Annex B – Regional Engagements and Projects

Contents

Digital Data Initiative

Transparently generated and trustworthy data about transboundary water resources is critical to transboundary cooperation. CIWA's three pillars of *Investment, Institutions*, and *Information* are generally implemented at the basin or sub-regional level. However, the nature of the current global technology and data revolution creates the potential for scaling-up some of CIWA's information related support across the whole region.

The technology and data revolution is driven by several underlying and related trends, including:

1. More and better **sensors** that are improving the quality and amount of data that can be collected. This includes, *inter-alia*, remote sensing-based on satellites or drones, mobile phone-based data collection, and small cheap automated sensors connected to the 'Internet of Things'.
2. Increased **access** as data is shifted to the cloud. The constraint in low-income or limited capacity areas becomes internet access rather than many, many computers with many, many local problems.
3. Data **integration** as more and more data are presented as 'feeds' of machine-readable data (via Application Processing Interfaces or APIs). One application may retrieve live data from multiple sources in multiple places to provide the user with a single integrated perspective.
4. Growing **computing power** as a shift to online processing means there is potentially a super-computer everywhere.
5. **Price** – more and more data are free, and more and more tools are open-source. In addition, technological innovation means that the cost of everything from sensors to services becomes more and more competitive.
6. The growth in the number of practical **applications** is increasing the understanding of a much broader set of people, which encourages investment in applications, which in turn increases the broader understanding.

This combination of factors creates huge opportunities for improving data about water resources, and particularly for transboundary basins, where building a reasonable picture of shared water resources becomes much easier. However, the challenge is the size of the gap between the *potential* of these tools and the actual *use* of these tools.

The digital data challenge, as discussed as the 2018 CIWA Advisory Committee meeting, is how to move beyond a 'retail' project-by-project approach and toward a more 'wholesale' or regional approach. CIWA committed to explore how best this might be done, including through partnerships. This would build on the experience that CIWA has already gained in supporting remote sensing applications in the Lake Chad, Niger, and Nile basins.

FY19 Progress and Observations

During FY19 CIWA started the development of partnerships with:

- The African Minister's Council on Water (AMCOW), with a focus on building awareness among governments;
- The African Network of Basin Organizations (ANBO) with a focus on helping member basin organizations articulate their needs and apply solutions;
- The Digital Earth Africa initiative and the Global Partnership for Sustainable Development Data, with a focus on a regional data cube for Africa; and,

- The International Water Management Institute, with a focus on remote sensing-based water accounting.

At the basin level CIWA is exploring applications of remote sensing-based water accounting with Nile Basin Initiative (NBI) and dam optimization with the Zambezi Dam Owners Joint Technical Operations Committee. These applications are starting from the beginning with a view to scaling-up the methodology and tools beyond the initial client as rapidly as possible.

Horn of Africa

CIWA has a fast-growing portfolio in the Horn of Africa that includes a regional groundwater initiative to be implemented by the Intergovernmental Authority on Development (IGAD) as well as technical assistance for Somalia on transboundary water resource management. During FY2019 the ground water initiative was approved, while the Somalia work advanced quickly.

Regional Groundwater Initiative

The objective of the Horn of Africa Groundwater Initiative (P169078) is to support selected IGAD countries prepare for the development and management of groundwater through strengthening knowledge systems, building country and IGAD capacity, and assessing the feasibility of specific investments. Groundwater is a vital – and often the only – water resource available to many of the poorest people across the Horn. The sustainable development and management of groundwater is therefore vital to poverty reduction and to strengthen resilience of the inhabitants of the region against climate extremes.

FY19 Progress and Observations

During FY19 the project was prepared and approved. The project will strengthen the knowledge and analytical foundation for sustainable development of groundwater resources in the greater Horn of Africa region and supports transboundary cooperation for its management. The project will (i) building on related work, support the compilation of groundwater information from existing regional and in-country studies (including gray literature) into a regional knowledge base to identify opportunities for investments creating economic growth; (ii) conduct a regional hydrological assessment of the surface and renewable groundwater potential, considering their spatial and temporal variability, as a basis for investments aiming at building resilience against climate variability (iii) building on the regional knowledge work, the project will conduct a case study at the level of a river basin, integrating all knowledge on surface and groundwater potential to create shared understanding of the opportunities, risks, costs, and benefits of cooperative development and management of international waters among stakeholders; (iv) strengthen the capacity of IGAD Water Unit to support regional cooperation on groundwater management and enhance the capacity of IGAD's Climate Prediction and Application Centre (ICPAC) in the area of groundwater data management and assessments.

Project implementation is underway. Two important activities – the preparation of terms of reference for feasibility studies (and associated environmental and social impact assessments) of Mt. Elgon, Merti, and Bagara Aquifers — are largely complete and procurement will be launched in October 2019.

Somalia Transboundary Water Resources Management

The objective of the Somalia: Support to Transboundary Water Resources Management project (P167749) is to provide technical assistance to the Federal Government of Somalia (FGS) to articulate its water resources development options for the Juba and Shebelle basins, as well as to structure its transboundary agenda and explore and use the appropriate avenues to pursue dialogue. This initial phase is Bank-executed, with the intention of moving to a recipient-executed approach once the foundations are in place.

The Bank-executed phase finances a senior technical advisor as well as a variety of capacity building activities. Initially the focus is on the assessment of the existing situation and identifying practical steps forward for shared water resources management, as well as data and information needs.

The first component, as part of the capacity building for the government of Somalia (particularly to Ministry of Energy and Water Resources), is supporting a number of meetings and consultations between the federal government and member states, as well as support different modules of short- and medium-term 'on the job' and external training for staff.

The second component supports the FGS to explore dialogue with its neighbors on transboundary waters, including:

- Consultative meetings between technical staff from the relevant countries
- Trust-building, experience-sharing and learning events for technical staff from the relevant countries as part of technical meetings, or as separate events
- Supporting the participation of officials and experts from the relevant countries at regional meetings and learning events

Learning and experience gaining sessions are ongoing (Kazakhstan Astana 9–12 October 2018, Geneva September 3-4, 2019), and the preparation of several water resources related concept notes project proposals in underway.

The FGS has established a multi-agency transboundary team under the Office of the President to provide a coordinated approach to exploring transboundary dialogue, and there is strong demand from the FGS to expand the original support. This includes a request for support to develop a broader water resources model for Somalia, as well as to contribute to the preparation of a National Water Strategy for Somalia. Given the centrality of the Juba and Shebelle river systems to Somalia's water resources (they are the only two perennial rivers in Somalia), this broader 'integrated water resource management' approach makes technical sense. Following discussions with management and CIWA donors, CIWA is currently expanding this program

Looking Forward

Political progress in the Horn of Africa has created the space for deeper cooperation, including around transboundary water. CIWA support is growing rapidly, but at the same time there is a need to be both pragmatic about capacity and deliberate about a step-by-step process for scaling-up support. At present five states – Djibouti, Eritrea, Ethiopia, Kenya and Somalia – are in dialogue with each other and with the African Development Bank, European Union and the World Bank about a program of large-scale regional investments. CIWA will be contributing to this process on issues related to transboundary surface and groundwater to ensure that there are feasible and sustainable opportunities for regional investment in water resources across the Horn.

Niger

The objective of the Niger River Basin Project (P149714) is to **strengthen the institutional framework for regional cooperation in water resources in the Niger River Basin.** The project has two components: supporting the Niger Basin Authority (NBA) to sustainably deliver its mandate and facilitating evidence-based decision-making for large transboundary infrastructure in the Niger Basin.

FY19 Progress and Observations

Efforts to **strengthen the institutional and organizational systems** of NBA have been ongoing. The Bank-executed complementary institutional analysis, which started in April 2018 with a participatory self-assessment exercise, was completed in April 2019. It was presented by the NBA Executive Secretary during a round trip to the Ministers of the nine member countries in June and July 2019 to sensitize them in view of the Summit of Heads of State to be held in Conakry in October 2019. Key measures proposed and advocated are: (a) increased transparency of NBA budgetary management through a direct reporting mechanism to the Council of Ministers; (b) the NBA's water related functions are confirmed as pivotal (c) the NBA will strengthen its capacity to assist countries in the development of dams while mainstreaming the equitable water sharing, prior notice principles as well as consideration for environmental and social issues.

One of the project objectives was a **complementary financing mechanism** endorsed by member states. Restructuring of the project in June 2018 changed this to a complementary financing mechanism endorsed by a Technical Committee of the Council of Ministers. The actual setup of the sustainable financing mechanism for the NBA is not an objective of this project but would be supported under future engagements. An initial proposal to enhance the NBA's financial autonomy based on a hydropower levy has been produced in May 2019 by a consultant and discussed. The legal and institutional feasibility are being examined. This will be presented and discussed by a technical committee in October 2019.

Three high level consultants were hired in February 2019 and have been working on a **methodology for decision-making on large transboundary infrastructure**. They have produced an outline in June 2019. The Methodological Note will draw lessons from the actual difficulties encountered with past and current projects and suggest ways of improving future decision-making. The specific objectives are:

- Identify the main decisions to be taken in the planning of cross-border infrastructure projects, their preparation, implementation and operation, as well as the role of the main stakeholders involved.
- Give feedback on current and past practices on some key projects (including Fomi, Kandadji, Taoussa, Kainji and Sélingué).
- Propose a set of improvement areas based on the difficulties identified as expressed by stakeholders.
- Highlight the benefits for member countries generated by decisions taken in consultation within the basin and reinforce the role of the NBA in these decisions.

The **development of a model** of the Niger River Inner Delta to understand how the services provided by this major wetland's ecosystems respond to different inflow patterns is ongoing. Implementation of the model is underway following these principles:

- Verification and re-use of existing data on flows at existing hydrometric stations in the area
- Use of satellite products for consistent information on the entire area of study

- Correction of topography anomalies (bank levels, dikes, natural thresholds) based on the comparison of the results of the model and the remote observation of the flooded surfaces or water heights

The institutional complementary analysis included a specific group **stakeholder engagement** session dedicated to receiving feedback on the National Focal Structure representatives of the member countries as well as the regional coordination of users. The consultant also drafted and used an anonymous questionnaire to collect stakeholders' opinion and suggestions on the NBA performance and desired future.

Nile

CIWA supports the NBI to help countries to develop water resources in a sustainable way to ensure win-win gains for all through various projects that facilitate cooperative activities, improve integrated water resources planning and management, and identify and prepare potential investments of regional significance.

Nile Cooperation for Results (NCORE)

CIWA's Nile Cooperation for Results Project (P130694) supports the NBI in the preparation of multi-sectoral, upstream, and cooperative regional investments that includes a pipeline of $6 billion in investments currently being advanced by the Nile countries. CIWA helps advance regional investments by creating feasibility and design studies, building data and models for international agreement decision support, and strengthening stakeholder participation. The NBI regional investment portfolio in the Nile Basin is projected to benefit over eight million people through improved watershed management, irrigation, electricity production, and water supply.

FY19 Progress and Observations

The NBI continued implementation of the first phase of a **basin-wide hydromet network**. The detailed design and implementation plan for the hydromet network was developed by the Nile-SEC in close collaboration with the countries. Between 2018 and 2021, over 50 hydrological monitoring stations in the Nile Basin will be rehabilitated, installed, and commissioned. The stations will provide real-time data on river flows, water levels, water quality, and sediment transport, as well as reservoir and lake levels. The NBI is also continuing discussions with national-level water resource management programs to ensure that the new hydromet stations identified under the plan are harmonized with and adopted by national plans.

The NBI continued to support the **Rusumo Falls Hydroelectric Project** under joint development by the Governments of the Republic of Burundi, Republic of Rwanda and United Republic of Tanzania. The Rusumo Falls dam will generate approximately 80 megawatts to be shared between the three countries. NBI and the Nile Basin Discourse (NBD) supported implementation of the Livelihood Restoration Program (LRP), aimed at developing alternative income generating activities, as well as the Local Area Development Program (LADP), covering the five districts surrounding the Rusumo project.

Regarding the Nile Equatorial Lakes investments, in the FY19 period the NBI completed the **feasibility and preparation studies** for Mara Valley and Ngono Multipurpose projects in Tanzania, Sio-Sango Water Resources Development project in Kenya, and the Kabuyanda Water Resources Development project in Uganda's Kagera Basin. The studies were handed over to partner countries and a roadmap has been agreed by the riparian countries on the preparation of Nile Equatorial Investment Program (NELIP).

As reported previously, Eastern Nile governments have prioritized four **watershed management projects** in Sudan and Ethiopia prepared by the NBI. This year the NBI undertook an evaluation of the success of various pilot livelihood-based integrated watershed management interventions to inform riparian-led scale up of select best and most viable practices and training practitioners on lessons learned. This Multi-Sectoral Investment Opportunity Analysis is the first attempt to aggregate all water investment plans in the Eastern Nile and analyze them in the context of all (measured) water availability, while factoring in climate change predicted alternative scenarios, therefore ultimately attempting to

regionally optimize and prioritize investments. The reports: Watershed Management Impact Assessment for Scaling-up, Groundwater Availability and Conjunctive Use Assessment, and Irrigation System Performance Assessment and Options for Improvement were completed in FY19.

The **Flood Forecasting and Early Warning (FFEW)** system has regularly produced daily and weekly Forecast Reports for Lake Tana Floodplains (Ethiopia), Blue and Main Nile System (Sudan) and Baro Akobo Sabat floodplains in Gambella. The flood models built for FFEW has been improved through technical assistance on flood mapping using satellite images and historical flood maps. Current work includes: (i) near real-time flood mapping to be incorporated in the FFEW report and (ii) the use of satellite-based precipitation data to detect the flooded area on the ground and expanding trainings on the basics of flood mapping to the Nile Equatorial Lakes region.

The NBI has pioneered **dam safety** standardization in Sub-Saharan Africa and, in FY19, achieved adoption of its Reference Dam Safety Guideline and Regulatory Framework world-wide by the International Commission on Large Dams. In FY19, NCORE supported more than 200 planners, policy makers, dam owners, dam operators, academia, civil society representatives, and young professionals from Eastern Nile, as well as other African countries, to be trained in on-site dam safety assessments. Additionally, NCORE supported the development of dam safety guidelines and national dam safety departments in Ethiopia, Sudan, and South Sudan.

The **internship and young professionals mentoring programs** at the NBI have creating practical networks for Eastern Nile water resources professionals, enriching their technical base and enhancing national capacity. The programs facilitated collaborations among Egyptian, Ethiopian, South Sudanese and Sudanese Universities, increased the visibility of NBI. Since the programs began in 2011 the number of participants now exceeds 150 people, who took part in 12 cohorts. In total, ~ 20% are of participants have been women (over 50% of the 46 Sudanese participants were women!), a ratio that far exceeds the ratio of women to men hydrologists in the region.

Nile Basin Discourse (NBD)

The Engaging Civil Society for Social and Climate Resilience in the Nile Basin Project (P132448) supports the Nile Basin Discourse in providing a platform for citizen engagement in Nile Basin investment decisions and riparian dialogue, promotes awareness of the benefits of Nile Basin cooperation, and contributes to climate resilient growth in the region.

FY19 Progress and Observations

The NBD has continued to use its **outreach to civil society organizations** primarily through

its website. User-generated content received from each country National Technical Support Expert has ensured that topical issues are shared with the basin countries. The issues and contents of submissions covered several topics that indicated resilience to climate change including protection of the environment through tree planting, women's rights, engagement of youth in waste management, challenges and opportunities of water hyacinth on the Nile waters, climate change impacts and mitigation/adaptation measures, etc.

The NBD launched its 2018-2022 **strategy and financial sustainability** development process in February 2017. The final strategy incorporating all the comments of key stakeholders was submitted to the NBD Secretariat in August 2018.

The strategy was pivotal in the resource mobilization that led to NBD being one of the co-partners with IHE-Delft Seed Funding by Coca-Cola. "Women and Water in Communities for Change", grant Seed Funding (SF) from the Coca-Cola Foundation was received to implement activities running in the period of 20 months, September 2017-August 2019. In this case, groups of women and youth from the Mabamba Bay wetlands (Uganda) and Mara River wetlands (Tanzania) funded by the SF, participated in a CIWA-funded capacity building training on climate change resilience and entrepreneurship for women and youth. As a result, the capacity building has led to the formation of the Mara Mori Catchment Forum (MAMOCAF), which has been identified as a grassroots action for NBD. MAMOCAF has been established as a new platform to engage stakeholders in the catchment management process, an activity for which NBD is mandated.

Based on the experience with the CIWA-funded project, NBD was invited by The Friedrich-Ebert-Stiftung, Kenya Office in cooperation with the Pan African Climate Justice Alliance (PACJA) and the Stockholm International Peace Research Institute (SIPRI) to contribute to the "First Horn of Africa Climate Security Working Group workshop". The **knowledge-sharing** workshop took place in Nairobi, May 2019. The May 2019 working group unpacked the complexity of conflict and its relationship with climate change – how conflicts transcend borders and generally how the two issues can be weaved together and to identify necessary, comprehensive and potentially complementary regional mechanisms on different levels to address climate change related conflicts in the Horn of Africa.

NBD is a member of the Hydropower Congress Council, through the International Hydropower Association. On this basis, NBD was invited as a panelist to the World Hydropower Congress May 2019 on the topic "River basin development: Understanding connectivity, cumulative impacts and improved trade-offs". The objectives were to discuss the upstream and downstream effects of hydropower facilities' operational schemes and how cumulative impacts influence decision-making. At these panel discussions NBD shared the experience and lessons learned on multipurpose investment projects that entail hydropower. Project beneficiaries get affected by climate change, conflicts and end up migrating, which affects implementation plans. Leadership competency strengthening for the Secretariat commenced in May 2019 and will be continued in FY20.

Stakeholder engagement with transboundary communities on the Lakes Edward and Albert Integrated Fisheries and Water Resources Management (LEAF-II) Project was organized in December 2018 by the NBD in collaboration with the Uganda and D.R. Congo National Discourse Forums. The platform created awareness and an opportunity for the project beneficiaries and stakeholders to learn about the project's transboundary benefits, successes, and challenges to date. For purposes of monitoring the results of the platform, a declaration was issued and published on the NBD's website.

The Transboundary Stakeholders' Consultation platform on the Baro-Akobo-Sobat (BAS) Multi-Purpose Water Resources Development and Management Project was organized in December 2018 by NBD in collaboration with the Ethiopia and South Sudan National Discourse Forums. The objective was to facilitate a transboundary platform of engagement for sharing experience, learning and understanding the stakes and responsibility in the BAS project. Awareness was created at the platform on hydropower potentials of the BAS basin, the BAS projects design and status, the BAS multipurpose water resource

development feasibility study, the communities' engagements on the BAS project, and the appropriate stakeholder engagement modalities in development interventions in transboundary waters.

SADC

The objective of the Sustainable Groundwater Management in Southern African Development Community (SADC) Member States Project for Africa (P127086) is to support sustainable management of groundwater at national and transboundary levels across SADC Member States. The project has four components:

1. Operationalizing the SADC Groundwater Management Institute (GMI)
2. Strengthening institutional capacity for the sustainable management of groundwater in SADC countries
3. Advancing knowledge on transboundary and national groundwater
4. Promoting groundwater infrastructure management and development

FY19 Progress and Observations

The SADC region is affected by climate change in part by repeated and protracted droughts, impacting food security, energy production, access to water for domestic and other productive uses, and ecological services. **Improving knowledge and understanding** of national and transboundary aquifers is essential to improve sustainable conjunctive use of surface and ground water. The SADC project is working to better understand transboundary aquifers (TBAs) in the SADC region. So far only three out of 30 have been comprehensively studied in order to understand their full groundwater potential especially at transboundary level. FY19 saw the beginning of implementation of the Shire Transboundary River/Aquifer system project to identify and develop joint strategic conjunctive management of the shared surface and groundwater resources – a project in accordance with the SADC Soil and Groundwater Management Plan. SADC-GMI will need to access additional funds in order to undertake more studies of the TBAs to generate readily available decision-making information for regional policymakers to help address the impacts of climate change.

Demonstrating itself as a **strong institution** well-placed to address groundwater issues in the region, this year SADC-GMI completed, began, or continued ongoing projects with several organizations or RBOs in the region:

- Jointly, with the AU/Nepad Southern African Network for Water Centres of Excellence (SANWATCE) and the Institute for Groundwater Studies, SADC-GMI organized the second SADC Groundwater Conference, held September 4-6, 2018.
- SADC-GMI is working with Water Research Commission to implement the SADC Transboundary Water Cooperation Big Data Analytics pilot project also funded by RSA Department of Science & Technology and USAID and involving USGS, Sustainable Water Partnership, Winrock and IBM. The project is currently ongoing until December of 2020.
- SADC-GMI is collaborating with SANWATCE on the EU supported Water and Cooperation within the Zambezi River Basin (WACOZA) until May 2020.
- With the Africa Groundwater Network (AGW-Net), SAD-GMI delivered training on integration of groundwater in RBOs training in Lusaka and Pretoria in July ’18 and Nov ’18 respectively. Together, the two organizations are preparing the delivery of a borehole drilling supervision training (in collaboration with UNICEF) in Zimbabwe for delivery in early 2020 and organizing the roll-out of training on integration of groundwater in RBOs for Francophone countries (in collaboration with BGR & UNESCO-IHP) for delivery in early 2020.

- Notably, in December 2018, SADC-GMI and LIMCOM signed a Memorandum of Understanding for collaboration on groundwater issues in the Limpopo River Basin.

Also, in FY19, SADC-GMI participated with USAID Southern Africa and the South African Department of Science and Technology 'Big Data Analytics and Transboundary Groundwater in Southern Africa: Capacity Building and Research Collaborations.' Some preliminary results of this collaboration were presented in a special session at the second SADC Groundwater Conference held in September 2018, which included oral presentations and a panel discussion.

SADC-GMI is currently implementing the SADC Groundwater DataCoM) project, for which two young professionals from each SADC Member State are participating. In November 2018, SADC-GMI hosted the group of young professionals for five days of training and workshops. The training involved the 26 Young Professionals who, among other things, presented their final assignments for peer review by their colleagues. Part of the work done by the young professionals contributed to the content of the SADC Framework for Data Collection and Management produced in May 2019. As part of advocacy, the Executive Summary of the framework was submitted to the SADC Water Ministers' meeting also held in May 2019.

Investments Influenced

The background work of preparing technical and informational material supported by CIWA is directly informing the development and implementation of ten small grant projects worth a total of US$ 1.5 million. These investments will benefit an estimated 5,000 people through improved access to water resources.

Looking Forward

The project is destined to end on 31 December 2020. As of now, disbursements stand at about 81% and commitments are more than 90% on the full grant of $10.2 million and physical progress on all project components is impressive. Based on the success of this current project, there is an opportunity to scale up the successes achieved so far by expanding the scope of activities to make the role of groundwater an integral part of improving water security in the SADC region, especially in the wake of the negative impacts of climate change.

Proposed ideas under discussion for a new project phase include the following:

A. Institutional strengthening of SADC-GMI as a Centre of Excellence through implementation of the Financial Sustainability Plan
B. Operationalization of the Enabling Policy, Legal & Institutional Environment for Groundwater Management in SADC Region plan, including national and regional institutional capacity building and enhancing groundwater governance
C. Knowledge management and professional skills development
D. Knowledge generation through research to characterize and understand aquifers in the region
E. Promoting groundwater infrastructure development in member states through sub-grant scheme

Volta

The objective of the Volta River Basin Strategic Action Programme Implementation (P149969) was to improve the capacity of the Volta Basin Authority (VBA) for transboundary water resources management.

FY19 Progress and Observations

CIWA financing provided to the VBA allowed preparation of several investments (feasibility studies and detailed engineering design completed) for watershed restoration, riverbank protection, and sustainable livelihoods, which would benefit at least 6000 people in local communities upon implementation. These investments (totaling almost $7 million) intended to provide basin-wide, cross-boundary benefits in the six basin countries (Benin, Burkina Faso, Cote d' Ivoire, Ghana, Mali, and Togo), by improving water quality, flow regulation, ecosystem improvements, and development of sustainable livelihood activities. While these investments could not be advanced, the project successfully provided training in FY19 on environmental science and capacity building for 200 Civil Society Organizations from six countries in the project area. It also brought together ~100 participants from key strategic partners in the Organization of the Stakeholders' Forum in April 2019.

A key achievement of ABV in FY19 is the validation of the Volta Water Charter, and its subsequent endorsement by the Council of Ministers in May 2019. National workshops were subsequently organized for increasing the awareness on the Water Charter. ABV's achievement in this component exceeded the project target.

The CIWA-supported diagnostic of the communications of VBA, begun in 2017, was also completed in FY19, with 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 harmonized data among stakeholders to communicate the basin's needs, resources, and trends under a changing climate. CIWA has supported the VBA to help share studies and knowledge products ranging from regional planning documents to more technical studies on water resources management, climate risks, and water economic infrastructure in the region, both through an improved VBA website and through direct interactions and participation in other international workshops.

The project closed at the end of August 2019, and since the Volta is no longer one of CIWA's priority basins, there are no immediate plans for a follow-up activity.

Zambezi

The Zambezi basin is one of CIWA's 'priority basins' and CIWA has been supporting the Zambezi River Commission (ZAMCOM), the Zambezi Basin Authority (ZRA), as well as some Bank-executed analytic work. The last financial year saw much of this work being completed.

The Zambezi is potentially one of the most effected basins by **climate change** in Africa. A World Bank managed study analyzed possible changes in precipitation and runoff due to climate change for the Zambezi, with a focus on the risks for the Batoka Gorge scheme. Risks could include upstream land-use changes and water abstractions, energy price fluctuations, and differing development scenarios. Extreme flood and drought were also considered as performance risks as their likelihood increases as the climate changes. The study was completed in 2019.

Zambezi River Basin Management Project

The Zambezi River Basin Management Project (US$4 million, implemented by ZAMCOM) supported **strategic basin planning**, **decision support systems**, and **institutional strengthening** activities. These activities have been completed during 2019 and ZAMCOM now has a clear plan, better data and decision-making tools, as well as policy options on how to operationalize and advance the transboundary water resources development and management agenda of the Zambezi basin's countries.

The Strategic Plan has been prepared with two planning horizons: (i) Short-term 2018 -2027 and medium-term 2028 – 2040. The Infrastructure Investment Component has four programs comprising national and transboundary projects including: a) hydropower; b) agricultural water; c) water supply services and d) catchment and natural asset management. The strategy proposes projects in these four areas totaling to USD28.2M

The legal studies supported under this project have been approved by the ZAMCOM Technical Committee and will be used to shape future institutional arrangements for infrastructure development across the Zambezi basin and the SADC region more broadly.

Zambezi River Basin Development Project

The US$6 million Zambezi River Basin Development Project supported **infrastructure development preparation**, including detailed feasibility, environmental, and social studies, as well as transaction advisory services for the Batoka Gorge hydropower project. The 2,400MW project is on the Zambezi river upstream of Kariba. The grant recipient was the Zambezi River Authority (ZRA), a bi-lateral organization established by Zambia and Zimbabwe with responsibility for development of the shared sections of the Zambezi River between the two countries as well as for the management and operation of the Kariba Dam.

The project was impacted by several technical, capacity and scope of works changes that had led to three project extensions and the need for additional financing. Additional contract costs arose from four factors: a) some changes in scope required as the technical work has progressed; b) more and more intensive meeting and consultation schedule for the consultants compared to what had been anticipated; c) delays in project implementation derived from decision-making procedures inherent to the bi-national client; and d) appointment of the African Development Bank (AfDB) as the lead financial

arranger, which meant that the AfDB needed to take on some of the transaction advisory work being supported by the project and necessitated a change to this project's scope.

In late 2018 the two governments formally decided to adopt a Build, Operate and Transfer approach for the Batoka Gorge scheme in order to accelerate its development. In their formal notification to the Bank, the two governments noted that this represented a departure from the previous plan to publicly finance the dam and privately finance the two power stations via Special Purpose Vehicles, but that these changes were necessary given changes to their prevailing economic conditions, including the negative impacts of importing electricity on the balance sheets of the two energy utilities.

Together, these changes represented a significant departure in the overall approach originally envisaged under this project, and thus made it difficult to proceed with additional financing. The studies have continued with the same firms and under the same terms of reference, which ZRA have financed themselves. Final drafts of all studies were complete by September 2019, and they will be publicly disclosed upon finalization.

The Bank's formal self-assessment rated the project as 'Moderately Satisfactory' at close – recognizing that the objectives of the project were being met but with considerable delays.