

REPORT: Webinars on PIDA-PAP II Priority Water Projects

Held on 6 May and 18 May 2021



List of Commonly Used Acronyms

AfDB	-	African Development Bank
AIP	-	Continental Africa Water Investment Programme
AMCOW	-	African Ministers Council on Water
AMU/UMA	-	Arab Maghreb Union
ANWIN	-	African Network of Women in Infrastructure
AUC	-	African Union Commission
AUDA-NEPAD	-	African Union Development Agency – NEPAD
CAPEX	-	Capital Expenditures
CAR	-	Central African Republic
CBLT	-	Lake Chad Basin Commission
CICOS	-	International Congo Ubangui Sanga Commission
CWA	-	Central Water Authority
DGNRE	-	Directorate General for Natural Resources and Energy
ECA	-	Economic Commission for Africa
ECCAS	-	Economic Community of Central African States
ECOWAS	-	Economic Community of West African States
ESIA	-	Environmental and Social Impact Assessment
DBSA	-	Development Bank of Southern Africa
DMA	-	District Metering Areas
GWPSA-ACU	-	Global Water Partnership Southern Africa and Africa Coordination Unit
IGAD	-	Intergovernmental Authority on Development
IPPF	-	Infrastructure Project Preparation Facility
LBWT	-	Lesotho Botswana Water Transfer
LHWP	-	Lesotho Highlands Water Programme
MEAH	-	Ministère de l'Eau, de l'Assainissement et de l'Hygiène
NELSAP	-	Nile Equatorial Lakes Subsidiary Action Program
NVD	-	Noordoewer-Vioolsdrift Dam
NWSAS	-	North-Western Sahara Aquifer System
OPEX	-	Operating Expenditures
ORASECOM	-	Orange-Senqu River Basin Commission
PCDEAH	-	Le Plan Communal de Développement, chapitre EAH
PIDA PAP 2	-	Programme for Infrastructure Development in Africa Priority Action Plan 2
PPF	-	Project Preparation Funds
PPP	-	Private Public Partnership
PQL	-	PIDA Quality Label
PWC	-	Permanent Water Commission
REC	-	Regional Economic Community
RBO	-	River Basin Organisation
RPSC	-	Regional Project Steering Committee
RSA	-	Republic of South Africa
SADC	-	Southern African Development Community
SAP	-	Strategic Action Programme



AUDA - NEPAD
AFRICAN UNION DEVELOPMENT AGENCY



SCADA	-	Supervisory Control and Data Acquisition
SDM	-	Service Delivery Mechanism
SIDS	-	Small Island Developing States
STC	-	Specialised Technical Committees
ToR	-	Terms of Reference
VBA	-	Volta Basin Authority
WWF	-	World Wide Fund for Nature

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Executive Summary

1.0 Overview

- 1.1 The Programme for Infrastructure Development in Africa (PIDA) of the African Union is a continental strategic framework for infrastructure development in Africa. It has been developed to assist Regional Economic Communities (RECs) and Member States in contributing to a prosperous, peaceful and integrated Africa, based on inclusive growth, enough decent jobs, and sustainable development in accordance with the aspirations of the Africa Agenda 2063. PIDA establishes a common vision, framework, and global partnership to put in place an inclusive, cost-effective, and sustainable regional infrastructure base to promote Africa's socio-economic development and integration into the global economy.
- 1.2 Sixty-nine transboundary infrastructure projects were adopted by Heads of State at the African Union Summit in February 2021 as part of the PIDA Priority Action Plan 2 (PIDA-PAP 2), and are prioritised for implementation 2021 – 2030. Of these, 16 are water infrastructure projects.
- 1.3 In order to take the PIDA-PAP 2 projects forward, AUDA-NEPAD convened regional kick-off meetings with PIDA-PAP 2 project owners on 6 May 2021, followed up by sectoral meetings on 7 May 2021. Global Water Partnership Southern Africa and Africa Coordination Unit (GWPSA-ACU) supported AUDA-NEPAD in the organisation of the water sector meetings. The first water sector meeting was held on 7 May, followed up by a webinar on 18 May ensuring that all projects were covered.
- 1.4 The objective of the water sector meetings was to provide water sector project owners the opportunity to present on the status of project implementation and to discuss the level of support needed to advance the project. Specific requirements for each project to move to subsequent stages of the project cycle were discussed, noting the issues that need support from AUDA- NEPAD and partners.
- 1.5 The meeting also focused on presenting the PIDA Water Resource Mobilisation Strategy, which was developed by GWPSA-ACU and AUDA-NEPAD under the auspices of the Continental Africa Water Investment Programme (AIP).
- 1.6 The two meetings were attended by 214 participants collectively, representing African water sector stakeholders, RECs, River Basin Organisations, African government departments, United Nations (UN) agencies, and development organisations. A full list of attendants is provided in Annex 1.

2.0 Outcomes

- 2.1 Project owners provided updated project status, detailed project contexts, and highlighted areas of support on the following PIDA-PAP 2 water projects:

2.2 Regional projects

Northern Africa - Arab Maghreb Union (UMA)

- Using solar and wind energy to extract groundwater in the pastoral wells in the western region of the Jafara Plain (Libya and Tunisia)

Central Africa - Economic Community of Central African States (ECCAS)

- Construction du barrage et aménagement de la centrale hydroélectrique de Palambo (Central African Republic, Congo Republic, Democratic Republic of Congo)
- Operacionalização das estações hidrométricas de São Tomé e Príncipe (Sao Tome and Principe)

Eastern Africa - Intergovernmental Authority on Development (IGAD)

- Dawa River Multi-purpose Dam (Ethiopia, Somalia, and Kenya)
- Angololo Multipurpose Water Resources Development Project (also known as Angololo Dam) NELSAP (Kenya, Uganda)

Southern Africa – Southern Africa Development Community (SADC)

- Noordoewer-Vioolsdrift Dam (South Africa and Namibia)
- Lesotho Botswana Water Transfer (ORASECOM - Botswana, Lesotho, and South Africa)
- Lesotho Highlands Water Project Phase II (Lesotho and South Africa)
- Water Supply Project in Antanambao Manampotsy (Atsinanana Region, Madagascar)
- Modernisation of water infrastructure through implementation of a telemetry, supervisory control and data acquisition system (SCADA) (Mauritius)

Western Africa - Economic Community of West African States (ECOWAS)

- Barrage à usages multiples de NOUMBIEL (Burkina Faso, Ghana, Cote D'Ivoire)
- Projet d'Aménagement du barrage à buts multiples de Fomi (Guinea)

2.3 Multi-regional projects

Central Africa, Northern Africa and West Africa - ECCAS and ECOWAS

- Mobilisation et Transfert des Eaux du barrage Bria au Lac Tchad (Cameroon, Central African Republic, Chad, Libya, Niger, Nigeria)

Central Africa and Western Africa - ECOWAS

- Etudes de Faisabilité et Approfondies sur l'Aménagement du Lac Tchad (Cameroon, Central African Republic, Chad, Niger, Nigeria)

Southern African and Central Africa - ECCAS

- Programme de soutien à la facilitation du transport par voies d'eau intérieures, à la sécurisation de la navigation fluviale et à la gestion durable des ressources en eau dans le bassin du Congo (Angola, Cameroon, Central African Republic, Congo Republic, Democratic Republic of Congo, Gabon)

Continental Project - AMU, ECCAS, ECOWAS, IGAD, and SADC

- Continental Africa Water Investment Program (AIP) on transboundary water investment projects: integrated transboundary and regional investments in Water-Health-Energy-Food Security (WHEF) which was initiated with projects in Benin, Cameroon, Tunisia, Uganda and Zambia but will target 18 countries by 2025.

2.4 The following AUDA-NEPAD political and technical instruments were discussed, as they support a broad range of issues on infrastructure project development and will be critical in progressing the water projects through the different project development stages.

- Service Delivery Mechanism (SDM) supports early project preparation.

- PIDA Job Creation Toolkit
- NEPAD Infrastructure Project Preparation Facility (IPPF)
- Continental Business Network (CBN)
- African Infrastructure Database (AID)
- Virtual PIDA Information Centre (VPic)
- African Network of Women in Infrastructure (AWIN)

2.5 PIDA-PAP 2 water projects have high level political support from the African Union.

2.6 Collaboration between GWPSA-ACU and AUDA-NEPAD will be instrumental in driving PIDA-PAP 2 water projects forward.

3.0 Recommendations

- 3.1 Bilateral meetings between PIDA-PAP 2 water project owners and AUDA-NEPAD are to be arranged as an immediate next step, with support from GWPSA-ACU. The purpose of the meetings would be to further interrogate the support areas and challenges identified for each project, in order to advance implementation.
- 3.2 The meeting underscored the demonstrable impact of the work on water infrastructure projects on the lives of African people. PIDA projects' technical facilitators and all participants were therefore urged to engage fully in the follow-up activities in order to address the identified bottlenecks and requirements.

WEBINAR ON PIDA-PAP 2 PRIORITY WATER PROJECTS

1.0 Introduction

- 1.1 The Programme for Infrastructure Development in Africa (PIDA) of the AU is a continental strategic framework for infrastructure development in Africa which has been developed to assist the RECs and Member States in advancing infrastructure, water, and energy projects. This is to contribute to a prosperous, peaceful and integrated Africa, based on inclusive growth, enough decent jobs, and sustainable development in accordance with the aspirations of the Africa Agenda 2063. PIDA establishes a common vision, framework and global partnership to put in place an inclusive, cost-effective, and sustainable regional infrastructure base to promote Africa's socioeconomic development and integration into the global economy.
- 1.2 The PIDA-PAP 2 will run 2021-2030, and is based on an inventory of projects proposed RECs and Member States and was approved by the Heads of States at the AU Summit in February 2021. To take forward the process and understand the support required by the project owners, AUDA-NEPAD organised the PIDA-PAP 2 Kick Off meeting over two sessions on the 5th and 6th of May 2021 and then on the 18th of May 2021. The PIDA Water sessions took place on the 6th and the 18th of May and GWP Africa supported AUDA-NEPAD in the organisation of these under the auspices of the AUDA-GWP collaboration.
- 1.3 The objectives of these meetings were to:
 - Present the infrastructure projects in the approved PIDA-PAP 2 priority list
 - Present the AUDA-NEPAD tools supporting the implementation of infrastructure projects
 - Present the Resource Mobilisation Strategy for PIDA-PAP 2 water and hydropower projects
 - Introduce the AIP Water Investment Scorecard, which is under development
 - Discuss the project specific information gaps that need to be addressed for AUDA-NEPAD to identify the necessary support required to move the project through the project preparation cycle to bankability
 - Update the RECs and project owners/Member States on the processes and next steps regarding AUDA-NEPAD support
- 1.4 The meeting brought together representatives from the African Union Commission (AUC), the African Development Bank (AfDB), the Development Bank of Southern Africa (DBSA), PIDA Task Force Members, Africa Network of Women in Infrastructure (AWIN), development partners, GIZ, GWP Africa regions, and representatives from the RECs and Member States. A full list of attendants is provided in Annex 1.

2.0 Welcome Remarks by Dr Towela Nyirenda-Jere, Head: Economic Integration Division at AUDA-NEPAD

- 2.1 Dr Nyirenda-Jere, Head: Economic Integration Division at AUDA-NEPAD said that efforts to support the PIDA water projects had begun in 2019 with efforts to raise the priority of water infrastructure projects among key stakeholders.
- 2.2 The webinar on 18 May was in follow up to the PIDA-PAP 2 Kick-Off Meeting on 6 May, which had experienced technical difficulties. It was designed to assist project owners understand the PIDA-PAP 2 program and the various tools they can be accessed to help projects move in the project cycle.

2.3 Key timeline of the PIDA-PAP 2 process was presented as follows:

- June 2020: 42 PIDA-PAP 2 Regional Water Infrastructure Projects submitted for consideration by the AUC, which led and coordinated the efforts on project identification, screening, and portfolio building, drawing on submissions from RECs, Member States, and Specialised Technical Committees (STCs)
- July 2020 to February 2021: PIDA-PAP 2 Project Screening process using the integrated corridor approach
- June 2020 to February 2021: Development of Implementing Strategy, Financing Strategy and Partnership Strategy
- February 2021: Endorsement and adoption of 16 Water Projects at the AU Head of State Summit as part of PIDA-PAP 2
- February 2021 onwards: PIDA-PAP 2 project support ongoing
- May 2021: PIDA PAP 2 Kick Off Meeting

2.4 Dr Nyirenda-Jere provided an overview of the full approved project list by region, also shown in Figure 1 overleaf.

2.5 Overview of regional projects were presented as follows:

Northern Africa - Arab Maghreb Union (UMA)

- Using solar and wind energy to extract groundwater in the pastoral wells in the western region of the Jafara Plain (Libya and Tunisia)

Central Africa - Economic Community of Central African States (ECCAS)

- Construction du barrage et aménagement de la centrale hydroélectrique de Palambo (Central African Republic, Congo Republic, Democratic Republic of Congo)
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- Programme de soutien à la facilitation du transport par voies d'eau intérieures, à la sécurisation de la navigation fluviale et à la gestion durable des ressources en eau dans le bassin du Congo (Angola, Cameroon, Central African Republic, Congo Republic, Democratic Republic of Congo, Gabon)

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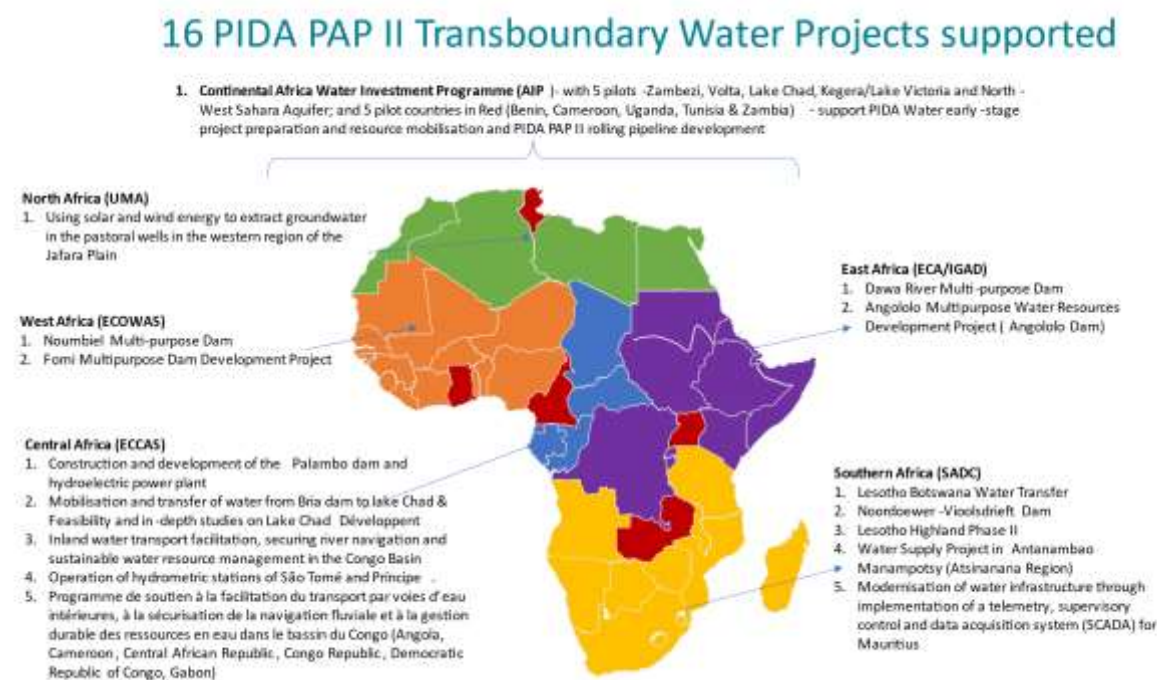


Figure 1: Approved PIDA PAP 2 Water infrastructure projects

3.0 Overview of the Continental Africa Water Investment Programme (AIP) by Mr Alex Simalabwi, Head: GWPSA-ACU

3.1 Mr Simalabwi, Head of the Africa Coordination Unit at Global Water Partnership outlined the milestones that had contributed to the development of the Continental Africa Water Investment Programme (AIP):

- The President of the UN and World Bank Secretary General co-convened a High Level Panel on Water in 2016, in order to catalyse global action on water and sanitation as a means towards achievement of the 2030 Sustainable Development Goals. In March 2018, the High-Level Panel on Water released its outcome document with a call for the launch of an Africa Water Investment Programme.

- The AIP was adopted by the Governance Council of the African Ministers' Council on Water (AMCOW) in February 2019. The Governing Council of AMCOW adopted a Decision for transformation of Africa's water investment outlook through increased partnerships and implementation of the AIP.
- The AIP was formally adopted during the 34th Ordinary Session of the Assembly of Heads of State and Government of the Africa Union in February 2021, in Addis Ababa, Ethiopia, as part of PIDA-PAP 2.

3.2 The goal of the AIP is to transform and improve the investment outlook for water security and sustainable sanitation for a prosperous, peaceful and equitable society. The objective of the AIP is to promote job creation, industrialization, and climate resilient development through gender sensitive investments in water security and sustainable sanitation services.

3.3 The high-level impact targets of the AIP are:

- \$30 billion leveraged by 2030 towards water and sanitation related investments
- 250 million people benefit from economic opportunities generated through investments
- Job Creation Toolkit for water investments operationalised
- 4 million indirect jobs for vulnerable and poor youth and women
- 1 million direct jobs created through investments in water and sustainable sanitation
- AIP Water Investment Scorecard developed and operationalised
- Bankable water infrastructure projects preparation and financing leveraged

3.4 Starting in July 2020, AUDA-NEPAD and GWPSA-ACU had developed the Resource Mobilisation Strategy for PIDA water and hydropower projects. The goals of the Resource Mobilisation Strategy are:

- Promoting the financing of PIDA-PAP 2 priority water projects to potential financiers including Public-Private Partnerships (PPPs)
- Brokering strategic linkages between project owners and suitable financiers
- Providing on-going facilitation of resource mobilisation across project preparation cycles

3.5 The Resource Mobilisation Strategy will support individual projects through:

- Strengthening Investment readiness and investor confidence by enhancing investment readiness to build investor confidence
- Enabling environment by strengthening the institutional, policy, and legislative environment for the development of the water and hydropower projects
- Capacity assessment and enhancement by ensuring technical, administrative, and institutional capacity required to undertake the project is adequate
- Securing finance by supporting project owners to secure suitable financing for each stage of the project preparation from concept development, prefeasibility, feasibility, detailed design, construction, and commissioning

3.6 Potential financiers for PIDA Water projects include bilateral agencies, multilateral agencies, and special purpose funds. The private sector can finance PIDA Water projects through grants, low concessional loans, reimbursable loans, debt, equity, public, PPPs, blended financial instruments and other innovative financing mechanisms.

3.7 The following were noted as key elements to support implementation:

- Review of the financial landscape

- The AIP technical investment facility
- Development of a resource mobilisation plan for each project
- Review of the financial landscape looking at funding tiers, as well as current and potential financiers

3.8 The AIP technical investment facility consists of the Resource Mobilisation Decision Tree, and monitoring progress with the AIP Water Investment Scorecard.

3.9 The Resource Mobilisation Decision Tree has five phases

- Phase 1: Development context assessment
- Phase 2: Resource option determination
- Phase 3: Preparation for engaging with financiers
- Phase 4: Closing agreements with financiers
- Phase 5: Financing project implementation

3.10 The AIP Water Investment Scorecard is a tool, currently under development, which tracks water investments to mobilise high level political support and leadership. It also enhances mutual accountability among African states and is anchored on supporting the AIP. It is being developed by AUDA-NEPAD, AMCOW, AfDB, GWP, DBSA, and partners with the following objectives:

- Set benchmarks and assist countries to track and increase the understanding of the water investment gap
- Display country-level performance against high-priority water investment thematic indicators for follow-up (not a static tool)
- Support countries to track progress, identify bottlenecks to be addressed to narrow the water investments gap
- Make a case to mobilise political and leadership commitment
- Accelerate and mobilise water investments to meet growing needs and narrow the investment gap
- Enhance enabling environment for water investments
- Promote accountability through tracking progress and sustaining political commitment to take action
- Serve as a tool to engage with public and private investors

4.0 Overview of the PIDA Service Delivery Mechanism by Mr Ibra Wahabou, Service Delivery Mechanism Officer in the Economic Integration Division of AUDA- NEPAD

4.1 Mr Wahabou presented the context and utility of the Service Delivery Mechanisms (SDM) for early project preparation support.

4.2 AUDA NEPAD's implementation of the SDM is by mandate of Assembly/AU/Dec.563 (XXIV), made at the AU Assembly in 2015. The Assembly of the Union endorsed, in the context of the Dakar Agenda for Action, the PIDA Acceleration Strategy (PAS) and the PIDA Service Delivery Mechanism (SDM) developed by the NEPAD Planning and Coordinating Agency (NPCA) and AUC in conjunction with AfDB, the Economic Commission of Africa (ECA), and the RECs. The decision was made to support the implementation of the Dakar Agenda for Action, focusing on early infrastructure project preparation and increased bankability of the PIDA-PAP projects.

- 4.3 The SDM project screening methodology, shown in Figure 2 below, considers both the strategic or political dimensions of a project and the technical elements. Projects are screened based on five dimensions: regional priority; sector readiness; private sector readiness; project readiness; and PPP attractiveness. The SDM project screening results from the project readiness highlight the strengths and the weaknesses to the project sponsors. When the project meets the standard criteria for early-stage preparation, the SDM will award the SDM PIDA Quality Label (PQL).

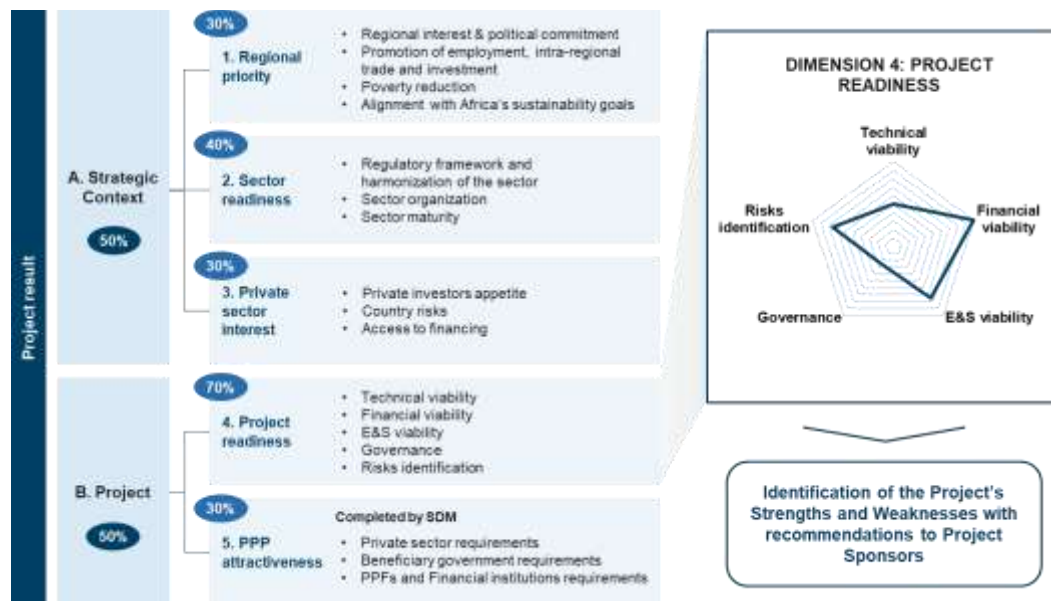


Figure 2: SDM Project Screening Methodology

- 4.4 The PIDA PQL is a quality recognition tool, and is awarded to projects that excel in early stage project preparation – the different PQLs awarded by the SDM are shown in Figure 3 below.

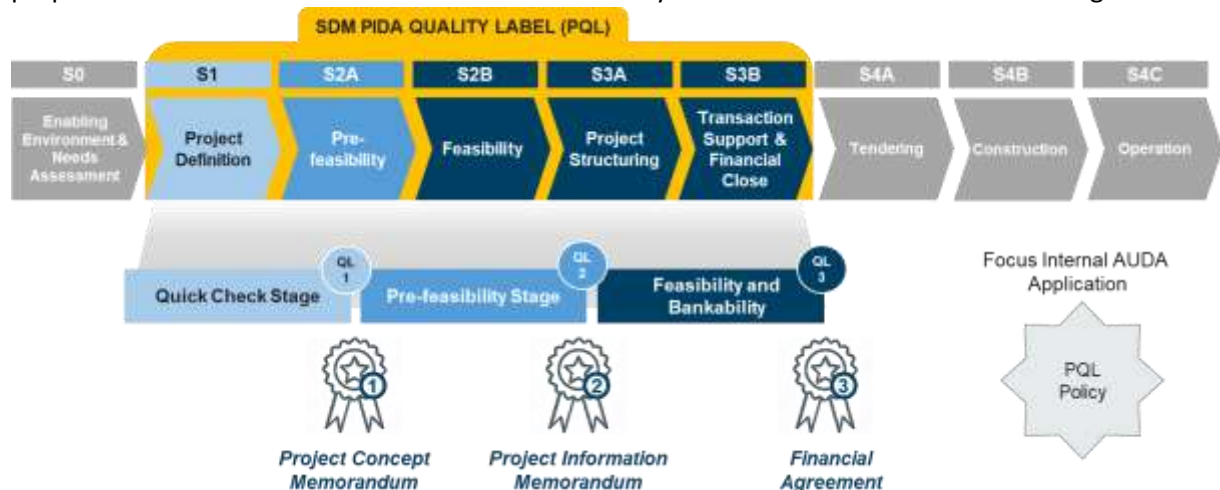


Figure 3: The SDM PIDA Quality Label (PQL)

- 4.5 The PQL has three stages, which are shown in Figure 3:

- QL1: project concept memorandum

- QL2: project information memorandum
- QL3: financial agreement

- 4.6 The SDM instrument provides services during the development phases up to financial close of a project by applying the PIDA Quality Label (PQL) tool, providing tailored advisory services; and impact assessment to maximize development impact regarding job creation. Through the provision of early-stage and upstream capacity support, the SDM aims to drive the PIDA-PAP projects from origination to feasibility, leveraging on partnerships with traditional Project Preparation Facilities (PPF), financing institutions, member states, and other stakeholders. The end goal is to 'tunnel' the projects to bankability/financial close.
- 4.7 The main direct beneficiaries of the services provided by the SDM are Member States, RECs, Power Pools, and Transport Corridor Authorities. The SDM also has a number of indirect beneficiary clients of the services it provides. These include PPFs which will receive a larger number and more mature project applications from Project Sponsors, strengthening their project pipeline. Financial Institutions will also benefit from increased quality in project preparation, and better structured projects will lead to a larger pipeline of bankable projects. More and better structured information facilitates the assessment of project risks which are in turn better addressed.

5.0 Project Status Updates

- 5.1 The following section is a summary of the key highlights and takeaways from the presentations made in breakout sessions that discussed the individual projects. The Noordoewer-Vioolsdriefft and Lesotho Water Highlands Phase 2 projects from Southern Africa were presented on 6 May, but their presentations have been included in this report in order to present a comprehensive picture of all 16 PIDA-PAP 2 water projects. During the webinar on 18 May, project owners presented the remainder projects in three geographically segregated groups:
- Small Island Developing States (SIDS) presented in plenary, facilitated by Dr Loreen Katiyo (AUDA-NEPAD Water Sector Expert: Economic Integration)
 - Francophone speaking regions (Central, West and North Africa), in breakaway session 1, facilitated by Mr Ibra Wahabou (AUDA NEPAD SDM Officer: Economic Integration)
 - Anglophone regions (Eastern and Southern Africa), in breakaway session 2, facilitated by Mr Andrew Takawira (GWPSA-ACU Senior Technical Advisor)
- 5.2 The report back session was facilitated by Ms Elisabeth Tesfayohannes Tedros (AUDA-NEPAD Principal Programme Officer: Infrastructure Finance & Project Preparation).

6.0 Small Island Developing States (SIDS)

6.1 Water Supply Project in Antanambao Manampotsy (Atsinanana Region) – Madagascar

Presented by: Mr Simon Robison Randriatsiferana, the Secretary-General of the Ministry of Water

Project Stage: S1 - Project definition

Project Sponsors/Owners: Ministry of Water, Sanitation, and Hygiene, Madagascar

REC: Southern Africa Development Community (SADC)

Project Location: Antanambao Manampotsy in the Atsinanana region of Madagascar

Project Countries: Madagascar

Estimated total project cost: USD 2.2 million (includes studies and minor infrastructure development)

- 6.1.1 The project consists of interventions on water infrastructure development to ensure adequate supply of potable water to communities in the Antanambao Manampotsy area, shown in Figure 4 below, which is not adequately served presently.

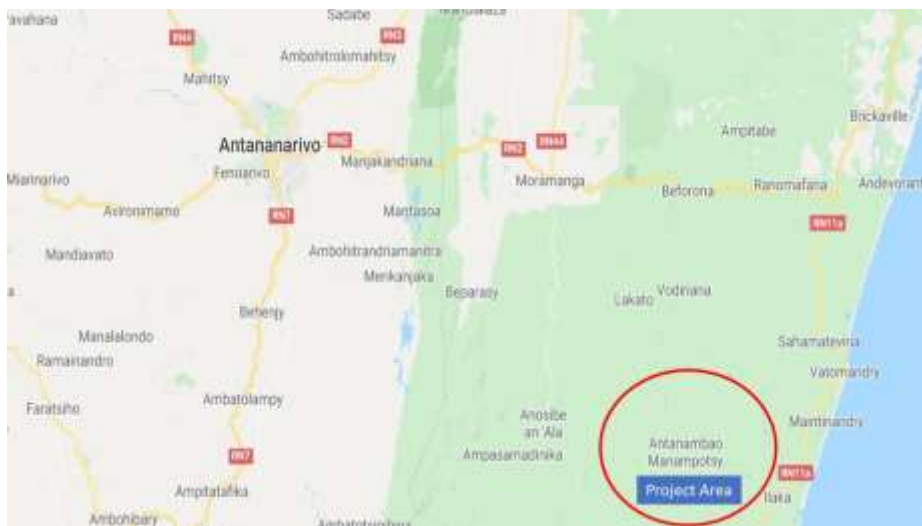


Figure 4: Madagascar Water Supply project area

- 6.1.2 The project also seeks to build climate resilience in water resources management interventions. The improved access to drinking water and hygiene due to improved quantity and quality of water is expected to reduce morbidity and mortality amongst women and children. Integrated Water Resources Management (IWRM) in the form of awareness creation and enhancing political and regulatory frameworks will also be applied.
- 6.1.3 In 2018, a study of the hydrological potential of the area was prepared for the project. In 2021, the pre-early project preparation was actively initiated. For water infrastructure development, the project components consist of (1) Feasibility Studies and (2) Designs and Construction Works. The IWRM interventions consists of:
- Increased awareness and understanding of the river basin issues;
 - Climate change vulnerability assessment;

- Development of institutional, policy and regulatory frameworks; and
- An action plan for iwrms

6.1.4 Project requirements

- Design and monitoring of project activities carried out in close collaboration with the Madagascar MEAH (Ministère de l'Eau, de l'Assainissement et de l'Hygiène)
- Consideration of the Water - Sanitation – Hygiene (WASH) work package
- Development of reference documents: PCDEAH (Le Plan Communal de Développement, chapitre EAH)
- Public-Private Partnership approach for system management
- Promotion of the IWRM approach

6.1.5 Discussion points from plenary

- The total project cost is estimated at \$2.2 million. However, the country is also looking for investors to fund the full suite of complementary infrastructure for the 5 communities. The PIDA SDM support is required to assist with identifying potential investors for prefeasibility and feasibility studies and support the identification of potential Public Private Partnerships.

6.2 Modernisation of water infrastructure through implementation of a telemetry, supervisory control, and data acquisition system (SCADA) for Mauritius

Presented by: Mr Chandrasen Matadeen, General Manager at Central Water Authority, Mauritius

Project Stage: S2B – Feasibility

Project Sponsors/Owners: Ministry of Water, Sanitation, and Hygiene, Mauritius

REC: Southern Africa Development Community (SADC)

Project Location: Mauritius

Project Countries: Mauritius

Estimated total Project Cost: USD 10 million (to be confirmed after the feasibility study)

- 6.2.1 As a Small Island Developing State, Mauritius is highly vulnerable to the effects of climate change. Climate change manifests itself in several ways, including intense cyclones, abnormal tidal surges, prolonged droughts, flash floods, and increase of sea surface temperature. The main objective of the project is to adapt and mitigate to the adverse climate change impacts through enhancing the resilience of the water distribution system and by reducing non-revenue water to internationally accepted levels.
- 6.2.2 The Mauritius Central Water Authority (CWA) is currently facing challenges to secure and optimize their operations, mainly due to physical losses in the distribution networks. The CWA has developed district metering areas (DMAs) within these networks in order to have a better control on the volume of water circulating. The DMAs also assist in better understanding of the amount of water sold to customers and enable identification of the most critical areas where the Operations Division can carry out leak detection surveys and subsequent repairs. The CWA has implemented several telemetry systems to transmit basic data from one site to another. However, these systems are limited in terms of extent and capacity. They typically consist of the transmission of reservoir water level data to an upstream pumping station.
- 6.2.3 The CWA would therefore like to implement digital solutions for remote monitoring and control of the

equipment and accessories (pumps, gensets, meters, water levels, etc.) at various pumping stations, service reservoirs, water treatment plants and water distribution network. The targeted Supervisory, Control and Data Acquisition (SCADA) system will include the following functions: a) Telemetry: to collect basic operational data on the various sites and transmit them to control centres where they will be processed, displayed, analysed, used for operational decisions, and finally stored; b) Remote monitoring: to transmit notifications & alarms to the control centres in case of faults, defective equipment/systems, abnormal intrusions at CWA sites and buildings; and Telecontrol: to enable automatic and remote control of the operation of particular equipment (pumps, valves, etc.). The proposed key parameters of the Telemetry System is shown below in Figure 5.

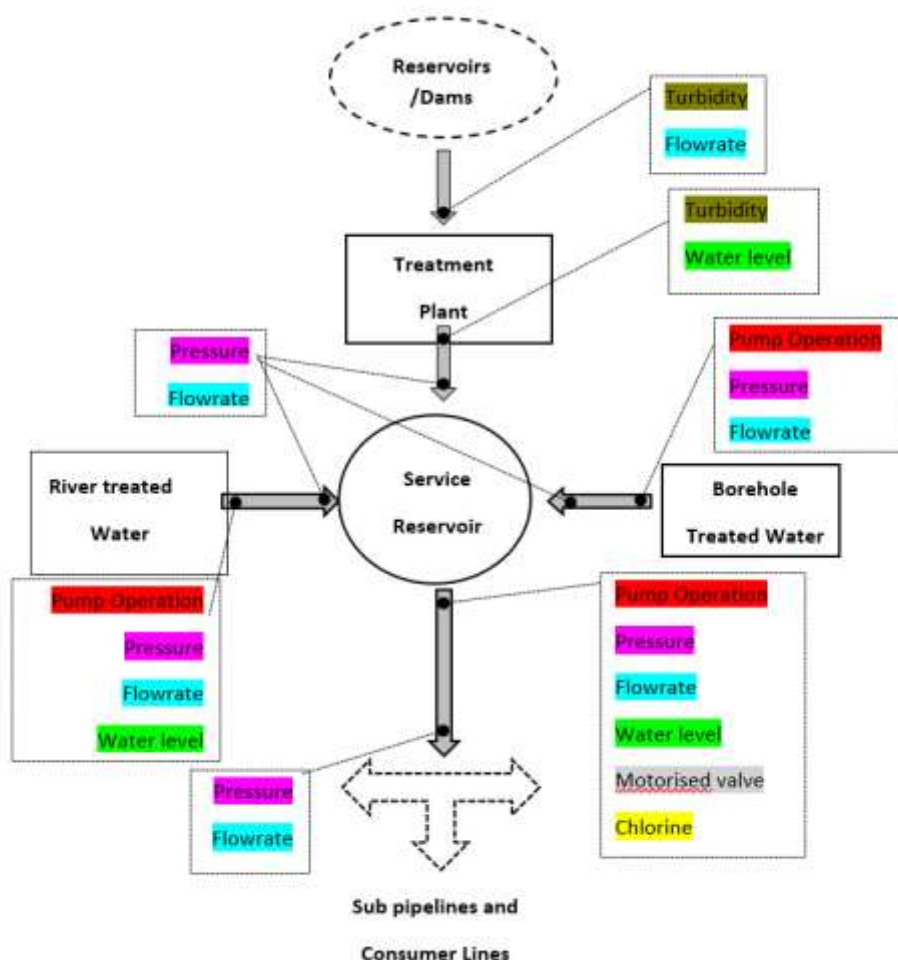


Figure 5: Key parameters of the Telemetry system

- 6.2.4 The SCADA system will ensure continuity of service by monitoring and tele-controlling system operation (pumps, generators, chlorination system, valves, water levels, etc.) at all sites; it will also ensure monitoring, data collection and reporting with regards to water production; ensure and monitor water quality reduce costs pertaining to staff and logistics mobilization on remote sites (residual chlorine, status of treatment systems, physicochemical and bacteriological quality); and ensure security and surveillance of sites (intrusion detection and access control).
- 6.2.5 A consultant has already been appointed for the feasibility, design, and preparation of bid documents for

the implementation of SCADA, which is expected to be completed by April 2022. The feasibility studies are scheduled for completion in 2022 due to COVID-19 delays. The SCADA system is planned to be implemented over a period of two years as from July 2022. The estimated cost of USD10million will be confirmed after the feasibility study.

6.2.6 Discussion points from plenary

- Currently the system is manual and there are long lead times between breakdowns and response, and there is high non-revenue water. It was also clarified that the AfDB is funding the feasibility of the telemetry. The field studies have not commenced because of the COVID-19 but is expected to be prepared September 2021-April 2022. The study will determine the scope of work and further resources necessary.

6.3 Operationalization of São Tomé and Príncipe's hydrometric stations

Presented by: Eng. Jose Bastos, Ministry of Public Works, Infrastructure, Natural Resources and Environment

Project Stage: S3A - Project Structuring

Project Sponsors/Owners: Directorate General for Natural Resources and Energy (DGRNE)

REC: Economic Community of Central African States, ECCAS

Project Location: São Tomé and Príncipe

Project Countries: São Tomé and Príncipe

Estimated total Project Cost: USD1.5 million

- 6.3.1 The project aims to create resilience through the operationalization of hydrometric stations for issuing alerts and managing river basins. This intervention is critical in mitigating the effects of climate change such as extreme weather events and protecting lives through establishing an early warning system. The operational system for water management is a challenge and is currently limited in supporting decision making to mitigate the impacts of extreme events.
- 6.3.2 The project rationale is to optimize and efficiently manage water resources in order to ensure sustainable use, protection, valuation of the resource, and provision of a quality service. This intervention will include operationalizing hydrological stations (satellite communication, maintenance, calibration, data processing, acquisition of tools and materials), strengthening the institutional and legal frameworks of the hydrology sector (legal, human resources, training), promoting environmental awareness, reducing vandalism, and increasing community surveillance.
- 6.3.3 The Directorate General for Natural Resources and Energy (DGRNE) has been providing national services for monitoring and disseminating hydrological information. As part of the Early Warning System (SAP/UNDP) project, DGRNE benefited from 12 hydrometric stations, a hydrological control centre, training of hydrology and water resources technicians, and hydrological modeling. These stations now require extensive maintenance for their effective operation.
- 6.3.4 The project objectives include:
- Development of complete and robust hydro-meteorological systems
 - Monitoring of hydrographic basins
 - Early warning system for extreme events (flood and drought)
 - Creation of control and measurement zones

- Training, communication, and awareness raising
- Women's involvement in hydro-meteorological monitoring and water resources management
- Building resilience to environmental disasters in the most vulnerable communities

6.3.5 This project seeks to sustain the operations and maintenance of hydro-meteorological stations and improve the communication system (satellites, data transmission - antennas), in addition to calibrating the hydro meteorological sensors. The project also seeks to consolidate an effective and efficient regulatory model for hydrological observers, acquire software for processing data, increase collective responsibility through establishing measures to curb acts of vandalism – and to develop a hydrological online portal WEB DGRNE.

7.0 Projects from Central, North and West Africa (Francophone)

7.1 Using solar and wind energy to extract groundwater in the pastoral wells in the western region of the Jafara Plain

Presented by: Eng. Mokhtar Radi, Water Strategies office, Libya General Water Resources Authority

Project Stage: S1- Project Definition

Project Sponsors/Owners: General Water Resources Authority

REC: Arab Maghreb Union (AMU)

Project Location: Sahel Al-Jafara in north-western Libya

Project Countries: Libya and Tunisia

Estimated total Project Cost: USD 0.4 million – USD 1 million for the study and the execution (approximately). Actual costs will be determined by the feasibility study results.

7.1.1 The project entails installing pumps on 15 pastoral wells in Sahel Al-Jafara in north-western Libya, operated by solar energy or wind energy for the purpose of watering animals. The intervention also seeks to establish forest areas around the well in order to create natural reserves for wild animals, develop pastoral areas, and increasing the vegetation cover in the region gradually and thus addressing the impacts of climate changes and desertification.

7.1.2 Project Requirements

- The project requires technical advisory for the renewable energy study and also support to mobilize resources.

7.1.3 Discussion Points from plenary

- A Tunisia delegate submitted that they were surprised to be cited as one of the beneficiary countries of the Jafara project when they had not been consulted. They noted that it had been agreed at a NWSAS mechanism meeting held at the 2019 PIDA Week that a consultative meeting would be convened by UMA in early 2020, but this had not taken place. Notwithstanding that, Tunisia expressed willingness to join Libya in the implementation of the Jafara project, on condition that the institutional governance for implementation, content and activities of the project be reviewed to ensure that the project will benefit both Libya and Tunisia.
- As a way forward, Tunisia agreed to the proposal for a bilateral meeting between Tunisia and Libya to discuss the reformulation of the project. Such a meeting could be convened with the facilitation of UMA and technical support from AUDA-NEPAD and GWPSA-ACU.
- The key outcome from the discussion was that the project needed further consultations with the

- different parties, in particularly Tunisia, Libya, and UMA.
- It was noted that the PIDA SDM would be on hand to support the project to move forward once consensus was reached on the scope of the project. GWP Mediterranean also submitted that they were ready to technically assist the countries and partners as needed in order to promote the PIDA agenda in North Africa.

7.2 Noumbiel Multipurpose Dam

Presented by: Eng. Koudakidiga Habdoulaye, Ministry of Water and Sanitation, Burkina Faso

Project Stage: S2A - Pre-Feasibility studies

Project Sponsors/Owners: Burkina Faso's Ministry of Water and Sanitation and Volta Basin Authority

REC: Economic Community of West African States (ECOWAS)

Project Location: The Mouhoun River on the Ghana-Burkina border, one of the three main tributaries of the Volta River.

Project Countries: Burkina Faso, Ivory Coast, Ghana

Estimated total Project Cost: Estimated total discounted cost in 2020 of this dam is USD 1,694,915,254

7.2.1 The Noumbiel dam project's primary purpose is providing hydropower and improving agricultural production. The project aims to contribute to poverty reduction, economic growth, building resilience to climate change, promoting gender equality in accessing water resources, and improving the living conditions of people living in both the area under direct influence (Burkina faso, Ghana, Côte d'Ivoire) and other countries in the Volta basin (Benin, Mali, Togo) as shown in Figure 6.

7.2.2 The Noumbiel dam will enable land development, access to electricity, the supply of Potable water (AEP) and the creation of productive activities in fishing, livestock, and tourism for riparian and surrounding communities, and strengthening cooperation between States and transboundary communities. The project will also have multiplier effects i.e., contribute to the creation of development opportunities in the region, as well as improve the livelihoods of young people during and after the construction of the dam through job creation.

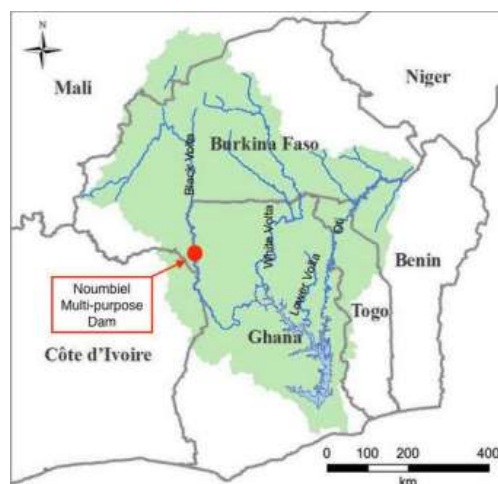


Figure 6: The Noumbiel Dam site

7.2.3 Project requirements

- The project's immediate needs include an update of the Terms of Reference (ToR) and estimation of the budget relating to the realization of the feasibility studies and the environmental and social impact assessment. In addition, funding must be mobilized for carrying out these studies. The 2012 budget estimate for the Feasibility studies was 2,425,000 Euros, but this estimate will need to be updated.

7.2.4 Discussion Points from plenary

- This project has been in the SDM pipeline since PIDA-PAP 1, and the key action from the presentation was that the high-level dialogue on the project will be facilitated by AUDA-NEPAD in partnership with GWPSA-ACU to address some institutional bottlenecks on the project. The dialogue will be held with the Government of Burkina Faso, the Government of Ghana, and the Volta Basin Authority (VBA).

7.3 Fomi Multipurpose Dam Development Project

Presented by: Project owners were not available to present the project during the meeting, but a brief summary of the project rationale was outlined by Mr Desire Ndemazagoa, International Congo Ubangui Sanga Commission (CICOS))

Project Stage: S3B - Transaction Support & Financial Close

Project Sponsors/Owners: Guinea Ministry of Energy

REC: Economic Community of West African States (ECOWAS)

Project Location: Fomi, Guinea

Project Countries: Guinea

Estimated total Project Cost: USD 55,246,764

- 7.3.1 The degradation of the ecosystem of the Niger River basin may eventually compromise the existence of the riparian populations and deteriorate their living conditions. The development of the Fomi dam constitutes the best alternative for sustainable development in Upper Niger, and a guarantee of safeguarding the natural resources of the river basin.
- 7.3.2 The project aims to ensure the basic needs of water supply and watering of the livestock, development of irrigated agriculture, low-cost hydroelectricity production, development of fishing and aquaculture, improvement of river navigation, and development of ecotourism.

7.4 Construction of the dam and the development of Palambo hydroelectric power plant

Presented by: Mr Desire Ndemazagoa, International Congo Ubangui Sanga Commission (CICOS)

Project Stage: S2A - Pre-Feasibility

Project Sponsors/Owners: Economic Community of Central African States and the Ministries in charge of energy of the project member states (Central African Republic, Congo Republic, Democratic Republic of Congo)

REC: Economic Community of Central African States (ECCAS)

Project Location: Palambo, Central African Republic

Project Countries: Central African Republic, Congo Republic, Democratic Republic of Congo

Estimated total Project Cost: USD 3 million

- 7.4.1 This project is aimed at addressing the interruptions caused to the navigation on the Oubangi River into the Congo River. These interruptions occur during the low-flow period. The navigation conditions downstream from Bangui, the capital of the Central African Republic (CAR), have deteriorated significantly, severely

reducing the period of navigation between Bangui and Brazzaville or Kinshasa in recent years. In addition, CAR and in particular Bangui and its regions, are confronted with very serious problems of production and supply of electric energy.

- 7.4.2 The construction of the Palambo reservoir at the Palambo Rapids - also known as the Elephant Rapids - located about sixty kilometers upstream from Bangui, will regulate the flow of the Oubangui and generate electricity for the Central African Region, North Congo, and the Democratic Republic of Congo (DRC).
- 7.4.3 The development of the project would make it possible to augment the hydroelectric power stations of Boali to meet the ever-increasing demand for electricity from the city of Bangui. The current electricity situation has a negative impact on the economy of CAR as it affects the production of goods and services and the development of activities in the various economic sectors.

7.4.4 Discussion Points from plenary

- The identified immediate requirements for the project were the need to support the development of a Project Concept Memorandum (PCM), the preparation of Terms of Reference for detailed studies, and the need to determine the cost estimates for the same. It was proposed that the PIDA SDM should liaise with ECCAS to appraise the project needs in detail and support the development of the required documents.

7.5 Mobilisation and transfer of water from Bria dam to Lake Chad

Presented by: Eng. Michel Dimbele-Kombe, Lake Chad Basin Commission (CBLT)

Project Stage: S2A - Pre-Feasibility

Project Sponsors/Owners: Lake Chad Basin Commission (CBLT)

REC: Economic Community of Central African States (ECCAS)

Project Location: From Bria / Kotto Dam to Lake Chad

Project Countries: Cameroon, Central African Republic, Chad, Libya, Niger, Nigeria

Estimated total Project Cost: 508 million USD (242 billion CFA francs) for construction of Bria dam. The option of transfer via the Kotto involves costs in the order of USD 4 billion (1,900 billion CFA francs)

- 7.5.1 The project seeks to improve the hydraulic capacity of the Chari River and to carry out in-depth studies on the probable impacts of the construction of several pieces of infrastructure. This included the proposed Bria dam, and infrastructure for a water transfer corridor through the Boungou river, the Ipendo river, the Ouaka river, two trenches to cross the inter-basin ridge and a channel along the Koukourou and Bamingui rivers before continuing towards the Chari River. The project will result in the development of a region of approximately 100,000 km² currently devoid of road and electricity infrastructure.
- 7.5.2 The project is as a result of the decision to implement a combined transfer of water from the Palambo and Bria dams, within the framework of the Lake Chad Basin Commission's (LCBC) major Water Transfer Project from the Ubangi to Lake Chad. The intervention by the LCBC is aimed at responding to the deterioration of the lake's ecosystem and the loss of the livelihoods in the riparian states following the catastrophic shrinkage of Lake Chad due to the severe droughts of the 1970s and 1980s.
- 7.5.3 The dam site is in Bria (CAR), at the confluence of the Kotto and Mounbou rivers. The dam will raise the level of the Kotto River to allow an inter-basin transfer by gravity to Lake Chad via the Chari River (through Chad). The construction of a 20 MW hydroelectric power station and a concrete spillway are also planned.

Raising the water level will increase the level of the lake by around 40 cm in the south basin and 50 cm in the north basin. The increase in the lake area would be of the order of 3,000 km².

7.5.4 The duration of the project is planned to be five years. The capital expenditure for the expected construction of the Bria dam is in the order of USD 508 million (242 billion CFA francs). The option of transfer via the Kotto involves costs in the order of USD 4 billion (1,900 billion CFA francs).

7.5.5 The project will support socio-economic activities in the two basins (Congo and Chad) to alleviate poverty. The beneficiaries of this program will be the populations of the countries bordering Lake Chad (Cameroon, Niger, Nigeria, Chad), the CAR, and the two Congos.

7.5.6 Project requirements

- A negotiation process between the LCBC and the International Commission of the Congo basin - Oubangui Sangha (CICOS) is needed to set up a legal and institutional framework for the implementation of the inter-basin transfer project between the Congo River basin and the Lake Chad basin.

7.5.7 Discussion Points from plenary

- AUDA-NEPAD and GWP will liaise with LCBC and ECCAS to gather information to appraise the project and understand the requirements for support.

7.6 Feasibility and in-depth studies on Lake Chad Development

Presented by: Eng. Michel Dimbele-Kombe, Lake Chad Basin Commission (CBLT)

Project Stage: S2A - Pre-Feasibility

Project Sponsors/Owners: Lake Chad Basin Commission (LCBC/CBLT)

REC: Economic Community of Central African States (ECCAS), Economic Community of West African States (ECOWAS)

Project Location: Chad, Cameroun, Niger, Nigeria

Project Countries: Cameroon, Central African Republic, Chad, Niger, Nigeria

Estimated total Project Cost: € 18.400.000

7.6.1 The drastic decrease in the availability of fresh water in the Lake Chad basin has resulted in a 95% decrease in the volume of the lake from 1963 to date. At the same time, the degradation of the Lake Chad ecosystem continues. The droughts of 1973-74 and 1985-86 led to an increase in the erosion of the watershed and the silting up of Lake Chad and its main tributaries - the Chari and Logone rivers.

7.6.2 The general objective of the project is to conduct an in-depth study on the development of Lake Chad with a focus on:

- improving the hydraulic properties of the chari river to limit losses in the flood plains;
- developing Lake Chad and its main tributaries through dredging and sand removal to ensure a better distribution of water in the different basins of the lake;
- restoring navigation, fishing, and irrigation along Lake Chad to alleviate poverty

7.6.3 The overall objective of the development of Lake Chad is the establishment of a technical process aimed at improving its hydraulic capacity. The feasibility study has three main parts – the preliminary technical study,

the technical study for the dredging of the Lake Chad, and the technical studies for the control of the invasive plants. The studies will go to the Detailed Design Study stage, after approval by the LCBC. The LCBC is responsible for mobilizing resources for the project and will coordinate the implementation with the national coordinators. At the institutional level, the strategic approach envisaged is that of the participation and empowerment of beneficiaries.

7.6.4 Discussion Points from plenary

- AUDA-NEPAD and GWP will liaise with LCBC and ECCAS to gather information to appraise the project and understand the requirements for support.

7.7 Inland water transport facilitation, securing river navigation and sustainable water resources management in the Congo Basin

Presented by: Mr Aboubakar Halilou, CICOS

Project Stage: S0 - Enabling Environment and Needs Assessment

Project Sponsors/Owners: International Commission of the Congo basin - Oubangui Sangha (CICOS)

REC: Economic Community of Central African States (ECCAS)

Project Location: Congo basin

Project Countries: Angola, Cameroon, Central African Republic, Congo Republic, Democratic Republic of Congo, Gabon

Estimated total Project Cost: USD 48,000,000 (Forty-eight million US Dollars) As per budget breakdown, USD 34 million for hard infrastructure and USD 14 million for soft measures.

7.7.1 The network of waterways in the Congo basin are currently facing several challenges, identified in the various studies carried out by CICOS. These include:

- numerous physical and non-physical barriers (sandbanks, tree trunks, rocks, wrecks of river units, abnormal practices, etc.)
- operation of units without observing safety and environmental standards
- the lack of information on the exploitation of water resources and in particular on the river transport sector
- the lack of common regulations drawn up and promoted by CICOS
- the dilapidated and inadequate infrastructure and port equipment
- the drop in the level of water of the Congo River and its tributaries causing the impassability of river transport routes on certain sections (Oubangui and Sangha)
- pollution of waterways and port platforms
- lack of hydrological information
- poor consideration of climate change and environmental considerations in projects with cross-border impacts
- no standardized approaches to the collection of resources for various needs

7.7.2 The project will contribute on the one hand to the facilitation of trade on the internal waterways of the Congo Basin and the Ogooué River facilitating the integration of the Central Africa sub-region and on the other hand the improvement of integrated management and sustainable use of water resources. The waterway is an important link in the multimodal transport chain and interconnection of the various transport corridors in Central Africa.

7.7.3 The project's expected impacts, are among others:

- reducing the time in customs operations and tax payment
- reducing red tape and other abnormal practices in river transport
- Improving the conditions of embarkation and disembarkation of passengers and goods
- improving hydro-climatological and environmental monitoring
- improving the dissemination and sharing of information

7.7.4 The following outcomes will be achieved through implementing the project:

- one-stop shops built, installed, and operationalised
- 10 observatory bulletins published
- landing stages built and functional
- 100 hydro-climatological stations installed and operational
- 1 Documentation and information center on Water and river exploitation is built and operational
- 1 Observatory of transboundary wetlands operational

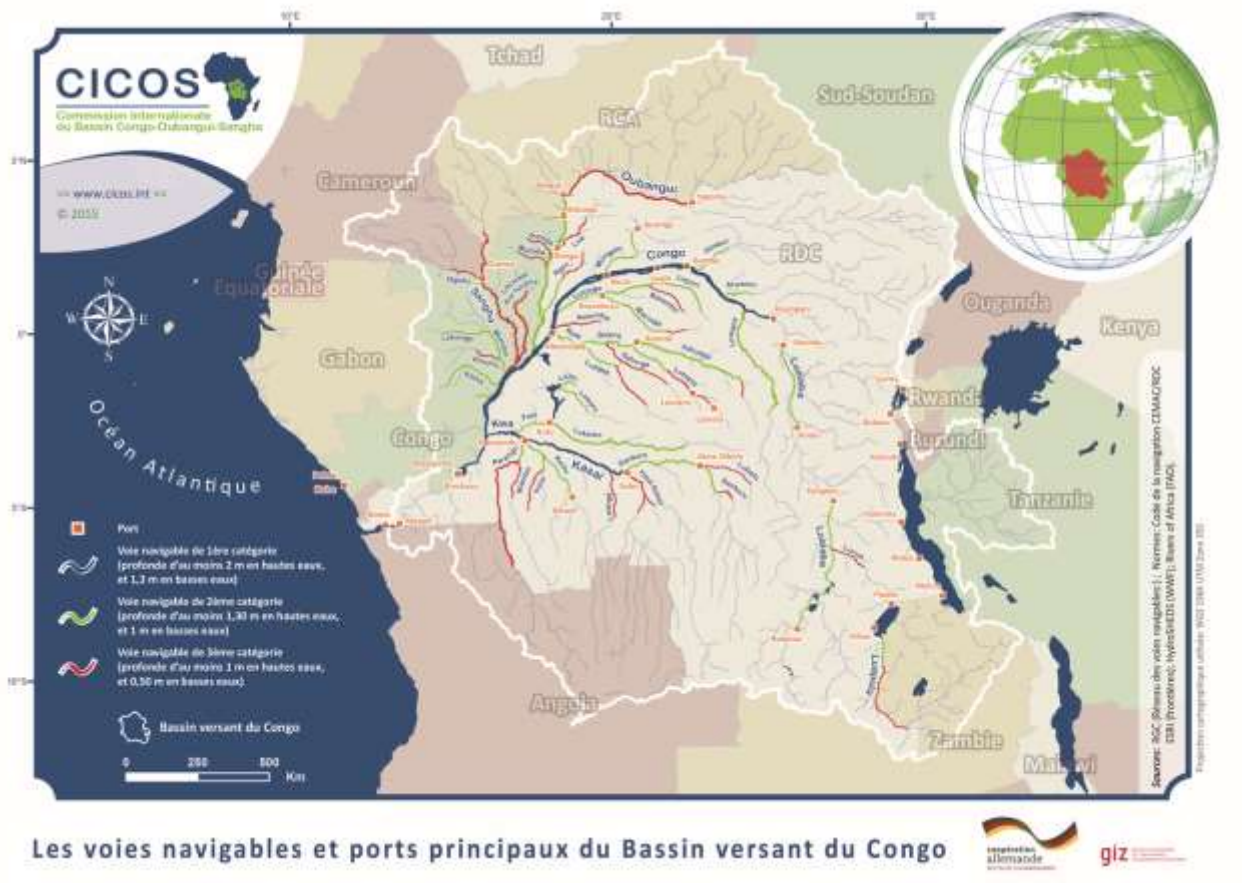


Figure 7: The Congo River Basin

8.0 Projects from Eastern African and South Africa (Anglophone countries)

8.1 Dawa River Multi-Purpose Dam

Presented by: Mr. Nathan Mwema, Ministry of Water, Sanitation and Irrigation, Kenya

Project Stage: S1 – Project Definition Stage

Project Sponsors/Owners: Ministry of Energy and Water Resources (Somalia); Ministry of Water, Irrigation and Energy (Ethiopia); Ministry of Water and Sanitation (Kenya)

REC: Intergovernmental Authority on Development (IGAD)

Project Location: Dawa River, the proposed Dawa dam will be in River Dawa at Latitude 4.064824 and Longitude 41.043819. The site is located approximately 20 km upstream of Rhamu Dimtu town in Mandera County of Kenya and 2km upstream of Boni centre in Ethiopia.

Project Countries: Ethiopia, Kenya, Somalia

Estimated total Project Cost: 634 million USD

8.1.1 The project area is characterized by food insecurity, mainly due to water insecurity and leading to overall limited opportunities for improved socioeconomic conditions of the communities. The Dawa multi-purpose dam project is intended to offer the residents of the basin a platform to jointly conserve the environment while utilizing the water resources and other biodiversity benefits of the basin. Hydropower will provide energy to power processing of agricultural outputs for the much-needed value addition in the agricultural sector. The objective of the project is therefore to come up with a multipurpose dam providing water for hydropower generation, irrigation, human and livestock water supply. The project will also contribute to mitigating floods and droughts, improving catchment management, and enhancing data management.

8.1.2 A memorandum of understanding is proposed between the three countries, Ethiopia, Kenya and Somalia, for the joint management of the Dawa. The proposed framework also includes a project steering committee to oversee implementation of the project. The committee's role will be critical in facilitating discussions between the three countries to move the project forward.

8.1.3 Discussion Points from plenary

- Clarity was sought from plenary by Egypt to understand at what stage the project was expected to officially notify the riparian countries, noting that as this is a transboundary water project in the Nile basin, and notification is required under international law. The response was that the project was identified out of a list of projects in 2010 that was approved by the Council of Ministers from all the countries of the Nile Basin.
- A pre-feasibility study was done by Kenya through the National Irrigation Board in September 2013, further support is required for the feasibility studies.

8.1.4 Project requirements:

- Being a transboundary river, there is need for a platform to facilitate discussion between the three states - Ethiopia, Kenya, and Somalia. The project will need support in accessing financing from SDM and NEPAD IPPF.

8.2 Angololo Multipurpose Water Resources Development Project

Presented by: Eng. Sami Osman Eltoum, Nile Equatorial Lakes Subsidiary Action Program (NELSAP)

Project Stage: S2B - Feasibility

Project Sponsors/Owners: Ministry of Water and Irrigation, Kenya and the Ministry of Water and Environment & Ministry of Agriculture, Animal Industry and Fisheries, Uganda in collaboration with Nile Equatorial Lakes Subsidiary Action Program/Sio–Malaba–Malakisi (SMM) River Basin Management Project

REC: Intergovernmental Authority on Development (IGAD)

Project Location: The Angololo dam is located at Kalait village, at the border of Uganda and Kenya.

Project Countries: Kenya, Uganda

Estimated total Project Cost: USD 61.7 million

8.2.1 The Angololo project was identified by Kenya and Uganda in collaboration with the Nile Equatorial Lakes Subsidiary Action Program (NELSAP) through its Sio Malaba Malakisi (SMM) River Basin Management (RBM) project. The objectives of the proposed Angololo project studies is to assess the potential and viability for multipurpose water resources development in irrigated agriculture, hydropower generation, livestock development, water supply, flood control, drought mitigation, aquaculture, etc., coupled with the restoration of the associated sub-catchments. The project has a catchment area of about 430 km² and the dam has a potential height of 30 meters and reservoir capacity of 3 million cubic meters. The project location is shown in Figure 8 below

8.2.2 A Regional Project Steering Committee (RPSC) is in place and the project was launched on July 7th, 2019, in Entebbe. Thereafter, project site visitation and consultations were conducted with representatives and respective communities in both countries. The project will generate 1.75MW hydropower.

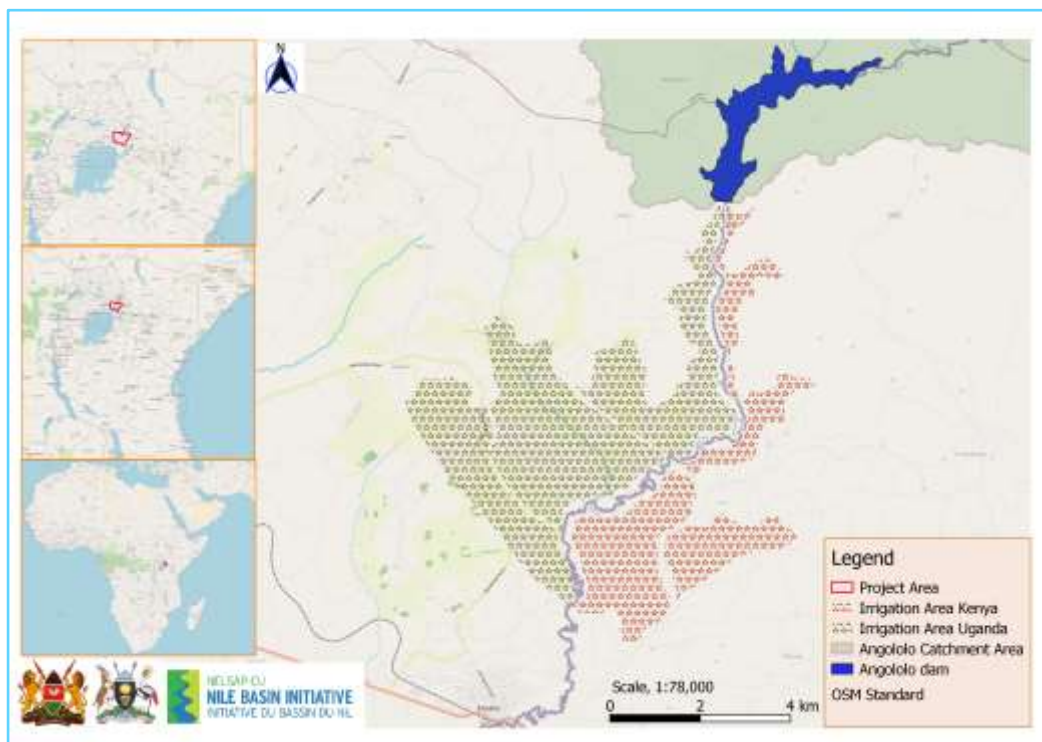


Figure 8: Location of Angololo dam

8.2.3 The project's three main components are stakeholder engagement, the project preparation studies (including a feasibility study and the detailed design), as well as project management and monitoring & evaluation. An independent consultant has been appointed to conduct the Environmental and Social Impact Assessment (ESIA) and the Settlement Action Plan. The studies are expected to commence in July 2021 as the procurement for the individual consultant has been finalized. The main financier is the African Development Bank.

8.2.4 After the completion of the studies, the next steps will be the mobilisation of financial resources for the project and the implementation itself once proven to be economically viable. There are still some gaps within this project that require the SDM support. The main gaps relate to practical capacity building, as well as sensitization and awareness campaigns targeting the project affected persons. Closing these gaps will also require financial resources.

8.2.5 Project requirements:

- The project requirements include funding for capacity building, sensitization and awareness campaigns; funds to ensure bankability of projects; and project structuring for mobilizing of financial resources.

8.2.6 Discussion Points from plenary

- Clarification was made that the Angololo Project CAPEX is USD61.7mn, not USD51.1mn as was presented in the submission to PIDA-PAP2. The latter figure is the outcome of a now-outdated feasibility study.
- It was further clarified that assistance is required with the Transboundary Project Management aspects of the project, and with mobilising financial resources for implementation. The AfDB has provided financing of USD 1.2 million whilst Kenya and Uganda have contributed USD 75,000 each.

8.3 Lesotho Botswana Water Transfer Project

Presented by: Mr Lenka Thamae, Orange Senque River Commission (ORASECOM)

Project Stage: S2A – Pre-feasibility

Project Sponsors/Owners: Joint Study Management Committee (Lesotho, South Africa, and Botswana with Namibia as an observer), ORASECOM Secretariat (on behalf of the countries)

REC: Southern Africa Development Community (SADC)

Project Location: Dam in Lesotho. Conveyance system in Lesotho, South Africa, and Botswana

Project Countries: Botswana, Lesotho, South Africa

Estimated total Project Cost: About USD 3.004 billion (about USD3billion for construction, and USD4 million for studies)

8.3.1 The objective of the project is to transfer water from Lesotho to Botswana through South Africa, to meet water supply demands in Botswana, the Lowlands of Lesotho, and parts of South Africa. The project involves construction of a multipurpose dam along Makhale River in Lesotho and a conveyance system from Lesotho to Botswana, involving a transfer of water over more than 700km. Given that the Botswana and Lesotho are in the same Orange Senqu River Basin, and both party to ORASECOM, there is an opportunity to transfer water from Lesotho to Botswana through South Africa. Various foreseen water uses include domestic, industrial, irrigation, hydropower generation, and environmental water requirements. The transfer is anticipated to meet water demands for the riparian parties and build climate resilience. The project will also include some hydropower opportunities within Lesotho. Overall, the project is addressing

water security in the three countries in the medium to long term.

- 8.3.2 A desktop study was conducted and finalised in 2015 funded by the World Bank. In the same year, a decision in 2015 was taken at a meeting in Maseru by the countries' Water Ministers to conduct a combined pre-feasibility and feasibility study of this project. A Memorandum of Understanding was signed in this regard, and a request made for ORASECOM to facilitate the process. The project attracted key financiers to support the pre-feasibility studies: NEPAD IPPF, the African Water Facility (AWF), the Climate Resilience Infrastructure Facility (CRIDF), GWPSA-ACU, and the Stockholm International Water Institute (SIWI). This support led to the preparation of a Climate Resilient Water Resource Investment Strategy and plan.
- 8.3.3 The project is ready to deliver the technical feasibility study for the dam on the Makgaleng river, the pre-feasibility level studies for the water transfer project conveyance, institutional model, and the project financing options. NEPAD IPPF is envisaged to finance the remaining components of the full feasibility study, including the ESIA after completion of the earlier studies. There has been good progress on the project. The project will deliver a full feasibility study, a complete ESIA including the settlement action plan, and a detailed engineering design. The project will also propose a robust PPP model, as well as other operational and business models.
- 8.3.4 The project delivery can be broken down into three main areas: technical solutions, the legal and regulatory issues, and the environmental and social assessment.
- 8.3.5 The individual states themselves have committed and contributed more than Euro 900,000 up until the present date. To support the implementation of the project the Member States established a Joint Management Study Committee, which reviews and approves the various studies and reports being considered.
- 8.3.6 Way forward and next steps: The initial timeline of completing the full feasibility study, a complete ESIA including the settlement action plan, and a detailed engineering design by the end of 2021, is impossible due to Covid-19. Negotiations are underway with principal sponsors, including AfDB, to allow the project to carry this exercise up to 2023. Key lesson learnt from this project so far– is the time it takes to reach consensus in transboundary projects and this time must be factored into planning.

8.4 Lesotho Highlands Water project Phase II

Presented by: Mr. Andre Lambrechts, Lesotho Highlands Development Authority (in the first PIDA PAP 2 regional water sessions on May 7)

Project Stage: S3A - Project Structuring

Project Sponsors/Owners: Lesotho Highlands Development Authority

REC: Southern Africa Development Community (SADC)

Project Location: Lesotho, South Africa

Project Countries: Lesotho, South Africa

Estimated total Project Cost: USD2.6 bn (with an estimated capital expenditure of +/- USD1.0 bn for the major dam and transfer infrastructure, and about USD 0.7 - 0.9 bn (initial estimate) for Hydropower component in Lesotho).

- 8.4.1 The aim of the Lesotho Highlands Water project (LHWP) Phase II is to deliver water by gravity to the Vaal River system, which drives the economic heart in Gauteng and supplies water to electricity stations in

Mpumalanga. For Lesotho, Phase II is expected to increase the existing hydropower generation capacity to the benefit of both local and regional consumption. Hydropower capacity improvements to be considered by Lesotho as part of Phase II include erecting stations powered by downstream releases of Polihali, Katse, and Mohale. The planned project is shown in Figure 9 below.

8.4.2 The expected projects benefit for South Africa include the high-quality water transfer (16 931 000 mill liters to date), improved water security for Vaal River system at affordable price, job opportunities during planning, design and construction phases, and enhanced bi-national cooperation between neighboring countries, among others. The benefits to Lesotho include revenue from the water transfers, communal assets linked to compensation and resettlement which include public health facilities, education and sanitation infrastructure, and the construction of feeder roads and bridges.

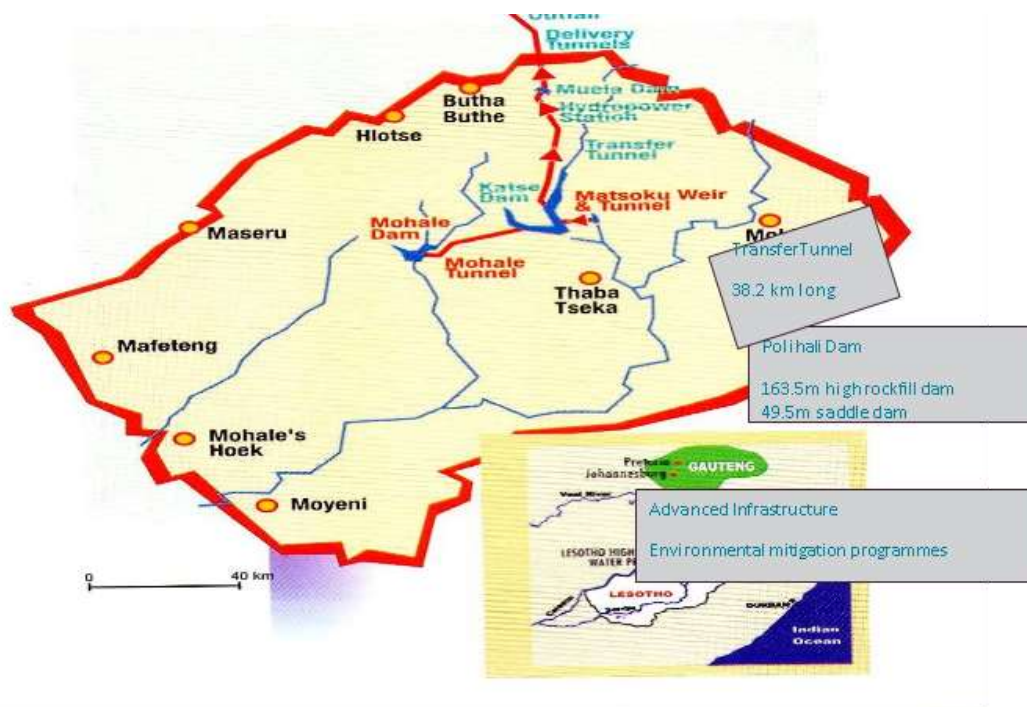


Figure 9: Lesotho Highlands Water Project

8.4.3 The expected outcomes are:

- Revenue to Lesotho by transferring water from the catchment of the Senqu in Lesotho to meet the growing demand for water in South Africa's major industrial and population centres
- An increased assurance of water supply to Gauteng
- Hydro-electric power generation for Lesotho
- General development of the remote and underdeveloped mountain regions of Lesotho, while ensuring that comprehensive measures are taken to counteract any adverse effects which the project might have on the local population and their environment.
- Opportunities to undertake ancillary developments such as the provision of water for irrigation and potable water supply

8.4.4 The progress to date is:

- 17 contracts have been completed to date while 64 contracts are in progress; 15 contracts are at evaluation stage; 10 contracts are at tender stage; 2 tender documents (Dam and Tunnel) are ready for issue as soon as lockdown measures are lifted. Advanced Infrastructure contracts are 4-6 months behind schedule.
- Baseline studies are complete.
- Polihali Dam designs are complete. The construction tender documents with optimized designs are ready for issue subject to receiving a “No Objection” from the Lenders.
- The Tender Design for Polihali to Katse Transfer Tunnel is completed. Construction tender documents with optimized designs are ready for issue subject to receiving a “No Objection” from the Lenders.
- The pending future contracts to be awarded in 2021/22 include: 6 other Advanced Infrastructure Contracts, Polihali Dam construction and Polihale Transfer Tunnel construction

8.4.5 Discussion Points from plenary

- The project is quite advanced and enjoys political support in both Lesotho and South Africa, providing a good role model for other transboundary infrastructure projects. Currently the funding for the project is being underwritten by banks in South Africa. Several international and national consultants and contractors are involved, which makes it a truly international project.
- The project was submitted to PIDA-PAP 2 specifically to advance the hydropower component. The funding for the delivery of water to South Africa is almost fully in place, with South Africa taking responsibility for that. The Government of Lesotho is still trying to raise funding for the detailed design and subsequently implementation of the hydropower component, which needs to be completed by the time the project is commissioned in 2026-2027. Therefore, the hydropower component is becoming rather urgent. The European Investment Bank expressed interest in following up on the details of the hydropower component of the project during the meeting, and the Lesotho delegation took note.

8.5 Noordoewer-Vioolsdrift Dam

Presented by: Eng. Hristo Dudenski, Department of Water and Sanitation, South Africa

Project Stage: S2A – Pre-feasibility

Project Sponsors/Owners: Permanent Water Commission (PWC) - Namibia and South Africa

REC: Southern Africa Development Community (SADC)

Project Location: South Africa and Namibia border

Project Countries: South Africa and Namibia

Estimated total Project Cost: USD 501 million (US\$ 1 million to complete remaining work for feasibility study, plus US\$ 500 million to implement).

8.5.1 The Noordoewer-Vioolsdrift Dam is a joint project between the governments of Namibia and Republic of South Africa, which is still in planning stage and currently managed by the Permanent Water Commission (PWC) for the two countries. In September 2015, Namibia, and South Africa, under the auspices of the PWC, commissioned the Noordoewer / Vioolsdrift Dam (NVD) Feasibility Study, which is aimed at identifying and optimising the best development dam size(s), site(s) and sequence of dam developments in the Orange River System (ORS) needed to achieve the overall catchment objectives, of re-regulating the flows for ecological needs and increasing the yield in the ORS for use by both RSA and Namibia. The study was

completed in May 2020, at a cost of over US\$2.1 million.

8.5.2 The Project involves the construction of a dam in the Lower Orange River, about 150 km upstream of estuary, across the border between Namibia and RSA, likely volume from 300 million m³ (38 m high dam wall) to 6,000 million m³ (92 m), with the following main purposes:

- To compensate for impact on yield due to LHWP II (transfer water from Orange to Vaal River) and due to future implementation of higher ecological Reserve (both to start about 2027 or later)
- To provide for re-regulation storage to allow efficient maintenance of ecological flows and demands for irrigation in the Lower Orange River
- To provide additional system yield to meet growth in future requirements for Namibia and RSA

8.5.3 Many options for the dam's technical specifications were investigated and 17 volumes of reports containing valuable and usable information produced. The level of completed studies by far exceeds definitions for pre-feasibility stage, however, the study remained inconclusive about the exact recommended optimal size, site, and type of dam. This is due to information related to environmental impacts, which emerged late.

8.5.4 The project strength is that it enjoys high priority in the development agendas of the two countries, and in the entire basin. The two governments are fully committed to its implementation. The project is technically viable, economically feasible, and can be made ecologically sustainable. The latter is subject to further studies to finalise the exact optimal dam size, site, and type, to update the environmental impacts and their mitigations, and to obtain environmental authorisations in both Namibia and SA.

8.5.5 The current institutional lead for project is the PWC, who are currently managing the studies; however, a Joint Authority will be established for the implementation and subsequent Operation & Management of infrastructure.

8.5.6 Project Requirements

- There is a need for certain further feasibility studies (such as a Bridging Study) to finalise the recommendation for the optimal dam size, and to update the environmental impacts and their mitigations, and ensuring required environmental authorizations are obtained. Financial support, estimated at USD1 million, is required to fund the further feasibility studies. Thereafter, approximately USD500mn will be needed for the implementation of the project.
- Substantial project information is available from the feasibility study reports completed in May 2020. Summarised information about project strengths and weaknesses will be available in the AUDA-NEPAD Project Concept Memorandum (still being finalized as of May 2021). The project area is shown in Figure 10 below.



Figure 10: Location of NVD Dam and Orange River Basin characteristics

8.5.7 Discussion Points from plenary

- Significant strides have been made in the preparation of the feasibility study. The bridging study will lead to the finalization of the iterative process between the dam dimensions and the environmental impacts with respect to the environmental laws of both SA and Namibia. The SDM has already engaged the PWC and the Departments of Water Affairs of Namibia and Department of Water and Sanitation in SA. The information provided on the project is quite extensive. However, the extent to which private sector involvement will be possible is yet to be evaluated because this will depend on the tariff settings arrangements, which are not yet finalized. Tariff setting requires accurate calculation of the actual CAPEX and OPEX costs, which will be finalised after the bridging study.

9.0 Wrap-up and Closing Remarks

9.1 Closing remarks – GWPSA-ACU

- 9.1.1 On behalf of GWPSA-ACU, Mr Simalabwi thanked all the participants for their attendance and participation in the discussions. He highlighted that water issues are critical for the continent and yet are some of the most difficult to navigate. Therefore, it was encouraging to note that this is a challenge that all participants in the meeting have demonstrated commitment to pursue.
- 9.1.2 Mr. Simalabwi underscored that it was essential to demonstrate the impact of the work that has been done towards improving the lives of citizens. AUDA-NEPAD has developed both political and technical instruments to deal with a broad range of issues. He further highlighted that the role of the webinar's participants was to ensure that positive change can improve communities, through the provision of water.
- 9.1.3 The PIDA-PAP 2 programme has high level political support from the African Union (AU) and technical

support from GWPSA-ACU. GWPSA-ACU's Board Chair, His Excellency President Jakaya Kikwete, former President of Tanzania, is aware of the challenges the water sector is dealing with and is committed to support interventions at the highest level.

9.1.4 The next steps after the meeting were outlined as follows:

- AUDA-NEPAD, supported by GWPSA-ACU, to convene one-on-one sessions with project owners to delve deeper into the diagnostics of each project and determine gaps and project bottlenecks which would then be addressed under the PIDA-PAP 2 program. The information gathered in the webinar would provide the basis for the follow up one-on-one meetings to identify the support needed to address the gaps.
- AUDA-NEPAD to organize a consultation between Libya and Tunisia with the facilitation of UMA in liaison with GWPSA-ACU.

9.2 Closing Remarks – AUDA-NEPAD

- 9.2.1 On behalf of AUDA-NEPAD, Mr Tichakunda Simbini thanked all the participants for their support. He thanked the GWP team for coordinating the meeting and emphasized that the immediate next step was for AUDA-NEPAD to facilitate one-on-one sessions with project owners.
- 9.2.2 Mr Simbini indicated that Dr. Loreen Katiyo would initiate the follow up contact and would share a form that is designed to capture the gaps and identify the specific needs for each project. He also thanked the IT team and interpreters who had supported the proceedings, then proceeded to declare the meeting officially closed.

Annex 1: List of Participants

	First Name	Last Name	Region	Affiliation
1	Robert	Dessouassi (VBA/ABV)	Western Africa	VBA
2	JOSÉ ANTÓNIO	RELAY	Southern Africa	Interpreter
3	Khotso	Letšela	Southern Africa	
4	James	Wachira	Southern Africa	GWPO
5	Beatrice	Kanyamuna	Southern Africa	
6	Wensley	Muchineri	Southern Africa	UMSCC
7	Mohamedou	Sy	Western Africa	
8	Charafat	Afailal	Northern Africa	
9	Liphapang	Khaba	Southern Africa	
10	Matus	Samel	Eastern Africa	
11	VICTOR A.	MENGOT	Central Africa	
12	Yaovi	Kogbe	Western Africa	
13	Fungai	Musana	Southern Africa	WWF (World Wild Fund for Nature)
14	Ahmed	Fouad	Eastern Africa	
15	Judith	Enaw	Central Africa	ANBO
16	Addisu Melkamu	Kebede	Eastern Africa	
17	Ebenizario	Chonguica	Southern Africa	LIMCOM
18	Albert	Chomba	Central Africa	
19	Lenka	Thamae	Southern Africa	ORASECOM
20	marwa	khattab	Eastern Africa	
21	José Bastos	Vaz da Conceição do Sacramento	Central Africa	
22	Christopher	Chilongo	Southern Africa	
23	MARGARET	SAMULELA	Southern Africa	



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28	Dina	Ramaromandray	Southern Africa	GWP
29	Andrew	Takawira	Southern Africa	GWP SA
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31	Chris	Nshimbi	Southern Africa	
32	Alpha oumar	BAH	Western Africa	
33	halima	Mamou	Northern Africa	
34	Paul	Orengoh	Eastern Africa	AMCOW
35	Evans	Kaseke	Southern Africa	ZAMCOM
36	Rene	Schieritz	Southern Africa	GWP SA
37	Boris	Relay	Southern Africa	
38	jackson	twinomujuni	Eastern Africa	
39	Caroline	Rukundo	Eastern Africa	GWP EA
40	Tahani	Sileet	Eastern Africa	
41	Janvier	BAZOUN	Western Africa	
42	Sibongile	Mavimbela	Southern Africa	SADC
43	Sondos	Njoumi	Northern Africa	GWP Med
44	FRED	MWANGO	Eastern Africa	IGAD
45	Koetlisi	Koetlisi	Southern Africa	GWP SA
46	RAKOTOBÉ RAHELIARISOA	Holinantenaina	Southern Africa	Mauritius CWA
47	Paseka	Lesolang	Southern Africa	
48	Svetlana	Doneva	Southern Africa	GWP SA
49	Albain	Tchangou	Central Africa	



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51	Dumisani	Mndzebele	Southern Africa	SADC
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54	Abraham (Abri)	Vermeulen	Southern Africa	Pegasys
55	Litumelo	Mate Sievers	Southern Africa	GWP SA
56	Michael	Mutale	Southern Africa	ZAMCOM
57	Ashton	Mpofu	Southern Africa	Green Cape
58	Albert	LAMAH	Western Africa	
59	Dibi	MILLOGO	Western Africa	
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64	Patience	Mukuyu	Southern Africa	IWMI
65	Gloria	OKYEMOU	Central Africa	
66	Sarra	Touzi	Northern Africa	GWP Med
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69	Sarah	Kiggundu	Southern Africa	
70	Letsatsi	Lekhooa	Southern Africa	
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79	Akinwale	Aboyade	Southern Africa	
80	Aobakwe	Phuthi	Southern Africa	
81	George	Sanga	Eastern Africa	GWP EA
82	Robert	Raw	Southern Africa	C4ES
83	Mildred	Johnson	Southern Africa	
84	Mokhtar Radi	Libya	Northern Africa	
85	Chicher	Diogo	Central Africa	
86	Mrs Alphonsine APENDEKI	NABUTUNGA	Central Africa	
87	Mapaseka	Gumbi	Southern Africa	
88	Olushola	Moses	Western Africa	
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124	Belynda	Petrie	Southern Africa	One World
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127	Gareth James	Lloyd	Southern Africa	DHI
128	Nicolas	Delaunay	Western Africa	
129	Eunice	Mugera	Eastern Africa	
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137	Frank Chisoni	Nyoni	Southern Africa	WARMA
138	Narayan	Joshi	Southern Africa	
139	MICHEL	DIMBELE - KOMBE	Central Africa	
140	Mofihli	Motsetsero	Southern Africa	
141	Sowed	Sewagudde	Eastern Africa	
142	Michelle	Saffy	Southern Africa	GWP SA
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146	Sehlomeng	Maqelepo	Southern Africa	
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150	Chilika	Ngonga	Southern Africa	
151	Aidan	Senzanje	Southern Africa	UKZN
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163	Stefan	Vosloo	Southern Africa	GWP SA
164	Nico	Elema	Southern Africa	NEPAD
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189	CHARIF	AISSIOU	Northern Africa	
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191	Khumbuzile	Zuma	Southern Africa	UNICEF
192	Mohamed	Eliwa	Northern Africa	
193	Touitha	Younes	Northern Africa	
194	Mpho	Fako	Southern Africa	
195	Cathrine	Mutambirwa	Southern Africa	UNCCD
196	Simon Robison	RANDRIATSIFERANA	Southern Africa	
197	Sami	Osman	Eastern Africa	NELSAP
198	Bonang	Mosiua	Southern Africa	
199	Steven	Makhongela	Eastern Africa	RRS Investments
200	Tlhoriso	Morienyane	Southern Africa	
201	Samyra	Amabo	Central Africa	GWP-CAF
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203	Masauso	Chilima	Southern Africa	
204	Djaffar	Chachoua	Northern Africa	
205	BLAISE-LEANDRE	TONDO	Central Africa	
206	Francina	Phakamea	Southern Africa	GWP SA
207	OUMAR	SOULOUM	Central Africa	
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212	NATHAN	MWEMA	Eastern Africa	
213	Mkhuzo	Chongo	Southern Africa	GWP SA
214	Litumelo	Mate Sievers	Southern Africa	GWP SA