

SENEGAL
STORMWATER AND CLIMATE CHANGE ADAPTATION PROJECT (P122841)
Environmental and Social Management Framework and
Environmental and Social Impacts Assessment

Executive summary
March 2012

I. ENVIRONMENTAL AND SOCIAL MANAGEMENT FRAMEWORK (ESMF)

1. In order to address the flooding issue in the Dakar region, the government of Senegal, with the World Bank's support, is currently preparing a storm water management and climate change adaptation project in the Greater Dakar Area (PROGEP) whose objective is to contribute to reducing flood risks in the Greater Dakar area and protect populations living in flood prone zones. The project cost amount US\$72.9 million, financed by a US\$55.6 million credit from the World Bank, a 3 million EURO grant from the Nordic Development Fund as well as US\$13.2 million from the Government of Senegal. The project design includes four components: i) Flood Risk Mainstreaming in the Urban Sector; ii) Drainage Investment and Management; iii) Community Engagement in Urban Flood Risk Reduction and Adaptation to Climate Change; and iv) Project coordination, Management, Monitoring and Evaluation. The Municipal Development Agency (MDA) is responsible for project preparation and implementation.

2. The project activities, in particular those of Component B (drainage investments and management) and Component C (community engagement in urban flood-risk reduction and adaptation to climate change) could have negative environmental and socioeconomic impacts. Since the areas of interventions could not be determined with accuracy during project preparation, and in particular those interventions associated with the community investments under component C but also subsequent drainage investments under component B, and in order to minimize potential negative effects, an Environmental and Social Management Framework (ESMF) was prepared as the appropriate safeguards instrument.

3. The development of an Environmental and Social Management Framework (ESMF) will help guide the project activities in a way that environmental and social issues are addressed and managed during the implementation. Hence, the risks associated with various project interventions will need to be identified as well as procedures and mitigation measures defined to be applied during project implementation. The Environmental and Social Management Framework (ESMF) is also designed as a screening mechanism for environmental and social impacts of

investments and project activities. As such, it serves as a guide to the development of Environmental and Social Impact Assessment studies (ESIA) specific to sub-projects of which the number, sites and environmental and social characteristics still remain unknown.

4. In addition, the ESMF provides a monitoring and supervision framework as well as institutional arrangements for project implementation in order to mitigate the adverse environmental and social impacts, and mitigate them to acceptable levels. Besides the community investments, the ESMF will have a municipal scope, with a particular focus on drainage infrastructures and storm water retention basins.

5. The political and legal framework of the environmental sector and intervention areas of the Project is influenced by the existence of policies and strategic planning documents (Sector Policy Letter of the environment; Sector Policy Letter for Transport, PRSP II; National Action Plan for the Environment, Biodiversity Conservation Strategy plan against desertification, etc...). At the legislative and regulatory level, there are several texts and regulations concerning environmental and social management (Environmental Code, Forest Code, Hygiene Code, Water Code, Labor Code, etc...), but also the procedures of environmental impact studies. However, regarding environmental and social assessment, constraints are noted in terms of activity selection (screening).

6. The main institutional actors involved in project implementation, have different experiences concerning flood management issues, but inconsistencies were noted in their statements, in terms of management, coordination and synergy in planning and monitoring of implementation actions. A capacity building action plan has been built into the project design.

7. The Project directly triggers five safeguard policies: Environmental Assessment (OP/BP 4.01); Natural Habitats (OP/BP 4.04); Pest Management (OP 4.09); Physical and Cultural Resources (OP/BP 4.11); and Involuntary Resettlement (OP/BP 4.12). A Resettlement Policy Framework (RPF) has been prepared as a separate document to address the triggered involuntary resettlement policy. The World Bank General Guidelines regarding Environment, Health and Safety (April 2007) will be applicable to this project.

Table 1 Summary of applicable SPs

World Bank Safeguard policies	Applicable
4.01 –Environmental Assessment	Yes
4.04 –Natural Habitats	Yes
4.09 – Pest Management	Yes
4.11 –Physical and Cultural Resources	Yes
4.12 –Involuntary Resettlement of People	Yes
4.20 –Indigenous People	No

4.36 - Forests	No
4.37 – Safety of dams	No
7.50 – Projects on international waters	No
7.60 – Projects in disputed areas	No

8. In general, the PROGEP activities will generate the following positive impacts:
- Improvement of the population’s living conditions by addressing the problem of flooding in urban areas;
 - Rehabilitation of lakes and natural ponds in the hydrographic network;
 - Preventive and coherent flood management and their mitigation through city planning, sanitation and appropriate drainage plans;
 - Water evacuation of homes, infrastructure and other assets regularly flooded (schools, health centers, markets, mosques, etc...);
 - Reduced risk of septic tanks saturation;
 - Eradication of mosquitoes breeding sites;
 - Reduction of mortality and morbidity related to flooding;
 - Increase of community resilience to address flooding risk;
 - Preservation of household assets and businesses against flooding;
 - Promoting community engagement in the implementation and infrastructure management of storm water drainage in urban areas.;
9. However, drainage channels, retention basins, pumping stations, could generate negative impacts on the environment and the human environment.

During the works

- Loss of land, housing and economic activities;
- Environmental pollution by waste from the works;
- Frustrations for non use of local labor;
- Social conflicts in case of occupation of public or private land;
- Risk of deterioration of the cultural heritage.

During the operation phase

- Proliferation of vectors of disease and reptiles (catchment areas);
- Pollution and nuisances for non maintenance of channels;
- Insecurity and risk of accidents (drowning) in the event of implementing defaults and lack of protect;
- Risks of flooding in the event of saturation of the basins and bad wedging of outfalls;
- Risks of pollution, erosion and silted outfalls (Niayes, beaches, backwaters).

Table 2 Impact Assessment by category

Project Categories	Environmental Impacts		Social Impacts	
	Positive	Negative	Positive	Negative
Drainage channels	Major	Moderate	Major	Major
Retention basins	Major	Moderate	Major	Major
Planning, development and management of wetlands and ecological sensitive areas	Major	Major	Major	Minor
Development of green spaces within the municipalities	Major	Minor	Major	Minor

10. To avoid or reduce these potential negative impacts, the ESMF has provided an Environmental and Social Management Plan (ESMP), including an environmental and social screening procedure for activities to be performed under the project, taking into account the World Bank’s safeguard policy requirements and national environmental legislation.

11. The ESMP identifies the guiding framework for future interventions in terms of national priorities for environmental and social management, taking into consideration the requirements of the World Bank safeguard policies. The tables below present the summary of the steps and the institutional responsibilities for the selection and preparation of the evaluation, approval and implementation of activities of PROGEP: (i) structural projects (canals and ponds) and (ii) small scale micro projects (strolling areas and open nearby spaces, landscaping, pedestrian paths, sports course, children's playgrounds, resting areas, etc..).

Table 3 Responsibilities for the Environment Assessment Process

Steps	Responsibilities
<i>Step 1</i> : Project preparation	Municipal Development Agency (MDA)
<i>Step 2</i> : Environmental and social screening and classification	Environmental and Social Focal Point (ESFC) /MDA
<i>Step 3</i> : Validation of the environmental and social classification of the project	Direction of Environment and Registered Facilities (DEEC)
<i>Step 4</i> : Implementation of the environmental and social work	ESFC/MDA
4.1. Enforcement of uncomplicated mitigation measures	ESFC/MDA

4.2. Conducting an environmental and social impact assessment (ESIA)	ESFC/MDA
Step 5 : Review and approval	DEEC
Step 6: Public Consultations and dissemination	<ul style="list-style-type: none"> • MDA • DEEC
Step 7 : Integrating environmental and social measures in the invitation to tender	ESFC/MDA
Step 8 : Implementation of the measures, including the preparation of the ESMP for the implementation	Contractors
Step 9: Environmental and social monitoring	<u>Supervision :</u> <ul style="list-style-type: none"> • ESFC/MDA • Members of the Steering and Technical Committees <u>Internal monitoring :</u> <ul style="list-style-type: none"> • Works: supervision consultants • Maintenance/monitoring: municipalities <u>External monitoring :</u> Regional Committee of Environmental Monitoring <u>Evaluation :</u> Independent Consultants

Table 4 Responsibilities for the micro project screening process

Steps	Responsibilities
Step 1 : Micro projects preparation	Social facilitator/NGOs
Step 2: Filling out the social and environmental screening form	Social facilitator/NGOs
Step 3: Implementation of the environmental and social work Choosing uncomplicated mitigation measures	Social facilitator/NGOs
Step 4 : Validation of the chosen environmental and social mitigation measures	ESFC/MDA
Step 5 : Integration of environmental and social mitigation measures in bidding documents	Social facilitator/NGOs
Step 6 : Implementation of the measures, including the preparation of the ESMP for the implementation	Social facilitator/NGOs

<p><i>Step 7: Environmental and social monitoring</i></p>	<p><u>Supervision :</u></p> <ul style="list-style-type: none"> • ESFC/MDA • Members of Steering and Technical Committees <p><u>Internal monitoring :</u></p> <ul style="list-style-type: none"> • Works: Auditing offices and NGOs • Maintenance/monitoring: municipalities <p><u>External monitoring :</u> Regional Committee of Environmental Monitoring</p> <p><u>Evaluation :</u> Independent Consultants</p>
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12. To further optimize the management of environmental and social aspects of the project, a monitoring program and detailed recommendations concerning institutional arrangements were proposed in the ESMP. In addition, the ESMP has identified the following measures for a better consideration of the environment in the sector: Environmental expertise strengthening (MDA and members of the Steering Committee); Provision for the realization and implementation of eventual ESIA's; provision of maintenance and sanitation equipment to municipalities; training, advocacy and social mobilization programs of locals; environmental and social monitoring program.

13. To further optimize the management of environmental and social aspects of project, a Consultation Plan, a close monitoring program by the Auditing Offices, in collaboration with the Municipalities is proposed, in the ESMF. External monitoring will be primarily performed by the DEEC through the Regional Committee of Environmental Monitoring

14. The ESFC/MDA and members of the Technical Committee of the project are responsible for supervision. The implementation of the Contractor ESMPs (CESMPs) will be the responsibility of the contractors, while the day to day monitoring of the adequate implementation of the CESMPs will be by contractual arrangement be the responsibility of the Supervising Engineers. The contractors and the Supervising Engineers hire qualified staff to execute this task.

15. The total cost of the ESMF measures is estimated at 350 million CFA.

II. ENVIRONMENTAL AND SOCIAL IMPACTS ASSESSMENT (ESIA)

16. In order to address the flooding issue in the Dakar region, the government of Senegal, with the World Bank's support, is currently preparing a storm water management and climate change adaptation project in the Greater Dakar Area (PROGEP) whose objective is to contribute to reducing flood risks in the Greater Dakar area and protect populations living in flood prone zones. The project cost amount US\$72.9 million, financed by a US\$55.6 million credit from the World Bank, a 3 million EURO grant from the Nordic Development Fund as well as US\$13.2 million from the Government of Senegal. The project design includes four components: i) Flood Risk Mainstreaming in the Urban Sector; ii) Drainage Investment and Management; iii) Community Engagement in Urban Flood Risk Reduction and Adaptation to Climate Change; and iv) Project coordination, Management, Monitoring and Evaluation. The Municipal Development Agency (MDA) is responsible for project preparation and implementation. Under component B, the first priority drainage investments compliant with the recently validated Drainage Master Plan will cover two catchment areas namely Dalifort Basin and downstream Tiourour where impact is most urgently needed¹.

17. The proposed project is designed to have beneficial impacts on the population in terms of reduced vulnerability to flooding and improved urban services and livelihoods conditions (see table below)

Table 5: Summary of positive environmental and social impacts (construction and operation phases)

Phase	Positive impacts
	Potential employment for local population
	Intensification of economic and commercial activities around the constructions sites
	Possibility of new jobs with management and maintenance committees of infrastructure and other realizations
	Improving quality of life for local residents near basins and flood prone areas
	Construction of social facilities, development of recreation and relaxation areas
	Reduction of various forms of nuisance and pollution
	Reduction of floods problems in neighborhoods
	Lowering of the groundwater level and clearing stagnant water from areas currently flooded
	Improvement of the number of household having access to stormwater drainage
	Improvement of health situation and increase in the population's productivity

¹ Note: The Mbao and Mbeubeuss catchments which were initially included in the ESIA have not been selected in the first tranche of investments and will be subject of a detailed/updated ESIA during project implementation.

	Strengthening the security of goods and people and decline of criminality
	Strengthening of solidarity between local populations;
	Preservation of the environment including environmental health
	Improvement of public health
	Improvement of social cohesion between the community members
	Development of socio-economic activities
	Reduced risk of accidents due to lighting, basins securing and various facilities

18. The project activities might also have potential negative impacts on the environment, described in the tables below. The objectives of the Environmental and Social Impact Assessment (ESIA) is to identify potential negative environmental and social impacts of the project, and to propose mitigation measures required to minimize the effects of these potential negative impacts.

Table 6: Synthesis of potential negative environmental and social impacts

Phase	Negative Impacts
Preparation of sites and construction	<p><u>Negative environmental impacts :</u></p> <ul style="list-style-type: none"> • Cutting of trees / clearing and site preparation • Risk of pollution caused by waste from work • Risk of pollution due to exhaust from vehicles <p><u>Negative social impacts:</u></p> <ul style="list-style-type: none"> • Risk of crop losses • Social conflicts in the acquisition of the site • Losses of land or socio-economic activities on work sites • Risk of accidents for workers and local residents • Non use of local labor

Table 7 : Potential negative impacts of water basins

Phase	Potential impacts
Construction	<ul style="list-style-type: none"> • Disruption of the physical environment by the civil works (waste, noise, accidents, etc..) • Destruction of flooded and uninhabited houses • Disruption of surrounding ecosystems (rivers, lakes, soils) • displacement of populations and losses of socio-economic activities
Operation	<ul style="list-style-type: none"> • Propagation of insects, reptiles and vectors of water-related diseases (malaria, schistosomiasis) • Flood risk in case of premature saturation of basin • Risk of social conflicts with local populations • Risk of Drowning

Table 8: Specific negative impacts of stormwater drainage infrastructures

Phase	Negative impacts
Construction	<ul style="list-style-type: none"> • Risk of disruption of economic activities along the row (preserved area) • Interference / obstruction of traffic during works • Risk of accidents at work

	<ul style="list-style-type: none"> • Lack of the use of local labor
Operation	<ul style="list-style-type: none"> • Environmental degradation (pollution of natural environments and outlets) and inconvenience to the neighborhood (odor) in case of wrong choice of outlets • Risks for public health (epidemic cholera, diarrhea) where discharges of solid and liquid waste (illegal connections of waste water) in the drainage canals • Misuse of gutters and their transformation into garbage dumps in the absence of maintenance program and public awareness campaign • Flood risk in the event of under- calibrated drainage channels • Dysfunction of drainage infrastructures due to a defect on works construction • Siltation and / or pollution of waste water outfalls • Environmental pollution by waste dissection during collectors cleaning

Analysis of alternatives

19. The situation "without project" has tremendous inconvenience environmentally and in terms of socio-economic development. People living in informal settlements and flood prone areas will continue to be affected by recurrent floods and it is not a preferred option.

20. The option to reuse drained water and groundwater for horticultural and arboricultural activities could be very beneficial considering the potential and opportunities in the Niayes area. The pumping of the water and its transfer to the Niayes area might be very costly and cost recovery will require as strong commitment from the farmers as well as the establishment of a public private partnership. In addition, detailed water analysis reveals that the water quality does not allow its use for human consumption and irrigation. As a result, the option will need additional investigations and probably accompanied by a treatment of the water. A technical, economic and financial feasibility study will be carried during project implementation and come up with recommendations. In conclusion, the study recommends the implementation of project as proposed to relieve the affected populations from recurrent flooding and maintain the option of evacuating rainwater into the sea. The project will also deepen the technical feasibility of the paving option of streets instead of tertiary canals.

Table 9: Mitigation measures common to all infrastructures (canal, collectors, basins etc.)

Potential Negative impacts	Mitigation measures	Monitoring indicators	Responsibilities			Implementation schedule
			Implementation	Supervision	Monitoring	
Preparation and works Phase						
Loss of property, land, activities, deforestation, accidents, pollution and nuisance, disruption of living conditions during works	Select sites in order to avoid these negatives impacts	Number of sites and affected people	Firms	MDA ²	DREEC ³	Before the beginning of the project
	Carry out a communication and awareness campaign before and after works	Number of meetings conducted	MDA	Steering Committee	DREEC	Before the beginning of the project
	Use of priority local workforce	Number of staff locally recruited	Contractor	Supervising consultant	DREEC	During works
	Ensure compliance with safety rules	Number of accidents	Contractor	Supervising consultant	DREEC	During works
	Ensure collection and elimination of waste resulting from works	Presence of waste resulting from works	Contractor	Supervising consultant	DREEC	During works
	Closely involve the district mayors in the implementation and monitoring	Number of common monitoring missions conducted	Supervising consultant	MDA	DREEC	During works

² MDA : Municipal Development Agency

³ DREEC : Regional Direction of Environment and Registered Facilities

	Preparation of an Abbreviated Resettlement Action Plan (ARAP) ⁴ and compensate affected population in case of destruction of properties or loss of activities	Number of compensated people	MDA	Steering Committee	DREEC	Before the beginning of the works
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⁴ Exact locations and alignments of the drainage channels and retentions basins will only be known when the detailed engineering studies, which include complex hydrologic and hydraulic modeling, will be completed. Thus, an Abbreviated RAP (ARAP) will be prepared, and disclosed once the detailed engineering studies have been completed before the works start. The ARAP will include any necessary mitigation measures to be implemented.

Table 10 : Mitigations measures related retention basins

Potential Negative impacts	Mitigation measures	Monitoring indicators	Responsibilities			Implementation schedule
			Implementation	Supervision	Monitoring	
Construction phase						
Loss of flooded and uninhabited homes	Preparation of an Abbreviated Resettlement Action Plan (ARAP)	Number of affected people relocated	MDA	Steering committee	DREEC/CRSE ⁵	Before the beginning of the works
Disruption of existing lakes and wetlands	Protection of basins and control of safety during civil works	Number of polluted basins	Contractor	Supervising consultant	DREEC NGOs ⁶	During works
Disruption of activities (gardening, mechanical studio etc.)	Compensation in case of losses / disruption of activities	Number of compensated persons	MDA	Steering committee	DREEC/CRSE	Before the beginning of the works
Risks of social conflicts with local populations settled near the retention basins	Awareness, dialogue with population Support the establishment of autonomous wastewater drainage infrastructures and sanitary facilities	Number of sessions Number of infrastructures	MDA municipalities Community organizations	Steering Committee	DREEC/CRSE	Before and during works
Operation phase						
Propagation of insects, reptiles and vectors of water-related diseases (malaria, schistosomiasis)	Surveillance and anti-larval operation, public Health monitoring, and distribution of mosquito nets	Number of sites monitored and treated Number of people healthy watched Number of mosquito nets distributed	MDA	Steering committee	DREEC/CRSE	At the end of the works

⁵ CRSE : Regional committee for environmental monitoring (*Comité Régional de Suivi Environnemental*)

⁶ NGOs : Non-Governmental Organizations

Pollution of basins by the discharge of wastewater and solid waste and proliferation of aquatic plants	Awareness campaign for populations Skeptical tanks Removal of aquatic plants Qualitative monitoring of basin waters	Number of sessions Number of infrastructures Volume of plants Level of pollution	Municipalities Community organizations ONAS ⁷ DGPRE ⁸	DBRLA ⁹	DREEC/ CRSE	At the end of the works
Risk of flooding in case of premature saturation of basins	Stabilize banks and slopes Surveillance and drain/cleaning basins	Level of degradation Number of flood cases	Municipalities Community organizations ONAS	DBRLA	DREEC/ CRSE	At the end of the works
Risk of drowning and accidents	Protective drills Lighting sites Ring roads around basins Stabilization of basins and facilities Surveillance to avoid solid waste and wastewater discharges	Infrastructures of protection Public lighting Footpaths Number of accidents	Municipalities Community organizations	DBRLA	DREEC/ CRSE	At the end of the works
Potential conflicts in the use of basins and lakes	Awareness of the various users, Rational and concerted management of basins and lakes	Number of sessions Number of management agreements	Municipalities Community organizations	DBRLA	DREEC/ CRSE	At the end of the works

Table 11: Mitigation measures related to the stormwater drainage infrastructures

Potential Negative impacts	Mitigation measures	Monitoring indicators	Responsibilities			Implementation schedule
			Implementation	Supervision	Monitoring	
Construction phase						
Disruption of traffic lanes during works	Establish access path to houses	Number of paths built	Contractor	Supervising Consultant	DREEC/ CRSE	during works
Risks of accidents during works (poor signaling)	Lead an awareness campaign Ensure compliance with hygiene and safety on construction sites	Number of sessions Number of accidents	Contractor	Supervising Consultant	DREEC/ CRSE NGOs	Before and during works

⁷ ONAS : National Sanitation Office (*Office National de l'Assainissement du Sénégal*)

⁸ DGPRE : Directorate for Water Resources Management and Planning

⁹ DBRLA : Directorate for retention basins and artificial lakes (*Direction des Bassins de Rétention et des Lacs Artificiels*)

Risk of pollution caused by waste from civil works	Install dumps for works waste and manage wastes transfer to authorized landfills	Number of dumps Presence of dumps	Contractor	Supervising Consultant	DREEC/ CRSE	during works
Social conflicts in the case of non-use of local labor	Include in enterprise contracts the use in priority of unskilled local labor when the procurement processes can allow it	Number of jobs	Supervising Consultant	MDA	DREEC/ CRSE	Before works
Operation phase						
Risks for public health due to discharges of liquid and solid wastes	Carry out closed canals (or paved channels) particularly in residential area	Number of meters of closed channels	Supervising Consultant	MDA	DREEC/ CRSE	Before works
Improper use of drains and their transformation into garbage dumps due to the absence of maintenance program and public awareness campaign	Lead communication and awareness campaign after works. Ensure that infrastructures built are monitored Ensure that infrastructures built are maintained and operated Ensure regular solid wastes collection	Number of sessions Number of interventions Number of illegal dumps	Municipalities Community organizations ONAS CADA ¹⁰	DPC ¹¹	DREEC/ CRSE	At the end of works
Environmental pollution due illegal discharge of drainage channel cleaning wastes	Wastes to be transferred to authorized landfills	Number of illegal dumps	ONAS	DPC Municipalities	DREEC/ CRSE	At the end of works
Risk of flooding in case of defaults (under-sizing, bad construction of drainage channels)	Design and carry out the work professionally Awareness and communication on risks that are not completely eliminated as the works are designed to evacuate a decennial rain	Number of accidents	ONAS	DPC Municipalities	DREEC/ CRSE	At the end of works

¹⁰ CADA¹⁰ : Urban Community of Dakar (*Communauté des Agglomérations de Dakar*)

¹¹ DPC : Directorate for Civil Protection

21. The estimated costs of implementing the environmental and social management plan is 572,630,000 FCFA in construction phase and; (ii) and 150,000,000 per year in operation phase. These costs are summarized below:

Table 12 : Cost of the Environmental and Social Management Plan (ESMP)

N°	Measures	Costs (FCFA)
Works Phase		
1	General mitigation measures common to the four catchments	included in the Firm's contract
2	Environmental and social clauses to be inserted in the bidding and implementation documents	included in the Firm's contract
3	Measures against pollution and nuisance during works (PGESE)	included in the Firm's contract
4	Specific measures for each catchment and by infrastructure type (settling filtration system through three layers consisting Coarse sand, gravel and coal), safety equipment for pumping stations, etc.)	150 000 000
5	Social measures related to property losses and population displacement	100 000 000
6	Compensation measures for the Mbao forest and the Filaos forests of Guédiawaye	32 630 000
7	Facilities and security measures for basins	Included in the project
8	Socio-economic rehabilitation measures (autonomous sanitation, support in sanitation equipment)	160 000 000
9	Communication plan, information and awareness	30 000 000
10	Surveillance	50 000 000
11	Support to environmental and social monitoring (DEEC, CRSE,)	50 000 000
Total work measures		572 630 000 FCFA
Operation		
12	Monitoring, maintenance plan and works management (channels and basins)	75 000 000
13	Prevention plan against waterborne diseases	50 000 000 per year
14	Management and monitoring plan for discharges towards the beach of Hann and Guédiawaye, including qualitative monitoring of water basins and groundwater	5 000 000 per year
15	Communication plan, information and awareness	10 000 000 per year
16	Provision for the monitoring of the ESMP implementation, including health monitoring	10 000 000 per year
Total operation measures		150 000 000 per year

22. External monitoring will be mainly performed by the DEEC¹² through the CRSE. Supervision is provided by the PFES¹³ / MDA and members of the Technical Committee of the project. Contractors responsible for the works will be required to prepare and implement the Enterprise – ESMP, under the supervision of the supervising consulting firm (“Maitre d’oeuvre”). The day to day monitoring of proper implementation of the Enterprise-ESMP will be the responsibility, on a contractual basis, of the supervising firm.

¹² DEEC : Direction of Environment and Registered Facilities (Direction de l' Environnement et des Etablissements Classés')

¹³ PFES : Environmental and Social Focal Point