

**SECTORAL GUIDELINE No. 1**

**CONTENT OF PRELIMINARY  
ENVIRONMENTAL REPORT (PER)**

**FOOD PROCESSING INDUSTRY, EXCLUDING  
SMALL AND MEDIUM ENTERPRISES**

**December 2013**

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



## ***Preface***

Preliminary Environmental Report (PER) is an approach to identify, evaluate and predict the environmental impacts of a proposed development or activity and enables the provision of appropriate mitigating measures to offset these impacts. It is therefore essentially based on the precautionary principle and aims at the protection of the environment at the very inception stage of a project. It should not be perceived as an obstacle for economic development.

The preparation of a PER document in a professional manner can be an intricate process in the absence of proper guidance. This sectoral guideline on the content of a PER concerns the **Food Processing Industry, Excluding Small and Medium Enterprises** and is designed to assist proponents and consultants in the preparation of a comprehensive PER document. It is not exhaustive, but provides the essential structure and the detailed requirements of the PER.

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## 1.0 INTRODUCTION

### 1.1 Background

Preliminary Environmental Report (PER) is a short form of an Environment Impact Assessment (EIA) and applies mostly for common projects which are of less polluting nature. The PER document shall be in conformity with **Section 16 of the Environment Protection Act (EPA) 2002 (as amended)**.

Food processing consists of the transformation of harvested crops, milk and meat products, slaughtered animals, fish or other food based raw materials into attractive, marketable and often long shelf-life food products. It is a multifaceted industry and incorporates processes such as fermenting, sun-drying, preservation with salt, different types of cooking or pre-cooking (such as roasting, smoking, steaming, and oven-baking) and canning amongst others. It also involves transportation, receipt of raw materials, processing, packaging, storage (both raw materials and final products) and distribution. Due to the highly diversified nature of the activity, the magnitude and significance of the impacts differ and require appropriate mitigating measures. Food Processing Industry, Excluding Small and Medium Enterprises (SMEs), is a scheduled undertaking under Item No.6 of Part A of the Fifth Schedule of the EPA 2002 and warrants the approval of a PER. Such activity should preferably be located in an industrial zone.

SMEs<sup>1</sup> undertaking food processing have to ensure self-adherence to the Environmental Guideline No. 10 on Food Processing for Small and Medium Enterprises prepared by the Ministry of Environment and Sustainable Development (MOESD) and available on the Ministry's website at <http://environment.gov.mu>.

A proponent applying for a PER approval should deposit 10 copies of the document at the Department of Environment (Environmental Assessment Division, 2<sup>nd</sup> Floor, Ken Lee Tower, Barracks Street, Port Louis) and in such additional copies as the Director of Environment may request. A processing fee of Rs 3000 is currently applicable.

### 1.2 Objective of the PER Guideline

The objective of this Guideline is to assist proponents and consultants in the preparation of a comprehensive PER 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 Planning Policy Guidance (PPG) of the Ministry of Housing and Lands, Outline Planning Schemes of the concerned Local Authority, Food Act and the relevant acts and regulations.*

<sup>1</sup>As defined by the Small and Medium Enterprises Development Authority (SMEDA) Act 2009:

- a. "small enterprise" means an enterprise which has an annual turnover of not more than 10 million rupees;
- b. "medium enterprise" means an enterprise which has an annual turnover of more than 10 million rupees but not more than 50 million rupees;



## 2.0 STRUCTURE AND CONTENTS OF THE PER

The PER could be prepared according to the following proposed outline:

### **Outline of a typical PER document:**

Cover Page  
Table of Contents  
Non-technical Summary  
Chapter 1- Introduction  
Chapter 2- Policy, Legal and Administrative Framework  
Chapter 3- Site Description and the Surrounding Environment  
Chapter 4- Environmental Baseline Information  
Chapter 5- Project Description  
Chapter 6- Environmental and Other Impacts - Evaluation and Mitigation  
Chapter 7- Identification and Analysis of Alternatives  
Chapter 8- Conclusions  
Expertise of Consultant/Consultancy Team  
Appendices and Supporting Documents  
References

### **Cover Page**

The cover page should clearly indicate:

- (i) The title of the proposed project, as stated in Part A of the Fifth Schedule of the EPA 2002 (as amended);
- (ii) Location of the project;
- (iii) Name of the proponent; and
- (iv) Date.

On a second page:

- (i) Contact details and address of the proponent;
- (ii) The person responsible with contact details: address, phone/mobile, email and fax number;
- (iii) The main Directors, the Company Registration Number/Business Registration Number;
- (iv) The team responsible for the PER, name of the consultant/s or consultancy firm, as applicable;
- (v) Qualification of Consultant and expertise in the field; and
- (vi) Signature of the proponent or his duly appointed legal representative.

### **Table of Contents**

The Table of Contents should indicate the different chapters and sub-chapters with their respective page numbers. It should also indicate the tables, figures, appendices, acronyms among others.

### **Non-technical Summary**

The Non-technical Summary should provide a concise overview of the report in a simple language. It should be about one or two pages focusing primarily on the location, the scale, the main impacts associated with the project and measures envisaged to mitigate same.



## Chapter 1-Introduction

The introduction should highlight the main features of the project, its objective and justification. It should also encompass the project costs, experience in similar projects (if any), benefits, employment opportunities, the market for the products and by-products, as well as the technical, economic and environmental features essential to the project. The consultant(s) should preferably have an industrial engineering background, be fully conversant with new process technologies and have the necessary knowhow to identify the different sources of nuisances and to accordingly propose appropriate mitigating measures.

## Chapter 2 -Policy, Legal and Administrative Framework

This section of the PER should indicate compliance of the project with the relevant plans, policies, national laws, standards, guidelines and regulations, and the protection of sensitive areas and how these are being addressed. These include, inter alia:

- (i) The EPA 2002, the National Environmental Standards, Guidelines and Regulations;
- (ii) The Town and Country Planning Act, Planning and Development Act, Building Control Act, Wastewater Management Authority (WMA) Act, Public Health Act, Ground Water Act, Rivers and Canals Act, Central Water Authority Act, Dangerous Chemical Control Act, Forest and Reserves Act, Food Act, Local Government Act 2011, Local Government (Dumping and Waste Carriers) Regulations 2003; and
- (iii) Planning Policy Guidance (PPG) and Outline Planning Schemes.

## Chapter 3 -Site Description and the Surrounding Environment

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

- (i) Proof of land ownership: copy of Title Deed if the promoter is the owner of the land where the development is being proposed or where the proponent is not the owner of the land, by a Lease Agreement or written registered evidence of the authorisation of the owner, or a certificate issued by a notary expressing his opinion as to the owner's title.
- (ii) Exact land extent and project location. The site should be indicated on a legible **Context Map or an aerial photographs of scale 1:10,000 or any appropriate scale;**
- (iii) A comprehensive legible **Site Location Plan drawn to scale 1:5,000 or as appropriate,** should be provided. It should be **duly certified by a Sworn Land Surveyor** with appropriate landmarks as reference points, indicating the distance of the site boundary from the limits of settlement boundary, the nearest existing residential building, any environmentally sensitive area (ESA), mineral resource area, cave entrance, geological pit, nearby farm, designated site of interest, water body, natural drain, canal, storm water drain, wetland, borehole, other critical habitat and existing development in the surrounding environment within a radius of 500 m. The prevailing wind direction should be indicated on the plan. The Location Plan should clearly indicate whether the site is affected by any environmentally sensitive area (ESA) or any mineral resource site;

- (iv) 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 or water body, any environmentally sensitive area, mineral resource area, sensitive habitats of ecological importance, present and past land use, vegetation cover, flora and fauna, amongst others;
- (v) Accessibility of site, indicating the width of access roads;
- (vi) Archaeological, cultural and heritage value of site, if applicable; and
- (vii) Indication of similar projects and other forthcoming projects in the surroundings.

## Chapter 4 -Environmental Baseline Information

The purpose of the baseline information is to determine the state of the environment prior to the implementation of the proposed project. It is primarily a benchmark to measure environmental changes due to the proposed development. The baseline information should provide a description of the existing environmental status with emphasis on those aspects likely to be affected by the project proposal. The baseline information should include, inter alia, the following:

- (i) Data source, data collection methodology and results of site investigation;
- (ii) Any constraint in data collection and proposed remedial measures;
- (iii) Position of water table;
- (iv) A geotechnical report including description of subsurface strata up to 3m deep, maximum level of water table and results of percolation test as per BS 6297 MSB as applicable. The geotechnical report shall be certified by a Civil Engineer registered with the Council of Registered Professional Engineers (Mauritius) or a Soil Scientist;

*Note: The onus of requesting a geotechnical report/percolation test rests with the Wastewater Management Authority (WMA) which might request for same on a case-to-case basis depending on the sensitivity of the site. Proponents/consultants are therefore advised to consult the WMA in order to ascertain whether a geotechnical report is required or not. The percolation tests must be witnessed by an officer from the WMA.*

- (v) Details on any feature such as environmentally sensitive area, mineral resources area, in the vicinity of the site; and
- (vi) Prevailing climatic conditions (as applicable) such as wind direction, ambient air quality, quality of water in nearby watercourse, background noise level as applicable, hydrological characteristics, rare or endangered species of flora and fauna among others.



## Chapter 5 -Project Description

The project description should include, inter alia, the following:

### a. Structure of the Food Processing Industry:

- (i) Type of project and associated activities to be carried out;
- (ii) The design, size and scale of the project (in terms of raw materials and final products processed on a daily, weekly or monthly basis);
- (iii) The set up of the building should be in compliance with the existing food laws (Food Act);
- (iv) The workforce – both direct and indirect, permanent or contractual basis;
- (v) The hours of operation and number of working days per week;
- (vi) The marketing of products (whether products are meant for local market or for exportation) the targeted customer and any proposal for on-site point of sale;
- (vii) A legible **Site Layout Plan, drawn to scale 1:200** or as appropriate, indicating the site boundary, any infrastructure on site prior to construction, proposed infrastructures of the new undertaking, entrance/exit, wastewater disposal system, storm water drains, location of chimney, fuel storage, stores, watchman's quarters, parking spaces, delivery bay, entrance and exit amongst others; and
- (viii) Legible detailed **Buildings Layout Plans, drawn to scale of 1:100** or as appropriate, indicating floor layouts, gross floor area, elevations and architectural plans.

All plans should be drawn on a legible scale and preferably on A3 or A4 size.

### b. Description of the Process:

- (i) Description of processes involved in terms of:
  - Raw materials –its supply, frequency, the mode of transportation and storage;
  - Micro-organisms and enzymes– list of micro-organisms to be used as culture and the different enzymes to be used during the different stages of processing. Their origin must be stated;
  - Final products –the mode of storage and delivery;
  - By-products – the amount of by-products on a daily, weekly or monthly basis, and the mode of disposal;
  - Availability of utilities such as water, electricity, and fuel among others; and
  - Process technologies – the technology to be used and justification of the choice of technology in case of the availability of alternative technologies.
- (ii) A detailed process flowchart should indicate the raw materials input, the intermediate products, the final product and the by-products. The flowchart should also include:
  - Flow-rate (either in volume or in mass); and
  - Amount of liquid, solid, gaseous and other wastes generated at each stage.

In case the production involves different process units, a flowchart for each process should be provided along with an overall process flowchart.

- c. Sustainability aspects of the project: Any **Clean Technology**, best management practices envisaged with regards to raw materials, utilities (use of renewables), wastes generated, waste minimisation and segregation, water and energy use minimisation, should be provided.





#### **d. Equipment and Fuel Used**

- (i) Equipment and machinery in terms of number including capacity (horse power) and the expected noise level;
- (ii) Specifications on any proposal for boiler installation and operation. Details on stack height and air emission. *All emissions should be in compliance with the Environment Protection (Standards for Air) Regulations 1998 promulgated under the EPA 2002, as amended in 2008;*
- (iii) The type of fuel to be used, its amount on a daily or weekly basis, its storage facilities and justification on the fuel choice. *Cleaner fuel is preferred as far as possible, however the approval with regards to the fuel choice remains at the discretion of the MOESD.* Regarding liquid and gaseous fuel, a contingency plan is required in case of any spillage and leakage. *Proponent should also maximise the use of renewable energy resource;*
- (iv) Details on any proposed cold room. Refrigerants to be used in the air-conditioning system should be ozone-friendly with Ozone Depleting Potential value of zero as well as a low Global Warming Potential; and
- (v) All compressors, generators, pumps, extractors, boilers and other noise generating equipment should be housed in sound proof structures so that noise emanating therefrom is within permissible levels as per the Environment Protection (Environmental Standard for Noise) Regulations 1997. These regulations can be obtained on website at <http://muelex.gov.mu>.

#### **e. Chemicals**

- (i) Stock list (inventory) and description of the different types of chemicals to be used, their amount, the storage facilities and the handling procedures.
- (ii) To indicate whether any chemical to be used is listed under the Dangerous Chemical Control Act; and
- (iii) The Material Safety Data Sheet (MSDS) of all chemicals to be used should be provided.

#### **f. Traffic Implications**

- (i) Details on the adequacy of the existing road networks, its width, turning radii and visibility splay at junction with the main road;
- (ii) The expected traffic to be generated by the proposed industry; and
- (iii) Details on the loading and unloading bay and number of parking spaces to be provided.

#### **g. Availability of Utilities including, inter alia:**

- (i) Availability and sources of potable water supply, electricity, telecommunication facilities and any connection to sewerage network;
- (ii) Provision for any water storage facility in terms of capacity; and
- (iii) Any provision for a stand-by generator is being envisaged in case of power failure.

#### **h. Time Schedule**

- (i) Proposed schedule of works for project implementation.
- (ii) Hours of operation



## Chapter 6 -Environmental and Other Impacts – Evaluation and Mitigation

The potential significant adverse environmental impacts should be assessed in terms of its magnitude and significance during the site preparation, construction, operation and decommissioning (if any) phases of the project. For each impact identified, appropriate mitigating measures should be proposed.

### A. SITE PREPARATION AND CONSTRUCTION

*(applicable in case the development will be on a new site and will involve the construction of new building)*

- (i) Site preparation – excavated soil and debris, felling down of trees, generation of noise and dust.
- (ii) Construction phase – Noise, traffic, generation of construction wastes and wastewater.

Appropriate mitigating measures should be provided for each impact identified.

The report should also include:

- Necessary precautions to be taken to preserve and reinstate any natural drain on site;
- Detailed designs, specifications and layouts of surface drains for evacuation and final disposal of storm water;
- Embellishment/environmental enhancement and any landscaping work; and
- Precautionary measures to prevent any risk of soil erosion and flooding.

### B. OPERATIONAL PHASE

#### (i) Solid waste Management

Sources, types and expected amount of solid wastes generated on a daily/weekly basis, the mode of collection, storage and disposal must be elaborated. Any solid waste which might generate odour upon decomposition should be stored under refrigerated conditions, prior to its final disposal. The report should also include any proposal for waste minimisation and waste segregation in terms of reduce, reuse and recycle.

#### (ii) Wastewater Management

Sources, types and expected volume of wastewater generated on a daily/weekly basis, the physical (temperature, colour, suspended solid etc.), chemical (pH Chemical Oxygen Demand, heavy metals etc.), and biological (germs, bacteria etc.) characteristics of the wastewater, method of collection, treatment and final disposal, the receiving media and its corresponding effluent discharge limitations as per existing legislations, design calculations, drawings and dimensions of wastewater disposal system, layout plan showing wastewater collection, treatment and disposal system. The report should also include any proposal for reducing, reusing and recycling of wastewater. The wastewater disposal structures shall be at a minimum distance of 30 m from any existing water course/body.

#### (iii) Disposal of Used Oil *(where applicable)*

The report should include details on the expected volume of used oil to be generated and its sources (cooking or maintenance works) and the mode of disposal.

#### (iv) Emission of Air Pollutants

Source, type and the characteristics of air emission. Proposed abatement measures and technologies to comply with the Emissions Standards promulgated under the Environment Protection Act, including monitoring and maintenance programme.

**(v) Reduction of carbon footprint**

Environmental stewardship and implementation of ecofriendly measures/technologies including renewable energy sources, water saving devices, low energy bulbs amongst others.

**(vi) Odour**

Identification of all point sources of odour generation, use of odour control systems and best practices to avoid odour generation. Details on the measures proposed to mitigate odour generation including good housekeeping and proper ventilation. Provision for green belt, decorative and aromatic plants could be envisaged.

**(vii) Noise**

Identification of all point sources of noise emissions, evaluation of the noise level emitted by the proposed development. The assessment will have to be effected at the noise sources and the site boundaries. Details should be provided on the mitigating measures envisaged to be in compliance with the noise standard. The equipment to be used to monitor noise level should also be mentioned.

*Note: A noise modeling exercise may be required depending upon the proposed activity. The onus of requesting a noise modeling exercise rests with the Ministry of Health and Quality of Life.*

**(viii) Flies and rodents**

Details on the measures taken to control flies and rodents proliferation. These could include amongst others provision for wire mesh netting at the openings, good housekeeping, proper storage of raw materials and final products, avoid spillage of food materials, baits and traps, and the controlled application of pesticides and insecticides. The service of a pest control company could also be considered.

**(ix) Chemicals**

Contingency Plan in case of accidental spill, fire hazards and natural disasters.

**(x) Traffic Impact**

Measures envisaged so as not to adversely impact on the traffic flow in the area. The need for a full Traffic Impact assessment (TIA<sup>2</sup>) study will have to be ascertained with Traffic Management and Road Safety Unit.

**(xi) Environmentally Sensitive Areas (ESAs)**

In case the development site will be affected by an ESA or sensitive land use, an assessment will have to be undertaken to evaluate the degree of adverse impacts and the mitigating measures envisaged. No development will be allowed in Category 1 ESAs on state lands.

**C. THE OTHER IMPACTS AND MITIGATING MEASURES REQUIRED, INTER ALIA:**

- (i) Identification of the cultural and heritage sites (if any) that may be affected by the proposed development and proposed measures to mitigate any adverse impact. On a case to case basis, a proponent may be requested to submit a full Heritage Impact Assessment (HIA).

<sup>2</sup> The purpose of a TIA study is to determine the transportation impacts a particular development will have on the existing roadway network system. A TIA study identifies the need for any improvement and mitigating measure to the adjacent and nearby roadway system to maintain a satisfactory level of service (LOS) and safety of the roadway network in the vicinity of the proposed development.

- (ii) Measures envisaged to ensure the protection of important scenic landscape. The developments should blend with the landscape and landform character. Appropriate use of green belt may be considered and visual screening by means of green hedges. The report should also include any embellishment works, planting of trees, flowering/decorative plant within the site.
- (iii) Socio-economic impact should consider how the project would influence the social and economic conditions of people and communities. For instance, the number of employment created directly and indirectly by the development and the advantages and weaknesses of the project on neighbourhood. The PER should indicate the ways and means to reduce any adverse impact. Any initiative for Corporate Social and Environmental Responsibility (CSER) from the proponent may be included in this section.

## **Chapter 7 - Identification and Analysis of Alternatives**

Alternatives taken into account in developing the project should be documented such as alternative site, alternative process and zero development option.

## **Chapter 8 - Conclusions**

The final chapter of the report should provide the main findings and conclusions, which justify the acceptability of the proposed project in relation to the proposed mitigating measures. Appropriate conclusions should be drawn and summarized in a series of brief statements with focus on significant impacts and mitigating measures proposed.

## **Expertise of Consultant/Consultancy Team**

The preparation of a PER demands a multidisciplinary approach and expertise in different fields. The responsible team should demonstrate wide experience in the relevant field and should be well versed with impacts generated by food processing industries.

## **Appendices and Supporting Documents**

These should include information, which would cluster to the main body of the text, such as site photographs and maps, press releases, written responses to the project.

Any additional technical information, a list of reference materials, copy of Certificate of Incorporation for Company, copy of Business Registration Card, names, addresses and qualifications/expertise of the PER consultants, copies of clearances/ permits obtained or applied (if any) from authorities and proof of land ownership, may be included.

## **References**

The bibliographies that have been used for the preparation of the PER document.

*Note: Section 16 (8) of the EPA 2002 (as amended) makes provision for the Minister of Environment to revoke a PER Approval, where a PER contains any false or misleading information or any material omission.*



## Appendix I

### Checklist for accepting PER Application for Food Processing Industry, excluding SMEs

SN	Particulars	Tick
1.	The project title as per the Fifth Schedule of the EPA 2002 (as amended)	
2.	Name and address of proponent	
3.	Person responsible: name, address, contact details	
4.	Name and address of consultant/consultants/consulting firm	
5.	Qualifications of consultant	
6.	Expertise of consultant/consultancy team in the field	
7.	PER duly signed by the proponent or duly appointed legal representative	
8.	Letter of appointment of legal representative	
9.	Proper binding	
10.	Number of printed copies	
11.	Document is in conformity with outline in the Sectoral Guideline No. 1, Content of PER for Food Processing Industry, Excluding Small and Medium Enterprises	
12.	Proof of ownership - Copy of Title Deed /Notary Certificate/Lease Agreement /Registered Letter of Authorization	
13.	Non-technical summary	
14.	Objective of project	
15.	Project justification	
16.	Zoning and compatibility of site	
17.	Description of site and surrounding environment	
18.	Present land use	
19.	Flora and fauna	
20.	Distance of site from settlement boundary and residential development	
21.	A legible Context Map or an aerial photograph of scale 1:10,000, or as appropriate	
22.	A legible Location Plan drawn to scale 1:5,000, or as appropriate and duly certified by a Sworn Land Surveyor, indicating the distances of the site boundary from the limits of settlement boundary, the nearest existing residential building, etc.	
23.	Legible Site Layout Plan of scale 1:200, or as appropriate indicating the different components of the project	
24.	Architectural Building Layout Plan of scale 1:100 or as appropriate	
25.	Environmental baseline information	
26.	Project description	
27.	Scale of project	
28.	Annual turnover	
29.	List of raw materials	
30.	Description of processes	
31.	Process flowchart	
32.	Equipment and machinery	
33.	Type of fuel to be used	
34.	Use of any boiler and expected emissions	



35.	Provision of any cold room	
36.	Type of refrigerant to be used	
37.	Number of workers	
38.	Availability of statutory services and requirements	
39.	List of end products	
40.	<b>Environmental impacts during site preparation phase</b>	
	Mitigating measures	
	Noise	
	Dust	
	Disposal of solid waste	
41.	<b>Environmental impacts during construction phase</b>	
	Mitigating measures	
	Noise	
	Dust	
	Disposal of solid wastes including construction debris	
	Wastewater generation and mode of disposal	
42.	<b>Environmental impacts during operation phase</b>	
	Mitigating measures	
	Solid wastes from processes and domestic sources	
	Wastewater from processes, cleaning/washing and domestic sources	
	Odour	
	Noise	
	Emission	
	Traffic implications	
	Parking facilities	
	Flies/rodents	
	Compliance with Food Act	
	Provision for soundproof enclosures for electric motors and noise generating equipment	
	Fuel storage and provision of bunded walls	
	Collection and disposal of used cooking oil (as applicable)	
43.	<b>Sustainability aspects of the project</b>	
	Technologies	
	Eco-friendly measures	
	Water saving/conservation/rainwater harvesting	
	Waste minimization	
	Reduce, reuse and recycle	
	Waste segregation	
	Energy saving devices (LED bulbs, solar lamps)	
	Renewable energy/photovoltaic	
44.	Alternatives to the project	
45.	Implementation schedule	
46.	Permits and clearances already obtained	
47.	Land Conversion Permit (if applicable)	