6 Residual impacts

6.1 Introduction

This chapter highlights the unavoidable irreversible impacts caused by the Project and also indicates the mitigation measures that would be taken to minimize the impacts taking into perspective the need for and overall benefit from the Project.

The residual impacts envisaged from the vertical expansion of the Mare Chicose landfill are listed below:

- Loss of flora and fauna within the land strip meant for forest along the western border of the site and meant for sugar cane cultivation along the southern border of the site;
- Change of landscape and visual impression;
- Leachate generation; and
- Landfill gas generation.

6.2 Loss of flora and fauna within the land strip

As stated earlier, the 20 m wide strip adjacent to the site border does not host any rare or endemic plants or animals of significant interest as it was affected during construction and operation of the perimeter ditch and the landfill. In fact, the flora and fauna which will be lost are present throughout the island. It is expected that during relocation of the perimeter ditch and establishment of the gabion wall, which will be carried out in phases, most of the mammals, birds and insects will move to the adjacent areas with conditions like within the land strip. It is envisaged that the vegetative cover established on the landfill upon filling of the vertically expanded cells will host the flora and fauna compensating for the loss related to the infrastructure relocation over the land strip.

6.3 Change of landscape

Vertical expansion will cause an irreversible impact on the landscape. A new hill will be grassed to look like other hills.

Visual impact of the landfill expansion works and the resulting new hill on people travelling along the nearby roads can be reduced by the green belts (bushes) established along the roads passing by the landfill area.

6.4 Leachate generation

Leachate will be generated during the proposed landfill expansion and during many years after establishment of the final cover. The amount of leachate generated and managed within the Project will depend on the water balance during the landfill development: diversion of surface water runoff, covering of

waste for minimisation of rainfall infiltration into waste, collection and accumulation of leachate in ponds, pumping for treatment and for carting away.

The strategies should be adopted to minimize leachate generation. The suitable capacity will be ensured for leachate collection system, on-site leachate treatment plant and tankers for carting of the treated leachate away to the disposal point.

Once final capping and re-vegetation if site surfaces have been completed, sufficient control over infiltration of rainfall into waste body could be achieved and in the longer prospect result in gradual reduction of generated leachate volume.

6.5 Landfill gas generation

Landfill gas will be generated during the Project and them during many years later after establishment of the final cover. Landfill gas utilisation for electricity production will be continued as per capacity of the power plant and flaring of the excess gas.

6.6 Occupational Health and Safety

The contractor's Occupational Health and Safety Management Plan shall address the impacts of dust, noise, vibration, odour, emissions from engines and other impacts related to Occupational Health and Safety of staff working at the landfill and involved in transportation of waste, leachate and construction materials, etc.

6.7 Socio-cultural and socioeconomic impacts

Community Hall in Mare Chicose village

As the residents of the village have moved to Rose Belle, the present community hall in Mare Chicose village will be most probably closed in the near future. All nearby villages have their own community halls. No impacts on activities of community halls will be posed by the proposed Project. Information about the project could be presented in the nearby community halls.

Hindu Temple and Cremation Ground in Mare Chicose village

There is presently a well-maintained Hindu Temple in the Mare Chicose village and it is expected that religious activities will still be carried out there. It is expected that the existing cremation ground in the village of Mare Chicose will still be used in the future in line with the local tradition. Traffic safety improvements could be recommended for better access during ceremonies at the temple and the cremation ground.

Hindu Ceremonial Public Space near Astroea Bridge

There is a well-maintained Hindu Ceremonial Public Space with built prayer structures on the bank of the La Chaux river near the Astroea Bridge. The operation of the existing landfill has no impact on this prayer area and it is expected that its integrity will be preserved. No activity associated with the landfill expansion or operation is expected to impact on that area.

Scenic Route (Road to Mahebourg)

There is a designated Scenic Route (SE of landfill) on the road leading to Mahebourg. Waste trucks from La Laura transfer Station presently use this road to come to the landfill. The amount of heavy traffic is not expected to increase along this road because of the proposal expansion works at the landfill. Thus, no adverse impact is foreseen.

Socio-economic impacts

The project implementation will ensure opportunity for additional waste disposal within the current landfill site during more than 10 years with collection and utilisation of landfill gas for electricity generation.

The main negative socio-economic impacts of the proposed Project are:

- Permanent loss of a 20 m wide strip of agricultural land along the southern border and forest land along the western border of the site;
- Continued negative impact on the quality of life in areas adjacent to the landfill and along the waste transportation routes;
- Increased traffic due to transportation of materials for construction of gabion wall during the vertical expansion.