

Sectoral Guideline No3 February 2014



Ministry of Environment and Sustainable Development

*Guideline on the Content of an Environmental Impact
Assessment report for Development under the Integrated Resort
Scheme*

This Guideline is not a legal document. It serves as an environmental guidance and provides a template for the preparation of a comprehensive EIA report. Copies of this guideline are available at the Department of Environment and on the website at <http://environment.gov.mu>

PREFACE

Environmental Impact Assessment (EIA) is a process and a tool which is used to identify, predict and evaluate both the positive and negative potential environmental impacts of a proposed development. It encourages promoters to take into consideration environmental factors to ensure proper site selection at the very inception stage of a project proposal. It is based on the precautionary principle, sustainability and the prevention approach. EIA should not be perceived as a hurdle for economic development. A project planning, properly and thoroughly undertaken, will eliminate obstacles to the project which may give rise to adverse environmental impacts that may be costly to mitigate or control.

This sectoral environmental guideline on the content of an EIA report concerns development under the Integrated Resort Scheme (IRS) Scheme and is designed to assist proponents and consultants in the preparation of a comprehensive EIA document. It is not exhaustive, but provides the essential structure and the detailed requirements of the EIA report.

This Guideline complements the Planning Policy Guidance 2004 (Design Guidance Hotels & Integrated Resorts) of the Ministry of Housing and Lands.

Proponents are advised to refer to Part IV of the Environment Protection Act 2002 for necessary information on EIA in general.

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1.0 Introduction

1.1 Background

Environmental Impact Assessment (EIA) is a tool which is used to identify, predict and evaluate both the positive and negative environmental impacts of a proposed development. It requires a multi-disciplinary approach and compares alternatives, including any alternative manner in which the project can be implemented. It aims at the best combination of economic, social and environmental benefits.

The **Integrated Resort Scheme (IRS)** is an initiative of the Government of Mauritius designed mainly to facilitate the acquisition of resort and residential property by non-citizens on the island. It allows a foreigner and his family, under the IRS regulation to reside in Mauritius for as long as they retain ownership. Facilities include, but are not limited to:

- Luxury villas built to international standards;
- Golf course and marina facilities;
- Individual villa swimming pools;
- A range of nautical and other sporting activities, fitness and beauty centers, shopping malls;
- High class restaurants and catering; and
- Maintenance, waste disposal, landscaping and gardening, security, housekeeping, chauffeurs, cooks and childcare, on request, fruit and vegetable market, handicraft shops.

An Integrated Resort Scheme is associated with environmental impacts during the different stages. Impacts during the land clearing and site preparation relate essentially to risks of destruction of biodiversity, natural habitats, and environmentally sensitive areas like wetlands amongst others. Impacts during the construction phase relate to dust, noise, vibration risks of erosion, disposal of sewage and solid waste. The operational phase requires proper management of solid waste and wastewater, storm water disposal amongst others.

Under Item 19 of Part B of the Fifth Schedule of the Environment Protection Act (EPA) 2002, “*Hotel or Integrated Resort Scheme, including extension, with first boundary within 1 kilometre of high water mark*” is a scheduled undertaking and warrants an EIA. The EIA report should contain a true and fair statement and description of the undertaking as proposed and should be in line with Section 18 of the EPA.

A proponent applying for an EIA licence should submit to the Department of Environment (Environmental Assessment Division, 2nd Floor, Ken Lee Tower, Barracks Street, Port Louis) 15 printed copies of the EIA report and in such additional copies as may reasonably be required by the Director of Environment and 2 soft copies in conformity with the Guidelines for Submission of EIA report in Soft Copy Version (Annex II). A processing fee of Rs 15,000 is currently applicable. The letter of Approval from the Board of Investment is a pre-requisite for the preparation of the EIA report.

1.2 Objective of the Guideline

The objective of this guideline is to assist proponents and consultants in the preparation of a comprehensive EIA document that contains the necessary information, while addressing all the environmental aspects to enable a proper assessment. It also aims to encourage a consistent approach for a timely processing without the necessity to request for additional information.

Note: *This guideline is by no means exhaustive and should be complemented with other relevant documents such as the sectoral guidelines on the content of an EIA report (as applicable) prepared by the Ministry of Environment and Sustainable Development, the Planning Policy Guidance (PPG) of the Ministry of Housing and Lands, Outline Planning Schemes of the concerned Local Authority, the Investment Promotion (Real Estate Development Scheme) Regulations 2007 and the relevant acts and regulations.*

2.0 Structure and Content of the EIA Report

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Cover Page

This should clearly indicate the title of the proposed project as listed under Part B of the Fifth Schedule of Environment Protection Act 2002 (as amended); location of the project; name of the proponent and consultant/ consultancy firm and the date.

On a second page:

- Contact details and address of the proponent;
- Contact person (address, phone/mobile, email and fax number);
- The person responsible with contact details: address, phone/mobile, email and fax number;
- The team responsible for the preparation of the EIA report;
- The name of the consultant/s or consultancy firm, as applicable;
- The duly appointed legal representative of proponent (if any);
- The signature of the proponent or his duly appointed legal representative;
- The signature of all the principal consultants who have prepared or have assisted in the preparation of the EIA report;
- The main Directors, the Company Registration Number/ Business Registration Number (BRN);and
- Company Number as per Certificate of Incorporation.

Table of Contents

This should indicate all the topics and chapters dealt with in the EIA report, their relevant sections and respective page numbers. It should indicate the tables, figures, acronyms and annexures among others.

Non-technical Summary

This should be a concise and short overview of the project in simple and non-technical language and should include the title of the project; a brief outline of the project and its location; a summary of the potential environmental impacts and proposed mitigative measures; outcome of public consultations; and conclusions.

Chapter 1-Introduction

This chapter should include, inter alia, the type, size of the project, its location, scale and scope of works; project's aim, justification; the promoters' experience in similar projects; benefits to local communities and employment opportunities.

Chapter 2-Policy, Legal and Administrative Framework

2.1 "Integrated Resort Scheme" is a scheduled undertaking requiring an EIA. This section of the EIA should indicate compliance of the project with the relevant plans, policies, national laws, standards, guidelines, regulations and /or subsequent relevant amendments, and the protection of sensitive areas and how these are being addressed. These include, inter alia:

- The EPA 2002, the National Environmental Standards, Guidelines and Regulations under the EPA;
- Wildlife and National Parks Act, Rivers and Canals Act, Forests and Reserves Act, Local Government Act;
- Plans and policies such as the Integrated Coastal Zone Management Framework (2010), Study on Environmentally Sensitive Areas for Mauritius and Rodrigues, National Climate Change Adaptation Policy Framework for the Republic of Mauritius (2012), National Development Strategy, all relevant Planning Policy Guidance, the Planning Policy Guidance on Hotels and Integrated Resorts, Design Guidance for Sloping Sites including the Supplementary Guidance for Desalination Plant and Wastewater Treatment Plant issued by the Ministry of Housing and Lands;
- Investment Promotion (Real Estate Development Scheme) Regulations 2007 and the guidelines made thereunder.

2.2 The promoters/consultants should ensure that the necessary permits/clearances/authorization from relevant authorities including Land Conversion Permit from the Ministry of Agro-Industry & Food Security, clearance from the National Ramsar Committee (as applicable in case of presence of wetland), clearance from the Forestry Services for felling of trees and Statement of Intent from the utility authorities that the land is capable of being serviced have been obtained.

The promoter/consultants are also advised to consult the authorities/ministries concerned to ensure that their requirements are clearly addressed in the EIA report.

2.3 Proponents should submit:

- Proof of ownership of land with copy of the Title Deed or a certificate issued by a notary expressing his opinion as to the owner's title;
- Particulars of any consultation held with the public in the area where the undertaking is to be located.

Chapter 3- Site Description and Surrounding Environment

3.1 Site and Surrounding Environment

This chapter should provide a detailed investigation of the site, the surrounding environment and the sensitivity of the site. It should include, inter alia, the following:

- a) Location of the site;
- b) Exact land extent. The site should be indicated on a **Context Map of a scale of 1:10,000 or as appropriate** along with aerial photographs and/ or satellite images;

- d) Comprehensive **legible Site Location Plan of a scale of 1:5,000 or as appropriate, drawn and duly certified by a Sworn Land Surveyor** with appropriate landmarks as reference points. It should clearly provide indication of:
- Distance from the nearest settlement boundary;
 - Nearest residential areas/built up environment and any existing development in the vicinity;
 - Distance from any bad neighbour development;
 - Environmentally sensitive areas (if any) and distance
 - Water bodies and waterways (as applicable);
 - Cultural and heritage sites(if any);
 - Designated sites of interest; and
 - Future/ forthcoming development projects.
- e) Existing land use and site constraints;
- f) Description of the site characteristics in terms of site location (GPS coordinates of the boundaries delimiting the site), landform, topography (supplemented by 1.0 m interval contour map in case the site is slopy), geology, soil type and characteristics, presence of any watercourse and natural drain, any environmentally sensitive area, present and past land use, vegetation cover, flora and fauna, amongst others;
- g) A full terrestrial and freshwater (as applicable) ecological survey describing the types, distribution and abundance of flora and fauna, Environmentally Sensitive Areas (sand dunes, inter-tidal mud flats, wetlands, mangroves, rivers), any protected, rare or endangered species, location of habitats (areas for feeding, refuge, reproduction or nesting for migratory species);
- h) Description of the soil type, geologic resources (rock quarry potential), presence or absence of lava tunnels, slope stability and landslide potential;

In case the site is affected by the coastline then the following need to be submitted:

- i) Description of the shore types (sandy, muddy, rocky, cliffs, mixed, calcareous lime stone shore), length of the shoreline, beach frontage and their characteristics, landform, topography, elevation, magnitude of slope, slope stability, erosion, escarpments and landslide risks supplemented by 0.5m-2m interval contour map (as applicable);
- j) Description of the hydrographic conditions to include wave regime (patterns, height, frequency and direction), currents direction and speed, tidal water levels including the probability of extreme conditions and potential for waves and surges (as applicable);
- k) Vulnerability of the site to natural hazard, sea surges or climate change impacts like sea level rise, inundation or flooding (as applicable).

3.2 Description of the present socio economic values of the site and its surroundings

- a) Socio-cultural value of the site;
- b) Socio-economic importance of the site e.g. recreational, any public beach and public access, any agricultural activity; fishing activity, nautical activity;
- c) Socio economic profile of the local community; existing community amenities ,facilities and public infrastructure;
- d) Historical and cultural heritage value of the site.

Chapter 4: Description of the Existing Baseline Conditions

This is a record of the site condition used as a benchmark against which to measure environmental changes following the implementation of the project. For the collection of baseline information, proponents/consultants should provide the sampling point locations, test parameters and methodologies. Some factors to be considered in describing the baseline environment should, inter alia, include ÷

- a) Baseline data on the basic land and hydrographic condition of the site, inter alia, in terms of: soil conditions (soil classification, suitability for method of sewage disposal); water quality, streamside condition (as applicable), presence of any of boreholes, rivers, marshlands, drains, height of water table and areas vulnerable to erosion and other impacts from natural hazards or climate change; and
- b) Data on the ecological environment of the site, relevant meteorological data such as annual average rainfall (frequency, duration and quantity), strength and direction of prevailing wind (velocity and intensity), tidal regime (as applicable) and existing nuisances such as odour and noise level.

Chapter 5- Project Description

This chapter should provide a detailed description of all the activities that would be carried out and should include amongst others:

5.1 General Requirements

- a) A general description of the project and the different components such as common facilities to be provided e.g. swimming pool, spa etc.;
- b) Size and scale of IRS;
- c) Detailed **Site Layout Plan drawn to a readable scale of 1:500 or as appropriate**, indicating:
 - Site boundaries as per Title Deed or Lease Agreement or certified survey report drawn by Sworn Land Surveyor;
 - All existing development/ structure on site (if any) ;
 - The layout of the IRS;
 - Plot coverage, building height in compliance with the PPG;
 - All proposed structures to be put on land with setbacks from site boundaries and the coastline ; Environmentally Sensitive Areas, river/rivulet/feeder reserves (as applicable), existing and proposed accesses with width, parking facilities, wastewater disposal structures, etc.;
 - Fueling facilities (mode of storage, capacity, siting, distance from HWM, nearest residence or other infrastructures)
- d) Detailed **Building Layout Plans drawn to a readable scale of 1:100 or as appropriate** indicating , plot coverage and building footprint;
- e) Detailed architectural drawings **drawn to a readable scale of 1:100 or as appropriate on A3 size** in respect of all buildings/structures including elevations associated with the IRS;
- f) 3-D sketches describing the design character of the proposal or landscape architect's impression of the project in the receiving environment in compliance with design factors for architecture and landscape architecture as spelt out in PPG for Hotel and Integrated Resorts;
- g) Landscaping plan, green spaces, type of plants/trees including species introduced for landscaping purposes.

5.2 Terrestrial Engineering Aspects

- a) Detail methodology and scope of works and type of machinery;
- b) Any cut and fill;
- c) Transportation and mode of storage of construction material;
- d) Details on proposed access roads including width, length, road reserve, kerb radii as per PPG.

- e) Legible plan showing the road networks including the entry and exit;
- f) Details on the presence of watercourses, natural drains, canals, etc., within the site and measures envisaged to safeguard the watercourses;
- g) Availability of statutory services;
- h) Potable water supply and utilities;
- i) Any clearing of vegetation, number of trees/plants to be removed;
- j) Any provision for drains and management of storm water runoff. The site analysis and site preparation should comply with Technical Sheet on Drainage of the PPG to minimize risks of flooding;
- k) Details on the design, capacity of the proposed drainage network indicating the final point of evacuation;
- l) Legible plan showing the proposed drainage network;
- m) Generation of solid waste and wastewater (construction and operational phase of the IRS);
- n) Mode of disposal of solid waste and wastewater.

5.3 Climate Change Issues

- a) Risk based mitigation approach of the site giving details to show that the development is climate resilient (as applicable);
- b) Details on the engineering design of the IRS taking into consideration the vulnerability of the site to natural hazard, sea surges or climate change impacts like sea level rise, inundation or flooding; and
- c) Details justifying how the development will be climate resilient.

5.4 Eco-friendly Measures and Sustainability

The environmental design and performance of the project should be based on a number of criteria, including energy and water efficiency, indoor environment quality and resource conservation.

- a) Details on measures adopted to make sustainable use of resources such as energy consumption e.g. renewable energy source (solar energy and photovoltaic cells, solar lighting), energy saving devices and mercury free energy efficient lighting (low energy bulbs, bulbs with sensors) and water conservation practices e.g. water saving devices , use of tap with sensors, rain water harvesting, irrigation management (i.e. monthly water budget and 10-year water supply-demand projection); use of eco-friendly materials (paints and coatings for buildings, use of eco-friendly herbicides/pesticides, organic fertilizers, composting and Integrated Pest Control Management);
- b) Buildings to be designed to minimize use of energy;
- c) Details on the technology for the refrigeration and air conditioning systems which should be energy efficient, ozone-friendly with an Ozone Depleting Potential value of zero and climate friendly.

5.5 Traffic Implications

Details on the traffic to be generated.

5.6 Other Aspects

- a) Proposed implementation schedule;
- b) Duration of works (construction and operation phases);
- c) The marketing of the IRS;
- d) Capital investment;
- e) Employment opportunities.

Chapter 6- Categorisation and Method for Identification of Environmental impacts

The consultant should identify impacts which may, inter alia, be categorized as:

Negative (e.g. degradation of the ecosystem, conflict among existing businesses) / **positive** (e.g. job creation, tourism and people influx); **direct** (e.g. displacement of people) / **indirect** (e.g. reduction in living standards for the displaced people); **short term** (e.g. noise and dust from construction works and vehicular movement)/ **long term** (e.g. pollution of adjacent water bodies); **recurring** (e.g. dumping of solid waste)/ **non-recurring** (e.g. noise from machinery),

cumulative (e.g. disruption of scenic value of a site) / **non-cumulative** whereby impacts do not accumulate in space and in time; **reversible** (e.g. planting of mangroves, creation of artificial wetlands) / **irreversible** (e.g. elimination of wildlife habitats).

Proponents/consultants should demonstrate methods used to identify impacts which may, inter alia, include interaction matrices, Geographic Information Systems (GIS), ranking and weightage.

Chapter 7- Impacts and proposed mitigating measures

Impacts on the environment may occur during land clearing and site preparation, construction, as well as operational phase of the project. The proponent/consultant should propose feasible precautionary and mitigative measures to reduce the adverse impacts and enhance the positive impacts.

7.1 Impacts during site preparation phase

7.1.1 Biodiversity

Removal of vegetation, felling of trees may cause loss of natural habitat and degradation or destruction of environmentally sensitive areas like forest, wetlands etc. The proposed mitigating measures should include preservation and transplantation of trees, and compensation measures.

7.1.2 Machinery /Equipment

Machinery / equipment, stand-by generators and diesel storage tanks on-site may pose the risks of hydrocarbon spills and contamination of soil, underground /surface water.

Necessary mitigating measures should be included in the EIA report to address the above impact.

7.1.3 Noise and dust nuisances and air emissions from machinery and transport vehicles

Dust generated by earth-moving machinery, wind blowing upon the cleared site and stockpiled materials may be a cause of concern. In addition, vehicles and earth-moving equipment also emit exhaust fumes. Machinery and transport vehicles are also associated with noise nuisances.

Mitigating measures should be taken so as not to cause any nuisance by way of dust and air emissions to the nearby residents, public and surrounding environment. These include, amongst others, water spraying of stockpiles, access road and the construction site; regular maintenance of all heavy machine and vehicles.

Noise reduction options include, amongst others, fencing to screen noisy operations, the maintenance of machinery and installation of silencers to reduce noise emission.

7.1.4 Preservation of drains and watercourses

Tampering with natural watercourses and drains can have the potential risks of flooding of the site and its adjoining areas.

Natural watercourses and drains should be preserved and maintained.

7.1.5 Solid waste/ demolition waste

Solid waste may include green wastes from land clearing, demolition debris and inert construction materials, amongst others.

Best Management Practices to minimize solid waste and demolition waste include inter alia:

- Stockpiling of solid waste in a central area, away from water bodies;
- Re-use of demolition waste as backfill material;
- Collection, transportation and disposal of solid waste and demolition waste to the satisfaction of the Local Authority.

7.1.6 Traffic Implications

A detailed assessment of the traffic in terms of the impact area, condition and size of roads, number of machineries on site, transportation lorries during the site preparation should be included.

Detail on any damage to local roads due to operation of heavy machinery; access points, routing and parking requirement.

7.2 Impacts during construction phase

7.2.1 Biodiversity

Removal of vegetation, felling of trees may cause loss of natural habitat of endemic endangered species and degradation or destruction of environmentally sensitive areas like rivers, forest land, wetlands etc. The proposed mitigating measures should include preservation and transplantation of trees, and compensation measures.

7.2.2 Machinery /Equipment

Machinery / equipment, stand-by generators and diesel storage tanks on site have the risk of hydrocarbon spills and contamination of soil, underground /surface water.

Necessary mitigating measures should be included in the EIA report to address the above impact.

7.2.3 Noise and dust nuisances and air emissions from machinery and transport vehicles

Dust, noise and air emissions during the construction phase from stockpiled materials, trucks, excavators, loaders, bulldozers, piling machine and cranes can be a source of nuisance to the nearby residents, public and surrounding environment.

Mitigating measures include, amongst others, water spraying of stockpiles, access road and the construction site; transported materials to be covered, roads to be kept smooth, well graded and cleaned (free of soil and mud), regular maintenance of all heavy machine and vehicles.

Noise reduction options include, amongst others, control of times of construction operations, limiting the hours of operation for specific pieces of equipment, fencing to screen noisy operations, the maintenance of machinery and installation of silencers to reduce noise emission.

7.2.4 Preservation of drains and watercourses

Tampering with natural watercourses and drains can have the potential risks of flooding of the site and its adjoining areas.

Natural watercourses and drains should be preserved and maintained.

7.2.5 Erosion and sedimentation impacts

Land clearing, leveling and other earthworks such as cut and fill may give way to erosion. Improper management of excavated spoil may cause obstruction of natural or man-made waterways thus creating flooding.

Mitigation measures include, amongst others, excess soils to be compacted immediately for required landscape or carted away to minimize the risk of soil erosion, stabilization and protection of exposed areas, cut and fill slopes with vegetation as quickly as possible, stockpiling overburden and spoil away from watercourses and away from the coastal areas and construction of sedimentation ponds.

7.2.6 Vibration impacts associated with vehicular movement, machinery

Ground vibrations may have a damaging effect on nearby buildings, sand dune slope stabilization measures and retaining structures and can cause discomfort to residents and businesses in the area.

The EIA report should propose appropriate actions to be taken to abate the nuisance such as informing the residents and businesses of the schedule of operation and conducting the operation within the shortest delay

7.2.7 Slope stability impact

Removal of foot slope, changes in stress conditions of rock underlying slope, change in groundwater conditions and increase in load on slope and vibration may lead to slope stability problems. The EIA report should propose appropriate actions used to stabilize slopes which include reduction in the steepness of slope through grading, diverting water from the slope by controlling surface drainage.

7.2.8 Solid waste and construction debris

Solid waste may include green wastes from land clearing, excavated spoils, demolition debris, rock and boulder fragments, inert construction materials, timber and wood cuttings, thatching straw, paper, plastic wrappings, solidified concrete spills, electrical cables, pipes, tiles, glass debris, metal or plastic paint tins and containers amongst others.

Measures to minimize the above impacts include:

- Stockpiling of solid waste in a central area, away from water bodies,
- Re-use of excavated spoil for other purposes in a 'Cut and fill' exercise or backfill for construction of buildings and access roads or for other purposes, if possible,
- Sorting out at source and proper collection of all recyclable wastes for eventual recycling;
- Composting of all green and biodegradable wastes;
- Disposal of other solid wastes and non-compostable wastes to the satisfaction of the Local Authority.

7.2.9 Wastewater

Wastewater from the workforce during the construction phase can be a potential impact causing ground/ surface water pollution.

Mitigating measures include the provision of on-site wastewater disposal facilities which should be located not less than thirty (30) m from any natural water course so as to prevent defiling of the said water and/ or carting away to the satisfaction of the Wastewater Management Authority.

7.2.10 Traffic Implications

A detailed assessment of the traffic in terms of the impact area, condition and size of roads, number of machineries on site, transportation lorries during the construction phase should be included.

Detail on any damage to local roads due to operation of heavy machinery; access points, routing and parking requirement.

Detail on an upgrading and construction of access roads to the site.

A Traffic Impact Assessment (TIA) may be requested by the Traffic Management and Road Safety Unit (TMRSU).

7.3 Impacts during operational phase

Operational impacts associated with the daily operational activities of an Integrated Resort Scheme relates to amongst others:

7.3.1 Solid waste impact

Solid wastes from an Integrated Resort Scheme comprise mainly of biodegradable wastes such as food leftovers from restaurants, bars and guest residence villas, kitchen wastes (oil and grease), green wastes, non-biodegradable wastes such as glass ware, metal cans, plastic bottles, packages, paper and grass clippings amongst others.

The EIA report should characterize and quantify the waste according to their source, composition and generation (daily and monthly basis). A waste management programme that considers best practices like prevention, reduction at source, reuse, recovery and recycling with facilities for receiving recyclable waste materials (bottles, cans, paper, plastic, organic material, etc.) as well as composting should also be included.

Collection, transportation and disposal should be to the satisfaction of the Local Authority.

7.3.2 Wastewater Management

Wastewater generated from an Integrated Resort Scheme relates to wastewater from food service, kitchen restaurants, suites, villas and residences, spas and swimming pool and equipment maintenance shops. The EIA report should indicate, inter alia, type and expected volume of wastewater generated on a daily basis, its physical, chemical and biological characteristics, method of collection, treatment and disposal, the design calculations, drawings and dimensions of wastewater disposal system including mitigating measures envisaged to control odour nuisance.

On-site wastewater disposal system (wastewater treatment plant, wastewater pumping stations, septic tanks and associated absorption pits/leaching fields, etc.) to be located not less than 30 m from any water course as per Rivers and Canals Act.

7.3.3 Generator

To include details pertaining to the use of generator as a backup and the mitigating measures envisaged to avoid noise nuisance and fuel spillage.

7.4 General Impacts

7.4.1 Storm Water Management

Storm water includes any surface runoff and flows resulting from rainfall.

The EIA report should, include, inter alia,

- Detailed design, specification and layout of surface drains for storm water disposal indicating position of silt traps/oil and grease /hydrocarbon separators (at refueling facilities, workshops, parking areas, fuel storage and containment areas) and final evacuation;
- Proposed means to treat any contaminated storm water;
- Designated specific enclosed areas for maintenance activities such as painting, engine repairs;
- Give consideration for sustainable materials which minimize surface run-off, e.g. porous concrete, gravel, grass;
- Indicate their intention for achieving sustainable water consumption on site through water conservation measures like rainwater harvesting, use of storm water as a resource, e.g. for groundwater recharge for meeting water needs on site e.g. irrigation amongst others.

7.4.2 Eco-Friendly Practices

These should include, amongst others, energy-saving devices and eco-friendly practices such as sorting of waste for recycling purposes, rain water harvesting, economic compact fluorescent lamps, renewable energy supply (solar energy and photovoltaic cells), solar lamps, green buildings, greening of open spaces and road reserves using native/endemic species of plants as well, provision of landscaped bicycle tracks and other similar facilities.

7.4.3 Climate Change Issues

A vulnerability assessment with respect to climate change issues such as sea level rise, storm surges (as applicable) flooding, inundation, landslides and other adverse climatic conditions should be provided along with the proposed adaptation and mitigating measures

The IRS should be designed to be climate proof and resist the dynamic lateral loads due to sea surges.

7.4.4 Socio-Economic Impacts

The positive socio-economic impacts are foreign direct investment, creation of jobs, recurrent foreign earnings from the secondary rental of residential units to tourists, influx of tourists in the local area, increased activity of the local tourism operators and firms, increased opportunities for fishermen to sell their catch, upliftment and empowerment of the local community through training programmes and jobs, additional infrastructure for the local community.

The negative socio-economic impacts may relate to reduced beach access, road diversion, loss of community recreational areas.

Mitigative measures to be considered in the EIA report could be in terms use of alternative site (location), compensation and development of a Corporate Social Responsibility Programme amongst others.

7.4.5 Visual Impact (visual environment and aesthetics)

This chapter should indicate the intention to incorporate landscaping and environmental enhancement aspect, embellishment works in the IRS project and how the development architecture, materials and paintings will blend with the natural landscape.

Other mitigative measures to be considered could be in terms of rehabilitation (e.g. upgrading of access roads, rehabilitation of wetlands), restoration of the affected resources to its previous state.

7.4.6 Impact on heritage, historical and cultural features

The impacts on physical and cultural resources should be avoided by encouraging their conservation and enhancement. Measures should be proposed to avoid damaging significant cultural property and beliefs and measures to be taken to protect same, including buffer zones.

Chapter 8- Public Consultation

According to Section 19(1) (b) of the EPA, an EIA report shall enclose particulars of any consultation held with the public in the area where the undertaking is to be located.

Consultation is required for information purposes and details on the project are explained to the public.

This section of the EIA report should indicate:

- Any interaction and outcome of consultation with the relevant Ministries/Authorities/Institutions (e.g. consultation with the Ministry of Housing and Lands, Traffic Management and Road Safety Unit),
- Stakeholders and communities likely to be affected by the project (NGOs, Force Vive, locally registered fishermen, local inhabitants, beach users etc.).

The following should also be provided:

- Establishment and record of procedure (e.g. notes of meetings, leaflets, public display, questionnaires, letters) by which the interested and affected parties were afforded the opportunity to participate;
- A brief about the interactions detailing the areas of concern, the list of issues identified and how these have been addressed in the EIA e.g. trade off;
- A description of the public participation process followed by a list of stakeholders and their comments, the venues and times of consultation should be included as an appendix. The outcome of consultative meeting should be provided.

Chapter 9- Alternatives

The EIA report should provide details on any alternative manner in which the undertaking may be carried out to cause less harm to the environment including the 'no-development option'. The proposal is the best alternative as compared to other options.

Chapter 10- Environmental Monitoring Plan and Environmental Management Plan

10.1 Environmental Monitoring Plan (EMoP)

An Environmental Monitoring Plan (EMoP) is required under Section 18(2) (I) of the EPA. This EMoP is indicative and should provide an indication of all the parameters which need to be monitored including noise and air quality, coastal water quality, river water quality, ground and surface water quality, etc.

Once an EIA Licence is granted, a proper EMoP has to be submitted to the Ministry of Environment & Sustainable Development for approval taking into considerations the list of conditions attached to the EIA Licence as well as the proposals made in the EIA.

The EMoP puts responsibility on proponent to carry out monitoring exercise to verify:

- Successful implementation and effectiveness of mitigative measures to address impacts as spelt out in the EIA document.
Note: list of all mitigative measures as spelt out in the EIA document and corresponding monitoring exercise to check effectiveness of measures should be submitted in a tabular form.
- Compliance with EIA licence conditions, standards, guidelines and regulations.

The monitoring plan should comprise of baseline environmental parameters of the receiving media of the site and the surrounding environment prior to start of the project.

The following additional aspects, where relevant, should, inter alia, be addressed in the description of the monitoring activities:

- Institutional arrangements for carrying out the work, responsibility for monitoring;
- Indicators to be measured, monitoring methods, equipment and calibration details to be used;
- Specific parameters to be monitored, monitoring locations and control stations; monitoring frequency and duration;
- Standards and guidelines to be used to compare monitoring results;
- Name of environmental consultant and accredited laboratory conducting environmental monitoring, analysis of environmental samples.

10.2 Environmental Management Plan (EMaP)

Section 18(2) (n) of the EPA requires an EIA to include an Environmental Management Plan (EMaP) for the construction phase, in case of a new infrastructure proposal.

The EMaP should address amongst others: infrastructural layout plans, summary of impacts and mitigative measures, identify clearly the roles and responsibilities for the construction phase, responsibilities on environmental management and protection (provide names, positions, mobile phone, contact numbers and e-mail addresses).

The EMaP should clearly spell out the obligation to be imposed on the contractor in the contractual agreement to ensure that there will be no environmental nuisance and pollution in terms of for example sewage disposal for on-site workers, management and disposal of excavated spoils, construction wastes and abatement of dust and noise nuisances amongst others.

Chapter 11- Expertise of Consultant/ Consultancy Team

EIA requires a multi-disciplinary approach and involves expertise in various fields. This chapter should indicate the details about the composition of the consultancy team in terms of academic background, experience, area of study, contact details (complete address, phone and fax numbers).

The members of the study team in general shall have the following specialization/expertise amongst others: engineering (environmental, civil), landscape design (Landscape Architect), ecology (terrestrial and freshwater), soil science and geology (Geotechnical Engineer), solid waste management (versatile in reduce, re-use and recycling), wastewater management, meteorology, Land surveying (Quantity Surveyors), architecture and planning (versatile in sustainable building design).

Chapter 12 -Conclusions

The final chapter of the EIA report should deal with the recommendations and conclusions which justify the acceptability of the proposed project in relation to the proposed mitigative measures.

Appendices and Supporting Documents

These can be, inter alia:

- Extracts of reference documents, relevant laws, regulations and international conventions;
- Data for research work done for the project such as soil test results, biodiversity assessments, results of air and water quality, noise survey, climatic conditions (surges);
- Copies of clearances/permits obtained;
- Copy of Title Deed and annexes, land surveyors plan with PIN number and notary certificate;
- Particulars of any consultation held with the public in the area where the undertaking is to be located;
- Maps and figures;
- Certificate of Incorporation of the company

Note:

Proponents and consultants are requested to ensure that the EIA report contains all salient information as mandated under the Environment Protection Act 2002 and as per the checklist given at Annex II of this document. Any missing information may lead to the non-acceptance of the EIA application at the level of the Department of Environment.

The submission of false or misleading information is an offence under Section 85 of the Environment Protection Act.

Annex I- Guidelines for submission of EIA Reports in soft copy version

1.0 Introduction

As per Section 18(1) (a) of the EPA 2002, proponents applying for an EIA Licence must submit 15 printed copies and two electronic forms of the EIA reports. The objective for the posting of the soft copy version of EIA reports on the website of the Ministry of Environment and SD is to enable users to access the EIA reports in a more user friendly format.

Specifications of soft copy version

- 1.1 The soft copy version of the report, which should be identical to the hard copy version, should be submitted in electronic file preferably on a CD.
 - a. The document should be broken into different chapters with each chapter in a separate file. The executive summary also should be treated as a chapter and submitted in a separate file. If a chapter exceeds 50 MB, then it should be further broken down into files of less than 50 MB.
 - b. The table of contents also should be submitted as a separate file.

All the chapters/headings/appendices listed under the table of contents should have proper naming. This is important to allow the user to know which file he/she is accessing.

e .g .Chapter 10-Mitigative measures
 - c. The table of contents should provide links to the different chapters including the executive summary and appendices.
 - d. All filenames must
 - i. be less than 8 characters
 - ii. be in small letters
 - iii. start with a letter

The soft copy version should be page numbered, in the same order as the hard copy and should be submitted in **any one** of the following 2 formats **with security measures so that the document cannot be edited or printed:**

- HTML format
 - PDF format
- 1.1 All html files must be in htm extensions file format. All image files must be in the gif/jpg extension file format.
 - 1.2 The EA section will, open the electronic file in the presence of the applicants in order to ensure that the hard and soft copy versions are absolutely the same. In case the soft copy version does not contain documents, which are present in the hard copy version, the applicants would be called upon to fill in a form. Decision to accept or reject the soft copy version would be taken by the EA Division and the applicants would be informed at a later stage.

Annex II- Checklist for accepting EIA applications

SN	Particulars	Tick
1	Name, address, contact details of the proponent	
2	Person Responsible: Name, address, contact details	
3	The EIA duly signed by proponent or his legal representative	
4	Letter of appointment of the legal representative	
5	(a) The name and address of the consultant/s or consultancy firm	
	(b) Contact person (address, phone/mobile, email and fax number)	
	(c) Qualifications of the consultant/s	
	(d) Expertise/experience in the area of study of all the consultants	
	(e) EIA duly signed by <u>all principal consultants</u>	
6	Contact person : Name, address, contact details	
7	List of Main Directors (in case of a company)	
8	The Company Registration Number / Business Registration Number (BRN)	
9	Copy of Certificate of Incorporation of the company	
10	EIA report properly binded	
11	Format of EIA report is in conformity with the Sectoral Guideline on Integrated Resort Scheme	
12	No. of printed copies of EIA report (15)	
13	Soft copy in conformity with guidelines for soft copy version (2 copies)	
14	Non-technical Summary	
15	Proof of land ownership (copy of Title Deed / extract of Title Deed / Notary Certificate)	
16	Objective of project	
17	Project justification	
18	Site description and surrounding environment	
19	Extent of land	
20	Distance of site from settlement boundary and nearest residence	
21	Number of similar undertakings in the area (context plan)	
22	A legible context map of scale 1:10,000 or as appropriate	
23	A legible site location Plan of a scale of 1:5,000 or as appropriate, drawn and certified by Sworn Land Surveyor	
24	A legible Site Layout Plan of a scale of 1:500 or as appropriate indicating the different components of the project and the setback from site boundaries.	
25	Legible Building Layout Plans of a scale of 1:100 or as appropriate	
26	Legible architectural plans and diagrams and elevations of scale of 1:100 or as appropriate	
27	3-D Sketches/artistic impressions describing the design character of the proposal	
28	Legible plan showing the road networks, the entry and exit	

29	Legible plan showing the proposed drainage network	
30	Availability of statutory services & requirements and potable water supply	
31	Present land use	
32	Terrestrial and freshwater (as applicable) ecological survey (flora & fauna)	
33	Description of existing baseline conditions	
34	Project description	
35	Methodology and scope of works	
36	Associated infrastructural works on: <ul style="list-style-type: none"> - Mainland - Coastal frontage (as applicable) 	
37	Fueling facilities (mode of storage, capacity, siting, distance from HWM or other infrastructures)	
38	Type of machinery and equipment	
39	Implementation schedule/ duration of works	
40	Environmental impacts during site preparation	
41	Mitigating measures:	
	Biodiversity	
	Noise	
	Dust	
	Solid waste	
	Traffic	
42	Environmental impacts during construction phase	
43	Mitigating measures:	
	Biodiversity	
	Noise/vibration	
	Dust	
	Mode of disposal of solid waste including construction debris	
	Mode of disposal of wastewater	
	Erosion	
	Containment of sediment entrainment/plume –provision of geotextile screens	
	Traffic	
	Slope stability	
44	Environmental impacts during operation phase	
45	Mitigating measures:	
	Mode of disposal of solid waste	
	Mode of disposal of wastewater	
	Traffic impacts	
	Storm water drainage	
	Visual impacts and aesthetics	
	Risks of ground water contamination/ salt water intrusion	
	Socio-economics	
46	Eco-friendly measures:	
	Sorting of waste/recycling	
	Water saving devices and rain water harvesting	
	Energy saving/ renewable energy	
47	Stakeholders likely to be affected by the project	
48	Outcome of public consultation	

49	Alternative manner of carrying out the undertaking	
50	Any inevitable adverse environmental impact	
51	Any irreversible and irretrievable commitment of resources	
52	Fuel Spill Contingency Plan/ Emergency Preparedness and Response Plan	
53	Vulnerability assessment with respect to climate change	
54	Adaptation measures with respect to climate change	
55	Environmental Management Plan during construction phase	
56	Environmental Monitoring Plan	
57	Permits and clearances already obtained	
	Letter of Approval from Board of Investment	
	Land Conversion Permit (if applicable)	
	Clearance from the Ramsar Committee (if applicable)	