TERMS OF REFERENCE

INDUSTRIAL PROJECTS: FOOD PROCESSING & PROCESSING PLANTS - CITRUS, COFFEE, COCOA, EDIBLE FATS, COCONUT, SOLAR SALT, FISH & MEAT, SYRUP. AQUACULTURE FACILITIES, BREWERIES AND BOXING PLANTS,

Notes for NEPA for Generic Terms of Reference

This generic Terms of Reference (TOR) is applicable to **Food Processing and Processing Plants** including the processing of citrus, coffee, cocoa, edible fats, coconut, solar salt, fish and meat and syrup. Also included are aquaculture facilities, breweries and boxing plants. The TOR outlines the aspects of an Environmental Impact Assessment (EIA) which when thoroughly addressed will provide a comprehensive evaluation of the site, in terms of predicted environmental impacts, needed mitigation strategies, potentially viable alternatives to the development proposed and all related legislation.

In reality, significant environmental issues may be site specific and it is expected that these be incorporated accordingly. Sites of special consideration are:

Coastal Areas: Issues such as Coastline stability, coral reef, mangrove and wetland, seagrass impacts, unique coastal environments, nutrient loading in coastal waters and impact on coastal commercial fishing should be examined. The handling of food processing solid waste and wastewaters, and their impact on coastal waters should be closely examined.

Upland Areas: Issues such as slope stability, available road network, access to basic amenities such as treatment facilities, impact of final effluent on drainage network, and the effect of storm drainage from the site on pre existing drainage patterns etc. should be examined.

Freshwater/ Riverine/ Wetland Areas: Issues relating to leachate being introduced to the water column, erosion and siltation, nutrient loading, and macro-invertebrate habitat destruction. The possible increase in mortality rate of overall aquatic life due to improper waste handling is a major issue.

Distinct Terrestrial Forest Types: Issues relating to the specific growth form of the vegetation, the carrying capacity, the successional stage of the forest and the projected level of disturbance which the forest can withstand

Sites located within and adjacent to areas listed as protected or having protected species: The main issue(s) of concern are determined by the statutes of the convention in question and what the convention speaks to. The impact of the development on the specific sensitivities of the protected area should be highlighted. Mitigation of impacts should assess if the post mitigation status would be acceptable in the protected area context. Alternative sites should be rigorously evaluated.

The socio – economic aspects of such a development should be highlighted as the type and location of food processing facilities frequently have an impact on property values and on communities' perceptions of a healthy environment.

Terms of Reference

The Environmental Impact Assessment should:

1) Provide a complete description of the existing site proposed for development. Detail the elements of the development, highlighting areas to be reserved for construction and the areas which are to be preserved in their existing state.
2) Identify the major environmental issues of concern through the presentation of baseline data which should include social and cultural considerations. Assess public perception of the proposed development.
3) Outline the Legislations and Regulations relevant to the project.
4) Predict the likely impacts of the development on the described environment, including direct, indirect and cumulative impacts, and indicate their relative importance to the design of the development's facilities.
5) Identify mitigation action to be taken to minimise adverse impacts and quantify associated costs.
6) Design a Monitoring Plan which should ensure that the mitigation plan is adhered to.
7) Describe the alternatives to the project that could be considered at that site

To ensure that a thorough Environmental Impact Assessment is carried out, it is expected that the following tasks be undertaken:

Task #1. Description of the Project

Provide a comprehensive description of the project, noting areas to be reserved for development, areas to be preserved in their existing state as well as activities and features which will introduce risks or generate impact (negative and positive) on the environment. This should involve the use of maps, site plans, aerial photographs and other graphic aids and images, as appropriate, and include

information on location, general layout and size, as well as pre-construction, construction, and post construction plans. For projects to be done on a phased basis it is expected that all phases be clearly defined, the relevant time schedules provided and phased maps, diagrams and appropriate visual aids be included. Detailed descriptions, including graphical layouts of the wastewater and solid waste treatment facilities' designs should be included.

Task #2. Description of the Environment

This task involves the generation of baseline data which is used to describe the study area as follows:

i) physical environment
ii) biological environment
iii) socio-economic and cultural constraints.

It is expected that methodologies employed to obtain baseline and other data be clearly detailed.

Baseline data should include:

(A) Physical

i) a detailed description of the existing **geology** and **hydrology.** Special emphasis should be placed on storm water run-off, drainage patterns, effect on groundwater and surface water, and proposed wastewater management facilities. Any slope stability issues that could arise should be thoroughly explored.

ii) **Water quality** of any existing wells, rivers, ponds, streams or coastal waters in the vicinity of the development. Quality Indicators should include but not necessarily be limited to nitrates, phosphates, faecal coliform, and suspended solids.

iii) **Climatic conditions and air quality** in the area of influence including particulate emissions from stationary or mobile

sources, NO_x, SO_x, wind speed and direction, precipitation, relative humidity and ambient temperatures,

iv) **Noise** levels of undeveloped site and the ambient noise in the area of influence.

v) Obvious sources of pollution existing and extent of contamination.

(B) Biological

Present a detailed description of the flora and fauna (terrestrial and aquatic) of the area, with special emphasis on rare, endemic, protected or endangered species. Migratory species should also be considered. There may be the need to incorporate micro-organisms to obtain an accurate baseline assessment. Generally, species dependence, niche specificity, community structure and diversity ought to be considered.

(C) Socio-economic & cultural

Present and projected population; present and proposed land use; planned development activities, issues relating to squatting and relocation, community structure, employment, distribution of income, goods and services; public health and safety; cultural peculiarities, aspirations and attitudes should be explored. The historical importance of the area should also be examined. While this analysis is being conducted, it is expected that an assessment of public perception of the proposed development be conducted. This assessment may vary with community structure and may take multiple forms such as public meetings or questionnaires.

Task #3 - Legislative and Regulatory Considerations

Outline the pertinent regulations and standards governing environmental quality, safety and health, protection of sensitive areas, protection of endangered species, siting and land use control at the national and local levels. The examination of the legislation should include at minimum, legislation such as the

NRCA Act, legislation from the National Solid Waste Management Authority (SWMA), The Public Health Act, the Town and Country Planning Act, The Factories Act, and the appropriate international convention/protocol/treaty where applicable.

Task #4 - Identification of Potential Impacts

Identify the major environmental and public health issues of concern and indicate their relative importance to the project. Identify potential impacts as they relate to, (but are not restricted by) the following:

- change in drainage pattern
- flooding potential
- landscape impacts of excavation and construction
- loss of natural features, habitats and species by construction and operation
- pollution of surface and ground water
- Air pollution
- risk of vermin/pest infestations
- capacity and design parameters of proposed solid waste treatment facility.
- capacity and design parameters of proposed wastewater treatment facility.
- socio-economic and cultural impacts.
- risk assessment
- noise
- proper disposal/treatment of potentially hazardous compounds

Distinguish between significant positive and negative impacts, direct and indirect, long term and immediate impacts. Identify avoidable as well as irreversible impacts. Characterize the extent and quality of the available data, explaining significant information deficiencies and any uncertainties associated with the predictions of impacts. A major environmental issue is determined after

examining the impact (positive and negative) on the environment and having the negative impact significantly outweigh the positive. It is also determined by the number and magnitude of mitigation strategies which need to be employed to reduce the risk(s) introduced to the environment. Project activities and impacts should be represented in matrix form with separate matrices for pre and post mitigation scenarios.

Task #5 - Mitigation

Prepare guidelines for avoiding, as far as possible, any adverse impacts due to proposed usage of the site and utilising of existing environmental attributes for optimum development. Quantify and assign financial and economic values to mitigation methods.

Task #6 - Monitoring

Design a plan to monitor implementation of mitigatory or compensatory measures and project impacts during and post construction. An Environmental Management Plan for the long term operations of the facility should also be prepared.

An outline monitoring programme should be included in the EIA, and a detailed version submitted to NEPA for approval after the granting of the permit and prior to the commencement of the development. At the minimum the monitoring programme and report should include:

- Introduction outlining the need for a monitoring programme and the relevant specific provisions of the permit license(s) granted.
- The activity being monitored and the parameters chosen to effectively carry out the exercise.
- The methodology to be employed and the frequency of monitoring.
- The sites being monitored. These may in instances, be pre-determined by the local authority and should incorporate a control site where no impact from the development is expected.

- Frequency of reporting to NEPA

The Monitoring report should also include, at minimum:

- Raw data collected. Tables and graphs are to be used where appropriate
- Discussion of results with respect to the development in progress, highlighting any parameter(s) which exceeds the expected standard(s).
- Recommendations
- Appendices of data and photographs if necessary.

Task #7 - Project Alternatives

Examine alternatives to the project including the no-action alternative. This examination of project alternatives should incorporate the use history of the overall area in which the site is located and previous uses of the site itself. Refer to NEPA guidelines for EIA preparation.

All Findings must be presented in the **EIA report** and must reflect the headings in the body of the TORs, as well as references. Eight hard copies and an electronic copy of the report should be submitted. The report should include an appendix with items such as maps, site plans, the study team, photographs, and other relevant information.