

4.0 ENVIRONMENTAL MANAGEMENT PLAN

4.1 Introduction

The Environmental Management Plan, as a control and regulatory tool, contains the strategies that focus on the enforcement of existing laws and regulations, information dissemination, waste management and environmental monitoring. Presented in Section 4.5 are the various programmes and projects that are to be implemented along these strategies.

4.2 Goal and Objectives

Goal

To ensure the sustainable economic growth and development of the City through effective environmental management measures that will preserve its environmental integrity and promote the proper utilisation of its land, air, water and other ecological resources.

Objectives

- To promote strict compliance with existing environmental laws, ordinances, standards and other regulatory measures;
- To protect the City's Public Lands that form part of the Angat Watershed Reservation and areas with critical slopes from further degradation;
- To extend full support to the current activities, programmes and projects of the City Environment and Natural Resources Office, the City Agriculture Office and the Sinop Kalat and Luntiang Kapitaligiran Executive Committee, which includes the City's Solid Waste Management and Recycling Programme and tree planting activities;
- To heighten environmental awareness and concern among the City's residents;
- To encourage the development of the identified new dumpsite in Barangay Minuyan Proper into a sanitary landfill;
- To preserve and further promote San Jose del Monte's image as a clean and ever green City;
- To encourage the development of more mini-forest parks within the City;
- To upgrade the quality of the City's rivers and creeks, as well as protect them from further soil erosion and siltation; and
- To control and eliminate the dumping of solid and liquid wastes into the City's bodies of water.

4.3 Development Strategies

- **Strict Implementation of Environmental Laws and Standards**

Compliance with the existing environmental laws, standards and other regulatory measures in the national and city levels shall be enforced within San Jose del Monte. Private citizens and owners or managers of establishments found to be non-compliant with these measures will be imposed with appropriate penalties and administrative charges.

In order to serve as a reference for all development activities within San Jose del Monte, an Environment Code (Annex A refers) shall be drafted for the City. It shall contain all existing ordinances that relate to the Environment.

- **Environmental Monitoring**

Air and water quality monitoring shall regularly be undertaken. This is particularly important in the long term, since along with the projected increase in population, there will be an expected accompanying increase in the number of motorised vehicles, residential areas, and commercial and industrial activities within the City.

An office that would effectively regularly observe and analyse the City's air and water quality levels shall be created. The office would comprise people from the DENR, City government, non-government organisations, and the private sector.

- **Extensive Support to the Existing Environmental Programmes and Projects**

The continuous implementation of the currently on-going environmental programmes and projects of San Jose del Monte shall be promoted. The active participation of Non-Government Organisations and the private sector groups to in these shall be encouraged. These include:

- Solid Waste Management and Recycling Programme;
- Clean and Green Program;
- Bantay Kalinisan and Bantay-Ilog Program; and
- Mini Forest Projects.

- **Close Linkages among Government Agencies, Non-Government Organisations and Private Sector**

The local government shall maintain close linkages with non-government organisations and the private sector to encourage their active participation in and support for all environmental programmes. The role of the non-

government organisations is vital to the protection of environment. These organisations may participate in river rehabilitation/clean-up programmes or adopt a river, area or street where they can undertake cleaning/greening activities. On the other hand, the private sector could be tapped to provide financial and/or technical assistance to river dredging activities and other environmental programmes.

- **Forest Protection and Rehabilitation**

The protection and rehabilitation of its forestlands, which form part of the Angat Watershed Reservation, shall be one of the City government's priorities. It shall also be carried out with the active participation and assistance of non-government organisations and private sector groups.

In protecting San Jose del Monte's forests, any activity found within the area that is detrimental to its best interest shall be prohibited. Applicable national laws and other regulatory measures in forest management shall be strictly enforced. At the community level, the people in San Isidro, the only barangay near the designated forest reservation shall be encouraged to exercise vigilance in protecting the area. A "Bantay-Gubat" group, comprising of volunteer residents, will be organised to monitor activities at the forest reservation.

Reforestation activities shall be carried out within the forest reservation. The CENRO and the City Agriculture Office will lead the movement, and more importantly, the establishment of seedling banks and nurseries. Private sector groups shall be tapped to provide financial or technical assistance while non-government organisations may adopt portions of the forest for rehabilitation.

- **Development of Community Urban Mini-Forest Parks**

A number of Community Mini-Forest Parks shall be established in strategic areas. Potential sites shall be identified in co-ordination with Barangay officials along with the development of schemes and strategies for the establishment of these parks. Fast-growing and sturdy trees shall be introduced within these areas. This is particularly crucial as one of the primary environmental concerns of the City is that almost all lands that are within the 18 percent and above slope categories are titled. Although those east of Quirino Highway are predominantly used for agri-forestry activities, those along and west of Quirino Highway are well built-up. Some portions of it are also vacant and idle. The establishment of intermittent mini-forest parks within strategic areas of the City will not only protect the slopes, but they shall also effectively promote the image of San Jose del Monte as a clean and green City.

The City Agriculture Office is already currently maintaining a 1.65 hectare Mini Forest Project in Barangay Muzon along the San Jose del Monte-Marilao

Provincial Road. This is aside from the mahogany-planting site located in an area beside the proposed dumpsite in Barangay Minuyan Proper.

- **Environmental Education and Information Dissemination/Campaign**

The Environmental Education and Information Dissemination/Campaign is geared to educate the people on solid waste management, upland and lowland forest resource management and protection, and prevention of air and water pollution. It will entail the conduct of a number of seminars and lectures, and the distribution of Information Education Campaign materials including leaflets, comics and posters to households. The campaign materials shall include the role of each individual, the importance of environment and natural resources management, city laws, rules and regulations and programmes/projects in the area where each individual can participate. This will also serve as social preparation prior to the launching of a proposed environmental project.

- **Ensure the Proper Implementation of an Effective and Efficient Solid Waste Management System**

The City government shall strictly enforce all ordinances pertinent to solid waste collection and disposal, most important of which is Ordinance No. 22(A)-10-99. This is the Comprehensive Solid Waste Management Ordinance of San Jose del Monte, which covers all residential and agricultural areas, and commercial, institutional and industrial establishments within the City. It was enacted to provide a system for the proper management of the City's rapidly increasing volume of solid wastes, to uplift the environmental conditions within the area and to ensure the overall health, safety, and general well being of the residents. It also aims to ensure environmental cleanliness, control pollution and provide guidelines on waste collection, segregation, recycling and disposal of hazardous wastes.

Development of a Sanitary Landfill

A sanitary landfill is vital in a solid waste management system. The newly identified dumpsite in Barangay Minuyan Proper could be converted into a sanitary landfill to replace the currently used dumpsite in Barangay Citrus.

Waste Segregation, Reuse, Recycling and Composting

The segregation of biodegradable and non-biodegradable wastes is one of the most important components of an effective waste management system. Ordinance No. 22(A)-10-99 enjoins the populace to segregate these items from source. Biodegradable items could be used for composts.

The non-biodegradable items (i.e. bottles, wastepaper, cardboard, aluminium cans, glass and plastic container, etc.) could also be further segregated for recycling or reuse. It is the most effective way to significantly reduce the volume of waste that has to be disposed within the landfill. The proposed Waste Recycling and Recovery Centre of the City is located just beside the proposed dumpsite in Barangay Minuyan Proper. The area should be properly secured to prevent future squatting and scavenging activities.

Garbage Collection

Non-biodegradable wastes from residential, commercial, institutional and industrial areas shall be regularly collected by garbage trucks at specified times. The current collection services being carried out by the City government shall be expanded to cover all barangays. Sufficient number of garbage collection trucks shall be eventually procured to adequately collect, transport and dispose the solid wastes of the whole City.

4.4 Programmes and Projects

The following are the environmental programmes and projects:

- **Implementation, as well as Enhancement of the Existing Solid Waste Management Programme**

This is focused on the implementation of the City government's existing solid waste management programme. One of its key focus is extensive information dissemination on the importance of solid waste segregation, recycling, reuse, composting, health impacts and other related topics. Information Education Campaign materials shall be prepared for distribution to all households within the City. The main concentration of the campaign will be those areas, which generate considerable solid wastes such as the public markets, and all the barangays located west of Quirino Highway.

The City's proposed dumpsite in Barangay Minuyan Proper shall be considered whether it is deemed suitable as a sanitary landfill site. The construction of the proposed waste ecological centre shall be pursued in order to considerably reduce the volume of waste to be placed in the landfill. Further, currently implemented strategies on waste characterisation, storage and segregation techniques, waste collection and processing shall be periodically studied whether these are still effective and adequate for the City.

- **Air and Water Quality Management Programme**

Though air and water quality are still at relatively good levels, the City government is already taking a pro-active stance in pollution prevention. The Air and Water Quality Management Programme entails the regular monitoring

of pollution levels. The projects under this programme are the following:

- Establishment of Pollution Monitoring Centre
- Creation of Pollution Monitoring Team

The Pollution Monitoring Team shall be composed of representatives from the City government, non-government organisations and private sector groups who will undertake a comprehensive plan on air and water quality monitoring. The CENRO and the City Health Office shall take the lead.

• **Rivers and Creeks Rehabilitation and Management Programme**

The Rivers and Creeks Rehabilitation and Management Program involves the development of a comprehensive plan to prevent the rivers and creeks of the City from being the direct recipient of solid wastes and untreated liquid wastes. The current Bantay Kalinisan and Bantay-Ilog Program shall be part of this new programme. Extensive environmental information dissemination/campaign to enjoin the full support and active participation from the residential areas, commercial and industrial establishments shall be undertaken.

• **Forest Protection and Rehabilitation Programme**

The Forest Protection and Rehabilitation Program shall be spearheaded by the CENRO, CPDO and the CAO. One of its components shall be the conduct of an information campaign on forest protection and management and the distribution of IEC materials. In particular, seminars and lectures shall be conducted to household members at the barangays in the eastern section of San Jose del Monte. These lectures shall also involve members of indigenous communities. The IEC materials shall be composed of leaflets, posters, comics, etc., and will be prepared and distributed to all household population of the City.

The program shall encourage those barangays adjacent to the watershed to exercise vigilance in their respective areas and participate in forest monitoring activities. "Bantay Gubat" Groups in the adjacent barangays of San Isidro and Paradise III shall be formed. These organisations' primary function will be to safeguard the Forest Lands. They shall report any illegal logging, kaingin, as well as other illegal forest activities to local authorities. The groups shall be provided with the necessary monitoring equipment and devices as well as adequate training in undertaking their roles.

The programme will also entail the putting up of seedling banks and nurseries within the City for the cultivation of plants and trees to be utilised in the rehabilitation of the forest's already denuded areas. Non-government organisations shall also be encouraged to participate in the programme by

encouraging them to establish their own forest management projects within the City.

- **Urban Forestry Programme**

The Urban Forestry Programme shall be implemented in parallel with the Forest Protection and Rehabilitation Programme. It involves the designation of strategic areas within the City as mini-forest parks. The City government shall acquire lands within the City for the specific purpose of development into mini-forest parks. In addition, all residential, industrial or mixed-use area developers will be required to allocate areas for the same purpose. These are especially crucial on already moderately populated areas of the City that have 18 percent and above slopes. These are within Barangays Kaypian, Tungkong Mangga, Sto. Cristo, Citrus, Maharlika, and Gaya-Gaya. The mini-forest parks will not only be established as natural slope covers but they shall also be recreational zones that will provide refuge from urban and traffic noise.

This programme shall likewise involve the conduct of tree planting activities along the major and minor roads of San Jose del Monte, with the active participation of students from different schools and colleges within the City. The existing Clean and Green Programme of the local government shall be continuously implemented and enhanced through the Urban Forestry Programme.

As with the Forest Protection and Rehabilitation Programme, it shall entail the establishment of seedling banks and nurseries within the City. The programme shall be spearheaded by the CENRO, CPDO and the CAO. Non-government organisations or private sector groups could also be tapped to provide assistance and financial support.

4.5 Summary of Programmes and Projects

Table 4.1 presents the summary of programmes and projects on Environmental Management.

Table 4.1 Summary of Environmental Management Programmes and Projects

Code	Project Title	Location	Fund Source	Timing	Total Project Cost (PhP)	City Counterpart (PhP)
ENV-1	Air and Water Quality Management Programme					
	Pollution Monitoring Centre, Monitoring Team and its Air and Water Quality Monitoring Activities	All Barangays	City government , private sector	ST-LT	6,500,000.00	1,950,000.00
ENV-2	Forest Management/ Reforestation Programme					
	Information Campaign on Forest Management and Protection	Barangays San Isidro and Paradise III	City government	ST-LT	250,000.00	250,000.00
	Bantay Gubat Groups and its Monitoring Activities	Barangay San Isidro and Paradise III	City government	ST-LT	500,000.00	150,000.00
	Seedling Banks/Nurseries	Barangay San Isidro and Paradise III	City government	ST-LT	500,000.00	150,000.00
ENV-3	Urban Forestry Programme					
	Land Acquisition	Barangays Kaypian, Tungkong Mangga, Sto. Cristo, Citrus, Maharlika, Gaya-Gaya, and the other barangays west of Quirino Highway	City government	ST-LT	15,000,000.00	15,000,000.00
	Clean and Green Programme/ Tree Planting Activities	All barangays west of Quirino Highway	City government , private sector	ST-LT	1,000,000.00	300,000.00
	Seedling Banks/Nurseries	All barangays east of Quirino Highway	City government	ST-LT	500,000.00	150,000.00
ENV-4	River Management / Protection Programme					
	River Management Plan	Kipunggoc, Sta. Maria and St. Cristo River Systems	DENR, Int' l Funding Agencies	ST	1,000,000.00	
	Information Campaign on River Management / Protection Programme	All barangays along Kipunggoc, Sta. Maria and St. Cristo River Systems	City government	MT	250,000.00	250,000.00
	Implementation of the River Management Plan	All barangays along Kipunggoc, Sta. Maria and St. Cristo River Systems	DENR, Private Sector and Non-Government Agencies	MT-LT	2,000,000.00	600,000.00

Table 4.1 Summary of Environmental Management Programmes and Projects (cont.)

Code	Project Title	Location	Fund Source	Timing	Total Project Cost (PhP)	City Counterpart (PhP)
ENV-5	Integrated City Solid Waste Management Programme					
	Information Campaign on Integrated City Solid Waste Management Programme	All barangays	City government	ST-MT	250,000.00	250,000.00
	Comprehensive Study on Solid Waste Management	All barangays	City government , International Funding Agencies	ST-MT	1,000,000.00	300,000.00
	Procurement of Garbage Collection Equipment	All barangays	City government , International Funding Agencies	MT	5,000,000.00	1,500,000.00
	Development/Construction of Materials Recovery Facility and Sanitary Landfill	Barangay Minuyan Proper	BOT, International Funding Agencies	ST-MT	250,000,000.00	
TOTAL					290,250,000.00	20,850,000.00

Note: ST = Short-term (2002-2004); MT = Medium-term (2005-2007); LT = Long-term (2008-2012)