

ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN SUMMARY

Project Title: Cape Verde Technology Park **Project Number: P-CV-G00-002**
Country: Cape Verde
Department: OITC **Division: OITC.3**

a) Brief description of the project and key environmental and social components

The Cape Verde Technology Park (the Park) is part of the country's Information and Communication Technologies (ICT) sector strategy, aimed at promoting innovation and business development, thereby leveraging the country's growth. Its vision is to galvanize the ICT cluster, positioning Cape Verde as an international service center and a «gateway to Africa» for key international companies in the sector.

The Park's strategic goals will be achieved through an infrastructure with four main components: 1) data center, 2) business center, 3) incubation center and 4) training and qualification center. In addition, the Park will have a number of other areas and services, such as a library, leisure and athletic areas, commercial areas, among others.

Buildings

The Park will predictably occupy an area of 8 hectares of land and will have six main buildings, which will host the four above mentioned components. All buildings will be located in the island of Santiago, except Building 2, which will be part of the Data Center component and will be located in the island of São Vicente. This Data Center will be exclusively for disaster recovery services, which is why it is located in a different island.

Power line

The Park's location already has access to a transformation station, which is connected to the national electrical network. Additionally, the Park will be equipped with diesel generators with a total power supply of 1.5 MW for backup. The Park may be served in the future by wind energy infrastructure, lowering the cost of energy and contributing for a more sustainable environment. However, these were not considered at this moment.

Access road

The Park is already connected to the national road network. Minimum paving works will be required.

Project location and estimated size

The Park will be located halfway between the city center and Praia's international airport, at a distance of only 3 kms each. The exact GPS coordinates are as follows: 14.926089 DMS = 14° 55' 33.9198'' N, - 23.495859 DMS = 23° 29' 45.0918'' W, Elevation: 66,210m

b) Major environmental and social impacts

- The direct positive environmental impacts of the project will arise due to the landscaping activities that will be carried out during construction, given the sparse vegetation cover in the project site. From a broader perspective, the project has the potential to contribute to the enhancement of environmental natural resources for the country through facilitating the country's growing potentials in virtual tourism and scientific marine research. This derives from the electronic data storage and processing capacity that will be made available through the project.
- The Park will generate at least 55 jobs directly tied to the business of the Park's components. In addition to these, 648 jobs will be created involving companies residing in the business center and startups in the incubation process. Along with these 703 direct job positions, around 844 indirect jobs will be added in services tied to the Park's activities, such as maintenance, security, cleaning, accounting, marketing, renovation, tourism, etc. The total number of jobs created is thus anticipated to be more than 1,500.
- The Project is expected not to produce any significant adverse environmental or social impacts. However, some environmental, safety and health impacts were identified which can be readily mitigated:

During construction phase

The main impacts will be typical for most building sites, namely:

- Loss of top soil and vegetation;
- Generation of dust, noise emissions and vibration;
- Disposal of construction debris and general solid waste;
- Disturbance of the public and hazards posed by construction work;
- Traffic, sanitation and occupational health and safety concerns for construction workers.

During exploitation/operational phase

- Increase in non-biodegradable and biodegradable waste, mainly due to the heavy use of IT equipment and other short life span appliances.
- Increase in the consumption of fuel used in the backup thermal power generation plants.

c) Enhancement and mitigation program

The following mitigation measures represent the key areas that would be addressed in the project as part of its mitigation and enhancement measures. In addition this includes the development of detailed ESMPs by the contractor who will be in charge of the construction activities. This contractor ESMP will form part of the procurement criteria.

Environmental considerations will also be integrated in the procurement of fittings and materials used in the construction and equipping of the project.

The Project Management Team includes the an environmental officer who will be in charge of the day to day oversight on environmental issues during the construction process and would be in charge of developing a comprehensive environmental management system to guide the operational phase of the project.

A. Construction Phase

Some cautionary measures will be observed during construction activities:

- During construction, land cut and landfill are to be reduced to minimum; in addition, steep slopes will be grassed or lined;
- Top soil will be preserved and affected areas re-vegetated (although most of the land is arid);
- The risk of accidents in the construction phase will be avoided or minimized through on-site signage and equipment of skilled workers by the contractors responsible for the installation of sites.
- Movement of construction trucks and equipment will be limited;
- Trucks carrying sand, cement and soil will be covered;
- Use of sand and crushed stones will be regulated; and
- The construction site will be delimited.

Construction safety

Safety of the workers and communities will be guaranteed through:

- Providing personal protective equipment to the workforce;
- Sensitizing the local communities about construction hazards and possible disruptions of traffic as well as utility services through signage and notices; and
- Making arrangements for the workforce to access sanitation facilities.

Diligence on the part of the contractors and proper supervision during construction are critical in mitigating adverse impacts. The contractors will comply with the relevant legislation stipulating occupational health and safety conditions and they will submit a Construction Site Safety Plan.

Operational Phase

A. Waste management

The project will generate waste mainly from increased ICT activities. The project provides capacity building in waste management to identify each waste type in order to be able to store, handle, dispose of and monitor it in consultation with the local municipalities.

Disposal of outdated equipment and other materials will be done in accordance with the National Environmental Policy¹.

Several initiatives developed by the Project can help address the challenges of increasing amounts of biodegradable and non-biodegradable waste, such as the creation of a recycling programme.

B. Security in offices and other equipment

Project design will include:

- Emergency response facilities/equipment in case of accidents;
- A fire evacuation plan with firefighting equipment and emergency exits;
- Appropriate ventilation systems;
- Pre-treatment facilities for wastewater and sewage before discharge, amongst others.

d) Monitoring program and complementary initiatives

An environmental and social monitoring programme has been established specifying the actions on which attention will be focused in the different phases of the project. A summary table (presented in the next page) shows the key impacts, mitigation/optimization measures, stakeholders responsible, frequency and output indicators.

Some mitigation measures should be monitored during the preparatory phase (land transferal, preparation of bidding documents), and others in the construction phase or exploitation/operational phase.

Entities involved in environmental monitoring

The terms and conditions of environmental monitoring are defined as follows:

- Internal monitoring will be conducted by an environmental officer appointed by the Project owner;
- External monitoring will be carried out by the Environment Directorate-General of the Ministry of Environment (EDG)² and the Environment Commission of the Local Municipality (ECLM)³.

Monitoring consists of field missions to ensure the effectiveness of the measures proposed and their compliance with the specifications given.

During the implementation period, monthly site meetings will monitor the implementation of the environmental mitigation plans. In addition, AfDB quarterly supervision missions will follow up on the implementation of the ESMP.

¹ «Lei nº 86/IV/93, de 26 de Julho» which defines the Basic Foundations of Environmental Policy, further detailed in the «Decreto-Legislativo n.º 14/97, de 1 de Julho».

² «Direcção Geral do Ambiente do Ministério do Ambiente»

³ «Comissões Municipais de Ambiente»

Table 1: Summary of Key Impacts, Environmental Management and Monitoring Measures

Phase	Activity causing impact	Impact	Impact mitigation / Improvement measures	Monitoring indicators	Monitoring frequency	Stakeholders responsible
Preparation	Selection and recruitment of contractors	Limited safety implementation capacities of contractors	<ul style="list-style-type: none"> • Specification of safety procedure clauses; • Construction Site Safety Plan requirement; 	<ul style="list-style-type: none"> • Technical specifications on the bidding documents • Construction Site Safety Plan 	At bidding documents preparation	Project Owner
		Limited environmental implementation capacities of contractors	<ul style="list-style-type: none"> • Selective criteria for environmentally-friendly companies; 	<ul style="list-style-type: none"> • Selection criteria document 	At bidding documents preparation	Project Owner
Construction	Installation of sites	Loss of top soil and vegetation	<ul style="list-style-type: none"> • Land cut and landfill are to be reduced to minimum; • Steep slopes will be grassed or lined; • Top soil will be preserved and affected areas re-vegetated; 	<ul style="list-style-type: none"> • n.a. 	Monthly site inspections	Contractor
		Generation of noise and vibration;	<ul style="list-style-type: none"> • Movement of construction trucks and equipment will be limited; 	<ul style="list-style-type: none"> • n.a. 	Random site inspections	Contractor
		Deterioration of air quality due to dust release and emissions	<ul style="list-style-type: none"> • Spraying water on sites during excavation; • Trucks carrying 	<ul style="list-style-type: none"> • Effective spraying of water on sites • Effective cover of 	At the excavation stage	Local workers

Phase	Activity causing impact	Impact	Impact mitigation / Improvement measures	Monitoring indicators	Monitoring frequency	Stakeholders responsible
			sand, cement and soil will be covered; <ul style="list-style-type: none"> • Use of sand and crushed stones will be regulated; 	trucks		
		Accident risks for workers, residents and other users of roads adjoining sites	<ul style="list-style-type: none"> • Appropriate on-site signage; • Guarding of premises; • Safety equipment for skilled workers; • Emergency response facilities/equipment in case of accidents; • Fire evacuation plan with fire fighting equipment and emergency exits; • Appropriate ventilation systems; 	<ul style="list-style-type: none"> • Physical presence of the signs, guards and safety devices • Emergency response facilities/equipment • Fire evacuation plan • Appropriate ventilation systems 	During works on each site	Contractor
		Degradation of the living environment due to production of work site waste	<ul style="list-style-type: none"> • Waste removal and disposal on closest landfill sites; 	<ul style="list-style-type: none"> • Quantity of waste removed 	At the end of construction on each site	Contractor
		Disturbance of the public and hazards posed	<ul style="list-style-type: none"> • The construction site will be 	<ul style="list-style-type: none"> • Site delimitation • Sensitizing 	During the construction phase and	Project Owner and construction

Phase	Activity causing impact	Impact	Impact mitigation / Improvement measures	Monitoring indicators	Monitoring frequency	Stakeholders responsible
		by construction work;	delimited; <ul style="list-style-type: none"> • Sensitizing the local communities about construction hazards and possible disruptions of traffic as well as utility services through signage and notices; 	actions and notices	operating phase after the ongoing programme	companies
Exploitation	Exploitation of sites	Production of waste	<ul style="list-style-type: none"> • Promotion of recycling; • Pre-treatment facilities for wastewater and sewage before discharge, amongst others. 	• Percentage of recycled equipment	During exploitation phase	Project Owner

e) Institutional arrangements and capacity building requirements

The project is designed to operate in a participatory manner. All activities will be implemented in close collaboration with the relevant stakeholders (centralized and local government bodies, agencies and corporate associations, education institutions, telecommunications and ICT companies, etc.) to increase their sense of ownership of the improved facilities to be introduced under the project.

The responsibilities of the Promotor concerning environmental issues are:

- a. Compliance with commitments vis-à-vis the AfDB;
- b. Effective inclusion of environmental clauses in the bidding documents and the performance report and guarantee documents;
- c. Communication of its work plan to EDG services for environmental monitoring.

The responsibilities of contractors in charge of procurement of equipment and installation of sites are:

- a. Overall compliance with its commitments vis-à-vis the client;
- b. Compliance with commitments regarding implementation of environmental and social measures;
- c. Ensuring compliance with commitments by any subcontractors regarding environmental and social measures;
- d. Provision of reports and other documents required covering the management of environmental and social measures.

AfDB's responsibilities are:

- a. To ensure effectiveness of the inclusion of environmental clauses in the bidding documents for the selection of the contractors and in guarantee documents; and
- b. To supervise the status of implementation of the ESMP in the preparation of periodic reports on the implementation of the project.

The Ministry of Environment (EDG) and the Environment Commission of the Local Municipality (ECLM):

- a. Provide capacity for external monitoring of the project.

Provide capacity building in waste management to identify each waste type in order to be able to store, handle, dispose of and monitor it in consultation with the local municipalities.

f) Public consultations and disclosure requirements

The conception and operation of the proposed technology park is guided by a participatory and consultation process involving various public and private sector stakeholders who will also be involved during the project implementation as part of its Advisory Board. This participatory consultation process started in 2010 and has involved over 40 consultation forums which covered the contextual analysis and modeling of the project as well as discussions on the strategic vision of the ICT sector in the country.

Stakeholders from the public sector include:

- Government representatives: Ministry of Finance and Planning, Ministry of Infrastructures and Maritime Economy, Ministry of Tourism, Industry and Energy;

- Agencies, directorate generals and public institutes: Cape Verde Investments, National Communications Agency (ANAC), Agency for Enterprise Development and Innovation (ADEI), Strategic Policy Center and National Statistics Institute;
- Corporate associations: Barlavento Chamber of Commerce, Sotavento Chamber of Commerce and Cape Verde Association of Young Entrepreneurs (AJEC);
- Cape Verdean Institute for Gender Equality and Equity;
- Ministries of: Education; Health; and Youth, Employment and Human Resources Development

Educational and vocational training institutions have also made inputs to the conception of the project in view of their expected role in the project components on education and training. These include the University of Cape Verde, Jean Piaget University and Vocational Training and Employment Institute (IEFP). Likewise, private sector operators in industry and the diaspora population have also been involved given the expected potential investment from these sectors.

In addition, the Bank will be disclosing this ESMP for 30 days according to its disclosure requirements which are aimed to broaden the consultation process.

g) **Estimated costs**

Estimated Cost of Mitigating Measures		CCV	USD
Mitigating measures costed separately			
	Capacity building in sustainable development (Waste Management, maintenance and sanitation)	4000	47059
Subtotal		4000	47059
Mitigation measures that are included in other activities			
	Sanitation works and waste depots	117394	134047
	Site works (roads and car parks, landscaping etc)	7715	90767
	Safety of construction workers (on-site signage, security and safety equipment)	12000	141176
	Security of data centres	50000	588235
	Security in offices	10000	117647
	Recycling (a)	-	-
Subtotal		91109	1071873
Total		95109	1118932
(a) Although no investment costs were considered, operational costs with IT equipment recycling were estimated at 3% of the yearly capital expenditure, summing up to USD 60K of disposal costs per year.			

h) Implementation schedule and reporting

During the construction phase of the project, monthly site meetings will be held between the government monitoring agencies (EDG), the project contractors and the implementing agency (NOSI). These meetings will monitor the implementation of the environmental mitigation plans.

In addition, the African Development Bank will carry out its quarterly supervision missions which will follow up on the implementation of the ESMP. This will involve site visits and review of the quarterly reports provided to the Bank by the implementation agency.

The environmental officer, who will be part of the Project Management Team and appointed by the project owner will be in charge of preparing relevant monthly and quarterly reports for submission to the EDG and the AfDB.