central Africa over the past 20 years. It will analyze the cumulative experience in transboundary water management in the region to extract relevant lessons to better design future initiatives.

A study on small-scale storage aims to assess and develop guidance for operationalizing an integrated watershed-based approach. The study will include a review of the current practices; typologies of settings and interventions; and a guidance manual for siting, design, and construction of small-scale storage investments. While water resources availability per capita is decreasing in the region, small-scale watershed interventions can deliver significant benefits to reverse this trend and mobilize water resources at the local level.

The West and Central Sahel initiative will also provide support at the country level in Burkina Faso, Niger, Nigeria, Côte d'Ivoire, and Ghana. While the latter three countries are experiencing a medium-intensity conflict, the former two are affected by civil strife and FCV spill over from neighboring countries. In Burkina Faso, CIWA will conduct an assessment to conceptualize an integrated water security and services program to meet the water resource needs for various sectors. So far, the project team has organized consultations with technical-level counterparts from the Government of Burkina Faso to design and implement this activity. In Niger, CIWA will support the establishment of a water platform to help coordinate investments and ensure sustainable use at the watershed level. Here, water resources are currently under-developed, water use is significantly below sector demands, and numerous obstacles stand in the way of mobilizing the country's water resources - yet the country has a pivotal role in three Sahelian basins.

In Côte d'Ivoire, the project team is conducting a Gaps Assessment for Water Resources Management to identify critical gaps and hotspots. In Ghana, CIWA is contributing to a policy note on water security and climate resilience in the Northern Region with the endgoal of developing an integrated vision for harnessing the potential of shared transboundary water resources for regional development.

Next Steps

All of the activities under the CIWA West and Central Sahel initiative have been launched. Given the maturity level of previous engagements, the regional G5 Sahel and Burkina Faso engagements are expected to deliver draft recommendations by June 2021, which will form the basis for consultations and joint dialogue with development partners on supporting the water security agenda. The retrospective assessment of World Bank's transboundary operations in the region will be completed before December 2020 and will inform these discussions. The Niger water platform is expected to be operationalized in late 2021, as an integrated component of a World Bank-financed multi-sectoral investment project. The remaining activities are also scheduled for completion in late 2021. Stakeholder consultations, including with development partners, will be organized around the draft findings of the thematic activities - operationalizing small-scale storage and retrospective assessment of transboundary programs.

Additionally, expanding CIWA's footprint in the region, a new Bank-executed technical assistance project – the Sahel Groundwater Initiative – will strengthen foundations for enhanced groundwater knowledge and management capacity in the Western Sahel. The project will focus on the three following outcomes: (i) provide solutions (including the gender dimension) to remove the constraints and limitations to the use of groundwater for small-scale irrigation; (ii) review the status of groundwater assessment and exploration capacity in the Western Sahel; and (iii) facilitate regional cooperation around the development of male and female groundwater expertise in the Sahel.

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Horn of Africa

Regional Groundwater Initiative

Context

Due to its decentralized nature, groundwater plays a unique role in addressing key challenges faced in the drylands of Intergovernmental Authority on Development (IGAD) member states. Groundwater acts as a natural buffer against climate variability and is crucial for building climate resilience. Shallow groundwater can be easily accessible, and in resourcescarce regions such as the Horn of Africa (HoA), it is often the only water resource available to the most impoverished populations. The sustainable development and management of groundwater is, therefore, vital to reducing poverty and strengthening resilience to climate and weather shocks.

Groundwater acts as a natural buffer against climate variability and is crucial for building climate resilience.

With the Horn of Africa Groundwater Initiative (HoA-GWI), CIWA is promoting regional cooperation on groundwater management by bolstering the role of IGAD in the region's economic and social development. The project supports IGAD member states in preparing groundwater development and management by strengthening knowledge systems, building national and regional capacities, and assessing the feasibility of specific investments.

Progress

CIWA aims to maximize the benefits of groundwater to strengthen resilience by undertaking feasibility studies for three aquifers: Merti, Bagara, and Mt. Elgon. Selection of the three basins was based on joint decisions by IGAD member states.

IGAD officials participated in a study tour to SADC-GMI in February 2020. The capacity-building visit focused on exploring how ongoing CIWA support to HoA-GWI can be most effective: by strengthening information and data systems, building institutional

capacity, and conducting key feasibility assessments. Additionally, discussions focused on how the IGAD Climate Prediction and Application Center (ICPAC) could expand its mandate and potentially turn into a regional Groundwater Center by offering a water information database.

CIWA Engagement in the Horn of Africa

The Horn of Africa (HoA) is a geographical area that includes Djibouti, Eritrea, Ethiopia, Kenya, Somalia, Sudan, South Sudan, and Uganda. As the source of the Nile and the gateway to the Red Sea and the Gulf of Aden, this East African region is of crucial importance for economic growth and development. Most of the HoA's population of over 250 million is poor and relies on rainfed agriculture for its livelihood. Challenges related to poverty, vulnerability, conflict, and insecurity are exacerbated by the impacts of climate change and variability, including irregular and unpredictable short rainy seasons and recurring droughts.

CIWA is supporting a fast-growing portfolio in the HoA, with three Bank-executed core interventions. These include ongoing projects on regional groundwater implemented by IGAD, technical assistance for Somalia on transboundary water resource management, and a new analytical initiative to strengthen resilience building in the HoA through improved information systems and institutional capacity.

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To expand the knowledge base on regional groundwater resources, IGAD completed a National Validation Workshop on knowledge management in Djibouti. The workshop was a follow-up to the national groundwater knowledge management assessments from the previous phase of the current project (the Drought Resilience Case Study, financed by the World Bank Water Partnership Program, 2017).

Next Steps

Ongoing support under this project will enhance groundwater knowledge in the region and help countries identify information gaps and areas for capacity building. The project team will undertake feasibility studies of development projects with the potential to enter operation once resources are secured. In the process, IGAD will gain valuable experience, contributing to overall institutional strengthening. However, dialogue on shared water resources is a long-term process, requires a multidisciplinary platform, and needs a champion from all sides. CIWA maintains engagement and supports IGAD member countries to harness the opportunity in trust-building, networking, information sharing, and joint development.

Dialogue on shared water resources is a long-term process, requires a multidisciplinary platform, and needs a champion from all sides.

"The ongoing water resources strategy has greatly benefited from CIWA in terms of supporting the Prime Minister's call for action, actively engaging in the process of meetings and planning, and providing international experience. The support has been easily arranged in an informal and quick manner.

Given the above, the Ministry of Energy & Water Resources would appreciate continued CIWA support to enable future key water activities as we envisage new opportunities."

Abdiwahid Ibrahim Ahmed Director General, Ministry of Energy & Water Resources, Somalia

Somalia Transboundary Water Resources Management

Context

Approximately 60 percent of Somalia is arid or semi-arid with uneven and irregular availability of water resources. Adequate hydrological, hydro-meteorological, and related data is needed to assess the level of water availability and the sustainability of water resources. The Shebelle and Jubba rivers are essential sources of water for people, livestock, and irrigation purposes.

Through this technical assistance, CIWA provides support to the Government of Somalia on water resources development options for the Juba and Shebelle basins.

Progress

Preparation of a Somali National Water Strategy is under way. Working in collaboration with the United Nations Development Programme, CIWA is providing technical assistance to the Government of Somalia, Office of the Prime Minister, and Ministry of Energy & Water Resources to develop a National Water Strategy, which will be followed by a draft National Water Resources Strategic Plan. A Water Resources Development Road Map will be aligned to this strategy by converting key activities into projects. A team consisting of 11 Somalis is preparing the strategy with planned completion in October 2020.

CIWA is supporting the development of a Water **Resources Model to build the capacity of water sector institutions and training selected hydrogeologists on water resources modelling.** Trainees are learning to perform hydrologic simulations at the watershed and sub-watershed level using the Hydrologic Resource Assessment Model, fundamental concepts of hydrology, and geographic information system (GIS) and data management skills. Furthermore, CIWA trained a dozen Somalian hydrologists on the streamflow model for the Shebelle and Juba rivers to help visualize the fluctuation of flow through time.

The project's technical assistance includes activities to build knowledge, networks, and plans for the future. A Senior Transboundary Water Resources Advisor has been hired under the project to help navigate the ongoing dialogue and to prepare a draft proposal for a potential

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recipient-executed activity. A multi-sectoral team from the government made visits to Kazakhstan and Switzerland to share experiences, and efforts to network and collaborate with upstream countries are ongoing.

The CIWA-supported project is helping Somalia shape the dialogue on transboundary water resources. The quality and depth of understanding on shared water resources provided through this support has enabled Somalia to begin foundational work that includes building capacity and experience, collecting and organizing water resources information, and articulating its vision for water resources and development.

Next Steps

Establishing a productive dialogue on shared transboundary water resources requires time, preparation, local trust, and buy-in. Ensuring a win-win scenario is

crucial to foster cooperation and can be affected by the prevailing socioeconomic and political environment of the region. CIWA is facilitating progress toward a solid foundation for continuous dialogue on transboundary water resources management.

Though it started with few activities, assistance quickly expanded to include support for the National Water Strategy, a series of water resources models, and streamflow and Hydro-met training, and has been well received by the Government of Somalia. The technical assistance will close formally on July 31, 2021.

CIWA is facilitating progress toward a solid foundation for continuous dialogue on transboundary water resources management.

Strengthening Resilience in the Horn of Africa

Context

Resilience building is at the core of the HoA's ability to anticipate, cope, and adapt effectively to the multiple shocks and stresses that affect its growth and development. Within a volatile context in which the impacts of climate change interact with a wide range of vulnerabilities such as conflict and security, poverty, food insecurity, environmental degradation, forced displacement, and weak formal and informal institutions, collaborative solutions are crucial to address transboundary impacts. Regional organizations have a crucial role to play in strengthening the region's resilience.

The new CIWA-supported analytical work, Strengthening Resilience in the Horn of Africa, launched in May 2020, aims to strengthen the foundations for regional approaches to resilience building by improving the knowledge base and the institutional capacity to deal with climate shocks and scope potential investments in the region.

The two-year technical assistance represents a shift from siloed sectoral approaches as the project works to augment resilience capacity to respond to multiple types of shocks such as drought, conflict, fragility, COVID-19, locusts, and displacement.

Progress

The project focuses on three pillars: strengthening information for resilience, strengthening institutions and organizations for resilience, and strengthening the knowledge base for regional resilience investments. In working to strengthen information for resilience, the study looks at management of risks related to desert locusts and droughts, which share similar characteristics concerning the fundamental need to address, in a

A stocktaking of regional resilience investment projects in the Horn of Africa is underway. coordinated and systematized manner, the different phases of the risk management cycle.

The second pillar, strengthening institutions and organizations for resilience, focuses on the role of formal and informal social and governance-related institutions in building resilience, recognizing their critical role in mitigating and responding to shocks.

The third pillar, strengthening the knowledge base for regional resilience investments, aims to bring HoA countries together and help them agree on a package of policy, financing, and coordination measures to deepen regional integration around resilience in the region.

In FY20, the project launched an online knowledgesharing series to provide a dedicated space for learning and reflection on the meaning and implications of regional resilience building. The series has also begun to strengthen task teams' capacity in resilience design and operationalization. A stocktaking report of selected regional investment projects and Advisory Services and Analytics supported by the World Bank shed light on the approach to strengthen resilience in the region, drawing from lessons learned and recommendations to consolidate future investments.

Next Steps

Because transboundary resilience plays a key role in achieving growth and development goals in the HoA, working effectively across sectors, promoting appropriate institutional incentives to respond swiftly to emergencies, and long-term coordinated strategies are essential. The future pipeline of resilience investments would benefit from a robust method of resilience design and measurement, including the consideration of transboundary challenges and opportunities, and innovative approaches to groundwater access and use.

Addressing the HoA's institutional capacity gaps requires a long-term, forward-looking perspective. This involves building the skills needed to anticipate and respond to current shocks and stressors affecting the region, and to face future uncertainty. Further dialogue and collaboration with IGAD and its member states will help identify resilience capacity needs and priorities and influence the next steps.

OVERVIEW OF THE YEAR SOUTHERN AFRICA

Southern Africa

Southern African Development Community Groundwater Management Institute (SADC-GMI)

Context

People in Southern Africa are largely dependent on groundwater from aquifers shared between countries and communities. An estimated 70% of the 250 million people in Southern African countries rely on groundwater as their primary water source for health and well-being, food production, and economic growth. Furthermore, as climate variability alters the amount of available surface water, more people in the region are turning to groundwater, which is already challenged by threats of depletion and pollution. Unsustainable use of groundwater by competing users can have negative effects on the dependent ecosystems and be dangerous for those that rely on it. Expanding industry is drawing down aquifer levels, and pollution of the aquifers from agriculture and mining adds to the growing stress.

Improving knowledge and understanding of national and transboundary aquifers is essential for sustainable conjunctive use of surface and groundwater. The Sustainable Groundwater Management in the Southern African Development Community Member States project, executed by SADC-GMI and co-financed by the Global Environment Facility and CIWA, supports the sustainable management of groundwater at the national and transboundary levels across SADC member states.

Progress

The SADC Groundwater Information Portal and Groundwater Grey Literature Archive are core services that provide publicly available water resource data. The Groundwater Information Portal was reactivated in June 2017 and was expanded in FY20 to link with 20 other regional databases. The SADC Groundwater Grey Literature Archive is also being upgraded to improve functionality and increase the number of documents available. These activities have relied on the talents of young professionals who were mentored on groundwater data information management and international cooperation in the internship program.

The objective of the internship program was to build regional capacity in GIS skills. The program also supported building a network of regional groundwater professionals that include women and people for FCV situations. Each member state nominated two participants of both genders.

Core guidelines and gap analyses were produced for member states, and regional strategic analyses are being produced to support the evidence base for cooperation on shared aquifers. The project team generated Gap Analysis Reports covering the policy, legal, and institutional environment for groundwater for member states and the SADC region. The information in the reports will help strengthen institutional capacity to manage groundwater and has helped develop the pilot implementation roadmap for Tanzania and Eswatini. Two of the 16 member states sought assistance to draft their plans with project funding.

SADC-GMI is working with the African Ministers' Council on Water (AMCOW) to implement the AMCOW **Pan-African** Groundwater Program (APAGroP) and is leading the Groundwater Governance Working Group to implement APAGroP. SADC-GMI organized trainings and signed new Memorandums of Understanding (MOUs) with River Basin Organizations (RBOs), including the Permanent Okavango River Basin Water Commission (OKACOM), Limpopo Watercourse Commission (LIMCOM), and Zambezi Watercourse Commission (ZAMCOM). The project also supported the establishment and operationalization of groundwater committees by providing technical assistance to RBOs, preparing concept notes for the development of a Groundwater Strategy, and enhancing groundwater data management systems.

SADC-GMI demonstrated that it is capable of administering a long-term funding plan for its financial sustainability and manage funds for its programs and staffing by launching 15 small grant projects worth over US\$1.5 million. SADC-GMI provided the design, establishment, and running of a Sub-Grant Scheme to support national-level focal groups and pilot activities, which included planning, priority setting, calls for proposals, review, selection and award, results monitoring, financial management and compliance with the Sub-Grant Agreements.

As the COVID-19 crisis reached Southern Africa in March 2020, restrictions on movement that were introduced in several member states stalled some activities, especially under the Sub-Grant Schemes, which required field visits and caused delays in the implementation under the project. Given the current scenario, an extension to December 2020 is under consideration.

Following the progress to date, a phase two project is envisaged to build on the ongoing long-term technical engagement with SADC-GMI. The concept proposes to scale up and deepen engagements where SADC-GMI has been successful in mobilizing countries around cooperative action and where countries have expressed interest in and the need for further engagement. The planned areas for engagement proposed are: (i) improve capacity of regional institutions for sustainable groundwater management; (ii) develop and disseminate timely and targeted knowledge for groundwater management; (iii) improve livelihoods to increase resilience to climate change and climate-related shocks; and (iv) enhance SADC-GMI core functions and project management.

"I'm getting an idea of what I can do as a young professional, especially in our monitoring strategy in my country. Monitoring is the main element for ensuring that we are taking care of our underground water and managing it better. It gave me a lot of insight on what we need to put in our monitoring strategy to manage our groundwater resources better."

Reginalda Joseph

Hydrologist, Ministry of Agriculture, Water and Land Reform, Namibia

Key Achievements

- SADC-GMI hosted a total of 65 projectbased internships for young professionals from member states. The projects were related to collecting and managing data, expanding the SADC Groundwater Information Portal, and broadening the Groundwater Grey Literature Archive. The latter two projects and associated internships were conducted in FY20. Overall, 34 percent of young professionals were women and 23 percent were from member states that have an FCV situation.
- The project has helped strengthen SADC-GMI's institutional capacity by forging strategic partnerships with regional and international water institutions. SADC-GMI jointly implemented 12 activities with RBOs (including OKACOM. ZAMCOM. LIMCOM and CUVECOM) and another 12 activities were jointly implemented with regional institutions such as the International Union for Conservation of Nature, the Southern African Research and Documentation Centre, the Africa Groundwater Network, and the United States Agency for International Development Southern Africa.
- Out of the targeted 15 sub-grant pilot projects to be implemented in SADC member states, 14 have been launched, 5 of which were completed Botswana. Malawi. Mozambique. in and Zimbabwe. The projects focused on the integration of groundwater database systems, groundwater exploration, groundwater monitoring, and the promotion of hygiene and sanitation. Four other projects in Eswatini, Namibia, Tanzania, and Zambia are nearly 90 percent complete.
- The SADC-GMI implemented five joint activities to advance knowledge on transboundary and national groundwater. The institute contracted the International Water Management Institute (IWMI) to implement the Conjunctive Water Resources Management Research project on the Shire River Basin. A Transboundary Diagnostic Analysis and Strategic Action Plan are under development for the Tuli-Karoo

SOUTHERN AFRICA

Transboundary Aquifer (TBA) – shared between Botswana, Zimbabwe, and South Africa. Other preparation work is under way regarding the Eastern Kalahari, Ramotwsa, and Strampriet TBAs through United Nations Educational, Scientific and Cultural Organization (UNESCO) partnerships.

- A total of 239 people were trained in identifying and implementing solutions for strengthening legal, policy, and regulatory tools. Other important trainings took place, including on the topic "International Water Law & Gender", with 100 participants from 12 member states, and trainings provided to FCV member states on international law pertaining to groundwater.
- The project produced Gap Analysis Reports for each member state, guidelines for groundwater management, roadmaps for institutional frameworks in Eswatini and Tanzania, and three strategic analyses to support the evidence base for cooperation (an SADC Drought risk assessment, a Big Data Transboundary Water Cooperation study, and an OKACOM Groundwater Assessment).
- SADC-GMI participated in eight regional or international research platforms where it disseminated research results pertaining to groundwater management in SADC member states. These included the South Africa Ground Water Division Conference (2017), WaterNet Symposia (2017, 2018, and 2019), SADC Groundwater Conferences (2018 and 2019), and the AMCOW-led APAGroP workshops (2019 and 2020).

Zambezi River Basin Support Program Context

The Zambezi watercourse is one of the most diverse and valuable natural resources in Africa and is the fourth largest in Africa after the Congo, Nile, and Niger rivers. The Zambezi River Basin spreads across eight riparian states: Angola, Botswana, Malawi, Mozambique, Namibia, Tanzania, Zambia, and Zimbabwe. Member states seek to promote cooperative IWRM that drives sustainable economic growth and improves the livelihoods of their people, many of whom are critically dependent on the sustainable management of shared waters for health and livelihoods.

Progress

The Zambezi River Basin Support Program strengthened the role of two IWRM institutions in the basin: ZAMCOM and the Zambezi River Authority (ZRA). ZAMCOM was established with support from this project to address the entire basin, while ZRA is responsible for the Kariba Dam Complex and is governed by Zambia and Zimbabwe.

The project supported cooperative management and development of IWRM through institutional strengthening, improved information sharing and decision support, and strategic planning. Citizens of the riparian states benefit from sustainable IWRM affecting critical sectors including agriculture, energy, and industrial growth. Additional activities of the program focused on enhancing climate resilience of the Batoka Gorge Hydroelectric Power Station. The Zambezi River Basin Support Program closed in FY20; however, support to the basin continues through new CIWA projects.

Key Achievements

- The Zambezi River Basin Development Project supported preparation for infrastructure development, including detailed feasibility, environmental, and social studies, and provided transaction advisory services for the Batoka Gorge Hydroelectric Power Station, a 2,400 MW project on the Zambezi River upstream of the Kariba Dam.
- In late 2018, Zambia and Zimbabwe formally adopted a "Build, Operate, and Transfer" Public-Private Partnership for the Batoka Gorge Hydroelectric Power Station to accelerate its development. This approach was a departure from the previous plan to finance the dam publicly but privately finance the two power

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stations via Special Purpose Vehicles. The change cleared roadblocks to an agreement with private utility companies.

Support to ZAMCOM helped launch basinwide strategic planning, decision support, and institutional development. The Strategic Plan addresses short-term (2018–2027) and medium-term (2028–2040) investment plans, proposing projects worth US\$28.2 million. ZAMCOM's Council of Ministers endorsed all the measures to strengthen cooperation among the basin states.

Since the closure of the two projects, CIWA has continued to scale up the analytical foundations in the Southern Africa region. The Southern Africa Drought Resilience Initiative (SADRI), approved in June 2020, is championing a regional approach consistent with the Bank's strategy on regional integration in Africa.

Southern Africa Drought Resilience Initiative (SADRI)

Context

The 16 member states of SADC are regularly impacted by droughts, which are becoming more severe and protracted with climate change. These recurrent droughts come with an immense human and economic cost. Estimates indicate that from 1980 to 2015, droughts have cost the region US\$3.4 billion and have directly affected over 100 million people.

The impacts of droughts in the region are felt across all economic sectors. When a drought hits Southern Africa, cities – hubs of economic activity – run out of water; power generation declines, cutting industrial productivity; and rural livelihoods, largely based on subsistence agriculture or wildlife conservation, collapse, causing widespread food insecurity and forced migration, with rural women among the worst affected. The challenges of drought therefore require an integrated and cross-sectoral response.

Progress

SADRI represents a renewed approach with activities integrated across the energy-water-food-environment nexus. The project will help lay the foundations to make Southern African countries more resilient to the multi-sectoral impacts of drought. The two-year technical assistance program is utilizing an integrated drought risk management framework to generate knowledge and tools, facilitate internal World Bank coordination, enhance partnerships across SADC member states, and increase clients' capacities with the intent of informing national and regional portfolio and pipeline investments in drought-related activities.

SADRI is structured around three key pillars: cities, energy systems, and livelihoods and food security. These pillars are coordinated through an umbrella pillar, and together will deliver technical assistance, analytical products, stakeholder engagement, and convening activities throughout FY21 and FY22.

Next Steps

The new project will support the technical assistance and analytics along the three aforementioned pillars. Along with the planned analytical and advisory activities, a platform for regional collaboration on integrated drought risk management will support existing drought-related investments and help identify new national and regional investment opportunities.

The project will provide a forum for knowledge exchange among SADC member states on effective drought risk management approaches and to ensure the analytic products supported under this activity are relevant and high impact.

Luapula River Basin

Context

The Luapula River is a tributary of the Congo River – Africa's second-longest river – and forms part of the border between Zambia and the DRC. Water is a vital renewable resource for meeting the region's energy, livelihood, and ecosystem demands. Integrated planning to develop water resources for energy generation is becoming increasingly important as potential projects receive more attention from authorities and developers, and water and energy sectors benefit significantly from greater coordination efforts in the nascent stage of any project.

Progress

In total, investments worth US\$1.5 billion are planned across three shared priority sites of the Luapula River with a total installed cumulative capacity of 790 MW. The priority site considered for development will produce the electricity required for the equivalent of approximately 2 million people in sub-Saharan Africa. The biggest consumers of power will include mines and the domestic and commercial sectors in Zambia and the DRC, while the rest might be exported through the Southern African Power Pool, including to the Republic of South Africa.

The project team conducted a desk review of the legal and institutional frameworks to inform the future development of Luapula Sub-Basin hydropower investments in Zambia and the DRC. The review analyzed the current institutional arrangements, existing laws, and proposed options to strengthen the institutional framework for cooperation in the Luapula River Basin, including on aspects related to the development of Luapula hydropower projects.

The DRC and Zambia signed two MOUs focusing on the development of hydropower. The Inter-Governmental MOU, originally signed in 2015, was re-signed in 2018 to extend the period for finalizing the feasibility study and environmental and social impact assessments to 2021. The Inter-Utility MOU was signed between the DRC's La Société Nationale d'Electricité (SNEL) and Zambia's Electricity Supply Corporation (ZESCO). The MOUs have enabled the start of productive dialogues between the two countries on development of these projects and transboundary water cooperation. As the DRC and Zambia are SADC member states, they have also signed the revised SADC Protocol on Shared Watercourses (2000), which fosters closer cooperation for protection, management, and use of shared watercourses in the SADC region. However, legal and institutional foundations for joint water resources management need to be strengthened between the two countries to advance hydropower development investment opportunities.

Legal and institutional foundations for joint water resources management need to be strengthened between the two countries to advance hydropower development investment opportunities.

The two countries have discussed the possibility of establishing the Luapula River Authority (LRA) to manage the shared water resources. Currently, no bilateral institution or treaty governs the Luapula subbasin for the joint management of water resources. The desk review highlighted transboundary considerations that need to be taken in the design and operationalization of investment schemes, benefit-sharing, and appropriate Special Purpose Vehicle arrangements.

Next Steps

The desk review successfully outlined the legal framework and institutional options for the development and management of the Luapula River Basin. The evaluation of future institutional options for the development and management of the Luapula River Basin still needs to consider the obligations of the DRC and Zambia under international law and the geophysical and socioeconomic characteristics of the basin.

The next step in establishing a new entity, i.e. the Luapula River Authority (LRA), is to develop a roadmap with an outline of the elements involved in setting up an effective institution.

NEW STRATEGIC DIRECTION

Digital Data Initiative

To address the challenges of water adequately, governments and regional organizations need to manage water resources efficiently, based on historical trends, status, and future demand and availability. Information on rainfall, stocks and flows, and groundwater are key to improved water quality, water use, longterm environmental impact, and improving local and regional economies. Information and data on quantity and quality of water is vital to ensure equitable and efficient use of water. Meanwhile, a lack of crossborder data and information sharing coupled with scarce in-situ data remains one of the most challenging issues in transboundary water resource management. Earth observation data can fill these gaps and provide continuous and reliable coverage to be used for water resource planning at national and basin levels and for cross-border applications.

The CIWA Digital Data Initiative aims to better understand the current state of data availability and its use among end users such as river and basin organizations. The initiative identifies gaps and creates opportunities – such as for the potential development of a water accounting application – while also promoting data sharing platforms and services and increasing user capacity for data collection, analysis, and distribution. This demand-driven initiative connects end users' needs and solutions, generated from the bottom up, with possibilities offered by new top-down methods and technologies.

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Strategic partnerships are helping to build awareness among governments and articulate the needs of users and potential data providers. In FY20, CIWA focused on strengthening its collaboration with key organizations such as the African Network of Basin Organizations (ANBO), the Digital Earth Africa initiative, the Global Partnership for Sustainable Development Data, and IWMI. CIWA continues to work closely with regional organizations such as ANBO, IGAD, and SADC to assess their status regarding data and its applications, as well as their technical capacity and vision to further improve data use.

Over the next year, the CIWA Digital Data Initiative will launch a survey and assessment of the achievements of the regional centers over the past 5 to 10 years around data collection, analysis, and applications to improve decisionmaking processes. A series of workshops are planned to collaboratively set realistic milestones with the centers and build on the outcomes of this demand analysis. In addition, new products will be defined and implemented to scale up methodologies and tools to meet the needs of the regional centers and organizations.

Enhancing Communications

CIWA focuses its communications efforts on enhancing visibility and raising awareness on transboundary cooperation and cross-cutting issues – e.g. climate change, gender, social inclusion, and FCV – addressed by its programming. By creating a cohesive strategy and a community of practice, CIWA has spearheaded outreach, engagement, and advocacy to targeted stakeholders. Using various audiovisual and written tools such as short documentaries, blogs, social media, and animations has helped propagate the value and importance of transboundary cooperation and effective water resource management in the continent.

CIWA communications propagate the value and importance of transboundary cooperation and effective water resource management in the continent.

In a major step, CIWA's website has been overhauled. The site, www.ciwaprogram.org, is now interactive, linking live data that is easy to access, and available in English and French, given the importance of francophone projects.

CIWA developed a new communications strategy to reach the right audiences with the right messages. The strategy identifies key stakeholders, audiences, messages, media platforms, and channels, enabling the team to create and target content effectively. A detailed monitoring and evaluation framework is included in the strategy to gauge the effectiveness of the messages, media platforms, and activities. The monitoring and evaluation results will inform future development of implementation plans.

CIWA's new communications strategy also includes a stronger focus on our involvement with media and partner institutions. The goal is to empower our partners and media to be effective communication intermediaries on issues related to transboundary cooperation. With adequate capacity, CIWA believes that the media and partner institutions can reach wider audiences and shape positive opinion in the areas of sustainable water resource development and management, climate change variability and biodiversity, and gender and social inclusion. The program is planning regional and national-level workshops and seminars to influence and encourage greater dialogue around pertinent transboundary themes and practices.

Gender Equality and Social Inclusion (GESI)

CIWA's work on GESI has gained momentum as regional institutions responsible for transboundary water management increasingly respond to the critical role of gender equality and women. However, diverse challenges remain, including lack of capacity, insufficient funding, and a lag in moving from commitments to implementation. CIWA will therefore be innovative in identifying measures at the institutional and project levels to support the efforts of its partner organizations to translate their GESI commitments into concrete actions.

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NEW STRATEGIC DIRECTION

As CIWA scales up engagements in countries in the HoA and the Sahel, it is working in environments where issues of gender inequality are even more acute. CIWA's work in these sub-regions will require undertaking gender analyses to understand how to address gender dimensions in fragile and conflict-affected states. Issues connected to conflict and migration will require social inclusion analyses to ensure that the specific water needs of vulnerable populations are addressed.

The recent engagement of a GESI expert reflects CIWA's commitment to make transformative changes. CIWA will help ensure that technical input, coaching, training, and development tools and resources support the work of project teams and their counterparts. Currently, CIWA is applying a GESI lens to all new project concept notes, and research has been conducted to understand the challenges and recommended ways to adopt a transformative approach to gender equality across CIWA program activities. Overall, a transformative approach will mean moving away from one-off interventions toward a more comprehensive approach that recognizes the need to tackle the root causes of inequalities in social and power relations, behavior norms, and structures that underlie social inequalities.

In FY20, CIWA conducted a baseline study to guide planning for its future GESI work. Key findings from the survey include the need to expand reporting beyond the annual report, provide training and coaching to CIWA teams and their counterparts, and improve monitoring

"The low participation of women, in my opinion, emanates from education and career choices as the water sector is perceived as a technical field and women are seen as users rather than planners and developers. We need more role models to encourage women to enter the field, especially at the grassroots. Gender-inclusive government policies are necessary to encourage more women to study relevant qualifications that will allow them to join the water sector."

Beatrice Kanyamuna-Pole

Senior Hydrogeologist, Zambia Department of Water Resource Development, who is involved with the Chongwe groundwater mapping and wellfield development pilot project with SADC-GMI

and evaluation efforts. In addition to collaborating with the Bank's Water Global Practice, CIWA will explore partnerships with external organizations working to integrate gender concerns into transboundary water management.

The social inclusion³ dimension of CIWA's work is still at the preliminary stage, with limited integration into the institutional and technical levels. CIWA aims to address this shortcoming by conducting training, providing one-on-one and team coaching, developing tools and resources to enable the identification of specific vulnerable groups, and providing technical guidance to project teams on how to address these vulnerabilities.

³ Social inclusion refers to the consideration of the attributes of people's identities, in addition to gender, to purposefully maximize equitable access to project services. Major identities that typically affect access to services include age, gender, marital status, socioeconomic status, and ethnicity, but other factors like disabilities may be relevant, depending on the nature of the service.

LOOKING AHEAD

CIWA was established on the premise that transboundary cooperation is a complex, challenging, and lengthy process that requires the collaboration of various stakeholders. We are committed to helping our partners weather setbacks, address difficulties, and build back better by going beyond project-based support. We know that challenges are a part of the ecosystem for developing and managing transboundary water resources, and CIWA has a vital role to play as it provides a collaborative platform, builds technical know-how, and addresses issues that influence decisions around water.

As the demand for support is growing, CIWA is committed to supporting the plans and initiatives of African institutions in addressing critical challenges to achieving the SDGs. This holds true especially for SDG-6, which aims to fulfil the growing need and demand for water through sustainable development and management of water resources. Transboundary water resources play a significant role in achieving the continent's SDG-6 targets, and we need to work collaboratively in addressing critical challenges and sharing the benefits of water resources equitably.

CIWA will continue to build transboundary cooperation by improving access to information, strengthening institutions, and identifying, preparing, or mobilizing sustainable investments. We maintain a dual approach of continuity and change by leveraging both long-term engagements in priority basins with short-term strategic projects. Continuing our focus on FCV hotspots such as the HoA, Lake Chad, and Sahel will help CIWA partners address some of the underlying water resource-related risks hindering stability and development in some of the most vulnerable regions in the world.

The new short-term strategic opportunity emerged during Sudan's 2020 floods. The worst flooding in over a century has led to humanitarian catastrophe adding to the transitional governance, massive economic inflation, and the COVID-19 virus that has infected over 13,000 Sudanese as of September 2020. In addition to riverine flooding from the Nile River, several transboundary/ domestic seasonal rivers and wadis have severely impacted lives of more than 820,000 people across the country.

CIWA is providing just-in-time support to Sudan, which includes logistical assistance for a rapid damage assessment, deploying short-term experts, coordinating efforts for the Emergency Operations Committee by supporting data collection. Through this support, CIWA is also preparing a recipient executed grant activity that will include strengthening flood forecasting and early warning, improving safety of water harvesting and flood management structures, and institutional capacity building for government agencies. The project will aim to address underlying causes of vulnerability to floods.

We are expanding our efforts toward climate resilience through our new analytical and knowledge initiatives, which will help shape evidence-based decisions and use cutting-edge technology, applications, and modelling to mitigate the impacts of climate change.

COVID-19 has put a spotlight on the critical nature of a safe and secure water supply. With water resources under growing pressure due to climate change and population growth, the pandemic further underscored the importance of sustainable and equitable transboundary water resources management. The CIWA program understands these demands and continues to seek ways to support transboundary water resources cooperation. Nevertheless, CIWA acknowledges the need to remain flexible to be able to effectively meet client demands and to rethink the way we traditionally operate due to COVID-19. By proposing alternatives, adapting to the changing socioeconomic environment, and customizing our support based on the priorities of each basin, CIWA and our partners can overcome these hurdles.

As CIWA completes a decade next year and we reflect on lessons learned and what could be improved, we humbly appreciate the many successes that we have achieved with our partners, and look forward to future opportunities to help Africa unlock its potential by cooperatively developing and managing transboundary water resources for peaceful, sustainable, inclusive, and climate-resilient growth.

Cooperation in International Waters in Africa

The Cooperation in International Waters in Africa (CIWA) was established in 2011 and represents a partnership between the World Bank, its African partners and the governments of Denmark, the European Commission, Norway, Sweden, the Netherlands, and the United Kingdom. CIWA supports riparian governments in Sub-Saharan Africa to unlock the potential for sustainable and inclusive growth, climate resilience, and poverty reduction by addressing constraints to cooperative management and development of international waters.

www.ciwaprogram.org

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