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Report No.: PP1545

PROJECT PAPER

ON A

PROPOSED GRANT

IN THE AMOUNT OFUS$0.75 MILLION EQUIVALENT

TO THE

RIVER BASIN AGENCY OF OUM ER RBIA

FOR A

STRENGTHEN CAPACITY FOR AN INCLUSIVE DESIGN OF GROUNDWATER MANAGEMENT CONTRACT FOR GREEN GROWTH PROJECT

November 22, 2015

Water Global Practice
Middle East and North Africa

CURRENCY EQUIVALENTS
(Exchange Rate Effective as of April 30, 2015)

Currency Unit	=	Moroccan dirham (DH)
DH 9.7	=	US$1
US$0.1	=	DH 1

FISCAL YEAR
January 1 – December 31

ABBREVIATIONS AND ACRONYMS

ABH-OER	River Basin Agency of Oum Er Rbia (*Agence de Bassin Hydraulique de Oum Er Rbia*)
BCM	Billion Cubic Meters
CRA	Climate Risk Assessment
DPL	Development Policy Loan
FS	Financial Statement
GCM	Global Circulation Model
GDP	Gross Domestic Product
GoM	Government of Morocco
GRS	Grievance Redress Service
IUFR	Interim Unaudited Financial Report
LSI	Large-scale Irrigation
MEMEE	Ministry of Energy, Mines, Water, and Environment *(Ministère de l'Energie, des Mines, de l'Eau et de l'Environnement)*
PNEEI	National Plan for Saving Water in Irrigation (*Plan national d'économie de l'eau d'irrigation*)

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Task Team Leader:	Amal Talbi

MOROCCO
Strengthen Capacity for an Inclusive Design of Groundwater Management Contract for Green Growth Project

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APPRAISAL DATA SHEET

Morocco

Strengthen Capacity for an Inclusive Design of Groundwater Management Contract for Green Growth Project (P154280)

PROJECT PAPER

MIDDLE EAST AND NORTH AFRICA

GWA05

Report No.: PP1545

Basic Information		
Project ID P154280	EA Category C - Not Required	Team Leader(s) Amal Talbi
Lending Instrument Investment Project Financing	Fragile and/or Capacity Constraints [ ] Financial Intermediaries [ ] Series of Projects [X]	
Project Implementation Start Date 12-Nov-2015	Project Implementation End Date 16-Feb-2017	
Expected Effectiveness Date 8-Dec-2015	Expected Closing Date 16-Feb-2017	
Joint IFC No		

Practice Manager/Manager	Senior Global Practice Director	Country Director	Regional Vice President
Steven N. Schonberger	Junaid Kamal Ahmad	Marie Francoise Marie-Nelly	Hafez M. H. Ghanem

Approval Authority
Approval Authority CD Decision

Borrower: Kingdom of Morocco			
Responsible Agency: Agence du Bassin Hydraulique de l'Oum er Rbia			
Contact:	Lahoussine Akrajai	Title:	Director
Telephone No.:	212523482355	Email:	lakrajai@gmail.com

Project Financing Data (in US$, millions)			
Total Project Cost:	0.75	Total Bank Financing:	0.75
Financing Gap:	0.00		

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Financing Source	Amount
Borrower	0.00
Miscellaneous 1	0.75
Total	0.75

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Expected Disbursements (in US$, millions)

Fiscal Year	2015	2016	2017	0000	0000	0000	0000	0000	0000	0000
Annual	0.30	0.30	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cumulative	0.30	0.60	0.75	0.00	0.00	0.00	0.00	0.00	0.00	0.00

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Institutional Data

Practice Area (Lead)

Water

Contributing Practice Areas

Cross Cutting Topics

[X] Climate Change

[ ] Fragile, Conflict & Violence

[ ] Gender

[ ] Jobs

[ ] Public Private Partnership

Sectors / Climate Change

Sector (Maximum 5 and total % must equal 100)

Major Sector	Sector	%	Adaptation Co-benefits %	Mitigation Co-benefits %
Water, sanitation and flood protection	General water, sanitation and flood protection sector	100		
Total		100		

☑ I certify that there is no Adaptation and Mitigation Climate Change Co-benefits information applicable to this project.

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Themes

Theme (Maximum 5 and total % must equal 100)

Major theme	Theme	%
Environment and natural resources management	Climate change	20
Environment and natural resources management	Water resource management	80
Total		100

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Proposed Development Objective(s)

The development objective of the grant is to support the river basin agency of Oum Er Rbia in drafting an inclusive groundwater management contracts using participatory methods.

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Components

Component Name	**Cost (US$, millions)**
Stakeholder involvement in selecting performance indicators for a climate risk assessment of water resources, including groundwater, in the Oum Er Rbia Basin	0.16
Inclusive design and establishment of groundwater contract management in the Oum Er Rbia Basin.	0.58

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Compliance

Policy

Does the project depart from the CAS in content or in other significant respects?	Yes [ ] No [X]

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Does the project require any waivers of Bank policies?	Yes [ ] No [X]
Have these been approved by Bank management?	Yes [ ] No [X]
Does the project meet the Regional criteria for readiness for implementation?	Yes [X] No [ ]

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Safeguard Policies Triggered by the Project	**Yes**	**No**
Environmental Assessment OP/BP 4.01		**X**
Natural Habitats OP/BP 4.04		**X**
Forests OP/BP 4.36		**X**
Pest Management OP 4.09		**X**
Physical Cultural Resources OP/BP 4.11		**X**

Indigenous Peoples OP/BP 4.10		**X**
Involuntary Resettlement OP/BP 4.12		**X**
Safety of Dams OP/BP 4.37		**X**
Projects on International Waterways OP/BP 7.50		**X**
Projects in Disputed Areas OP/BP 7.60		**X**

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Legal Covenants

Name	**Recurrent**	**Due Date**	**Frequency**

Description of Covenant

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Conditions

Source Of Fund	**Name**	**Type**

Description of Condition

Team Composition

Bank Staff

Name	**Role**	**Title**	**Specialization**	**Unit**
Amal Talbi	Team Leader (ADM Responsible)	Senior Water & Sanitation Specialist	Team Leader	GWADR
Abdoulaye Keita	Procurement Specialist	Senior Procurement Specialist	Procurement	GGODR
Franck Bessette	Financial Management Specialist	Senior Financial Management Specialist	Financial Management	GGODR
Achraf Rissafi	Team Member	Team Assistant	Team Member	MNCMA
Andrea Liverani	Team Member	Program Leader	Program Leader	MNC01
Claudine Kader	Team Member	Program Assistant	Team Member	GWADR
Gabriella Izzi	Team Member	Senior Agricultural Specialist	Agriculture	GFADR
Hana Salah	Safeguards Specialist	Consultant	Social	GSU05
Hassan Lamrani	Team Member	Consultant	Irrigation	MNCMA
Hubert Serge Marie MACHARD DE	Team Member	Consultant	Hydrogeology	GWADR

GRAMONT				
Jean-Charles Marie De Daruvar	Counsel	Senior Counsel	Legal	LEGAM
Khadija Faridi	Team Member	Procurement Specialist	Procurement	GGODR
Laila Moudden	Team Member	Financial Management Analyst	Financial Management	GGODR
Mohammed A. Bekhechi	Team Member	Consultant	Institutional	GEN05
Suiko Yoshijima	Safeguards Specialist	Environmental Specialist	Environment	GENDR
Xavier Chauvot De Beauchene	Team Member	Senior Water & Sanitation Specialist	Water	GWADR
Johan Grijsen	Team Member	Consultant	Hydrologist/climate risk assessment	GWADR
Alexandra Sperling	Legal Analyst	Legal Analyst	Legal	LEGAM
Yogita Mumssen	Window Manager	Senior Infrastructure Economist	Economist	GWADR
Shomikho Raha	Team Member	Public Sector Specialist	Governance	GGODR

Extended Team

Name	Title	Office Phone	Location

.

Locations

Country	First Administrative Division	Location	Planned	Actual	Comments
Morocco	Tadla-Azilal	Tadla-Azilal	**X**		

I. STRATEGIC CONTEXT

A. Country Context

1. Against the backdrop of the historic events that swept through the Middle East and North Africa region in early 2011, Morocco initiated important political and social changes of its own, with King Mohammed VI spearheading the drafting of a new constitution and a broad range of reforms to respond to popular demands for more democratic governance and better opportunities. The new constitution presented a revised governance framework, strengthened the separation of powers, and granted greater human and social rights to the people of Morocco. The current government has a busy agenda ahead and is expected to deliver on key economic reforms to cut down on subsidies, reform the pensions system, spur competitiveness, create jobs, and improve quality of services in key sectors. Overall, despite regional political unrest, Morocco has done well in keeping a fine political balance and smoothly addressing the population's need for broader reforms and better governance. While reforms are being implemented gradually, the performance of key public sectors, namely education and health, and the bridging of social and human development gaps are perceived as a priority.

2. Morocco's economy has been performing relatively well with an average growth rate of 4 percent in the non-agricultural sector since 2007, despite successive external shocks due notably to the Eurozone crisis and a highly volatile global market. The gross domestic product (GDP) per capita doubled from 2003 to reach US$3,300 in 2014. This economic growth has greatly contributed to reducing poverty. However, inequality, poverty, and vulnerability remain important challenges. Morocco's Gini coefficient of 0.41 reflects a stubbornly high level of inequality in incomes and access to services. With 17.5 percent of the population still living just above the poverty line (vulnerable), it also means that more than a fifth of Morocco's population (6.3 million people) still lives either in poverty or just above the poverty line. In addition, overall unemployment remains high at around 9 percent, with urban youth unemployment reaching 35.4 percent. In the long term, Morocco needs to achieve higher growth rates that will lead to sustainable job creation and generate wealth, while proving to be more inclusive. In particular, the quality and governance of public services, including for youth and women, must be strengthened and the development model needs to be environmentally sustainable.

B. Sectoral and Institutional Context

3. Morocco has 22 billion cubic meters (BCM) of renewable, natural water resources, equivalent to 700 cubic meters per capita per year, which is under the 1,000 cubic meters per capita per year scarcity threshold. Moroccan water resources are variable in space (more than half of all resources are concentrated in the northern river basins, covering just 7 percent of the national territory) and time (precipitation can vary tenfold from 5 to 50 BCM over the years).

4. To manage this temporal and geographic variability, Morocco has traditionally focused on storage of surface water. Morocco's available surface water resources have largely been mobilized since the 1960s through large water retention dams, conveyance systems, and water supply or irrigation infrastructure. 17.5 BCM of surface water is captured in reservoirs, representing 90 percent of potential storage capacity, but only approximately 12 BCM is available for use each year.

5. In the meantime, water demand is growing, leading to exploitation beyond the threshold of available, renewable water resources, resulting in groundwater[1] depletion. Recent population growth of 1.5 percent per year, and economic growth of 4 percent on average per year are increasing the pressure on water resources. The urban population is expected to carry the brunt of the population increase by 2030 (8 million additional inhabitants, a 50 percent increase). Programs for the extension of service delivery through individual household connections to replace standpipes will represent a significant increase in water consumption by poor peri-urban and rural households. Morocco's large imports of agricultural products call for intensification of agriculture to cover increasing needs. The development of industries and tourism (+2.4 percent per year) also represents an increasing pressure on water resources.

6. As a result of successive droughts and reduced water availability, there has been an increasing pressure on water resources in the past decades. The current water deficit is estimated at around 2 BCM per year and could reach 3.8 BCM in 2030 and 5.4 BCM in 2050 due to increased demand and anticipated impacts of climate change. Successive droughts over the last 30 years have significantly reduced runoff and led to major shortfalls in the supply of irrigation water (52 percent decrease according to a 10-year average). According to a recent World Bank study (2013), climate projections in Morocco have shown that climate change is likely to result in (a) an increase in summer temperatures of up to 3.7°C by 2030 and (b) a reduction in rainfall in the region by 5 to 15 percent by 2030 and 10 to 25 percent by 2050. The 3°C increase in temperature and 15 percent reduction in rainfall by 2030 could reduce the available groundwater recharge by 33 to 45 percent and thus reduce the amount of groundwater that can be used sustainably.

7. Agriculture, the biggest water user, is central to Morocco's economy as evidenced by the strong correlation among GDP and agriculture GDP. As agriculture accounts for about 86 percent of the surface water withdrawals in Morocco, the sector's ability to continue to drive shared prosperity in rural areas is therefore threatened by increasing water scarcity. This scarcity is projected to worsen as a result of climate variability and change. Over the 2014 agricultural campaign, thanks to favorable weather, the sector represented 15.6 percent of GDP, contributing the most to the country's overall growth. The 20 percent increase in agricultural production allowed Morocco's GDP to jump from 2.7 percent in 2012 to 4.4 percent in 2013. Although the 1.46 million ha of permanently irrigated land represent only 16 percent of the cultivated land, it contributes to half of the agriculture GDP, to 75 percent of agricultural exports, and to 15 percent of overall merchandise exports. It is thus a critical factor to increase the level and stability of incomes in rural areas.

8. As in other parts of the world, farmers typically turn to groundwater as a source of 'resilience' in the face of rainfall and surface water uncertainty and variability. In areas with private irrigation (441,000 ha), which largely rely on groundwater to complement precipitation, reduced and more variable rainfall translates into groundwater overexploitation. In Large-scale Irrigation (LSI) perimeters (682,600 ha), which rely on surface water conveyed from dams or rivers, water scarcity translates into reduced volumes allocated to farmers and unreliable service provided by the Regional Agricultural Development Office (*Office Régional de Mise en Valeur Agricole*) with access to water every one or two weeks. Therefore, wherever possible, farmers in LSI perimeter have been making up for this shortfall by complementing

[1] Groundwater and aquifer are used interchangeably in this report.

their allocation with groundwater, further aggravating groundwater depletion. In small- and medium-scale traditional irrigation schemes managed by the Water User Association (334,000 ha), which rely partly on surface water and partly on aquifers, farmers are affected as well by increasing scarcity.

9. The water-energy nexus is particularly pronounced for groundwater management in agriculture. Energy prices can have a significant effect on water use as water production and irrigated agriculture are heavily dependent on pumps. Given that groundwater is fully dependent on pumping whose energy intensity increases with declines in the water table, the energy subsidy has considerable impact on intensive groundwater use and aquifer depletion under water scarcity conditions. Solar pumping could reduce the energy costs for farmers by as much as two-thirds (depending on the regional cost of fuel). This reduced cost, added to a lack of groundwater governance, raises major concerns on the risk of worsening the current overexploitation of the aquifers. It is important in this process of designing the groundwater management contract to have some estimate of the cost of inaction to improve stakeholder awareness of the risk of doing business as usual. In addition, pricing policies and implicit subsidies would help discuss with users the impacts and tradeoffs of some of the policies and agreed on areas in which the groundwater management contract can mitigate the impact of some policies.

10. The government's sectoral programs are intended to build the resilience of the agricultural sector while increasing farmer incomes. Under the Morocco Green Plan (*Plan Maroc Vert),* the government is supporting farmers in introducing climate-smart technologies such as direct seeding, climate-resilient varieties, and enhanced water management techniques, linked to improvements in quality and phytosanitary services, aggregation, and processing which expand economic opportunities. In an effort to increase the productivity of water in agriculture, the government of Morocco (GoM) has put in place a National Plan for Saving Water in Irrigation (*Plan national d'économie de l'eau d'irrigation,* PNEEI). The PNEEI promotes more productive water use by introducing efficient irrigation technologies (mainly drip irrigation) over 555,000 ha of the country's irrigated land by 2020, of which 335,000 ha are in private farms and 220,000 ha are in LSI perimeters. This process is supported through the agricultural development fund, with up to 100 percent subsidies for the adoption of drip and micro-sprinkler irrigation (under a maximum per hectare amount), and with 70 percent subsidies for sprinkler irrigation.

11. While the PNEEI is focused on the efficient use of water, its impact on overall water use in agriculture, including pressure on groundwater resources, depends on several complementary elements. Drip irrigation allows farmers to obtain high production quantities and value for the water used but in and by itself does not control the amount of water used which is based on quantitative or pricing restrictions. However, the drip systems do provide farmers with a much greater ability to adapt to more restricted water availability as they have greater control over water application. Similarly for groundwater, drip technology does not in and by itself restrict use, but rather facilitates compliance with restrictions when imposed.

12. The absence of effective traditional or formal mechanisms for managing groundwater resources is leading to increasing overexploitation of groundwater resources, effectively undermining longer-term resilience. To date, the majority of the wells used for irrigation are neither declared nor monitored, and remain largely uncontrolled. Morocco has already

experienced the dramatic consequences on agriculture and the local economy of aquifer depletion. In Guerdane, 13,000 ha of crops dried before the irrigation Private Public Partnership (PPP) was established. The available water resources enabled irrigation of only 10,000 ha, leaving 3,000 ha aside.

13. Groundwater governance is difficult to monitor and enforce. In Morocco, despite the provisions of water law No. 10-95, which imposes that all water users must register their wells, apply for an abstraction authorization, and pay the volumetric fee for groundwater abstraction, in practice it has proven extremely challenging for river basin agencies to ensure compliance. Global experience teaches that attempts to control groundwater abstraction through coercive actions have often failed. As a result, the River Basin Agency of Oum Er Rbia (*Agence de Bassin Hydraulique de Oum Er Rbia*, ABH-OER) is interested in designing an inclusive groundwater management contract as a bottom-up approach.

14. Morocco has experience in groundwater management contracts. In the Souss area in the south of Morocco, the current agriculture minister played a key role in the establishment of the first aquifer management contract. Building on this experience, the GoM is now looking at piloting a second generation of aquifer management contracts, aiming at having groundwater users plan their consumption of groundwater, with a hope that they will collectively benefit from it in the long run. The challenge is to change the paradigm from the current situation whereby each groundwater user is trying to get the most water for short-term profit into a paradigm whereby farmers jointly plan their consumption and adapt their productions and crops accordingly (see box 1). The key to success will be to convince farmers of their interest in entering into the groundwater management contract and the establishment of recognized local governance and self-enforcement mechanisms to ensure that users respect their commitment. In this second generation of groundwater management contract it will be important to ensure that in the consultation process the most vulnerable farmers also have an actual voice in the design and implementation of the contract..

15. The activities of this grant will be conducted in the Oum Er Rbia River Basin and in particular in the Tadla groundwater system. The Tadla, a vast plain which stretches about 320,000 ha, is located 200 km southeast of Casablanca at an average altitude of 400 m. It is drained by the Oum Er Rbia River and its major tributaries, the wadis Srou and El Abid. The Tadla groundwater system includes, from bottom to top, the following entities: (a) limited groundwater in contact with the crystalline basement, together with Triassic formations which are not exposed in the basin and which provide only local interest; (b) Cénomanian-Turonian carbonated groundwater; (c) a Senonian aquifer of minor significance; (d) the Eocene groundwater; and (e) ultimately, a complex plio-quaternary aquifer made of sand and gravels, conglomerates, and lacustrine limestones (calcarenites). The current estimate of the overuse of the aquifers is about 0.3 BCM per year.

16. The grant aims at supporting the ABH-OER in the inclusive design of two groundwater management contracts, using a bottom-up approach. Although farmers are the biggest consumers and the largest number of stakeholders, the groundwater management contracts will also include all other stakeholders using the selected aquifers, including potentially the National Agency for Electricity and Potable Water (*Office National de l'Electricité et de l'Eau Potable*), Sharifian Phosphate Agency (*Office Chérifien des Phosphates*), and other industries and businesses. By supporting in the design of inclusive groundwater management contracts,

this grant is expected to contribute to the long-term effort of the GoM for a more sustainable use of groundwater resources. The Bank supports this process and objective through its sector dialog and the ongoing Green Growth Development Policy Loan (DPL) series, which promotes piloting the preparation of a new generation of groundwater management contracts that are inclusive and ensure that stakeholders are involved and provide feedback during the design of the groundwater management contract.

Box 1. Theory of Change: Moving from Top-down to Bottom-up Approach in Using Groundwater

Stakeholders of the Oum Er Rbia Basin are confronted with limited access to a reliable source of surface water. As a result, stakeholders compensate the unreliable access to water by tapping into groundwater, bearing the pumping costs and adding pressure on the already overexploited aquifers.

By providing the stakeholders with information on the water availability currently and in the future under different scenarios of use (reduction, no change, or increase) and getting information from the stakeholders on the possible water savings and the time frame for these savings (change source of water from groundwater to surface water, improve efficiency in irrigation, and so on), the ABH-OER will be in a better position to design use scenarios and water allocations for key stakeholders. These allocations would need to be provided to the stakeholder for discussion and endorsement, which will be the basis of the groundwater management contract. It is expected that this endorsement from stakeholders would make them more inclined to respect allocations and would result in the stakeholders checking among themselves on who does not follow agreed allocations; and thus ensuring that use of groundwater is more controlled and extend groundwater exploitation through this planned use and better planning on the timing when some stakeholder will not be able to rely on groundwater (lack of resources, deterioration of quality, or increase cost of use of groundwater).

The grant will contribute to this long-term process of planned and controlled groundwater exploitation by the stakeholders.

C. Higher Level Objectives to which the Project Contributes

17. The objective of this grant is fully aligned with the Morocco country program: the salience of groundwater resources is fully reflected in the 2014–2017 Country Partnership Strategy, which lists "the establishment of three groundwater management contracts" as a Country Partnership Strategy target. This proposed grant is also aligned with (a) the 2012 Bank framework for engagement in the Middle East and North Africa region and particularly with its objective of strengthening governance and social inclusion and (b) the conceptual framework for Inclusive Green Growth supported by the Bank through a resilient and socially inclusive methodology. Indeed, the project contributes to the long-term joint effort of the GoM and the Bank for a more sustainable use of groundwater resources.

II. PROJECT DEVELOPMENT OBJECTIVES

A. PDO

18. The development objective of the grant is to support the river basin agency of Oum Er Rbia in drafting an inclusive groundwater management contracts using participatory methods. Box 1 concisely outlines how the support in the process of designing the groundwater management contract is expected to result in an improved management of groundwater in the

longer term. The area of the grant is the Oum Er Rbia River Basin and the contracts will target two deep aquifers in the basin.

Project Beneficiaries

19. The grant aims to empower the ABH-OER in addressing the challenges of groundwater management at the river basin level. It complements prior grant-funded analytical work implemented by the ABH-OER to quantify the impacts of climate change in the river basin, and the establishment of a comprehensive adaptation strategy, which it is currently implementing out of its own funds.

20. The primary grant beneficiaries are the staff of the Ministry of Energy, Mines, Water, and Environment (*Ministère de l'Energie, des Mines, de l'Eau et de l'Environnement*, MEMEE), the ABH-OER, and the Regional Agricultural Development Office (*Office Régional de Mise en Valeur Agricole*), whose capacity in designing an inclusive groundwater management contract will be improved. The secondary grant beneficiaries' are the stakeholder using deep groundwater in Oum Er Rbia Basin. As women in Morocco are increasingly more involved in areas where male rural-to-urban migration is occurring, consultation, workshops, and training will include a minimum percentage of women.

PDO Level Results Indicators

21. The grant results framework is presented in annex 1, alongside a proposed list of indicators. The PDO level indicator is that the contract for the management of two overexploited aquifers in Oum Er Rbia has been drafted following consultation process.

III. PROJECT DESCRIPTION

A. Project Components

22. The two most strategic aquifers in the Tadla system, from water quality and quantity aspects, are the Turonian and the Eocene aquifers. They are the ones for which a groundwater management contract is likely to be designed under this grant. Although the Turonian and Eocene aquifers are recharged yearly by rainfall in areas where they are outcropping (but also through leakage from other aquifers) and particularly by recharge from surface water irrigation systems, their exploitation by drilling has grown considerably from the early 1980s, after a succession of dry years. As a result, surface water deficits induced by drought events have led the farmers of irrigated areas to groundwater exploitation. From that time, the proliferation of drilled wells resulted in a continual imbalance of each of these two aquifers. The balance deficit of the two aquifers resulted in a continuous depletion since the early 1990s, and in a steady decline of groundwater levels, variable by sector, respectively of the order of 1 to 2 m per year (Turonian) and 1 to 3 m per year (Eocene).

23. Climate change projections in the Oum Er Rbia Basin predict a reduction in the annual water availability for irrigation by 0.2 BCM by 2030 and a potential lowering of the groundwater table. The main irrigation areas in the Oum Er Rbia Basin (for example, Tessaout Amont and Tessaout Aval, Doukkala, and Haouz) are expected to be affected by this reduction in water availability according to one of the three climate change models used in the Bank study on climate change impacts in the Oum Er Rbia Basin (2013). The potential lowering of

the groundwater table is a concern as groundwater is used to irrigate 10 percent of cultivated land in the basin. Presently, 9 out of the 11 different groundwater units in the Oum Er Rbia Basin are already over-exploited for irrigation.

24. As groundwater is the prime water resource available for reducing the impact of climate change, demand management for groundwater needs to be put in place as of now. The top-down option with water meters on wells and the water police have not been successful as very few meters are installed and the water police is limited in number and in its powers. A more comprehensive approach is needed.

25. Adoption of a groundwater management contract is an option that has been tested in other basins such as the Souss-Massa, and the ABH-OER is willing to test it in the Oum Er Rbia Basin. To increase the likelihood of success of this approach, the ABH-OER is designing groundwater management contracts with a strong emphasis on a participatory approach, with a strong and direct involvement of the users.

26. One major step in the design of groundwater management contracts is to conduct modeling of the anticipated impacts of climate change on the groundwater system, to project the possible evolution of groundwater levels over the next decades, based on inflows (rainfall and recharge) and different water use scenarios. Several groundwater models of the Tadla groundwater system have been developed in the past. However, these models had two shortcomings: (a) the rainfall projections did not take into account the projected impact of climate change (that is, the projected reduced recharge of the groundwater systems) and hence may have overestimated the water storage in the aquifers in the next two decades, and (b) the groundwater abstractions were based on user declarations and not on assessments of actual pumping, which resulted likely in a significant underestimation of the groundwater abstractions. It is thus important to re-evaluate the historic groundwater abstractions and to recalibrate the existing groundwater models. Another important source of recharge to be considered is the recharge from the widely applied surface water irrigation in the Tadla region. Future changes in surface water availability need be translated into changes in groundwater recharge, water demands and groundwater availability, recognizing that climate change will directly modify groundwater availability through reduced recharge during drought years and indirectly by increasing groundwater demand resulting from reduced surface water availability. To project changes in groundwater response to climate changes it will also be important to first examine historic rainfall/recharge relationships for a wide range of years, to better understand the dynamics of the groundwater systems prior to the modeling of climate change impacts. Climate change scenarios that aim at projecting changes in drought intensity/frequency and sequence can then use established rainfall/recharge correlations to project impact on groundwater availability.

27. Once the groundwater model has been recalibrated and the long-term groundwater availability has been established for different climate scenarios, this will need to be compared to current groundwater abstractions. Supplies and demand will need to be matched. Even with aggressive irrigation water efficiency improvement policies the overall groundwater demand would likely exceed aquifer capacity under certain climate scenarios. Thus, a transparent plan to gradually reduce irrigated areas to a sustainable level needs to be established along with the groundwater management contract, to avoid systematically supplying unrealistically low amounts of water to farmers.

28. Once the modeling is completed, with the inclusion of the impact of climate change and actual use of water, different future groundwater use scenarios will be analyzed and discussed with users, and the agreed groundwater use scenario will then form the basis for groundwater management contracts. As part of these contracts, the roles and responsibilities of each stakeholder will need to be defined, the monitoring of groundwater needs to be discussed and agreed upon, and the allocation for users and the redress mechanism for users will need to be agreed upon.

29. The groundwater management contract will need to be tailored to the local climate, hydrogeology and socio-economic conditions and has to be compatible with the existing legal and institutional framework. Most of the drivers of intensive groundwater use lie outside the water sector and are socio-economic in nature, and these externalities will need to be included. The impacts of resource allocation scenarios on farmer's incomes will also need to be considered. The model contracts will therefore need to include a mix of local governance, incentives and regulations grounded in solid knowledge on the resource, its dynamics and its uses. Incentive structures to encourage voluntary reductions in groundwater pumping and eliminate negative incentives for excessive groundwater abstractions (e.g. through cheap solar energy) will need to be considered. The introduction of solar pumps should be accompanied by other demand management measures. This project aims to make the first important steps in this – as such time consuming – iterative process.

30. This grant will support the ABH-OER in the design of inclusive groundwater management contracts and will *inter alia*:

(a) Conduct an overall Climate Risk Assessment for the Oum-er-Rbia basin and produce several rainfall input data series based on different climate change scenarios (for example, a low, medium, or high scenario and their plausibility of occurrence), as well as an updated assessment of actual and projected future groundwater abstractions as inputs for groundwater modeling.
(b) Conduct a detailed stakeholder mapping to identify the users of the two aquifers that will be identified for groundwater management contracts;
(c) update model projections which will be the basis for user discussions on the selection of water use scenarios,
(d) identify and discuss the basin's vulnerabilities to climate change with the stakeholders;
(e) update the groundwater modeling (taking into account climate change and actual groundwater uses) so as to present a plausible time-bound evolution of groundwater levels to the stakeholder based on selected water use and climate change scenarios,

(f) and establish on this basis the envisioned groundwater management contracts.

31. The in-depth knowledge on stakeholder mapping, in particular for the larger group representing the farmers, will be conducted as part of the grant (with regard to large farmers versus small farmers, type of irrigation, technologies, and so on). While this stakeholder mapping is doable for the two Turonian and Eocene aquifers, as the number of farmers is expected to be in the hundreds for the Turonian aquifer and thousands for the Eocene aquifer, it is important to note that some limitations are expected due to: (a) the absence of detailed well

logs resulting in uncertainty on tapped groundwater, and (b) farmers illegally tapping groundwater could be reluctant to come forward.

32. The more detailed description of the content of the components is presented below.

Component 1: Stakeholder involvement in selecting performance indicators for a climate risk assessment of water resources, including groundwater, in the Oum Er Rbia Basin (Cost: US$0.165 million)

33. The key objective of this component is to assess the climate vulnerability in the Oum Er Rbia Basin for selected performance indicators, particularly for the future availability of groundwater, and to the extent possible assess potential mitigating measures and actions aimed at reducing the identified climate vulnerabilities. The main tasks are the following: (a) assessment of current information/knowledge on the basin (hydrology/hydrogeology) and the initial scoping of possible future groundwater imbalances; ; (b) training on the methodology for Climate Risk Assessment (CRA) and consultation with key stakeholders in identifying key performance indicators for main uses (and thresholds, to the extent possible); (c) Assessment of the imbalance in groundwater use and recharge under the present climate conditions and a CRA for key performance indicators for potential future conditions (and thresholds, to the extent possible); and (d) consultations on the results of climate risk impacts for key indicators (and possibly thresholds) and the identification of potential trade-offs between climate change impacts and potential mitigating measures.

34. Generally, a CRA aims at better understanding the dynamics of future climate over the subject river basin, and assessing its potential impacts on water resources, hydro-energy production, agriculture, the environment, and the possible impacts on existing and planned infrastructure. Economic, financial and social climate vulnerabilities may also be considered. This understanding of future climate is essential for assisting decision makers and stakeholders to better manage their water resources, prepare for extreme hydrological hazards, and enhance development planning in the subject basin. Therefore, generally the objective of a CRA is to assess the risks of climate change to the water resources and associated development sectors of a basin in the near (for example, 2030), mid (for example, 2050), and distant future (for example, 2070); 2050 being significant for investments in water infrastructure with a typical 30-year investment horizon.

35. Under this component, from the available information, current knowledge, and the correlation between rainfall and runoff, present irrigation from surface water sources and groundwater recharge, the vulnerability to climate change of the basin's water resources and of performance indicators selected by the stakeholder will be assessed. Given the substantial uncertainty in climate projections from the current Global Circulation Models (GCMs), it is difficult to estimate what the future climate is likely to be, and it is thus to the extent possible there will be use of large ensembles of climate change projections to capture any plausible climate future. As such, GCM projections can be provided by the Meteorology Department, which has the ability to generate output of GCMs and generate rainfall and temperature data series at the adequate spatial and temporal scale. There are two approaches as mentioned below.

(a) In the top-down approach, the outputs of a limited number of GCMs are downscaled and used as an output for the modelling. As no single model can be regarded as the 'best' for any region or parameter, it is thus preferred to use the output of a large ensemble of climate projections for multiple GCMs and emission scenarios. This approach is generally time consuming, limits the number of climate projections which can be used, and hence limits the ability to conduct a probabilistic analysis of future runoff conditions.

(b) The bottom-up approach makes use of a large number of readily available downscaled climate projections[2] to inform but not to drive the CRA process. Under this approach, the water resources system model of the subject basin need not be run for a multitude of input scenarios derived from climate and hydrological models. Instead, the baseline runoff and rainfall conditions (current hydrology) are parametrically varied for each of the future investment and water demand scenarios to span a wide range of plausible changes in rainfall, groundwater recharge and runoff conditions. This methodology enables estimates of the plausibility of climate risks and helps to develop a conceptual framework for adaptation strategies that increases the resilience and robustness of investment planning in the subject basin, without the need for excessive climate change and hydrological modeling, and focuses on water resources system modeling (including groundwater modeling in this particular case). The methodology places climate projections in the context of risks to investments rather than as credible predictions of the future. The methodology has already been applied successfully for CRAs of infrastructure investments.[3,4] The water resources system vulnerability would generally be analyzed with regard to performance metrics of hydroelectricity production, irrigated agriculture, maintaining environmental flows and groundwater levels, and to the extent possible economic, financial and social water-resources-related performance indicators of interest to stakeholders.

36. Under this grant, the bottom-up approach is likely to be used, principally following the Decision-Tree methodology[5] as recently developed by the World Bank for climate resilience assessments. In this methodology the focus is first on climate risks, but then also considers other risk factors (social, institutional, economic) as needed to put climate risks in a broader risk framework and perform system stress tests to analyze system performance under a broader variety of external stresses and uncertainties.

[2] Brown, C., Y. Ghile, M. Laverty, and K. Li. 2012. "Decision Scaling: Linking Bottom-up Vulnerability Analysis with Climate Projections in the Water Sector." *Water Resources Research* 48(9): 1–12.

[3] Ghile Y.B., M.Ü. Taner, C. Brown, and Johan Grijsen. 2013. "Bottom-up Climate Risk Assessment of Infrastructure Investment in the Niger River Basin." *Climate Change*. doi: 10.1007/s10584-013-1008-9.

[4] Grijsen, Johan, and Hrishi Patel. 2014. *Understanding the Impact of Climate Change on Hydropower: The Case of Cameroon - Climate Risk Assessment for Hydropower Generation in Cameroon*. Washington, DC: World Bank Group. http://documents.worldbank.org/curated/en/2014/04/19458065/understanding-impact-climate-change-hydropower-case-cameroon-climate-risk-assessment-hydropower-generation-cameroon.

[5] Ray, Patrick A., and Casey M. Brown, 2015: *Confronting Climate Uncertainty in Water Resources Planning and Project Design: The Decision Tree Framework.* Washington, DC: World Bank; doi:10.1596/978-1-4648-0477-9.

Component 2: Inclusive design and establishment of groundwater contract management in the Oum Er Rbia Basin (Cost: US$0.585 million)

37. The key objective of this component is to support the consultative process and the design of the groundwater management contract for two aquifers in the Oum Er Rbia Basin. The key elements for increasing the likelihood of a successful groundwater management contract are involving the stakeholders, building trust, good communication, and transparency in the process. Indeed, based on lessons learned globally, coercive actions have not been successful. The initial pilot in Morocco on a convention including water users at the level of the Souss-Massa Basin also provided lessons—that all stakeholders need to be involved and that the contract framework should include clear roles and mechanisms for monitoring, informing stakeholders, getting feedback from users, and clarifying how the contract is to be updated when the need arises. The MEMEE, building on the lessons learned from the Souss-Massa Basin, is keen to ensure that the new generation of groundwater management contracts is inclusive and includes the basis for good groundwater governance. The Oum Er Rbia Basin was selected as the pilot for this new generation of groundwater contracts because of the long engagement of the Bank in the Oum Er Rbia Basin (in agriculture, water supply and sanitation, and climate change), and the ownership of the ABH-OER to pilot the design of an inclusive contract for two aquifers. The ABH-OER expressed interest in following these principles of bottom-up approach (inclusiveness, transparency, and agreement). This component thus aims at piloting this approach in the OER Basin and supporting the ABH-OER in the consultations and consensus-building process.

38. Under this grant, this component will include the following tasks:

(a) Confirmation with the ABH-OER on the selection of the two deep aquifers of the Tadla system (Eocene and Turonian aquifers). The selection of the two aquifers is based on two criteria. First, the number of farmers needs to be under few thousands so ensure that the consultation process is manageable and that there is a learning on how to ensure that the most vulnerable have a voice in the consutlations. Second, the groundwater is a strategic resources in terms of quality and quantity of water.
(b) Stakeholder analysis and assessment on the way forward for each contract (including legal gaps and the way to move forward with existing legal instruments).
(c) Initial consultations workshop to agree on the process and key content of contract management for the two aquifers.
(d) Assistance to the ABH-OER in the design process and first draft of the management contract for the two aquifers.
(e) Consultation workshops on the process and initial draft of the management contract (including obtaining the medium- and long-term objectives of the use of groundwater from the stakeholders, in the context of reduction of recharge of groundwater due to climate change).
(f) Workshop to present and exchange views on the groundwater management contract with other river basin agencies.
(g) Synthesizing lessons learned.

39. The design of an inclusive contract requires regular communication with stakeholders on technical aspects (modeling, development scenarios, and optimization of the system) and institutional aspects (consultations, legal setting, governance, and citizen feedback). To ensure

continuity in this communication, the ABH-OER will recruit a consultancy firm to support the technical and institutional aspects. Once the modeling of the groundwater is available, stakeholders will be presented with different development options such as (a) business as usual that is increasing the use of groundwater gradually over time; (b) stabilizing the use of groundwater to its current use; and (c) reduction of the use of groundwater. These consultations will provide the stakeholders with the information on the impact of each scenario and help reach a consensus for the majority of the stakeholders on the scenario that would be the basis for the design of the groundwater management contract. The consultations on the technical aspects are likely to be conducted in parallel with discussions on the institutional aspects to agree on the form and substance of the groundwater management contract.

40. It is important to emphasize that this pilot work on two aquifers takes place within the much wider context of the OER Basin. For example, reduced precipitation would lead to reduced availability of surface water for irrigation and simultaneously higher crop water requirements. Surface water allocations for the chosen aquifer areas depend on the overall allocation rules for the Basin.

B. Project and Financing

41. The project is a small recipient executed trust fund for a financing of US$0.75 million. Table 1 provides an overview of the costs by component.

Project Components	Project cost	Grant Financing	% Financing
Component 1: Stakeholder involvement in selecting performance indicator for a climate risk assessment of the Oum Er Rbia Basin	0.165	0.165	100
Component 2: Inclusive design and establishment of groundwater contract management in the Oum Er Rbia Basin	0.585	0.585	100
Total Costs			
Total Project Costs	0.750	0.750	100
Front-end Fees	0	0	
Total Financing Required	0.750	0.750	

C. Lessons Learned and Reflected in the Project Design

42. The main lessons derived from continuous Bank engagement through the sector dialog, including the Inclusive Green Growth DPL, and from global experience are the following.

43. It is important to set expectations at the right level. The groundwater management contract is a management tool for the planned use of the groundwater. It is hoped that this planned use will result in the sustainable use of the groundwater. Even with a well-designed groundwater management contract, it is not always possible, in particular in the short term, to reduce groundwater use below the recharge level. Setting an objective of sustainable use of groundwater for the short term may be unrealistic from an economic and social perspective as

in some cases it could be achievable only by reducing the economic activities to a level that cannot be reached in that period.

44. Early start of inclusion of all the users in the design of the groundwater management contract increases the chance of a behavior change to act upon agreed planned use of the groundwater. It is hoped that early inclusion of the users will result in ownership of the targets set in the planned use of groundwater and change the incentives from over-pumping at an individual level to peer pressure from the group to apply agreed actions in the groundwater management contract for all the group to benefit from the groundwater for a longer period.

45. Overexploitation of the groundwater in a planned manner is an option as long as there is a clear exit strategy. The groundwater management contract allows an agreement with stakeholders on the use of groundwater with regard to level of use and timeline. This use of groundwater in some instances may mean an overexploitation of groundwater, which can be acceptable only if there is an exit strategy. The exit strategy could be, for example, more efficiency in the water system, use of another source of water, and less reliance on agriculture.

46. In the case of the Souss area in the south of Morocco, the groundwater management contract was established thanks to the leadership of the governor (the current agriculture minister). However, the implementation could be further improved and provides the following lessons learned: (i) need to include stakeholders need to be involved at the design stage; and (ii) that the contract should include clear roles and mechanisms for monitoring, informing stakeholders, getting feedback from users, and clarifying how the contract is to be updated when the need arises.

IV. IMPLEMENTATION

A. Institutional and Implementation Arrangements

47. The grant will be implemented by the ABH-OER, which has successfully implemented a Bank-funded grant, the Japan Policy and Human Resources Development (PHRD) Grant No. TF092827 on strengthening capacity to adapt to climate change impacts on water management in the Oum Er Rbia Basin Project. The PHRD grant closed satisfactorily on June 30, 2013, and indicated that the ABH-OER has knowledge of Bank procedures. The Bank team will provide strategic support and guidance especially on the consultation aspects, which will be essential for the success of this grant. The support will be closely coordinated with the Deutsche Gesellschaft für Internationale Zusammenarbeit (GiZ) and Agence Française de Développement (AFD) that are involved in complementary interventions in water governance in Morocco.

B. Results Monitoring and Evaluation

48. The ABH-OER will be responsible for monitoring the implementation of the grant and will consolidate the information into one progress report at the end of each semester of the calendar year.

C. Sustainability

49. To be sustainable, the grant must have the commitment of the government, the implementing entities, and the beneficiaries. It must show that the awareness of the stakeholders on the impacts of overuse of groundwater has improved and demonstrate that it does not have a negative impact on the environment.

50. Government commitment to the grant can be seen through the updated water law, which includes groundwater management contracts, the groundwater management contracts being an indicator of Inclusive Green Growth DPL and the ABH-OER being the champion of this new way of designing groundwater management contracts. The environmental sustainability relates to the long-term management of aquifers through planned use of groundwater abstraction and with the stakeholders agreeing to this planning. Over time, this planning allows to look at exit strategies or strategies that allow to slow down the mining of groundwater (such as surface water available for some use, looking at options to increase efficiency in water use, reuse of water, and so on).

V. KEY RISKS AND MITIGATION MEASURES

51. The overall risk of the proposed grant for preparation and implementation is Moderate. A number of Bank-funded projects are under implementation or preparation in the Oum Er Rbia Basin in irrigation, water supply, and sanitation. There is a strong buy-in from the ABH-OER and it is worth noting that as a result of the dialogue during the Inclusive Green Growth (IGG) DPL1, three key ministries (the Ministries of Interior, Agriculture, and Water) issued the Interministerial Circular (Circulaire) requiring the conclusion of groundwater management agreements (contrats de nappes) in November 2013. Table 2 gives the risk rating summary.

Table 1. Risk Rating According to the Systematic Operations Risk-Rating Tool (SORT).

Risk Category	**Rating**
1. Political and Governance	Moderate
2. Macroeconomic	Moderate
3. Sector Strategies and Policies	Low
4. Technical Design of Project or Program	Moderate
5. Institutional Capacity for Implementation and Sustainability	Moderate
6. Fiduciary	Moderate
7. Environment and Social	Moderate
8. Stakeholders	Moderate
OVERALL	**Moderate**

VI. APPRAISAL SUMMARY

A. Economic and Financial Analysis

52. The grant is not subject to an economic and financial analysis as the activities are studies and training. However, a quick estimate was made on the possible contribution of the

present overexploitation of Morocco's groundwater to the national GDP. The basic assumptions for the estimate of the present overexploitation of groundwater in Morocco with regard to the GDP are: (a) as the value of water is included in the country's GDP, renewable water was considered mainly free; (b) surface water (water captured in reservoir or withdrawn from rivers) has not been taken into consideration in this estimate; (c) the deterioration of groundwater quality as a result of overexploitation was not accounted for; and (d) as per the water law, the highest priority was given to drinking water, industrial water, and then irrigation. It was concluded that, overall, the present unsustainable overexploitation of groundwater for irrigation (that is, depletion of groundwater resources which cannot be renewed) could be around 0.5 percent of the GDP. As water scarcity increases from the north to the south, the regional distribution of negative impacts is skewed toward the southern regions. It is estimated that 60 percent of the national overexploitation of groundwater takes place in the southern Souss-Massa and Tensift Basins, with an overuse of 277 million m^3 per year and 235 million m^3 per year, respectively. The estimated overuse of groundwater in the Oum Er Rbia Basin, where the activities of the grant will take place, is 122 million m^3 per year.

B. Financial Management

53. A financial assessment was carried out by Bank staff based on a meeting with a representative of the ABH-OER, the head of the division of budget, and a desk review, in accordance with OP/BP 10 and the Bank procedures related to project preparation of small recipient executed trust fund grants as the grant is less than US$5 million and above US$500,000. The evaluation procedures consisted of ensuring, upstream, the establishment of the expenditure, procedures, and criteria ensuring satisfactory financial management, and downstream, financial reporting and control a posteriori mechanisms to ensure that funds are used for the right purposes.

54. The Bank concluded that the proposed financial management arrangements meet the Bank's minimal requirements to manage and account for grant proceeds and to produce timely, accurate, and reliable financial statements (FSs) for general and the Bank's special purposes. The project will be implemented using the Morocco country systems governed by budgetary law and using existing capacities and human resources within the ABH-OER. The expenditures related to the project are part of the agency's budget and an independent financial reporting system will be implemented to ensure strict monitoring of expenditures and project payments.

55. Nevertheless, a number of weaknesses were identified during the assessment and mitigating measures were agreed with the ABH-OER to mitigate the risks posed by the identified weaknesses. The main risks identified during the evaluation are the following:

(a) The ABH-OER management capacity. To mitigate this risk, a ring-fenced training on the Bank's financial management and disbursement matters; accounting, disbursement, and financial reporting processes; and procedures and templates for the project will be described in detail in the project's operations manual.
(b) Delays in the planning of activities because of the delays in budget allocations or in the execution of procurement. To mitigate delays in expenditure execution, targeted training is provided to build the capacity of teams responsible for financial management of the project, in procurement and interim unaudited financial reports

(IUFRs) and project's audited FSs will be submitted to the Bank on a semiannual and annual basis, respectively.

(c) Risk related to the failure of the internal control system in light of the absence of an internal audit function, the lack of interface between the application of the management system, and the lack of a manual organization defining the agency's management rules. These risks can be reduced by planning strengthening activities.

56. **Risk assessment and mitigating measures.** On the basis of the Bank's project financial management assessment, the overall financial management residual risk is considered Moderate.

Reporting System and Audit

57. The IUFRs should include data on the financial situation. These reports must include (a) a statement of sources and utilization of funds for the period cumulatively, including a statement of the balances of the project accounts; (b) a statement of the use of funds by component and by category of expenditure; and (c) a status of the budget analysis indicating execution forecasts and variances. The IUFR is prepared and sent to the Bank within 45 days after the end of each semester.

58. **Project FSs.** The project FSs will be produced annually by the agency. The FSs must include (a) a cash flow statement, (b) a closing financial position, (c) a statement of running commitments, and (d) an analysis of payments.

59. The audit will be conducted by the external auditor of the agency and will be conducted in accordance with professional auditing standards accepted internationally. The auditor will produce (a) an annual audit report containing its opinion on the draft annual FS and (b) a report on internal control weaknesses identified during its mission. These reports must be submitted to the Bank within six months from the closing date of each fiscal year. In addition, the Bank must receive the audit report and management letter on internal controls specific to the agency within the same time.

Disbursement

60. Withdrawals of grant proceeds will be made in accordance with the Bank's guidelines and will be used to finance project activities. The proceeds of the grant will be disbursed in accordance with the traditional disbursement procedures of the Bank and will be used to finance project activities through the disbursement procedures currently used, that is Direct Payment and Reimbursement accompanied by appropriate supporting documentation (summary sheets with records and/or statements of expenses) in accordance with the procedures described in the Disbursement Letter and the Bank's Disbursement Guidelines. The ABH-OER will not open a designated account to receive advances. Following the Bank's standard disbursement procedures, disbursements will be completed four months after project closing date.

61. Supervision activities will include a review of semester IUFRs, review of annual audited financial statements and management letters, as well as timely follow-up on issues which have arisen and participation in Bank project supervision missions, as appropriate. There

will be two financial management supervision missions each year. Bank supervision missions will consist of visits to the ABH-OER to review financial management practices, procurement methods, payment procedures, and documentation.

C. Procurement

62. The ABH-OER has experience in implementing Bank-financed grants. The capacity assessment of the ABH-OER was carried out during grant preparation. The overall risk for procurement is assessed as Moderate. The procurement procedures for this grant are as follows:

(a) **General.** All goods, non-consulting services, and consultants' services required for the project and to be financed out of the proceeds of the grant shall be procured in accordance with the requirements set forth or referred to in:

(i) Section I of the 'Guidelines: Procurement of Goods, Works and Non-consulting Services under IBRD Loans and IDA Credits and Grants by World Bank Borrowers' dated January 2011 (revised July 2014) ('Procurement Guidelines'), in the case of goods and non-consulting services;
(ii) Sections I and IV of the 'Guidelines: Selection and Employment of Consultants under IBRD Loans and IDA Credits and Grants by World Bank Borrowers' dated January 2011 (revised July 2014) ('Consultant Guidelines') in the case of consultants' services; and
(iii) The provisions of this Section, as the same shall be elaborated in the procurement plan prepared and updated from time to time by the recipient of the project in accordance with paragraph 1.18 of the Procurement Guidelines and paragraph 1.25 of the Consultant Guidelines ('Procurement Plan').

(b) **Definitions.** The capitalized terms used in the following paragraphs of this Section to describe particular procurement methods or methods of review by the Bank of particular contracts refer to the corresponding method described in Sections II and III of the Procurement Guidelines, or Sections II, III, IV, and V of the Consultant Guidelines, as the case may be.

(c) **Particular methods of procurement of goods and non-consulting services.**

(i) The following methods may be used for procurement of goods and non-consulting services for those contracts which are specified in the Procurement Plan: (A) Shopping and (B) Direct Contracting.

(d) **Particular methods of procurement of consultants' services.**

(i) Except as otherwise provided in item (ii) below, consultants' services shall be procured under contracts awarded on the basis of Quality- and Cost-Based Selection.

(ii) The following methods, other than Quality- and Cost-Based Selection, may be used for the procurement of consultants' services for those assignments which are specified in the Procurement Plan: (A) Selection based on the Consultants' Qualifications; (B) Single-Source Selection of consulting firms; (C) Selection of Individual Consultants; and (D) Single-source procedures for the selection of individual consultants.

(e) **Review of procurement decisions by the Bank.** The Procurement Plan shall set forth those contracts which shall be subject to the Bank's prior review. All other contracts shall be subject to post review by the Bank.

D. Safeguards Policies

63. The grant is category C as the grant will finance assessments, consultations, and training and does not finance any physical interventions. None of the safeguards policies are triggered.

E. World Bank Grievance Redress

64. Communities and individuals who believe that they are adversely affected by a World Bank-supported project may submit complaints to existing project-level grievance redress mechanisms or the Bank's Grievance Redress Service (GRS). The GRS ensures that complaints received are promptly reviewed in order to address project-related concerns. Project-affected communities and individuals may submit their complaint to the Bank's independent Inspection Panel which determines whether harm occurred, or could occur, as a result of Bank non-compliance with its policies and procedures. Complaints may be submitted at any time after concerns have been brought directly to the World Bank's attention, and the Bank Management has been given an opportunity to respond. For information on how to submit complaints to the World Bank's corporate Grievance Redress Service (GRS) please visit http://www.worldbank.org/GRS. For information on how to submit complaints to the World Bank's Inspection Panel please visit www.inspectionpanel.org.

Annex 1: Results Framework and Monitoring

Morocco

Annex 1: Results Framework and Monitoring Country: Project Name Strengthen capacity for an inclusive design of groundwater management contract for green growth. (P154280)								
The development objective of the grant is to support the river basin agency of Oum Er Rbia in drafting an inclusive groundwater management contracts using participatory methods.								
PDO Level Results Indicators*	**Core**	**Unit of Measure**	**Baseline**	**Cumulative Target Values****		**Frequency**	**Data Source/ Methodology**	**Responsibility for Data Collection**
				YR 1	**YR 2**			
Indicator One: the contract for the management of two overexploited aquifers in Oum Er Rbia has been drafted following consultation process	☐	(Yes/No)	No	No	Yes	Once per quarter	ABH-OER	ABH-OER
INTERMEDIATE RESULTS								
Intermediate Result (Component One):								
Improved knowledge on the management of climate risk is shared with stakeholders (Text)	☐	**Text**	Existing downscaling (dynamic) of Climate Change projections for the basin		ABH-OER/MEMEE staff is trained in the assessment of climate and other risks, and training sessions and workshops are provided to stakeholders, which will include on average 15% females.	Once per quarter	ABH-OER	ABH-OER
Intermediate Result (Component Two): Inclusive design and establishment of groundwater contract management in the Oum Er Rbia Basin								
Intermediate Result indicator One: Number of stakeholders expressing intention to sign groundwater management	☐	**Number**	**0**		The end value will be determined after the selection of the two aquifers for which there will be a groundwater management contract. When aquifers are determined the possibility of gender disaggregated indicator will be assessed.	Once per quarter	ABH-OER	ABH-OER

contracts once finalized (Number)								