

# Final Report

Evaluation of the Implementation Status of  
Water-related Projects of the  
Programme for Infrastructure Development in Africa (PIDA)  
and Formulation of respective Action Plans

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Study carried out  
for  
African Ministers' Council on Water (AMCOW)

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## 1 INTRODUCTION

This report has been prepared under the consultancy "Evaluation of the Implementation Status of Water-related Projects of the Programme for Infrastructure Development in Africa (PIDA) and Formulation of respective Actions Plans" commissioned by the African Ministers' Council on Water (AMCOW).

According to the ToR for the consultancy, the PIDA priority action plan (PAP) comprises the 51 PIDA programs and projects designed to address sector-specific priority infrastructure deficits, of which the following nine (9) of the PAP projects are classified as trans-boundary water sector projects:

1. Palambo: Regulation dam to improve navigability of Obangui River with added hydropower component; Congo River Basin.
2. Fomi: Hydropower station in Guinea with irrigation water supply for Mali and regulation of the Niger River; Niger River Basin.
3. Multi-sectoral investment opportunity studies: Identification and preparation of investment programs in the basin; Okavango River Basin.
4. Lesotho HWPP Phase II - water transfer component: Orange-Senqu River Basin.
5. Gourbassy: Multi-purpose dam located in Guinea; regulation of the Senegal River; Senegal River Basin.
6. Noumbiel: Multipurpose dam with hydropower generation component (Burkina Faso & Ghana); Volta River Basin.
7. Nubian Sandstone Aquifer System: Implementation of regional strategy for the use of the aquifer system; Nubian Sandstone Aquifer System.
8. North-West Sahara Aquifer System: Pre-feasibility studies for the improved use of the aquifer system; North-West Sahara Aquifer System.
9. Lullemeden Aquifer System: Pre-feasibility studies for the improved use of the aquifer system; North-West Sahara Aquifer System; Lullemeden and Taoudeni/Tanezrouft Aquifer System.

As of today progress in these projects is slowed down by several factors including low capacity for project preparation; lack of financing, including PPP; lack of clear institutional arrangements for implementing the PAP, including the role of the RECs, LRBOs, and Member States. Currently even information on the current status of some of the PAP projects is not readily available.

The PIDA project implementation arrangement provides for a role for "Specialized Institutions and Agencies" to make technical inputs to the NEPAD Planning and Coordination Agency. There is currently no water sector specialized agency playing this role for PIDA water sector projects. In light of the above background and rationale AMCOW intends to assume a stronger role in the PIDA process by providing technical input to the NEPAD Planning and Coordinating Agency regarding water-related PIDA PAP projects. As a first step, AMCOW held a session on "Sustainable Infrastructure for Water Security and Climate Resilience" at the 2016 PIDA Week in Abidjan in November 2016. This was followed by the commissioning of the present study.

The rationale for the study is to provide a better understanding of the status of PIDA water projects and how their implementation has been progressing, identifying reasons why projects have progressed or stagnated and analyzing the main factors that have helped or hindered project implementation. In addition, the study is to assess ways to accelerate the pace of project implementation through the use of instruments PIDA has developed to catalyze the planning, preparation, and implementation of PIDA PAP projects. These PIDA project development and implementation support instruments include:

- i. PIDA service delivery mechanism (PIDA SDM)
- ii. Project Preparation Facility Network (PPFN)
- iii. PIDA Continental Business Network (PCBN)
- iv. PIDA M&E reporting system/ Virtual PIDA information centre (VPiC)
- v. PIDA information and communication system (including VPiC)

## 2 APPROACH, PROCESS AND ACTIVITIES

Initially the idea was to quickly prioritize and select PIDA water projects for visits and discussions with stakeholders, on the basis of existing project information, immediately followed by travel to meet the main project stakeholders of the selected projects as well as some of the PIDA stakeholders in various parts of Africa. It soon became clear, however, that few active working relationships existed with project focal points and stakeholders and that up-to-date contact information was largely unavailable. It was necessary, therefore, to track down current project focal points and stakeholders and ascertain their contact information in order to be able to establish contact with them and collect project information. This, in turn, required a much longer planning and preparation phase than originally anticipated.

The information collection process began in mid-June 2017 with an official introductory e-mail sent out by AMCOW to a range of project stakeholders (including RBOs and RECs), using 'best-guess contact information, followed by a 'gentle reminder' e-mail two weeks later. Responses received from project stakeholders were followed up by the consultant with e-mails requesting information on project-specific implementation progress. Progress on establishing contact with project focal points and stakeholders and collecting updated project information proved to be slow. It took a full two months for a clearer picture about current project focal points, stakeholders and project status to start emerging. This explains why the project inception phase needed to be extended very substantially and hence turned out to be much longer than anticipated in the original ToR.

A draft inception report was prepared in late August 2017 and revised in September 2017. The inception report outlines the approach taken and process followed during the inception phase, and summarizes preliminary results obtained. The inception report also provides a rationale regarding the critical need for project visits to enable direct engagement with project stakeholders in order to complement and expand on existing project information. Additional project information was required, in particular, to better understand PIDA water projects' past implementation progress (or lack thereof) and to help strengthen future project action plans, in particular through the potential use of PIDA project planning, preparation and implementation instruments. The inception report, further, offers criteria for prioritising projects for direct stakeholder engagement and presents the final choice of projects to be visited and outlines different options for completing the PIDA water project status assessment. For more details, see the final version of the inception report, dated 20 September 2017, which is appended as Annex A.

The following three projects were selected for visits:

- Cubango-Okavango Basin Multisectoral Investment Opportunity Studies (C-O MSIOA)
- Lullemeden Aquifer System (recently renamed Lullemeden-Taoudéni/Tanezrouft Aquifer System)
- North-West Sahara Aquifer System (also known as Sahara Septentrional Aquifer System)

Project visits took place during the first half of October 2017, involving travel to Southern Africa and North Africa to engage with the institutional focal points for these projects: the OKACOM Secretariat (OKASec) located in Gaborone, Botswana, for the C-O MSIOA project, and the Sahara and Sahel

Observatory (OSS) located in Tunis, Tunisia, for the two aquifer system projects. The visit to OKASec made it possible to also engage with the regional economic community (REC) for Southern Africa, also located in the same city (Gaborone, Botswana), and en route to visit NEPAD in Midrand, South Africa for meetings with relevant PIDA staff. An overview of the meetings held during the travel to Southern Africa and North Africa is provided in Annex B.

### 3 FINDINGS

This section summarises the findings and results of the study. The section is organised by project, starting with projects for which information was collected only through e-mail communications (sub-section 3.1) and followed by projects for which information collection benefitted from direct engagement with stakeholders during visits (sub-section 3.2). For each project, information and findings are organised in terms of the three objectives of the project status review: i) to establish the project status; ii) to assess project implementation progress and reasons for good or not-so-good progress; and iii) to discuss project plans and the possible use of PIDA project instruments. A list of new project-related documents obtained through e-mail contacts or during project visits, is appended as Annex C.

#### 3.1 PROJECTS NOT VISITED

##### 3.1.1 PALAMBO DAM

###### Project status

At the time the PIDA priority action plan (PAP) was finalised (2011-2012), the project was classified to be at the S2 stage (pre-feasibility/needs assessment). The project continues to be at the pre-feasibility and needs assessment stage (S2).

###### Project implementation progress

It appears that little, if any, implementation progress has taken place over the past five years and that lack of funding is the main reason for the lack of progress so far. This needs to be confirmed.

So far, some project status information has been received only from CICOS. There is need for receiving feedback from CEMAC's and CEEAC-ECCAS' on their perspectives regarding project status, implementation progress, and plans for the future.

###### Project plans and the use of PIDA instruments

This project is part of CEMAC's Regional Economic Program as well as part of CICOS' Strategic Action Plan for Inland Navigation, for which funding has been sought, apparently without much success so far. It is possible that PIDA instruments such as SDM, PPFN, CBN, and PViC might help to accelerate implementation progress. But this needs to be discussed and verified with the project stakeholders.

###### Recommendation

The main project stakeholders (CEMAC, CICOS, and CEEAC-ECCAS) need to be visited to discuss the reasons for the lack of progress so far, what could be done to accelerate implementation progress, and how PIDA might assist by means of its project planning, preparation, and implementation instruments.

##### 3.1.2 FOMI DAM

###### Project status

At the time the PIDA PAP was finalised (2011-2012), the project was classified to be at the S3 stage (programme/project structuring and promotion to obtain finance). It is not clear how far the project has come with project structuring and mobilisation of finance and when the S4 stage (implementation and operation) is expected to be reached.

#### Project implementation progress

The Fomi Dam PIDA PAP initiative has been pursued under two linked projects:

- WB-funded Water Resources Development and Sustainable Ecosystem Management (WRD SEM) APL-1 project (P093806), under which the principal preparatory studies have been supported; and
- Niger River Basin Management Project (P149714), approved for CIWA<sup>1</sup> funding in Nov. 2014 and, inter alia, aimed at providing additional support in terms of institutional capacity building, complementary studies, and other activities.

The WRD SEM APL-1 project was active in 2014. It is not clear if this project is still active or if it has gone into a new phase (APL-2?).

The Niger River Basin Management Project has a component which focuses on strengthening the capacity of Niger River Authority (NBA) for Fomi Dam preparation. This component is organised in 2 phases. Phase 1 is focused on facilitating stakeholder dialogue among Guinea, Mali, and NBA to develop a road map on how to proceed with the preparation of Fomi Dam Project. Phase 2 comprises studies that are complementary to the principal preparatory studies supported under WRD SEM APL-1 and other activities. The latter include: i) a review of joint financing and management options for Fomi dam and hydropower station (including the potential for public-private arrangements); ii) the design of corresponding legal and institutional frameworks; iii) contractual design; iv) benefit-sharing arrangements (short- and long-term); v) dam management arrangements; and vi) development of project implementation arrangements.

Implementation progress since 2014 is unclear and requires updated project information to be obtained and assessed.

#### Project plans and the use of PIDA instruments

In order to assess project plans and the scope for use of PIDA instruments, there is need to obtain updated information on the implementation of projects P093806 and P149714 and any possible follow-up phases, for the last 3 years, since 2014.

It is possible that PIDA instruments such as CBN, and PViC might help to accelerate implementation progress. But this would need to be discussed and verified with the project stakeholders.

#### Recommendation

The main project stakeholders (Direction Generale du Projet d'Amenagement du Barrage a buts multiples de Fomi, Ministère de l'Énergie et de l'Hydraulique, Conakry, Republic of Guinea; and NBA, Niamey, Niger) need to be visited to discuss implementation progress in recent years, by what time the Fomi Dam initiative can be expected to reach the implementation and operation stage, and how PIDA might be able to assist by means of its project preparation and implementation instruments.

### 3.1.3 GOURBASSY DAM

#### Project status

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<sup>1</sup> CIWA (Cooperation in International Waters in Africa) is a multi-donor initiative managed by the World Bank that supports the development and implementation of transboundary water infrastructure projects throughout Africa.

At the time the PIDA PAP was finalised (2011-2012), the project was classified to be at the S2 stage (pre-feasibility/needs assessment). Meanwhile a feasibility study has been completed (in 2012) and some activities have been undertaken to structure the project and mobilise finance. The project is now at an (early) S3 stage (programme/project structuring and promotion to obtain finance).

#### Project implementation progress

A feasibility study and preliminary design for the Gourbassy Dam was completed by SNC LAVALIN International in 2012 for the OMVS Secretariat (Haut Commissariat de l'OMVS), with funding from the World Bank under the project PGIRE 1. The main summary report is dated July 2012.

Since then, some (rather modest) progress has been made on further project preparation and mobilisation of finance. Activities that have been undertaken include: preparation of terms of reference for detailed design studies and tender documents; preparation of studies to assess the cost of building the dam; and development of plans to mobilise finance, including planning for a donor round table and sending out funding requests to potential partners.

#### Project plans and the use of PIDA instruments

It is possible that PIDA instruments such as CBN, and PViC might help to accelerate implementation progress. But this would need to be discussed and verified with the project stakeholders.

#### Recommendation

The main project stakeholder (OMVS) needs to be visited to discuss implementation progress in recent years, project plans for the coming years, and how PIDA might be able to assist by means of its project preparation and implementation instruments.

### 3.1.4 NOUMBIEL DAM

#### Project status

At the time the PIDA priority action plan (PAP) was finalised (2011-2012), the project was classified to be at the S1/S2 stage (early concept proposal/pre-feasibility/needs assessment). The project continues to be at the pre-feasibility and needs assessment stage (S2).

#### Project implementation progress

A consultant was hired by the African Development Bank (AfDB) in 2014 to carry out a feasibility study. However, the work of the consultant was not supervised by the Volta Basin Authority (VBA), and the VBA never saw the results of the feasibility study or any reports produced by the consultant. At the suggestion of VBA, the national authorities of Burkina Faso and Ghana were contacted for further information on the outcome of the attempt to conduct a feasibility study and on any other follow-up work, without a response to date. It appears as though the project is currently in limbo.

#### Project plans and the use of PIDA instruments

There is need to obtain updated information, in particular from the AfDB and the national authorities of Burkina Faso and Ghana, on the attempted feasibility study, what if any project activities have been carried out since 2014 and what if any plans exist to move forward on the project.

#### Recommendation

The main project stakeholders (above all AfDB and the national authorities of Burkina Faso and Ghana, but also VBA) need to be visited to discuss what happened with the attempted feasibility study, how the project could be (re)activated, and what PIDA could do to assist by means of its project planning and preparation instruments.

### 3.1.5 LESOTHO HIGHLAND WATER PROJECT (LHWP) , PHASE 2

#### Project status

At the time the PIDA PAP was finalised (2011-2012), the project was classified to be at the S3 stage (programme/project structuring and promotion to obtain finance). The project is now at the S4 stage (implementation).

#### Project implementation progress

The LWHP Phase 2 Feasibility Study was completed by the C4 SEED Joint Venture (Consult4 Consortium & Seed Consult) in 2009. The Governments of Lesotho and South Africa signed the LHWP Phase 2 Agreement in Aug 2011 and ratified in May 2013. A Project Management Unit was set up within the Lesotho Highlands Development Authority (LHDA) in 2012 and started operation in late 2012/early 2013.

As of Oct 2012, the project implementation plan (Master Programme) envisaged the main water infrastructure (dam and tunnel) to be built during Aug 2016 – Nov 2020 and water transfer to South Africa to start in Nov 2020. An update of the Master Programme in mid-2017, provided as part of a LHDA progress report dated July 2017, projects the main works to be completed, and water transfer to be initiated only by the end of the year 2025. This indicates a time slippage of 5 years in projected project completion within the 5-year period from Oct 2012 to July 2017.

As for the reasons for the apparent time slippage in project implementation, LHDA's progress report of July 2017 points to delays in the signing and ratification of the Phase 2 Agreement, longer than anticipated tender review and approval processes, slippages in procurement timelines, and communication issues. The progress report states that "LHDA has implemented measures to mitigate against further delays, including standardizing processes to streamline tender review and approval procedures, strict adherence to procurement timelines, and maintaining regular, frank communications with the project's principals".

#### Project plans and the use of PIDA instruments

Current project implementation plans envisage implementation to be completed and operation (i.e. water transfer within the Orange-Senqu Basin (from the Senqu River in Lesotho to the Vaal River in Gauteng Province, South Africa) to begin at the end of 2025.

For a project of the size of the LHWP Phase 2 (several billion USD), the prime promotion and governing mechanism (Lesotho Highlands Water Commission (LHWC)) can be assumed to have made every possible effort to market the project and line up financing commitments from public and private actors in a timely fashion. There is unlikely to be much scope for the use of PIDA instruments.

#### Recommendation

The main project stakeholders (LHDA and LHWC) should be visited for a more in-depth discussion of project implementation, progress, factors that have slowed down expected implementation progress, and measures taken to address these factors.

### 3.1.6 NUBIAN SANDSTONE AQUIFER SYSTEM

#### Project status

At the time the PIDA PAP was finalised (2011-2012), the project was classified to be at the S4 stage (implementation and operation). The project continues to be at the S4 stage.

### Project implementation progress

The project has used the GEF methodological framework of developing a Transboundary Diagnostic Analysis (TDA), followed by the development and implementation of a Strategic Action programme (SAP), for the transboundary aquifer system. The purpose of the TDA is to identify and analyse the main issues that need to be addressed regarding the status and use of the aquifer. The SAP is aimed at stimulating the necessary legal, policy and institutional reforms across the member countries in order to establish a framework for agreed collective management actions of the shared groundwater resources and to address key transboundary concerns at both regional and national level.

Cooperative efforts were formalized by the creation and ongoing activities of the Joint Authority for the Study and Development of the Nubian Sandstone Aquifer System (JASAD-NSAS), which was formally established between Egypt and Libya in 1991 (NSAS Agreement 1991, adopted in 1992), with Sudan joining in 1996 and Chad in 1999.

A Shared Aquifer Diagnostic Analysis (SADA) was completed in the period 2006 -2009 and a Strategic Action Programme (SAP) was subsequently developed, both with support from UNDP-GEF and IAEA. The SAP was signed by the four member states (Chad, Egypt, Libya, and Sudan) and their Joint Authority for the Study and Development of the Nubian Sandstone Aquifer System (JASAD-NSAS) on 18 September 2013.

More recently, a full-sized project entitled “Enabling Implementation of the Regional SAP for the Rational and Equitable Management of the Nubian Sandstone Aquifer System (NSAS)” has been prepared for UNDP-GEF support, with UNESCO (Paris Office) as the technical executing agency. The project document was expected to be signed by the four member states at a meeting scheduled for 10-11 September 2017 in Khartoum. Such approval would make it possible to the member countries to receive UNDP-GEF support and establish a regional focal point for the implementation of the project, with the assistance of the technical executing agency UNESCO.

Feedback on whether or not the full-sized UNDP-GEF project was approved at the September 2017 meetings is being awaited. Until that feedback is received, the exact current status of the UNDP-GEF project and the overall NSAS initiative remain unclear.

### Project plans and the use of PIDA instruments

Current project plans envisage the implementation of the full-sized UNDP-GEF project (i.e. the implementation of the existing SAP) over the coming years.

Given that a full-sized UNDP-GEF project tends to provide broad, all-encompassing financial and technical support, there is unlikely to be much scope for the use of PIDA instruments.

### Recommendation

Once it is clear that the UNDP-GEF project has been approved and once the project implementation starts, the main stakeholders of the project (regional project management unit, JASAD-NSAS(?), IGAD) should be visited to discuss the expected outputs, anticipated activities, and timeline of the project.

## 3.2 PROJECTS VISITED

### 3.2.1 CUBANGO-OKAVANGO MULTI-SECTORAL INVESTMENT OPPORTUNITY STUDIES (C-O MSIOA)

#### Project status

At the time the PIDA PAP was finalised (2011-2012), the project was classified to be at the S1 stage (early concept proposal). The C-O MSIOA is now at a late S4 stage (implementation), while its proposed investment options are at an S1/S2 stage (early concept proposal/pre-feasibility/needs assessment).

#### Project implementation progress

The C-O MSIOA was initiated in late 2014 with support from the World Bank managed multi-donor transboundary river basin development facility CIWA (Cooperation in International Waters in Africa). CIWA facilitated a consultative approach to develop the tools needed to identify sustainable regional investment opportunities in the Cubango-Okavango basin, an area of global environmental significance threatened by deep, persistent poverty within the three strong middle-income member countries. The MSIOA identified long-term development scenarios within the basin and analysed these scenarios within the OKACOM shared vision, national development objectives, and investment plans to outline a set of illustrative joint actions, which in turn inform a Sustainable and Equitable Climate Resilient Investment Programme structured around three target areas: a Climate-Resilient Livelihoods Enhancement; Enabling Basin-Wide Ecotourism; and Cooperative Infrastructure Development.

The technical analysis phase of the project was completed in 2016 with the support of consultants. The draft final report has been approved at the technical level by the relevant National Directors of the three member countries and is expected to be endorsed at the political level by the relevant Permanent Secretaries and Ministers of the member countries at OKACOM's upcoming semi-annual review meetings in November 2017. In parallel, a final internal review at the level of the World Bank is underway, with approval expected towards the end of 2017. Following formal OKACOM and World Bank approval, the final MSIOA reports are expected to be formally published by the end of 2017.

The draft final report presents a number of potential investment areas, in line with the Shared Vision, with recommendations on enabling institutional reforms. Proposed investment options include 'no-regrets' investments in improved livelihoods in the basin, tourism development, joint infrastructure investments (such as irrigation systems, multi-purpose dams, and energy supply systems), and institutional support.

In addition to MSIOA, a benefits assessment was carried out in collaboration with OKASec, UNECE, Sweden, and the DfID-financed CRIDF program. This was complemented by a Network Mapping of stakeholders carried out by the World Bank.

Implementation of the Sustainable and Equitable Climate Resilient Investment Programme is estimated to require around US\$ 1 billion in financial resources and would support the establishment of a dedicated endowment fund. A range of financing options have been identified, including the mobilisation of global public funds (such as Green Climate Fund), a framework for facilitating private-sector investments, and a roadmap for joint development of large-scale infrastructure.

The investment programme component that is aimed at climate-resilient livelihoods enhancement comprises relatively short-term interventions that build on existing initiatives to address the underlying drivers of poverty. These 'no-regret' measures can be used to inform longer-term sustained initiatives under a dedicated endowment fund.

The investment programme component that aims at enabling basin-wide ecotourism seeks to facilitate the mobilisation of private-sector resources by creating an appropriate enabling environment.

The investment programme component dealing with cooperative infrastructure development seeks to promote, test, and consolidate transparent cooperative processes around joint large-scale infrastructure development.

### Project plans and the use of PIDA instruments

There are plans to hold a series of roundtable consultations with development partners, potential investors, government officials, and other stakeholders to discuss options for implementing and financing recommended investment options.

A proposal is being prepared for support of interventions to address poverty and enhance local livelihoods in the basin, for submission to the Green Climate Fund (GCF) and for further CIWA support.

Consideration is being given to possibilities of engaging advisory services specialised in tourism concessions, in partnership with ongoing initiatives such as the Kavango-Zambezi Transfrontier Conservation Area (KAZA TFCA), to help guide private-sector investments in the tourism sector.

Consideration is also being given to mobilising grant financing to support transparent processes toward cooperative development of transboundary infrastructure.

The proposed investment programme seems to provide scope for PIDA to assist through the use of PIDA instruments. In particular, proposed efforts to encourage the private sector to invest in basin-wide ecotourism development may benefit from resources and inputs potentially accessible through PIDA's Continental Business Network (CBN). Likewise, the proposed joint investment programme may benefit from resources and inputs accessible through the service delivery mechanism (SDM) and the Project Preparation Facility Network (PPFN) and possibly also through the PIDA Virtual Information Centre (PViC) for the purpose of wider project marketing.

### Recommendation

Further consideration should be given to ways in which PIDA might assist the implementation of the investment program proposed by C-O MSIOA, specifically through the use of PIDA instruments, and appropriate follow-up should be explored.

### 3.2.2 NORTH-WEST SAHARA (SAHARA SEPTENTRIONAL) AQUIFER SYSTEM

#### Project status

At the time the PIDA PAP was finalised (2011-2012), the project was classified to be at the S2 stage (pre-feasibility/needs assessment). The project is now at the S3 stage (programme/project structuring and promotion to obtain financing).

#### Project implementation progress

This project has gone through three phases. Phase 1 (1999-2002) was funded by IFAD, SDC, and FAO and focused broadly on improving knowledge. Results included: the creation of a common database comprising about 9,000 water points; the development of a hydraulic management model to assess the impacts of water withdrawals on the resource; and the establishment of a consultation structure at the technical level.

Phase 2 (2003 – 2007) was funded by SDC, France, and UNEP-GEF and focused broadly on the development of a consultation mechanism (Mécanisme de Concertation) among the three member countries and the establishment of a common cooperative basin-wide groundwater management framework, based on the consultation mechanism. The consultation mechanism consisted of a Council of National Ministers in charge of water; a Steering Committee consisting of national institutions in charge of water resources, national multi-stakeholder committees, national and regional technical working groups, and a dedicated Secretariat and Project Coordination Unit based at the Observatory for the Sahara and Sahel (OSS) in Tunis.

Phase 3 (2009 – 2014) was funded by AfDB's African Water Facility (AWF), FFEM (France) and UNEP-GEF and focused on agriculture as the sector responsible for most of groundwater consumption and hence most at risk from increasing water scarcity due to unsustainable groundwater withdrawals (over the years, the overall water balance of the aquifer system has become strongly negative, with rising overall water withdrawals, now 2.8 m<sup>3</sup>/yr already exceeding overall recharge (1 billion m<sup>3</sup>/yr) by a factor of 3.

Phase 3 was structured around two components: a) socio-economic analysis of agricultural producers' (irrigators') operations and decision-making in order to better understand irrigators' behaviour with a view to improved valorisation (more efficient and productive utilisation) of water resources; and b) pilot studies carried out on six selected irrigators' plots (of 1-2 ha in size), using a participatory approach, to investigate and demonstrate the feasibility and acceptability of technical innovations aimed at using groundwater more efficiently and productively (specifically the use of solar energy for water pumping, upgrading brackish water through demineralisation, rehabilitation of degraded lands, improving irrigation efficiency and intensifying agricultural production). Socio-economic analysis made it possible to shed light on issues like the impacts of soil salinization on water productivity, the effect of water pricing on water consumption, the role of social organisation on the efficiency and productivity of farm water use, and differences in water use efficiency across farmers with access to private versus public water boreholes. Demonstration pilots tested the following four innovations:

Phase 3 also developed an overall strategy for the sustainable management of the NWSAS in the form of a GEF transboundary diagnostic analysis (TDA) which included elements for the elaboration of a strategic action plan (SAP).

OSS has proposed a 4<sup>th</sup> phase for the NWSAS/SASS project, to be implemented in collaboration with the three member countries (Algeria, Libya, and Tunisia). A concept note has been prepared under the title "Valorisation of the North Western Sahara Water Resources (VALES)", which is being used as a vehicle for marketing and fund raising. The concept note has been sent to various donors and funding agencies including AfDB, the GEF and several bilateral donors. The envisaged phase 4 builds on the previous phases, specifically phase 3, in proposing to move from relatively "small-scale agricultural systems" (demonstration pilot sites of 1-2 ha each) to a larger-scale "integrated production system" (demonstration pilot zones of 50 ha each) as units of experimentation, demonstration, and analysis on how groundwater could be used more efficiently and productively, taking into account the interactions between farmers and other actors in the production and commercialisation chain and integrating local and regional development strategies.

#### Project plans and the use of PIDA instruments

The envisaged phase 4 is expected to address the following issues: how an incipient shift from water supply management to water demand management could be further encouraged and incentivized among the three member countries; what could be done to encourage and incentivize more efficient and productive water use by increasing the economic value of water (enhancing water valorization), and how best to tackle these issues in a context of climate change (rising temperatures, and decreasing rainfall). Factors to be examined include: collective forms of water management, land tenure patterns, water pricing, water conservation, preserving ecosystems, adoption of solar energy for water pumping, encouraging a shift from summer cropping to winter cropping, etc.

It is proposed that phase 4 be structured in terms of three components: a) development and implementation of pilot studies on six large-scale demonstration pilot sites (of 50 ha each); b) identification and development of elements for a strategy toward more efficient (ground)water use and more sustainable (ground)water management; and c) strengthening the Consultation Mechanism, institutional capacity building, dissemination and extension of results and innovations.

Phase 4 is envisaged to run for a total of 4 years, with a preparatory phase of 6-12 months and a main phase of 36-42 months for the implementation and evaluation of demonstration pilots, parallel survey-based socio-economic studies, and the establishment and strengthening of an appropriate institutional structure. The estimated budget is USD 9.2 million, of which the member countries are expected to contribute USD 5.7 million, with the remainder (USD 3.5 million) to be covered by external support.

There may well be scope for PIDA's service delivery mechanism (SDM) and/or project preparation facility network (PPFN) to provide financial and/or technical assistance in support of the preparatory phase of proposed Phase 4 project. OSS has been made aware of this possibility and may contact the relevant PIDA officer at NEPAD.

#### Recommendation

Further consideration should be given to ways in which PIDA might assist the preparation of Phase 4 of the NRSAS/SASS project, specifically through the use of suitable PIDA instruments, and appropriate follow-up should be explored.

### 3.2.3 LULLEMEDEN - TAOUDENI/TANEZROUFT AQUIFER SYSTEM

#### Project status

At the time the PIDA PAP was finalised (2011-2012), the project was classified to be at the S2 stage (pre-feasibility/needs assessment). Initially, the project was defined to focus on the Lullemeden Aquifer system only. It has been decided, however, to extend the investigation of the Lullemeden Aquifer system to the wider hydraulically interconnected Taoudéni and Tanezrouft Aquifer systems and to take into account hydraulic interconnections with the Niger River as well (GICRESAIT project – see below), rather than advancing work on sustainable management of the Lullemeden Aquifer system in isolation of the other systems. For this reason, the project has continued to be at the S2 stage (pre-feasibility/needs assessment).

#### Project implementation progress

A GEF-supported project, implemented during 2004 – 2009, produced a TDA published in 2011. The TDA was supported by complementary studies such as mathematical aquifer modelling and by the development of a process to set up a tripartite consultation mechanism, also published in 2011. The project has also demonstrated the interchange between the surface waters of the Niger River and the Lullemeden Aquifer System, with each feeding the other at various times during the year.

The GEF-supported project was followed by a regional project for the larger interconnected Lullemeden, Taoudéni and Tanezrouft aquifer system (ITTAS), taking into account the interchange with the Niger River as well. The larger project, entitled "Gestion intégrée et concertée des ressources en eau des systèmes d'Lullemeden, Taoudéni/Tanezrouft, and le fleuve Niger" (GICRESAIT), involved seven countries (Algeria, Benin, Burkina Faso, Mali, Mauritania, Niger and Nigeria), and was funded by AfDB's AWF and FFEM (France) and implemented during 2010-2017. Results of the GICRESAIT project include:

- improved knowledge on the recharge and water supply potential of the wider aquifer system (11 billion m<sup>3</sup>/yr for the Taoudéni/Tanezrouft aquifer system plus 8 billion m<sup>3</sup>/yr for the Lullemeden Aquifer system, for an ITTAS total of 19 billion m<sup>3</sup>/yr) vis-à-vis current much lower water withdrawals from ITTAS (total of 0.35 m<sup>3</sup>/yr);
- the Niger River supplies about 1.5 billion m<sup>3</sup>/yr to the Taoudéni/Tanezrouft part of ITTAS and further downstream receives about 3.3 billion m<sup>3</sup>/yr from the Lullemeden part of ITTAS;
- Elements/indicators for the ongoing monitoring of ITTAS defined;
- A database of 122,000 water points established and shared among the member countries;

- A number of thematic maps developed (ITTAS, Atlas of Water Resources, March 2017);
- A hydrogeological model developed;
- High-potential aquifer zones (> 80% of ITTAS, where aquifer is deep) and low-potential aquifer zones (< 20% is low potential, where aquifer is close to surface) identified;
- 70 professionals trained in the use of aquifer management methods and tools;
- A website and geoportal developed;
- The Protocol to Consultation Mechanism agreement signed by Benin, Mali, Niger, and Nigeria.

GICRESAIT is in the process of winding down. Activities during 2017 have focused on the dissemination of results, the preparation of promotional/marketing materials and the mobilisation of financial resources for an envisaged follow-up phase to GICRESAIT.

#### Project plans and the use of PIDA instruments

A GEF PDF B project is being implemented for the development of a full-sized GEF project for the development of a TDA and SAP for the sustainable management of the combined Iullemeden, Taoudéni – Tanezrouft aquifer system (ITTAS) and the Niger River basin. The project document for the full-sized GEF project is expected to be approved by GEF's governing council in November 2017, with project implementation to start in 2018. The full-sized GEF project is envisaged to be coordinated jointly by the Niger River Authority (NBA) and the OSS. NBA will continue to implement their existing SAP, while OSS will complete and TDA and a SAP for the combined ITTAS – Niger River system, in close collaboration with NBA.

There are active plans for developing a 4-5 year follow-up phase to the GICRESAIT project, for which marketing and fund-raising efforts have started. The follow-up project is envisaged to shift focus from the previous aquifer-wide regional research to studies of particular local areas where critical water-related issues like flooding, water scarcity, and food insecurity have arisen that need to be addressed urgently. Options like capturing surface flood waters to inject them underground into the aquifer via wells (artificial recharge) for later beneficial use, pumping groundwater from higher-potential to lower-potential aquifer zones via water pipes, encouraging economic activities in groundwater-rich areas and if feasible, moving economic activities from (ground)water-scarce to (ground)water-rich areas are to be systematically developed and may feed into water master plans aimed at optimizing water supply-demand balances at different levels (national, sub-regional, and local).

There may be scope for PIDA's service delivery mechanism (SDM) and/or project preparation facility network (PPFN) to assist in the preparation of the proposed follow-up project to GICRESAIT. OSS has been made aware of this possibility and may contact the relevant PIDA officer at NEPAD.

#### Recommendation

Further consideration should be given to ways in which PIDA might assist the preparation of Phase 4 of the GICRESAIT follow-up project, specifically through the use of suitable PIDA instruments, and appropriate follow-up should be explored.

## 4 SUMMARY OF RESULTS ACROSS ALL PIDA WATER PROJECTS

This section summarises the results of the PIDA water project implementation status evaluation in terms of project status and implementation progress as well as project plans and the scope for the possible use of PIDA instruments to assist projects in strengthening their project plans and moving forward more effectively on their implementation.

#### 4.1 PROJECT STATUS AND IMPLEMENTATION PROGRESS

Table 1 provides an overview of how project implementation stages have evolved across the nine (9) PIDA transboundary water projects, from the time the PIDA priority action plan was finalised (2011-2012) up to now (mid-2017).

Table 1: PIDA water project stage ratings

Project	Project Stage	
	2011-2012 <sup>2</sup>	2017
Palambo Dam (Congo River Basin)	S2	S2
Fomi Dam (Niger River Basin)	S3	S3/S4?
Gourbassy Dam (Senegal River basin)	S2	Early S3
Noumbiel Dam (Volta River basin)	S2	S2
Lesotho Highland Water Project Phase 2) (Orange-Senqu River Basin)	S3	S4
Multisectoral Investment Opportunity Studies Cubango-Okavango basin (C-O MSIOA)	S1	S4 (S1/S2) <sup>3</sup>
Nubian Sandstone Aquifer System (NSAS)	S4 (S2/S3) <sup>4</sup>	Early S4
North-West Sahara Aquifer System (NWSAS or SASS)	S2	S3
lullemeden Aquifer System(IAS); lullemeden, Taoudéni -Tanezrouft Aquifer System (ITTAS)	S2 <sup>5</sup>	S2 <sup>6</sup>

Seven (7) of the nine (9) PIDA transboundary water projects have made significant, if variable, implementation progress over the past five years. The Fomi Dam project moved further towards implementation, although it is not clear how far and whether implementation might have started already. The Gourbassy Dam project had its feasibility study completed early on and has made some (limited) headway on project structuring and fund raising. The Lesotho Highlands Water project moved further on environmental and social studies, design work, and issuing construction tenders toward initiating construction activities, but with substantial slippages in the projected start of project operation (water transfer). The Nubian Sandstone Aquifer project has managed to complete a GEF proposal document as the basis for initiating a full-sized GEF project for the implementation of an already existing Strategic Action Programme (SAP). See sub-sections 3.1.2, 3.1.3, 3.1.5 and 3.1.6 for further information on the implementation status and progress of the Fomi Dam, Gourbassy Dam, Lesotho Highlands Water, and Nubian Sandstone Aquifer projects, respectively.

The C-O MSIOA project which started as an early concept proposal, is now virtually completed and the process of marketing the recommended investment projects and mobilising funding for them has begun. The MSIOA analysis has already provided needs and pre-feasibility assessments for most of the recommended investment options. The North-West Sahara Aquifer (SASS) project completed its 3<sup>rd</sup> phase and has advanced to a stage where a concept proposal for a 4<sup>th</sup> phase is being marketed among a range of potential donors to secure buy-in and project finance. And the lullemeden Aquifer (IAS) System

<sup>2</sup> The initial PIDA water project stage ratings were taken from the following document: PIDA Note (English), "Programme for Infrastructure Development in Africa – interconnecting, integrating and transforming a continent", undated (likely 2012).

<sup>3</sup> While the C-O MSIOA is all but completed, the project's proposed investment options are at an S1/S2 stage.

<sup>4</sup> The initial S4 rating for the NSAS project is debatable. Since the NSAS Strategic Action Programme (SAP) was only signed by the member states in Sep 2013 and the implementation of the SAP is only beginning in 2018, at the earliest (assuming the full-sized GEF project for SAP implementation has been or will soon be signed by the member states, a more appropriate rating would seem be S2/S3.

<sup>5</sup> This status rating refers to the lullemeden Aquifer System (IAS) project.

<sup>6</sup> This status rating refers to the extended lullemeden, Taoudéni – Tanezrouft Aquifer System (ITTAS).

project had its scope extended to including the hydraulically connected Taoudéni and Tanezrouft Aquifer Systems and Niger River (with a concomitant increase in the number of participating countries from three to seven) and has completed a foundational project (GICRESAIT) aimed at extending the knowledge base and consultation mechanism to the larger system (ITTAS). A full-sized GEF project to develop a TDA and SAP for the larger inter-connected system is expected to begin in 2018, and a follow-up phase to the GICRESAIT project is in the process of being conceptualised. See sub-sections 3.2.1, 3.2.2, and 3.2.3 for further information on the implementation status and progress of the Fomi Dam, Gourbassy Dam, Lesotho Highlands Water, and Nubian Sandaston Aquifer projects, respectively.

The two remaining PIDA water projects (the Palambo and Noubiel Dam projects appear to have made little if any progress in the first five years of PIDA PAP implementation. In the case of the Palambo Dam project, the main reason seems to be lack of funding, although that needs to be confirmed. In the case of the Noubiel Dam project, it is not clear whether a feasibility study that was initiated in 2014 was ever completed. Based on information provided by the relevant basin authority (VBA), the attempt of a feasibility study was either aborted, or if the feasibility study was completed, the process was not inclusive, as the VBA never saw any documented results or reports. See sub-sections 3.1.1 and 3.1.4 for further information on the Palambo and Noubiel Dam projects, respectively.

#### 4.2 PROJECT PLANS AND THE POSSIBLE USE OF PIDA INSTRUMENTS

Most if not all of the nine (9) PIDA water provide scope for the application and use of one or the other PIDA project planning, preparation and implementation instrument, at least in principle. This is certainly the case for the three projects that were visited (C-O MSIOA, NWSAS/SASS, and ITTAS). The service delivery mechanism (SDM)/ Project Preparation Facility Network (PPFN) and private sector participation/ Continental Business Network (CBN) instruments hold particular promise, at least in principle.

The project visits provided an opportunity to inform project focal points about the nature and purpose of the various PIDA instruments and to discuss their applicability and possible use. Names and contact information of relevant PIDA instruments managers at NEPAD were also provided to the project focal points. In order to further explore how PIDA instruments might assist particular PIDA water projects in future, the next step is for project focal points to contact NEPAD's PIDA instrument managers. It might also help if NEPAD and AMCOW officers make it a point to make reference, explain and discuss the PIDA instruments next time they visit any of the PIDA water project focal points.

#### 4.3 PROJECT FOCAL POINTS – CONTACT INFORMATION

When the PIDA water project implementation status evaluation started in June 2017, few if any firm contact details were available on the different project focal points and stakeholders. Consequently, interactions with project focal points and stakeholders were initiated using 'best-guess' contact information.

In the meantime, as a result of the PIDA water project status review, the contact names and details have been ascertained or confirmed for all of the PIDA water project focal points and for the responsible Regional Economic Commissions (RECs). The contact information is presented in Annex D.

## 5 OBSERVATIONS, QUESTIONS, CONCLUSIONS AND RECOMMENDATIONS

This section presents some observations, questions, and conclusions, following by recommendations, all based on the findings presented in sections 3 and 4.

### 5.1 OBSERVATIONS, QUESTIONS, AND CONCLUSIONS

#### 5.1.1 CHALLENGES ARISING DURING THE PIDA WATER PROJECT STATUS REVIEW

E-mail responses from project stakeholders, including the RECs, were often slow and usually provided only limited information. Attempts to speed up communications by trying to reach project stakeholders over the phone were largely unsuccessful. By contrast, informal e-mail communications with personal contacts were of more help. While reasons for the slow reactions from project stakeholders are not clear, factors such as the following are likely to have played a role:

- lack of interest (given that project finance comes from sources other than PIDA);
- lack of awareness or appreciation of ways in which PIDA can facilitate and add value to project development and implementation (e.g. through PIDA project planning/ preparation/ implementation instruments);
- lack of awareness of AMCOW's new role as PIDA agency providing technical inputs in support of PIDA water projects; and as a result of the above factors;
- a relatively low priority being given to interactions with NEPAD and AMCOW concerning PIDA water projects.

#### 5.1.2 HOW APPLICABLE ARE THE PIDA PROJECT STAGE CLASSIFICATIONS TO THE PIDA WATER PORTFOLIO?

PIDA classifies the project implementation stage of PIDA projects as per the following table:<sup>7</sup>

PIDA project stage classification

S1	Early concept proposal
S2	Pre-feasibility/needs assessment
S3	Programme/project structuring and promotion to obtain financing
S4	Implementation and operation

This classification seems to reflect the stages of large-scale physical infrastructure projects like dams and hence is readily applicable to the four multi-purpose dam projects and the Lesotho Highlands Water project.

However, the three transboundary aquifer system projects are primarily 'soft' projects primarily aimed at putting in place a shared knowledge base about the aquifer system and a mechanisms for regular consultations, consensus-building and conflict resolution among member countries, as well as developing and implementing cooperative strategies for sustainable management and use of the aquifer systems. The building of physical infrastructure is essentially limited to sinking small-scale boreholes for different purposes (groundwater flow, yield, and quality measurements and/or groundwater withdrawals, and possibly artificial recharge (injecting surface water into the aquifer)).<sup>8</sup> Therefore, it is a

<sup>7</sup> PIDA Note (English), "Programme for Infrastructure Development in Africa – interconnecting, integrating and transforming a continent", undated (likely 2012)

<sup>8</sup> For projects aimed at developing or implementing water master plans for the optimum use of groundwater at local, sub-regional, national or regional levels, it could also include putting in place potentially larger-scale surface pipelines for water transfer.

priori not clear, how the PIDA's project stage classification is supposed to apply to aquifer system projects. For the purpose of evaluating the status of the three aquifer projects (sections 3 and 4), PIDA's classification has been adapted as follows:

Adaptation of PIDA project stage classification for transboundary aquifer system projects

S1	Early concept proposal -7 development of proposal (project document) for the development of a TDA and/or SAP (usually with GEF support)
S2	Pre-feasibility/needs assessment -7 implementation of GEF-supported project for the development of a TDA and/or SAP
S3	Programme/project structuring and -7 development of a proposal (project document) for promotion to obtain financing the implementation of an existing SAP
S4	Implementation and operation -7 Implementation of a SAP

Some qualifications are in order here. First, the initial (2011-2012) PIDA aquifer project stage ratings are not always consistent with this suggested adaptation. Notably, the Nubian Sandstone Aquifer System project (NSAS) received a S4 classification in 2011-2012, but should have received only S2 or perhaps S2/S3, as the SAP was only signed in Sep 2013. Second, aquifer system projects may or may not follow the GEF model of project development and implementation, in which case further adaptations to the PIDA project stage classification may be necessary.<sup>9</sup>

Applying the project stage classification aquifer system projects to aquifer projects may have contributed to distorting at least one project stage rating, namely that for the NSAS project (which should have been classified S2/S3, rather than S4 in 2011-2012).

### 5.1.3 SHOULD THE PIDA WATER PORTFOLIO RETAIN ALL OF ITS CURRENT PROJECTS?

Irrespective of the questions about the PIDA project status classification system (raised in sub-section 5.1.1), it is reasonably clear that the nine (9) PIDA water have had varying degrees of success over the first five years of PIDA PAP implementation. As discussed in section 4.1, while seven (7) of the projects have made significant, if variable, progress, it appears that the remaining two projects (viz. the Palambo and Noubiel Dam projects) have made little, if any, progress.

Since PIDA was conceived as a dynamic programme where projects are expected to perform sufficiently well to remain within its PAP portfolio, questions arise as to what could be done by NEPAD and AMCOW to help weakly performing projects like the Palambo and Noubiel perform better, and what would be the criteria and process for deciding on whether or not to retain these projects in the PIDA water portfolio beyond the current mid-term PIDA evaluation and/or beyond the end of PIDA PAP's initial phase around 2020.

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<sup>9</sup> An example of a project that does not fit the GEF model is the Iullemeden Aquifer System (IAS) project. Here, TDA development (for the IAS) was not followed by TDA development and implementation. Instead, the system boundary was extended to including the hydraulically connected Taoudéni – Tanezrouft aquifer systems and Niger River, and a foundational S1-type project (GICRESAIT) was developed and implemented first, to be followed by the development of a TDA and SAP for the extended system (starting in 2018) as well as a parallel follow-up project to GICRESAIT aimed at applying new aquifer system knowledge to addressing water-related development problems in particular areas (floods, food insecurity, etc) and developing water master plans at different levels (local, sub-regional, country, and regional).

## 5.2 RECOMMENDATIONS

Based on the findings of this PIDA transboundary water project implementation assessment, the questions raised and the conclusions drawn, the following recommendations are made:

- NEPAD should look for ways to raise awareness among PIDA water project stakeholders about the value PIDA can add to projects and should actively market the PIDA project planning, preparation and implementation instruments in this connection.
- AMCOW should look for ways to raise awareness among PIDA water project stakeholders about its new role as PIDA technical agency for water-related matters
- The PIDA project status classifications should be reviewed by NEPAD's Planning and Coordination Agency PIDA managers, in collaboration with AMCOW and in consultation with other PIDA stakeholders (AfDB, RECs, and AUC), with a view to improving its fit with the PIDA water portfolio.
- Active consideration should be given as to how best to help improve the performance of the two PIDA water projects (the Palambo and Noumbiel Dam projects) that have so far shown little if any implementation progress and what criteria and timeline should be applied to decide on whether to retain these projects in the PIDA PAP water portfolio. As the two projects could not be visited during the current project implementation review, a logical first step may be to organise a visit to these projects to verify the apparent lack of implementation progress and gain clearer insights into the reasons for the lack of progress.

## ANNEX A: INCEPTION REPORT (FINAL VERSION)



Inception  
report\_final version\_

## ANNEX B: MEETINGS HELD DURING PROJECT VISITS

Date (dd.mm.yyyy)	Organisation Met With & Meeting venue	Persons Met With/ (Names & Positions)	Contact Information	Purpose of Meeting
03.10.2017	NEPAD, PIDA Coordination Office, 230 15 <sup>th</sup> Road, Halfway House, Midrand, South Africa	<ul style="list-style-type: none"> <li>• Ms Towela Nyirenda-Jere, PIDA Instrument Cluster, Regulatory and Policy Support</li> <li>• Ms Daphine Muzawazi, PIDA Instrument Cluster, Continental Business Network</li> </ul>	<a href="mailto:TowelaN@nepad.org">TowelaN@nepad.org</a> +27 11 256 3587  <a href="mailto:DaphineM@nepad.org">DaphineM@nepad.org</a>  +27 11 256 3600 (NEPAD, switchboard)	To discuss PIDA transboundary water projects and PIDA project planning, preparation, and implementation instruments
05.10.2017	OKACOM Secretariat (OKASec), c/o Department of Water Affairs, Government of Botswana, Plot 25019, Old Lobatse Road, Gaborone, Botswana	<ul style="list-style-type: none"> <li>• Dr Ebenizario Chonguiça, Executive Secretary, OKACOM</li> </ul>	<a href="mailto:ebenizarioc@gmail.com">ebenizarioc@gmail.com</a> +267 7134 2241 (mobile)	To discuss the Cubango-Okavango Multisectoral Investment Opportunity Studies (MSIOA) project
06.10.2017	SADC Secretariat, Plot 54385 New CBD, P/Bag 0095 Gaborone, Botswana	<ul style="list-style-type: none"> <li>• Mr Dumsani H. Mndzebele, Project Manager, Strategic Infrastructure</li> </ul>	<a href="mailto:dmndzebele@sadc.int">dmndzebele@sadc.int</a> +267 395 1863 Ext. 1643 +267 7351 0476 (mobile)	To discuss PIDA water projects in Southern Africa and the role of SADC vis-à-vis PIDA and the PIDA water projects
09.10.2017 and 10.10.2017	Observatoire du Sahara et du Sahel (OSS), Boulevard du Leader Yasser Arafat, BP 31, 1080 Tunis, Tunisia	<ul style="list-style-type: none"> <li>• Mr Djamel Latrech, Expert Hydro-géologue, chargé de programme</li> <li>• Dr Abdelkader DODO, Coordinateur du Programme Eau</li> <li>• Mr Mouhamadou Ould BABASY, Expert Hydrogéologue (Base de Données, SIG, Modélisation, Formation)</li> <li>• Mr Rachid Taibi</li> </ul>	<a href="mailto:djamel.latrech@oss.org.tn">djamel.latrech@oss.org.tn</a> +216 71 206 633  <a href="mailto:abdelkader.dodo@oss.org.tn">abdelkader.dodo@oss.org.tn</a> +216 71 206 633  <a href="mailto:lamine.babasy@oss.org.tn">lamine.babasy@oss.org.tn</a> +216 71 206 633  <a href="mailto:taibirachid52@yahoo.fr">taibirachid52@yahoo.fr</a>	To discuss the North-West Sahara (NWSAS) [Sahara Septentrional (SASS)] project and the lullemeden – Taoudéni/Tanezrouft Aquifer System (ITTAS) project

## ANNEX C: NEW PROJECT-RELATED DOCUMENTS OBTAINED

Project	New Project-Related Documents Obtained
Palambo Dam (Congo River Basin)	None
Fomi Dam (Niger River Basin)	None
Gourbassy Dam (Senegal River basin)	<ul style="list-style-type: none"> <li>Haut Commissariat de l'OMVS, Projet de Gestion Intégrée des Ressources en Eau et de Développement des Usages Multiples dans le Bassin du Fleuve Sénégal (PGIRE) – Étude de Faisabilité et d'Avant-Projet Sommaire (APS) de l'Aménagement Hydroélectrique de Gourbassy, Feasibility Study and Project Concept Proposal) completed by SNC LAVALIN International for OMVS in 2012 (seven volumes, including the main report dated July 2012 and titled Rapport d'Étude des Variantes, Volume 1 – Rapport Principal (Version Finale), and a Summary Report published in Sep 2012).</li> </ul>
Noumbiel Dam (Volta River basin)	<ul style="list-style-type: none"> <li>Copy of letter by Charles Biney, VBA Executive Director, to the African Water Facility, dated 06 May 2014, acknowledging receipt of an AWF letter of 05 May 2014 and welcoming the consultant Roger Marie Gaillard to begin his assignment (the feasibility study)</li> <li>Termes de Référence (TdR) pour l'étude de faisabilité du projet régional d'aménagement hydroélectrique de Noumbiel Burkina Faso – Ghana, June 2014, 48 pp</li> <li>Written comments on the ToR for the Noumbiel feasibility by Charles Biney, VBA Executive Director, dated 26 June 2014</li> </ul>
Lesotho Highland Water Project Phase 2) (Orange-Senqu River Basin)	<ul style="list-style-type: none"> <li>Lesotho Highlands Water Project – Phase II Update, Lesotho Highlands Development Authority, July 2017, 10 pp</li> </ul>
Multisectoral Investment Opportunity Studies Cubango-Okavango basin (C-O MSIOA)	<ul style="list-style-type: none"> <li>Multi-Sectoral Investment Analysis for Shared Prosperity in Cubango-Okavango River Basin, Project Flyer, August 2017, 2 pp</li> <li>Addressing Poverty Through Multi-Sector Investments in the Cubango-Okavango River Basin, Project Brief, OKACOM, CIWA, and World Bank Group, August 2017, 4 pp.</li> </ul>
Nubian Sandstone Aquifer System (NSAS)	None
North-West Sahara Aquifer System (NWSAS or SASS)	<ul style="list-style-type: none"> <li>North-West Sahara Aquifer System – The GEF Transboundary Diagnostic Analysis and Strategic Action Plan Applied to the NWSAS (TDA/PAS), Sahara and Sahel Observatory (OSS), undated (should be 2014 or 2015), 23 pp.</li> <li>North-West Sahara Aquifer System – For a Better Valorisation of Irrigation Water in the SASS Basin, Diagnosis and Recommendations, Sahara and Sahel Observatory (OSS), April 2015, 32 pp.</li> <li>Valorization of the North Western Sahara Water Resources (VALES) – Algeria, Libya, Tunisia, Concept Note, Sahara and Sahel Observatory (OSS), undated (should be 2017), 8 pp.</li> </ul>
Iullemeden, Taoudéni, Tanezrouft Aquifer System (ITTAS)	<ul style="list-style-type: none"> <li>Gestion Intégrée et Concertée des Ressources en Eau do Système Aquifère d'Iullemeden Taoudéni – Tanezrouft et du fleuve Niger (Algérie, Bénin, Burkina Faso, Mali, Mauritanie, Niger, Nigéria) – Le Projet GICRESAIT, Synthèse Final, FFEM, AWF/AfDB, Mar 2017, 24 pp.</li> <li>Mobilising the Iullemeden – Taoudéni/Tanezrouft Groundwater Resources – A Part of the Solution?, Project Note to Decision-Makers, Sahara and Sahel Observatory (OSS), Feb 2017, 11 pp. [French and English versions available]</li> <li>Iullemeden, Taoudéni – Tanezrouft Aquifer System – Atlas of Water Resources, Sahara and Sahel Observatory (OSS), 2017, 48 pp. [French and English versions available]</li> </ul>

## ANNEX D: INSTITUTIONAL PROJECT FOCAL POINTS WITH CONTACT DETAILS

Project	Institutional Project Focal Point(s) (Contact Information)
Palambo Dam (Congo River Basin)	<p><u>Mainregionalfocalpoint:</u> Secretariat of the Central African Economic and Monetary Community (Communauté Économique e Monétaire de l'Afrique Central), Bangui, Central African Republic<sup>10</sup></p> <p><u>Subfocalpoint:</u> Secretariat of the International Commission for the Congo–Oubangou–Sangha Basin (Commission Internationale du Bassin Congo–Oubangui–Sangha), Kinshasa, DRC Contact: Mr Georges Gulemvuga Guzanga, Director of Water Resources <a href="mailto:georges_gul@yahoo.fr">georges_gul@yahoo.fr</a></p> <p><u>ResponsibleRegionalEconomicCommission:</u> Secrétariat Général de la CEEAC (ECCAS), Libreville, Gabon Contacts: Mr Désiré Armand Ndemazagoa-Backotta, Chef de Service Energie et Eau, and Coordonnateur de l'UD / CRGRE, <a href="mailto:dndemazagoa@yahoo.fr">dndemazagoa@yahoo.fr</a> Tel: (241) 444731; Mme Marie Thérèse Chantal Mfoula, Secrétaire Général Adjoint CEEAC-ECCAS contact details: <a href="mailto:contact@ceeac-eccas.org">contact@ceeac-eccas.org</a> Tel: +241 01 44 47 31/32</p>
Fomi Dam (Niger River Basin)	<p><u>Mainregionalfocalpoint:</u> Direction Générale du Projet d'Aménagement du Barrage de Fomi (Niandan - Niger), Ministère de l'Énergie et de l'Hydraulique, Conakry, Republic of Guinea, Contact: Dr Condé Aboubacar Sidiki, Ingénieur Hydraulicien, Directeur Général, <a href="mailto:asconde2001@gmail.com">asconde2001@gmail.com</a> Tel: +224 628 746 569 / 664 389 776</p> <p><u>Subfocalpoint:</u> Secretariat of Niger Basin Authority, Niamey, Niger Contact: Mr. Yaovi Robert Dessouassi, Head of the Observatory Niger Basin, <a href="mailto:dessouassi@abn.ne">dessouassi@abn.ne</a> and <a href="mailto:dessouassi20013@yahoo.fr">dessouassi20013@yahoo.fr</a> Tel: +227 20315239</p> <p><u>ResponsibleRegionalEconomicCommission:</u> ECOWAS Secretariat, Abuja, Nigeria</p>
Gourbassy Dam (Senegal River basin)	<p><u>Mainregionalfocalpoint:</u> Haut Commissariat de l'OMVS (Secretariat of Senegal River Basin Development Authority), <a href="http://www.portail-omvs.org/">http://www.portail-omvs.org/</a> Rocade Fann Bel-Air Cerf-Volant, BP 3152, Dakar, Senegal</p> <p>Contacts: Ms Aminata Sokhna DIOP, Chef de la Division des Investissements et des Financements Extérieurs, Direction Financière, <a href="mailto:sitwaanbo.aminata@gmail.com">sitwaanbo.aminata@gmail.com</a> Tel: +221 33 859 81 25 Mr Mohamed Maouloud MAHJOUR, Regional infrastructures Director, <a href="mailto:ouldmahjoubm@yahoo.fr">ouldmahjoubm@yahoo.fr</a> or <a href="mailto:ouldmahjoubm@gmail.com">ouldmahjoubm@gmail.com</a> Mr Mahamadou Maciré DIAKITE, Head of technical Division, <a href="mailto:diakitemm2@gmail.com">diakitemm2@gmail.com</a> or <a href="mailto:mmdiakite@hotmail.fr">mmdiakite@hotmail.fr</a></p> <p><u>ResponsibleRegionalEconomicCommission:</u> ECOWAS Secretariat, Abuja, Nigeria</p>
Noumbiel Dam (Volta River basin)	<p><u>Mainregionalfocalpoint:</u> Secretariat of the Volta Basin Authority (VBA), Ouagadougou, Burkina Faso</p> <p>Contacts: Mr. Robert DESOUSSI, Executive Secretary, <a href="mailto:secretariat.abv@gmail.com">secretariat.abv@gmail.com</a></p>

<sup>10</sup> Contact details are not available

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Lesotho Highland Water Project Phase 2) (Orange-Senqu River Basin)	<p><u>Mainfocalpoint:</u>          Lesotho Highlands Development Authority, Maseru, Lesotho; <a href="http://www.lhwp.org.ls">http://www.lhwp.org.ls</a>          Contact: Mr Masilo Phakoe, Public Relations Manager, <a href="mailto:phakoem@lhda.org.ls">phakoem@lhda.org.ls</a>          Tel: +266 2224 6000 or +266 22311280, mobile: +266 +266 6285 7272</p> <p><u>Subfocalpoint:</u>          ORASECOM Secretariat; Mr Lenka Thamae, Executive Secretary, <a href="mailto:lenka.thamae@gmail.com">lenka.thamae@gmail.com</a></p> <p><u>ResponsibleRegionalEconomicCommission:</u>          SADC Secretariat, Plot 54385 New CBD, P/Bag 0095 Gaborone, Botswana          Contacts:          Mr Phera Ramoeli, Acting Director, Infrastructure Department <a href="mailto:pramoeli@sadc.int">pramoeli@sadc.int</a>          Mr Dumsani Mndzebele, Programme Manager, Strategic Water Infrastructure, <a href="mailto:dmndzebele@sadc.int">dmndzebele@sadc.int</a>          Tel: +267 395 1863 ext. 1643 mobile: +267 7351 0476</p>
Multisectoral Investment Opportunity Studies Cubango-Okavango basin (C-O MSIOA)	<p><u>Mainregionalfocalpoint:</u>          OKACOM Secretariat (OKASec), c/o Department of Water Affairs, Government of Botswana, Plot 25019, Old Lobatse Road, Gaborone, Botswana          Contact: Dr Ebenizario Chonguica, Executive Secretary, OKASec <a href="mailto:ebenizarioc@gmail.com">ebenizarioc@gmail.com</a>          mobile: +267 7134 2241</p> <p><u>ResponsibleRegionalEconomicCommission:</u>          SADC Secretariat, Plot 54385 New CBD, P/Bag 0095 Gaborone, Botswana          Contacts:          Mr Phera Ramoeli, Acting Director, Infrastructure Department <a href="mailto:pramoeli@sadc.int">pramoeli@sadc.int</a>          Mr Dumsani Mndzebele, Programme Manager, Strategic Water Infrastructure, <a href="mailto:dmndzebele@sadc.int">dmndzebele@sadc.int</a>          Tel: +267 395 1863 ext. 1643 mobile: +267 7351 0476</p>
Nubian Sandstone Aquifer System (NSAS)	<p><u>Mainregionalfocalpoint:</u>          Joint Authority for the Study and Development of the Nubian Sandstone Aquifer System (JASAD-NSAS), c/o Libyan National Water Authority, Tripoli, Libya<sup>11</sup></p> <p><u>NationalfocalpointforSudan:</u>          Ministry of Water Resources, Irrigation and Electricity, Water Resources Technical Organ (WRTO), Khartoum, Sudan          Contacts:          Mr. Osman Mustafa Ahmed Mohamed, <a href="mailto:omaburi@hotmail.com">omaburi@hotmail.com</a>          Mr Musa Abdelazim <a href="mailto:maosman66@gmail.com">maosman66@gmail.com</a></p> <p><u>ResponsibleRegionalEconomicCommission:</u>          IGAD Secretariat, Djibouti          Contact: Mr Mustafa Mohamed Ahmed, NEPAD Infrastructure Expert, <a href="mailto:MustafaM@nepad.org">MustafaM@nepad.org</a>          Tel: +253 21354050 (IGAD)</p>

<sup>11</sup> JASAD-NSAS was formally established among the four member countries (Chad, Egypt, Libya, and Sudan) during the 1990s. It seems, however, that JASAD is no longer in operation or functional. A regional focal point is expected to be (re-)established with UNESCO support once a full-sized UNDP-GEF project which has been developed with GEF PDF B resources, starts operation on the ground.

<p>North-West Sahara Aquifer System (NWSAS or SASS)</p>	<p><u>Mainregionalfocalpoint:</u> Observatoire du Sahara et du Sahel (OSS), Boulevard du Leader Yasser Arafat, BP 31, 1080 Tunis, Tunisia Contacts: Mr Djamel Latrech, Expert Hydro- géologue, chargé de programme (and project leader) <a href="mailto:djamel.latrech@oss.org.tn">djamel.latrech@oss.org.tn</a> +216 71 206 633 Mr Mouhamadou Ould BABASY, Expert Hydrogéologue (Base de Données, SIG, Modélisation, Formation) <a href="mailto:lamine.babasy@oss.org.tn">lamine.babasy@oss.org.tn</a> +216 71 206 633 Mr Rachid Taibi <a href="mailto:taibirachid52@yahoo.fr">taibirachid52@yahoo.fr</a> <u>ResponsibleRegionalEconomicCommission:</u> UMA (Union du Maghreb Arabe) Secretariat Contact: Mr Sebouai Lotfi, Infrastructure Department <a href="mailto:lotfi.sebouai@gmail.com">lotfi.sebouai@gmail.com</a></p>
<p>Iullemeden, Taoudéni, Tanezrouft Aquifer System (ITTAS)</p>	<p><u>Mainregionalfocalpoint:</u> Observatoire du Sahara et du Sahel (OSS), Boulevard du Leader Yasser Arafat, BP 31, 1080 Tunis, Tunisia Contacts: Dr Abdelkader DODO, Coordinateur du Programme Eau (and project leader) <a href="mailto:abdelkader.dodo@oss.org.tn">abdelkader.dodo@oss.org.tn</a> +216 71 206 633 Mr Mouhamadou Ould BABASY, Expert Hydrogéologue (Base de Données, SIG, Modélisation, Formation) <a href="mailto:lamine.babasy@oss.org.tn">lamine.babasy@oss.org.tn</a> +216 71 206 633 Mr Rachid Taibi <a href="mailto:taibirachid52@yahoo.fr">taibirachid52@yahoo.fr</a> <u>ResponsibleRegionalEconomicCommission:</u> UMA (Union du Maghreb Arabe) Secretariat Contact: Mr Sebouai Lotfi, Infrastructure Department <a href="mailto:lotfi.sebouai@gmail.com">lotfi.sebouai@gmail.com</a></p>