PROJECT INFORMATION DOCUMENT (PID)  
CONCEPT STAGE

Report No.: PIDC736

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I. Introduction and Context

Country Context

The Senegal River basin covers a surface area of about 300,000 km2. The high plateau in northern Guinea represents 31,000 km2 (11 percent of the basin), 155,000 km2 are situated in western Mali (53 percent of the basin), 75,500 km2 are in southern Mauritania (26 percent of the basin) and 27,500 km2 are in northern Senegal (10 percent of the basin). The basin has three distinct parts: the upper basin, which is mountainous, the valley (itself divided into high, middle and lower) and the delta, which is a source of biological diversity and wetlands. Topographical, hydrographic and climatic conditions are very different in these three regions and seasonal temperature variations are
extensive. The upper valley receives 700 – 2,000 mm of rainfall annually and provides most of the flow in the river. The middle valley and delta only receive 150 – 300 mm of rainfall annually. The total annual discharge of the Senegal River is estimated at 24 billion m³ per year but this annual flow is highly irregular. An overview of the river basin is shown in the map in Annex 1.

The four riparian countries of the Senegal River Basin rank among the twenty-five poorest countries in the World. The total riparian population is estimated at 35 million inhabitants, of which 12 million live in the basin. The population growth rate is estimated at 2.7 percent and the population is expected to double every 25 years. All the riparian countries are facing energy shortages and growing demand, which is hampering their economic performance. Yet, the basin’s hydropower potential is estimated at 1,200 MW of which less than 30 percent is currently exploited. Food security is another critical need across the basin but similarly, although the potential irrigable lands are estimated at 320,000 ha, less than 40 percent are currently developed. Increased water storage and infrastructure, coupled with multi-purpose water resources development and management, are therefore crucial to addressing the growing demand for water and food, and to ensure sustainable growth and the welfare of the people living in the Basin. Waterborne diseases associated with large infrastructure are still prevalent negatively affecting the Basin population’s health and economic productivity. Control intervention coverage for malaria and schistosomiasis in the four riparian countries and in the River Basin is among the lowest in the world.

Coordinated river basin planning and coordinated investment is essential in such a vulnerable area to ensure that the risks of large scale water investment are mitigated and the benefits of investments are shared. Unilateral planning and development of water infrastructure also has far reaching consequences for the socio-political stability and sustainable development in the region. The Senegal River Basin Organization (OMVS) has the mandate of securing countries’ economies and reducing the vulnerability of peoples’ livelihoods through coordinated water resources and energy development. OMVS was established in 1972 in the context of severe droughts, famine and degradation of the natural resource base. The current OMVS structure includes four countries: Guinea, Mali, Mauritania and Senegal. Guinea is a recent entrant since 2006. Following the Nouakchott Declaration of May 2003, which sets the strategic orientation for development of the Senegal River Basin, the OMVS vision for regional integration includes accelerating the development of multi-purpose water resources infrastructure to augment the availability of water and low cost hydroelectricity. OMVS is a strong, stable regional organization and critically important for regional integration in West Africa.

Sectoral and Institutional Context
The Senegal River Basin Multi-Purpose Water Resources Development (MWRD2) Project is the second phase of a 10-year Adaptable Program Loan (APL), which was approved by the Board in 2006. Phase 1 of the program (MWRD1) had significant positive impacts for the population living in the Basin across the agriculture, health, energy and fisheries sectors. There have also been important contributions at the regional level for improved water resources management. Key highlights of MWRD1 are described below. MWRD2, will now build upon the achievements of MWRD1.

Sector Context:
Under–developed basin hydropower potential and irrigable lands are leading to increased energy costs and food insecurity. The lack of development of these valuable assets limits sustainable growth and the welfare of the people living in the Basin. The Basin has seen considerable migration
of people due to worsening droughts and desertification since the early 1970s. Annual rainfall varies across the Basin from 2,000mm to 100 mm, with high variability between wet and dry seasons and also from year to year. Generally, decreasing mean annual rainfall levels have been the trend in West Africa over the last two decades illustrating the effects of climate change. Furthermore, with world crude oil prices averaging $80 a barrel, economies across Africa are struggling under the burden of soaring energy costs. For example in Dakar; the cost of taxis has almost doubled since 2005, blackouts occur every day and 10-hour power cuts several times a week are not uncommon. Senegal is paying nearly twice what it was a few years ago to import the same amount of oil. The increased cost alone is more than seven times as much as the country is gaining through multilateral debt relief programs. The government has responded to the energy crisis by providing direct subsidies to consumers. Since the rise in world oil prices began in 2002, these subsidies have increased five-fold, creating yet another incredible burden on the national budget. Currently, irrigation farming remains limited in the middle and lower river valley between Mauritania and Senegal, with 42,000 ha and 95,000 ha managed, respectively. In the upper basin, the Tolo and Mafevol dams on the Bafing enable irrigated farming on about 1000 ha in Guinea. Downstream from Manantali in Mali, just over an estimated 800 ha of land is serviced for irrigation. Thus, less than half of the irrigation potential for the basin, estimated at 375,000 ha, is currently developed. Of the 130,000 ha to 140,000 ha that are serviced, only 90,000 ha are really usable, including 60,000 actually cultivated in the rainy season and between 10,000 ha and 15,000 ha cultivated in the off-season.

The ECOWAS Water Resources Coordination Unit launched a Multi-stakeholder Dialogue on Large Hydraulic Infrastructure in West Africa in 2009. This dialogue, which included OMVS, led to a prioritization exercise of 39 dam projects in West Africa, five of which are in the Senegal River Basin. Three of these five dams, Boureya (161 MW) and Gourbassi (17MW), Koukoutamba (280MW), have been advanced under the first phase of this project as described below. The technical prioritization is based on multi-criteria analysis which includes their expected role in economic integration, food security, power generation and environmental and social aspects. The dialogue also led to specific recommendations for the sustainable development of water infrastructure in West Africa which ECOWAS envisions to use in the preparation of a framework directive and advocacy material. These moves indicate increased regional support for water resources development and a clear pipeline of hydropower infrastructure.

Under MWRD1, important achievements across several sectors (agriculture, energy, health, environment, fisheries) have been realized through regional cooperation.

Activities included:

i. The Development of Local Level Multi-Purpose Water Resources: Three large water intakes in Mauritania and Senegal to foster the development of irrigated agriculture were rehabilitated. The project also supported the rehabilitation and installation of several pumping stations. Approximately 4,398 ha have been rehabilitated or developed for irrigation.

ii. The Development of the Master Plan and Water Management of the Senegal River (SDAGE): SDAGE defines the guidelines for the strategic planning of the development and management of the Senegal River Basin; it reflects the shared vision of the OMVS and the riparian governments of developing the Senegal River basin until the year 2025.

iii. Support of activities for pre-investment projects of multi-purpose dams (Boureya, Gourbassi and Koukoutamba): The feasibility studies, environmental and social assessments as well as the bidding documents for Koukoutamba have been developed and validated by the Council of
Ministers. The pre-feasibility studies for Gourbassi and Boureya were also developed. These dams have a potential 450 MW of installed capacity.

Waterborne diseases associated with large infrastructure are still prevalent, negatively affecting the Basin population’s health and economic productivity. Control intervention coverage for malaria and schistosomiasis in the four riparian countries and in the River Basin is among the lowest in the world. The rate of malaria in the four riparian countries is, correspondingly, amongst the highest in the world; with more than 100 confirmed cases for every 1000 head of population across much of the area (WHO). With this high vulnerability it is critical that development of irrigation and other infrastructure is completed in parallel with programs to protect local communities from the associated public health risks. Studies have shown that integrated malaria control measures, coupled with sound water management, are essential to mitigate the burden of malaria in locations near irrigation or dam sites. This issue is also supported by practical examples, for example in April-May 2004, it was estimated that 33 percent of the local fishing population in the Senegal River Basin were affected by schistosomiasis. In the Manantali and Diama dam areas, it was reported that 80 percent of the population is affected (Roche, 2004). As the riverine population is mobile across the four riparian countries any public health strategy has to address treatment at a regional level, and across the four countries simultaneously, in order to be effective.

Under MWRD1, actions were initiated to reduce the incidence of malaria and schistosomiasis. More than 2.5 million insecticide treated nets and over 7 million albendazole and 2 million praziquantel were distributed. This resulted in over 1 million children, under-5 years of age, sleeping under insecticide-treated nets and about 80 percent of school-age children treated for schistosomiasis. The implementation of this component as part of an overall regional program has been highly satisfactory, particularly when compared to other national malaria programs. However with a growing basin population of more than 12 million people and a significant water infrastructure pipeline, further steps are needed to continue this support and ensure that that long term reduction of these diseases is embedded within water resources management.

Reduced productivity of the fishing sector and environmental degradation have also negatively impacted the basin population. Altered estuarine and freshwater system dynamics, the generation of invasive weeds, disappearance of wetland areas, degradation of fish populations, reduced pasture lands, changes in forests downstream of Diama and river bank erosion in the upper valley have been widely linked to the increased regulation of the Senegal River and associated infrastructure. Fishing is the largest economic activity in the basin after agriculture; however the future of this sector is in jeopardy as the annual tonnage of fish caught falls every year. Recessional agriculture has also suffered significantly. Moreover, it is argued that these changes have led to social disruption and even conflict.

MWRD1 supported the improvement of traditional fishing practices and contributed significantly to the revival of the sector by strengthening the technical capacity of 3900 fisheries stakeholders grouped into 122 organizations. The project has also helped to strengthen the capacity of fisheries stakeholders (fishermen, fishmongers, processors, carpenters). More than 1,200 fishermen and 10 fishing councils were formed and fishing equipment was made available to fishermen's organizations in Mali, Mauritania and Senegal. Estimates show that more than 28,000 beneficiaries were impacted by this sub-component, not counting the indirect effects associated with infrastructure such as fish markets and landing sites. As a result the quantity of fish sold from the main markets /depots rehabilitated under the project increased by 13% over the course of MWRD1.
Further steps are needed to continue to expand these activities so that local communities can develop sustainable livelihoods and increase their resilience to environmental changes in the Senegal basin, resulting from the infrastructure and also climate change.

Institutional Context:

The Senegal River Basin Organization (OMVS) was established in 1972 with the mandate of securing countries’ economies and reducing the vulnerability of peoples’ livelihoods through coordinated water resources and energy development. Since 1978, OMVS has formally adopted of the principles of equality and equity, with the allocation of benefits and costs based on the needs of the member states, their capacity to put to use the benefits provided by the river, and the actual uses derived from the river (Nguyen, 1982). The current OMVS structure includes four countries: Guinea, Mali, Mauritania and Senegal. The river basin integrated development program has three pillars: (i) Water resources management; (ii) Hydro-power dams development; and (iii) Inland water transport as a “dorsal spine” of an intermodal/multimodal transport system. It is the product of a long process of cooperation among riparian states along the Senegal River which commenced during the colonial era to jointly develop shared resources. Over this period OMVS has become a key river basin association in the region, with influence beyond the basin boundaries; for example it has hosted the African Network of Basin Organizations since its formation in 2002. As one of the most advanced basin organization in the region, OMVS ensures an environment conducive to investments and is well linked into the regional power pool. With a long-standing, established track record spanning more than 40 years, OMVS is well-positioned to undertake the multi-purpose and multi-sectoral investments proposed in this program.

With the support of MWRD1, OMVS completed then Inclusive Framework to integrate the fourth riparian country - Guinea - into its joint Senegal River Basin Development Program. In March 2006, the treaty was signed to integrate Guinea as the fourth riparian country and the four Heads of State approved the implementation of the joint Senegal River Basin Development Program. The inclusion of Guinea provided an opportunity for OMVS to embark on a comprehensive program of legal and institutional reforms, incorporating environmental and social issues, among other aspects which were not fully considered at the initial establishment of the organization. These reforms were supported by the World Bank through the Senegal River Basin Multipurpose Water Resources Development (MWRD1). The inclusion of Guinea within OMVS in MWRD1 was a critical step for regional development and economic integration. This is only the 2nd time the Bank has brokered such an agreement on international waters (the first time being the Indus Treaty). By joining OMVS, Guinea has benefited from the lifting of financial constraints to developing its significant hydropower potential, thereby strategically positioning itself in the West Africa Power Pool market. In return, Guinea’s contributions to the joint development and protection of the headwaters of the Senegal River will benefit the other riparian countries. But its inclusion also introduces a number of risks into the operations of OMVS due to their much lower capacity and critical position at the source of the Senegal River.

MWRD1 contributed significantly to the management of the water resources base through the modernization of OMVS and strengthening its institutional capacity. The institutional reform of OMVS was completed with the implementation of a new organizational structure. This new structure better positions the organization for the current and future challenges as well as strengthens the involvement of all stakeholders in the decision-making processes. This is important
as other development issues come to the forefront of water resources management (e.g. health and climate change adaption) and more participation from civil society is demanded. The project also helped to modernize OMVS’ headquarters and the documentation center.

The Bank’s investment program and support to OMVS is one that is extremely critical for reasons that go beyond the immediate energy and water sector needs in the Senegal River basin, and incorporate regional socio-political stability, environmental sustainability and protection of highly vulnerable communities. The MWRD program represents the first major test of OMVS’ Inclusive Framework by including Guinea as a full member in the joint ownership, financing and management of water infrastructure in the Senegal River basin. Although major steps were taken in MWRD1 there are still a number of key issues which need to be resolved, for example renegotiation of the partition of benefits within the Inclusive Framework. The partition of benefits among Mali, Mauritania and Senegal was formally agreed by the Council of Ministers in 1981, and although some aspects have been adjusted and updated in line with basin developments they have never been formally adopted. Differences between the new and old partition of benefits were too large to be politically acceptable and finally no revisions were ever made to the 1981 partition. Recent studies by the World Bank on OMVS have highlighted inequalities in how the benefits and costs of development are shared with the population at large. Some segments of the population have benefited from the developments facilitated by OMVS (for example urban populations) while others have not – and in some cases, have been negatively impacted (for example traditional recessional farmers). A more multi-dimensional and nuanced partition of the benefits is needed to better reflect the goals of all concerned at the regional, national and local levels.

This issue of partition of benefits, both internationally and within basin populations is just one example of why it is crucial that the relationship between OMVS and the riparian countries, especially Guinea be supported through sustained regional investments.

Relationship to CAS

The Project is consistent with the general goals of improved environmental and water resources management expressed in the four riparian countries’ existing CAS. For all recipient countries, the Project is also consistent with the general sector goals of strengthening governance, building institutional capacity and increasing sustainable management practices to reduce poverty as described in the CAS. In the same way, the project conforms to their PRSP goals for good governance and sustainable development.

Country Partnership Strategies (CPS) are currently under preparation for all four countries and will be presented for Board approval in early 2013. MWRD2 will be appraised in light of the new CPS goals, however CMUs have confirmed that these will continue to support the relevant goals highlighted above.

Individual country CAS goals, as they relate to the Project, are identified below:

Mali. The CAS (2008-2011) supports the government’s development strategy (GPRS 2007-2011) to reduce poverty through sustained, rapid, and broad-based economic growth. This includes efforts to encourage private-sector growth and support for growth of the rural sector with focused attention on sustainable agricultural and irrigation practices and efforts to promote good practices to reduce soil erosion. These same priorities have been confirmed in the GPRS 2012-2017, which will be the referential framework for the upcoming World Bank assistance strategy for Mali.
Mauritania. The CAS (2008-2011) highlights the environment sector’s crosscutting issues requiring the government to address desertification and deforestation issues and sustainable natural resource development. The CAS specifically notes Mauritania’s cooperation with the OMVS on sustainable development of the Senegal River Basin. The PRSP, within the context of the country’s National Environmental Action Plan (NEAP), identifies development of agriculture, livestock, forestry, and fisheries as some of the priority areas for intervention to address the national challenges for preserving natural resources while achieving sustainable development.

Senegal. The recent CAS for Senegal for the period 2007-2010 mentions that resource degradation is a growing challenge for Senegal, ranging from deforestation to land degradation associated with poor water resources management and the depletion of fish stocks. Under Pillar 1 one of the six major outcomes around which the Bank shaped its program was to foster sustainable development and management of natural resources. Under Pillar 3 one of the three major outcomes was to improve the quality of life of the population through better management of natural resources and improved access to water and sanitation.

Guinea. The CAS (2004-2006) focused on three strategic priorities to achieve its goal of poverty reduction: (i) promoting broad-based sustainable growth with a focus on the rural sector; (ii) improving social services delivery; and (iii) enhancing governance and institutional capacity with a strong emphasis on empowering communities and local government to play an increasing role in identifying, designing and implementing community level development projects. The project has strong linkages and cohesion with the Bank’s objectives in Guinea. While the PRSP does not include any specific environmental priorities, it does focus on an improvement in service delivery across sectors. In line with the CAS, the Bank’s approach in Guinea is three-pronged, with 1) the PRSC targeting macro-level challenges and sectoral reforms, 2) the PACV targeting community empowerment and financing to support capacity building and greater accountability at local levels, and 3) the strengthening of services to facilitate institutional transformation, decentralization to improve local governance and participation both within the public and private sectors.

The Bank worked with OMVS and riparian counterparts to identify the regional priorities for the MWRD program, consistent with the issues detailed in each of the four Country’s Assistance Strategies (CAS). The pressing challenges in the Senegal River Basin continue to be: (i) ensuring the equitable uses of water resources during periods of water shortages and drought and building resilience and adaptation to climate change; (ii) ensuring favorable social and environmental conditions through improved land and water resource practices; (iii) increasing incomes through increased agricultural productivity and other related water-resources based activities; (iv) optimizing benefits from existing infrastructure while developing appropriate new infrastructure; and (v) addressing increasingly competitive water uses and trade-offs between them. All the riparians acknowledge the necessity for continued regional cooperation and support OMVS as the leader for trans-boundary water resources initiatives. The member countries’ commitment to cooperate is more broadly confirmed by their active participation in MWRD1 and in regional institutions including the Economic Community of West African States (ECOWAS) and the New Partnership for African Development (NEPAD).

II. Proposed Development Objective(s)

Proposed Development Objective(s) (From PCN)
The PDO of MWRD2 will remain the same as of MWRD1: to enhance regional integration among the riparian countries of the Senegal River Basin through OMVS for multi-purpose water resources development to improve community livelihoods.

Responding to the needs of OMVS and riparian country governments MWRD2 will have broadly similar components to MWRD1: (i) consolidating and further strengthening the institutional, legal and technical framework of the Senegal River Basin to better serve all four riparian countries, (ii) expanding the scope or coverage of concrete water resources development activities at the local level that generate significant income to reduce poverty, and (iii) defining and preparing new multipurpose infrastructure to harness the hydropower potential identified in the basin. MWRD2 activities will primarily be located in the priority areas defined by studies in MWRD1. Each component will scale-up activities started under MWRD1, incorporating lessons learnt and taking forward successful elements for further development.

Key Results (From PCN)
The result indicators envisioned for the project include:

- OMVS legal, institutional, and financial mechanisms are updated and fully operational for effective execution of its mandate;
- Multi-purpose water resources activities implemented to stimulate income generation and poverty reduction at local levels; and
- Regional planning and management framework implemented for economically, environmentally, and socially responsible multi-purpose water resources development.

These correspond with the following key outcomes:

- Internationally recognized management practices (including legal, human resources, financial) are applied by OMVS
- Strengthened regional cooperation and integration
- Improved management of natural resources and improved socioeconomic conditions in the project intervention areas
- Strengthened water resources development

III. Preliminary Description
Concept Description
The Adaptable Program Loan (APL) spans 10 years and is being implemented in 2 phases (MWRD1 & 2), of 5 years each. MWRD1 had an envelope of US$ 110 million and it is expected that MWRD2 will have the same envelope. MWRD1 was approved by the Board in 2006. The rationale for using the APL instrument is to ensure long-term commitment and sustainability in scaling up multipurpose water resources development activities in the Senegal River Basin. The phased approach facilitates the prioritization of investments in alignment with appropriate funding. The APL instrument will also allow OMVS and the riparian countries of the Senegal River Basin to consolidate the benefits deriving from jointly-owned and managed infrastructure.

Triggers were established for continuation with the second phase (MWRD2) and, as defined during the Level 1 Restructuring in June 2011, these are: (i) satisfactory integration of Guinea into OMVS’ institutional, legal, and financial structures; and (ii) clear consensus among riparian countries to build one dam to complement the hydroelectric capacity of the OMVS member countries. These triggers have been successfully met.

Overview of the program design: The project design aims to simultaneously increase the productive
uses of water and enable macro-economic growth while safeguarding the health and livelihoods of vulnerable communities in the river basin. The issue of partition of benefits, both nationally and locally, is key to the design of MWRD2. The regional integration process establishes the inter-related parameters for sustainable water resources development across all sectors and the project components provide mutually reinforcing interventions at regional, local and national levels.

As described in the Project Appraisal Document for MWRD1, components covered institutional modernization, local level water resources activities and regional water resources development planning. The main achievements and outcomes of MWRD1 have been outlined in the Sectoral and Institutional Context given above.

Since the needs in these key areas continue to exceed the budget envelopes, the activities planned for MWRD2 scale up similar interventions to MWRD1, incorporating lessons learnt to improve technical quality. Fisheries will be introduced as a new activity in Guinea and the treatment of 5 other neglected tropical diseases (in addition to schistosomiasis) will be incorporated in the health sub-component.

MWRD2 builds on several regional to local level experiences including (i) the successful completion of MWRD1; (ii) the development of jointly-owned energy infrastructure in the Manatali and Diama dams; (iii) the Inclusive Framework that encouraged the full involvement of Guinea in the joint management of the Senegal River Basin (iv) the GEF funded Senegal River Basin Water and Environmental Management Project which laid the foundation for more integrated land, water and environmental management in the Basin and (v) the Bank’s experience internationally in transboundary river basins, for example the Nile basin, Lesotho Highlands, Niger and Zambezi in Africa, and the Ganges, Syr Darya, and Columbia River Basin. Lessons and experiences from the above coupled with the Bank’s long standing involvement in the Senegal River Basin clearly demonstrate that regional integration fosters more effective sustainable development and multi-sectoral investments. Therefore, the project provides a unique comparative advantage to mainstream close collaboration between institutions working on water resources management of the Senegal River Basin at three different levels (regional, national and local) while consolidating donor interventions through a coherent framework of actions.

The broad components of MWRD2 are identified below:

Component 1: Regional Institutional Development for Water Resources (USD$5 million). This first component will continue to support the implementation of the Inclusive Framework, which will involve the strengthening of institutional knowledge and technical capacity but also strengthening of the legal, institutional and financial frameworks. This component will focus upon capacity building for Guinea while also supporting: (i) the strengthening of institutional capacities of the dam holding agencies for infrastructure development and management, for example decision support for equitable water transfers in dam management; (ii) improving OMVS strategic coordination and collaboration among national water and agricultural technical bodies, developing exchange of experiences, best practices, and management tools for water resources, part of this subcomponent could potentially support OMVS to take a leading role regionally following the recent dialogue on hydropower prioritization; (iii) implementing the principles of the Water Charter for integrating environmental and social issues into water resources development in the Basin; (iv) updating the partition of benefits, to include: Guinea, developments since 1981 and additional sectors such as environment and health, this will require data collection, updating the existing model and analyzing a number of different scenarios; (v) updating the compensation framework for OMVS to correspond with the new structure developed; and (vi) other activities to be defined during the appraisal stage.

Component 2: Local Level Multi-Purpose Water Resources Development (USD$98 million). In
order to promote income-generating activities and to improve livelihoods across a wide section of the basin population, this component includes a number of core activities related to the development of water resources in some sub-basins. Activities under this component will be multi-sectoral and cover irrigation, fishing, health and environment. This component will help to ensure the ownership and active engagement of the local population to protect current and future investments. Planned activities and targeted areas have been developed and refined through MWRD1 and will lead to rapid results on the ground. These activities are designed to ensure that responsibilities are clearly assigned to implementing agencies, while ensuring the participation and involvement of stakeholders in decision-making.

a) Hydro-Agricultural development (optimization of the investments made in MWRD1). This sub-component will continue to support:
   • The establishment and capacity building of water user associations to ensure that water resources are managed properly;
   • Capacity building of farmers in the operation and maintenance of facilities;
   • Irrigation infrastructure development primarily for activities for which the feasibility studies were completed under MWRD1

b) Water Resources Protection. This sub-component will support planning and management of land and water resources at the community and sub-basin levels to ensure sustainable development of the resource and provide community stakeholders with tools and mechanisms for appropriate development. Key activities will: (i) map key areas and develop plans for local income-generation activities based on suitable land and water conditions; (ii) restore and maintain river banks; (iii) support community-based agro-forestry development.

c) Traditional fisheries improvements. This sub-component will continue to contribute to the development of traditional fisheries along the Senegal River. The main activities in this sub-component will include:
   • continued promotion of more efficient fishing practices;
   • continued facilitation of improved access for fishermen to modern technology (such as training, improved equipment, boats, and up-to-date fish processing and storage techniques) to improve their living conditions;
   • continued institutional support to the strengthening of fishing activities.

d) Reduction of the incidence of water-borne diseases. This sub-component will support activities to reduce malaria-related morbidity and Neglected Tropical Diseases (NTDs) (which include schistosomiasis, geo-helminths, onchocerciasis, lymphatic filariasis and trachoma) among local populations. The use of implementing partners through outsourcing will play a crucial role in the smooth and efficient execution of this sub-component in MWRD2. The activities in this sub-component will leverage the distribution networks set up in MWRD1 and the availability of drugs through WHO to address a wide range of NTDs dependent upon local needs and incidence levels. The main activities in this sub-component include: (i) the continued widespread distribution of long-lasting insecticide treated nets and the promotion of other suitable control measures against malaria-carrying mosquitoes (e.g. the spraying of insecticides in homes), (ii) the establishment of measures against health hazards related to water resources, such as the decongestion of irrigation canals and drainage (iii) the application of Praziquantel, Albendazole, Mebendazole and Ivermectin against schistosomiasis, geo-helminths, lymphatic filariasis and onchocerciasis, (iv) the establishment of disease surveillance and operational research in the fight against malaria and Neglected Tropical
Diseases (NTDs), and (v) the mobilization of communities, in the fight against NTDs, through information, education, communication and behavior change activities to support periodic mass treatment and other activities.

Component 3: Regional Multi-purpose and Multi-sectoral Planning (USD$7 million). This component will complete the development of the Comprehensive Senegal River Basin Master Plan (Schema Directeur et de Gestion des Eaux du fleuve Senegal [SDAGE]) and the feasibility studies for the Gourbassi and Boureya dams.

a) Support for the Implementation of SDAGE. The primary focus of SDAGE is to strengthen the capacities of the High Commissioner and other members of OMVS. The main activities related to the sub-component include: (i) the training of experts in the SDAGE economic model and hydrological modeling, and (ii) the organization of meetings of SDAGE member countries involving all the implementation stakeholders.

b) Completion of Feasibility Studies. This sub-component aims to: (i) assist OMVS to prepare comprehensive feasibility studies and, if necessary, update previous studies on the implementation of multi-purpose dam projects to be built in the basin at Boureya and Gourbassi, (ii) assist OMVS to complete complementary supporting studies for the local power pool, for example access roads and transmission lines, and (iii) carry out relevant evaluations to define the nature and scope of environmental and social safeguards for each site.

MWRD2 Co-financing

MWRD2 is co-financed by three grants from the Global Environmental Facility (GEF), the Least Developed Countries Trust Fund for Climate Change and the Dutch Government respectively. OMVS has previous experience working with the GEF and with the Dutch Government and has successfully implemented projects supported by these trust funds. The activities supported under the co-financing will build upon previous engagement and will be complementary to the MWRD2 so as to mutually reinforce integrated water resources management and development to improve community livelihoods.

The GEF will focus on adaptation to climate change and implementation of the Strategic Action Plan. The project will support improved environmental management; identify a series of measures and actions to be aligned with the climate change adaptation strategy of each Member State; improve the data quality on climatic variability, including long term trends, and the possible future impacts on water resources in the river basin. The project will also support community mobilization and promote adaption measures to reduce the vulnerability of livelihoods in the river basin.

The Dutch Trust Fund will finance (i) the control/reduction of invasive aquatic plants; (ii) river bank restoration and protection and (iii) watershed protection.

IV. Safeguard Policies that might apply

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</table>
V. Tentative financing

<table>
<thead>
<tr>
<th>Financing Source</th>
<th>Amount</th>
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<tbody>
<tr>
<td>BORROWER/RECIPIENT</td>
<td>0.00</td>
</tr>
<tr>
<td>International Development Association (IDA)</td>
<td>90.00</td>
</tr>
<tr>
<td>IDA Grant</td>
<td>20.00</td>
</tr>
<tr>
<td>Global Environment Facility (GEF)</td>
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</tr>
<tr>
<td>Least Developed Countries TF for Climate Chang</td>
<td>12.00</td>
</tr>
<tr>
<td>Total</td>
<td>126.00</td>
</tr>
</tbody>
</table>

VI. Contact point

World Bank

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Title: Sr Water Resources Spec.
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Borrower/Client/Recipient

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