

INTER-AMERICAN DEVELOPMENT BANK

THE BAHAMAS

**WSC SUPPORT PROGRAM – NEW PROVIDENCE WATER SUPPLY
AND SANITATION SYSTEMS UPGRADE**

(BH-L1028)

**Environmental and Social Management Report
(ESMR)**

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ABBREVIATIONS

AOP	Annual Operating Plans
EA	Executing Agency
ESA	Environmental and Social Analysis
ESMR	Environmental and Social Management Report
ESS	Environmental and Social Strategy
GOBH	Government of The Commonwealth Of The Bahamas
ICAS	Institutional Capacity Assessment System
ICB	International Competitive Bidding
IDB	Inter-American Development Bank
MOF	Ministry of Finance
MTE	Ministry of The Environment
NRW	Non-revenue Water
O&M	Operation and Maintenance
OC	Ordinary Capital
OM	Operations Manual
OUR	Office of Utilities Regulation
PMR	Progress Monitoring Report
PMU	Project Management Unit
POD	Proposal for Operation Development
SSF	Safeguard and Screening Form for Screening and Classification of Projects
TC	Technical Cooperation

I. INTRODUCTION

- 1.1 The Water and Sewerage Corporation (WSC) is the main provider of water and sewerage services in The Bahamas. Its service base includes about 66,000 customers on 13 islands that are spread over more than 200,000 square kilometers of territory, including the main population centre of New Providence.
- 1.2 Whilst approximately 98% of population in urban areas of New Providence has access to potable water, only 38% of properties regularly use water supplied by WSC. The number of live connections is considered to be 41,559, which with an occupancy rate of 3 people per house, corresponds to customer base of 124,667 people out of the total New Providence population of 328,097. As a result of former customers ceasing to use a WSC supply, the Corporation considers that there may be as many as 20,000 dormant or inactive water connections.
- 1.3 WSC's service area has limited availability of naturally occurring freshwater resources. Demand for water exceeds the local groundwater resource and the WSC purchases water from contractor-operated reverse osmosis plants and contracted barging services. The supply from the reverse osmosis plants has grown by over 450 percent since 2000, increasing WSC's cost of water purchase by B\$20 million over the same period.
- 1.4 In this context of limited supply and high cost, water lost through non-revenue leakage at around 50%, or 5mgd, is an unwanted strain on the finances of the WSC. Government subsidies are presently \$11Mn annually for water purchases in New Providence based on its allocation for the fiscal year 2010-2011. The subsidy is equivalent to \$0.0056/gallon sold or \$33.5 per head of population, whether or not a customer of WSC.
- 1.5 In order to address the problems facing the WSC and move toward financial sustainability, a number of operational areas where WSC should reduce costs or improve revenues were identified in the Water and Sanitation Strategic Sector Plan (WSSP) completed in 2009. Additionally, procedural and structural improvements that should increase WSC's ability to implement the goals that it sets out within its corporate planning documents were identified.
- 1.6 The long-term aim of the WSSP is to ensure the financial and operational sustainability of the service provided by the WSC so that potential customers will turn to the WSC as their preferred service provider and, in so doing, move away from the use of small, shallow wells that are commonly found in New Providence but which are an inherent health risk due to groundwater contamination from septic tanks, cesspools and the like. A cornerstone to ensure the sustainability of the WSC will be to reduce the current high levels of NRW to lower levels of around 20% or 2.5mgd at current flow rates.
- 1.7 Historically, sewerage has not been given much attention due to its limited coverage (less than 7% and 10,000 customers), low revenue generation (~\$4Mn per annum), and the extreme challenges constantly faced with water supply. Consequently, infrastructure conditions have declined significantly over the years and more recently staffing levels have decreased by over 30%. Significant investments are therefore required to avoid complete failure, of several systems or parts thereof, to minimize operational emergencies, and to mitigate the associated health and environmental risks.

- 1.8 The WSC has recently updated its Sewerage Asset Register (see Appendix 2). It should be noted that the total value of sewerage assets on New Providence Island is now valued at \$162.6 Mn, however beyond inherited third party infrastructure, and emergencies, very little investment has occurred over the last decade. Having proposed a significant investment in NRW, the WSC is also proposing a counterpart investment in sewerage through component to rehabilitate selected sewage treatment plants in this Project in order to stabilize operations, and to deal with immediate and critical sewerage needs for New Providence over the next 2 – 3 years. Preparation of a Wastewater Master Plan to guide development of WWTP is also contemplated.

II. PROJECT DESCRIPTION

- 2.1 The general objective of the proposed operation is to improve the efficiency and quality of service provision of potable water, address immediate problems of sanitation and prepare the WSC for economic and environmental regulation. The specific objectives are to: (i) reduce water losses, (ii) institutional strengthening of WSC, (iii) upgrade and rehabilitate selected sewerage infrastructure, and (iv) improve the legal and regulatory framework of the sector.
- 2.2 The range of activities that would be financed under the proposed project can be summarized as follows:
- a. **Component 1: NRW Reduction:** This component will finance a NRW Reduction Contract to address water losses in New Providence. The activities will be as follows: (a) perform a Baseline Survey and prepare a detailed NRW Reduction strategy; (b) leak detection and repairs; (c) construction works and equipment including mains and service lateral replacement, pressure control, data collection and monitoring; (d) NRW/asset management information system (MIS) that integrates key existing WSC systems such as GIS, Work Order Management, customer information, and network analysis; (e) NRW training for WSC staff; (f) consulting services to assist with execution; and (g) improvements to MIS with supervisory control and data acquisition system (SCADA);
 - b. **Component 2: WSC Institutional Strengthening:** This component will finance: (a) automated meter reading/intelligence (AMR/AMI) system for commercial accounts; (b) public relations campaign for project and customer win-back campaign; (c) training, development and implementation of the new organizational structure, and; (d) tariff study to prepare for sector economic regulation; and, (e) the preparation and implementation of an Operational Strategy, HR Strategy and benchmark performance standards for preparation of WSC for regulation by the Utilities Regulation and Competition Authority (URCA).
 - c. **Component 3: Minimum Wastewater Treatment Plant Upgrades and Preparation of a Wastewater Treatment Action Plan:** This component will finance the rehabilitation of; (a) wastewater treatment plants and disposal wells that are malfunctioning and causing environmental and potential health problems; (b) critical lift stations which require civil/mechanical/electrical and security upgrades, and; (c) collection systems and forcemains to address failing and inefficient/ineffective sewers. It will also finance the preparation of a Wastewater

Master Plan to address the wastewater collection, treatment, and disposal needs of New Providence. The Master Plan will also include the necessary technical, social, environmental and financial analysis.

- d. **Component 4: Upgrade legal and regulatory framework:** This component will finance (i) the establishment of Utilities Regulation and Competition Authority (URCA), as the independent Economic Regulator for the water sector; and; (ii) the reorganization of the institutional arrangements for water resources management and environmental protection in The Bahamas and establishment of an independent Environmental Regulator.

III. INSTITUTIONAL AND REGULATORY FRAMEWORK

- 3.1 By statute the WSC is the most significant agency of the water sector in The Bahamas. The WSC is the de jure (and non-functioning) regulator of the water and sanitation sector. The WSC was established by the Water and Sewerage Corporation Act (WSC Act) as both a service provider and a regulator. According to Sections 5 and 6 of the WSC Act, the WSC's regulatory responsibilities are:
- Controlling and ensuring the optimum development and use of the water resources of the Commonwealth of the Bahamas
 - Ensuring the co-ordination of all activities which may influence the quality, quantity, distribution or use of water
 - Ensuring the application of appropriate standards and techniques for the investigation, use, control, protection, management and administration of water
 - Determining the allocation of available water between different users or types of use in any area within its jurisdiction
 - Prescribing and collecting rates and service fees and deposits in respect of the distribution and supply of water and the disposal of sewerage
- 3.2 In practice, the WSC does not perform these regulatory functions. It has neither the funding nor the regulatory expertise to do so. The WSC does not plan on performing regulatory functions in the future, and is actively seeking to have its regulatory responsibilities transferred to another entity. Figure 1 outlines the organizational structure and staff levels for WSC.
- 3.3 Other agencies that establish policy for the water and sanitation sector, or have regulatory responsibility for the sector are: (i) Ministry of the Environment (including Department of Environmental Health Services, Department of Physical Planning and Bahamas Environment, Science and Technology Commission); (ii) Ministry of Finance; Cabinet; and the Utilities Regulation and Competition Authority (URCA).
- 3.4 The Ministry of Environment was created in 2007 with a broad mandate for environmental management, but no statutory powers for regulating. The Ministry of the Environment has been leading the preparation of "an Act to Establish the Bahamas Ministry of the Environment to Provide for Environmental Planning, Protection and Conservation and Matters Related Thereto" (hereafter, the "Environment Act of 2010").

This proposed Act would give the Ministry of the Environment the legislative authority and a remit to build the manpower and supporting bodies to implement a broad environmental protection strategy that would address, among other aspects, water resource management and protection from pollution of all types including sanitation and wastewater effluent, chemicals and other pollutants.

- 3.5 Currently, the Minister for the Environment holds the powers specified by the WSC Act for the “Minister responsible for Water and Sewerage.” These powers include: (i) giving the WSC directions that are deemed to be in the public interest; (ii) approving all borrowings by the WSC; (iii) appointing no more than four members of the WSC’s Board; (iv) approving General Manager appointment by the WSC’s Board. Additionally, the Minister must consult with the WSC to: (i) coordinate activities that influence quality, distribution and use of water; (ii) set appropriate standards and techniques for investigation, use, control, protection, management and administration of water; (iii) provide sufficient water for domestic, agricultural, urban and industrial uses; and (iv) provide adequate facilities for drainage and safe disposal of water. The WSC is supposed to work in conjunction with the Ministry to develop sewerage infrastructure.
- 3.6 In addition to responsibilities for overseeing the WSC, the Ministry of the Environment contains the following bodies with mandates relevant to the environmental regulation and protection of groundwater: (i) the Department of Environmental Health Services (DEHS); (ii) the Department of Physical Planning (DPP); and (iii) The Bahamas Environment, Science and Technology Commission (BEST).
- 3.7 The Department of Environmental Health Services (DEHS) was created under the Environmental Health Services Act of 1987 (Chapter 232). Through the Act, DEHS is responsible for the protection of public health through food safety monitoring and control and conservation and maintenance of the environment through the control and prevention of contamination of the air, water and soil, and solid waste management.
- 3.8 The Department of Physical Planning (DPP), formerly the Department of Town Planning, carries out mandates under the Public Works Act of 1964 (Chapter 26) and the Conservation and Protection of the Physical Landscape of the Bahamas Act of 1997 (Chapter 260). The Public Works Act addresses public works, building and roads, and the latter, the protection of landscapes and natural resources of The Bahamas from physical and environmental degradation related to land development and resource extraction such as grading of hills, filling of wetlands, quarrying sand from beaches and dunes, and removal of trees. Specifically, the DPP is responsible for permitting land use changes, development projects and landfills. The Department now administers the Planning and Subdivision Act of 2010.
- 3.9 The BEST Commission, formed by a directive from the Chief of State in 1994, has in effect been the country’s environmental agency since 1995. BEST is responsible for developing the Government’s environmental and natural resource management policies. As mandated, the BEST Commission is responsible for the administration of the EIA process, overseeing the technical review of EIAs, coordinating the public review of EIAs, and providing advice to Cabinet for consideration in their decision-making process.
- 3.10 The Ministry of Finance exercises authority over WSC in several areas, but does not exercise any authority over the private utilities. In particular, the Minister of Finance

must consent in order for WSC to borrow funds. According to the WSC Act, the Minister of Finance may also, at the request of the Minister responsible for WSC provide subsidies to WSC by making advances for the purposes of enabling WSC to defray expenditure properly chargeable to its capital account, including provision of working capital. On behalf of the Government, the MOF guarantee the repayment of principal and interest and other charges on any authorized borrowings of WSC after prior approval has been signified by the House of Assembly in accordance with the Financial Administration and Audit Act.

- 3.11 The Utilities Regulation and Competition Authority (URCA) was created by the Utilities Regulation and Competition Authority Act, 2009 (URCA Act) as an independent, corporate body with statutory power to regulate sectors once authorized by sector-specific legislation. The first sector-specific legislation, the Communications Act, 2009 (The Comms Act), was passed at the same time as the URCA Act, authorizing URCA to regulate the communications sector. URCA is the only independent regulator in The Bahamas, and the only entity with expertise in addressing the problem of monopoly power. URCA's website states, "In line with worldwide best practices, it is expected that URCA will eventually assume responsibility for other sectors as new sector-specific legislation is passed."
- 3.12 The Cabinet is the highest decision making authority in The Bahamas. It is the body that decides on the level of financial support that Government will provide to the water and sanitation sector, particularly the WSC; but in most cases, the arrangements for such support require the concurrence of the Minister of the Environment and the Minister of Finance, and may also require ratification by the Parliament. Until an independent regulator is empowered with statutory powers to undertake economic regulation of the water and sanitation sector, by default, the Cabinet is the body responsible for setting tariffs for WSC. WSC's tariffs are set through legislation.

IV. ENVIRONMENTAL AND SOCIAL SETTING

- 4.1 Fresh water resources in The Bahamas occur only as groundwater; there are no rivers or other major surface sources of freshwater. The fresh groundwater floats as lenses on brackish groundwater which increases in salinity with depth. The groundwater resources of the Commonwealth of the Bahamas comprise the fresh, brackish, saline and hypersaline waters found in the near and deep subsurface and in the lakes and ponds that intercept the surface. The freshwater resources occur as three-dimensional lens-shaped bodies, which overlie brackish and saline water.
- 4.2 Generally, there is nowhere on the islands that groundwater cannot be met in holes that penetrate 10 feet (3 meters) below sea level. Water is always met in the range 0 to 3 feet (0 to 0.9 meters) above sea level. Tidal action induces an up and down movement to the entire groundwater table ranging from negligible amounts to about 3 feet (0.9 meters). The effect of tides decreases inland on the whole, but can be substantial inland if a well established cavern or other large opening directly connects the area to the sea. In many places inland, rise and fall of the water table is less than 1 foot (0.3 meters).

- 4.3 Hydrogeology: Groundwater saturates the rock and all its pores, fissures and interconnected cavities. The size, shape and orientation of the island, the subsurface geology and the amount of rainfall control the shape size and thickness of the freshwater bodies. In excess of 90% of the freshwater lenses are within five feet of the surface. It is inappropriate to conceive of these Ghyben-Hertzberg lenses as occurring in subterranean lakes, rivers or ponds.
- 4.4 The physical geology, hydrogeology, and water resources are directly linked as there are no true rivers in The Bahamas. The only natural means of recharge for the freshwater resources is via rainfall. About 75% of precipitation that reaches the land is lost to the atmosphere through evapo-transpiration and as runoff from the surface back into the sea. The basic characteristics of the fresh groundwater water resource are the result of the geology and hydrogeology of the Bahamas. Geologically, the Bahamas are primarily Pleistocene marine carbonate banks of as much as 5 miles in thickness separated by oceanic canyons, with the islands being the highest areas projecting above the sea. In the interior of the islands, the carbonate bedrock is covered by a thin veneer of sandy soil (WMC 2003).
- 4.5 The total volume of fresh groundwater available in The Bahamas would be sufficient to meet the demand if the country's population were distributed according to the distribution of groundwater. Only Andros, Abaco, and Grand Bahamas have adequate water resources to meet current demands. Therefore, since saline groundwater is a virtually infinite water resource for the production of potable water using reverse osmosis plants, this technology provides a reasonable and cost-effective approach to meeting the demand for potable water.
- 4.6 Aquifer monitoring is currently done on an ad hoc basis. The most recent monitoring was done in 2003 by Water Management Consultants (WMC), and similar exercises with external consultants have occurred in the past, going back as far as 1921 with Howard Humphries and Sons.
- 4.7 Rainfall: The north and north central Bahamas receives annually some 50 to 60 inches (1270 to 1524 millimeters) of rainfall annually while in the southeast Bahamas, the rainfall decreases to some 36 inches (914 millimeters) annually. There is a distinct dry season (November to April) and a pronounced wet season (May to October). The seasonal effects of tropical cyclones have a pronounced effect on annual rainfalls across the Bahamas. Additionally, winter storms flowing off the North American continent also impact rainfall during the normally dry period. This effect however rarely extends into the central and southern Bahamas.
- 4.8 Ecology: All project sites are in urban areas that are already disturbed. Vegetation is mainly grasses with weeds and limited trees. No protected trees were observed at the sites visited. No birds were observed at any of the sites.
- 4.9 Wastewater Treatment: Sewage treatment infrastructure managed and operated by the WSC includes WWTPs, lift stations, forcemains and sewer connections. The current state of the WWTPs is described below:
- Coral Vista – This is one of only two functional wastewater treatment plant on New Providence that is managed by the WSC. It provides secondary treatment for

50,000 gallons of wastewater per day. The plant services various subdivisions including Coral Vista and Via del Rosa. The neighboring community of Coral Harbour is not sewered and homes are serviced by septic tanks. There is no plan to expand this plant as it is suitably sized for any growth in the subdivisions it services.

- Yellow Elder – This plant is not functional at this time. It services Yellow Elder Gardens and Pride Estates. The intent is to expand this plant and upgrade it to tertiary treatment.
- Airport – This plant is functional. It provides secondary treatment for the Lynden Pindling International Airport and neighboring subdivisions including Indigo and Serenity. Yuma Estates will be added to the plant. The intent is to expand this plant to 75,000 ga/day.
- Fox Hill – Currently, this plant is not functional with untreated sewage going to the disposal well. Its capacity is 0.25 Million gallons. The intent is to expand it to 0.5 Million gallons. Expansion will involve construction of new tanks and upgrading the plant from primary to secondary treatment. The lift station at this facility is in need of repair. In the past, untreated sewage was being chlorinated and sent to the disposal well, which results in creation of halogenated compounds which are extremely hazardous; this practice has since been stopped by WSC. This plant serves communities of Fox Hill, Elizabeth Estates, Yamacraw Shores and Twynam.
- Malcolm Park – This plant is not functional. Its capacity is 3.1 Million ga/day. This volume of untreated sewage is currently being disposed of daily into the 800-foot deep disposal well. The plant was built for secondary treatment, but has not worked for more than 10 years. It is not yet clear whether this plant will be rehabilitated or decommissioned with sewage being force-mained to the Fox Hill plant. This plant services residences and homes north of the crest of Collins Hill including the downtown area (all of Bay Street).

4.10 The Septage and Sludge Facility at the Harrold Road Landfill site is not functional. When originally commissioned in May 1996, it consisted of an aeration pond to the south and 3 anaerobic lagoons. The third lagoon can no longer be accessed and is overgrown with sawgrass. The site is in dire need of cleaning and re-design. It has never been cleaned since it was commissioned. Part of the challenge in accomplishing this is that no heavy equipment, such as cranes, can access the lagoons or the aeration ponds as there are no stable staging areas in close enough proximity.

4.11 If this facility can be rehabilitated to function properly, WSC engineers have indicated that it would be sufficient to deal with the current waste received. There are 20 – 25 trucks emptying waste at the facility. At a volume range of 2,000 – 4,000 gallons per truck, waste going into the lagoons on a daily basis is estimated at 40,000 – 75,000 gallons. There is a need to address the tariff structure for allowing the trucks to empty at the facility. Currently it is \$12 per load per truck whether it is a 2,000-gallon or 4,000-gallon truck. The card system for trucks to swipe when they entered the facility is down and in need of repair. Because of this, there are trucks entering the facility to empty waste and not paying for use of the facility as the gate is left open. While WSC staff monitors

trucks using the facility, some companies have been difficult to obtain payment from. These companies are still allowed to use the facility rather than have them dump the waste all over the island where no one knows what they are doing or where the waste is going.

- 4.12 Water Quality Monitoring: The Water Quality Unit at WSC is responsible for water quality monitoring of potable water supply of the Corporation. Monitoring of potable water is done for all pumping stations on a weekly basis and monitoring of the distribution network in New Providence is done on a monthly basis. When the WWTPs were operational, the Unit staff would do analysis of input and output once a week. Currently, sampling is only occurring at Coral Vista and not on a regular basis. In analyzing results, the Water Quality Unit follows World Health Organization (WHO) standards for potable water and treated wastewater. Testing is done following global standard methods.
- 4.13 The Unit staff confirmed that to date there have been no issues with potable water from WSC supply having increased coliform levels due to non-functional WWTPs in New Providence. The Unit does not monitor groundwater resources in areas surrounding the WWTPs to determine if these resources are being impacted. They do test private wells for a fee and there have been incidences of wells contaminated with sewage in New Providence.
- 4.14 In terms of health and safety, WSC is in the process of developing and approving health and safety policies in accordance with Health and Safety at Work Act of 2002.

V. ENVIRONMENTAL AND SOCIAL IMPACTS AND RISKS

- 5.1 By improving the reliability of water supply this operation will contribute to the health and well being of approximately 38% Nassau's population initially in preventing illnesses due to waterborne diseases; with a customer win-back strategy this could increase significantly. The sanitation component will address the needed rehabilitation of malfunctioning infrastructure (wastewater treatment plants, lift stations, network) and assist with improving overall environmental conditions. Key policies and directives triggered in the project include: B.01; OP-704, OP-102; B.02; B.03; B.06; B.07; B.07; B.11; and B.17 have been triggered. These pertain to natural hazards, disclosure of information, environmental assessment, and monitoring.
- 5.2 According to Category "B" classification, the Environmental and Social Strategy (ESS) involves the preparation of an Environmental and Social Analysis (ESA) including an Environmental and Social Management Plan (ESMP) for the Project. Environmental and social procedures will be included in the Operational Manual.
- 5.3 The Program is not expected to have any major large scale, significant and/or irreversible negative environmental or social impacts. Negative expected impacts are mainly related to wastewater treatment plant rehabilitation works; and potable water supply infrastructure construction works and operations, including construction noise, dust, waste generation, traffic inferences and occupational risks for there are standard mitigation measures.

- 5.4 Positive impacts will be fostered by improving efficiency of the operations of the WSC and addressing the malfunctioning wastewater treatment plants operated by this utility.

VI. ENVIRONMENTAL, SOCIAL, HEALTH AND SAFETY MANAGEMENT

- 6.1 Both the Environmental and Social Analysis (ESA) and the Environmental and Social Management Plan (ESMP) have been drafted. The ESA has defined the potential impacts of the various components of the project, while the ESMP portion of the ESA will guide WSC on the contractual obligations that it must have in place with the Contractors who are working on its behalf. WSC is still ultimately responsible for the project and to prevent and minimize adverse environmental and social impacts associated with the project. The ESA includes a framework table with the project activities, and generic information on potential impacts, mitigation measures, and responsibilities for implementation for the mitigation measures, monitoring arrangements, and an institutional and capacity building program. Key environmental, social, health and safety management activities are:
- 6.2 **Institutional:** The WSC will be responsible to follow-up on the compliance with the water and wastewater quality standards and will be responsible for supervision and reporting.
- 6.3 **Disaster Preparedness:** The Bahamas is naturally susceptible to disasters e.g. hurricanes, tropical storms and tidal floods. All projects activities are vulnerable to disasters during the construction and operational phases. The implementation period for each project component extends over a year, and it is likely that project activities will be affected by changes in climate and weather patterns. Slack time will be built into each of the projects as delays are inevitable if disasters happen. Though abandonment of project works is unlikely, in the event of a major hurricane (Category 3, 4 or 5) works maybe delayed or abandoned and new project activities developed.
- 6.4 **Environment, Social and Labor Provisions:** Generic environmental, social and labor provisions which include management of spoil, water resources, health and safety, traffic, reporting requirements, archeological chance find procedures will be included in construction contracts.
- 6.5 **Supervision and Reporting:** Implementation of the different mitigation activities will be supervised by PMU. As part of the routine project reporting, the PMU will include a section on environmental and social issues including implementation of the ESA/ESMP, preparation and implementation of site-specific ESAs, work programs, problems encountered, training activities, monitoring and evaluation, etc.

VII. PUBLIC CONSULTATIONS

- 7.1 The Draft ESA/ESMP was published on the WSC web site on September 13, 2011. The public notice informing of the availability of the Draft ESA/ESMP and the date for the public consultation will be published by September 15, 2011.

VIII. RECOMMENDATIONS

- 8.1 The current Draft ESA/ESMP provides an overview of proposed works and development activities for the Project and a guide to WSC on the contractual obligations that it must have in place with the Contractors who are working on its behalf.
- 8.2 WSC will conduct the public consultation.
- 8.3 During project implementation, compliance with all applicable environmental, health, safety, labor regulatory requirements associated with any environmental, health and safety related permits, authorizations or licenses that apply to the project will be required. Compliance with applicable IDB environmental and social policy and requirements including the Environmental and Safeguards Compliance Policy (OP-703); the Disaster Risk Management Policy (OP-704), and the Disclosure of Information (OP-102) will also be required.
- 8.4 Implement the Environmental and Social Analysis (ESA) / Environmental and Social Management Plan (ESMP).