



GEF Small Grants Programme

TITLE: Case Study on Sustainable Waste Management Practices

Project No: MAR/SGP/OP5/YR3/CORE/CC/14/06

Grantee: Association Kinouété in collaboration with the Mauritius Prison Services

Location: Petit Verger Prison

SGP Contribution: USD 50,000

In-Kind Co-Financing: USD 107, 733

Project Duration: 2 Years

Number of people served: 20

Focal area: Climate Change

Background

Land filling of waste is considered as the last treatment option in the Integrated Solid Waste Management (ISWM) hierarchy. With the increasing amount of wastes going to the landfill there is an urgent need to create and establish a sustainable waste management strategy. It is true that the implementation of any waste management strategy falls under the responsibility of the Local Government. However, it is also believed that institutions and communities must participate to establish proper waste management practices.

Project Objectives and Key Activities

The project objectives are:

- To develop a sensitization campaign on wastes segregation at the prison and at the community level for green wastes.
- To carry out a waste characterization study at the prison so as to identify potential waste treatment options in view of decreasing the amount of wastes going to the landfill.
- To create meaningful activities for detainees in view of their rehabilitation and resettlement.
- To train detainees and officers on the making of compost on a large-scale basis, for example, in windrow and to outline the various design requirements for a large-scale composting facility.
- To generate income through sale of compost.
- Uses of compost produced to the prison garden.

Environmental Impact

There was a very good participation of the detainees and prison officers in the project. The required wastes for the composting set-ups were readily available for the waste characterization study. One compost drum was set up and a total of 112.5 kg of organic wastes were prepared and 55.5kg were used for composting in the rotary drum composter. The table below shows the composition of the composting mix.

Organic Wastes	Weight (kg)	Equivalent number of buckets
Brown Leaves	10	1
Vegetables Wastes	76.5	4
Green Grass	6.5	1
Poultry Manure	11	½
Brown Grass	2.5	1
Brown Branches	6	1/4
Total Amount Prepared	112.5	
Composting Substrates in Drum	55.5	

A waste characterization study was carried out at Prison. It can be observed that yard wastes constituted of the highest amount (52%) of wastes being produced at the prison, followed by organic wastes (38%). The 2 percent of plastic bottles are mainly PET bottles which are already diverted for recycling purposes. No textile, glass and cardboard waste have been recorded. The 2 percent of plastic bag was principally composed of packaging. From the results obtained from this characterization study, it can be deduced that Petit Verger Prison has a great potential for composting its organic wastes which represent 90% of the wastes stream.

Estimated yearly collection of green waste would be an approximate of 56 tons (14 tons for every 3 months) and estimated yearly production of compost will be an approximate of 15 to 20 tons.

Socio-Economic Impact

Theoretical training sessions were carried out on the basic principles and techniques of composting as well as on compost use. Demonstration sessions on how to produce compost using the rotary drum composter and on germination test (phytotoxicity bioassay) were also conducted for the detainees as well as for the prison officers.

The participants of these training sessions were encouraged to compost their organic wastes using the rotary drum composter. The theoretical training consisted of: (1) the status of solid wastes generation and disposal in Mauritius; (2) the composting process; (3) composting parameters; (4) how to make compost in rotary drum composter; (5) benefits of composting; (6) monitoring of temperature, moisture content; (7) assessment of compost facility; (8) germination test.

The existing composting shed at Petit Verger Prison has been re-designed so as to meet the requirements for successful windrow composting processes. The following modifications have been brought to the existing composting shed:

- ✚ The extension of one compartment;

- ✚ Construction of a slope of 2^0 for the flooring of the first compartment so as to prevent accumulation of leachate that can be generated during the first 3 weeks of the composting process.

New windrow composting practices have been implemented at Petit Verger Prison as follows:

- ✚ Two windrow composting processes can be set-up in the extended compartment;
- ✚ After at least 3 weeks of composting, the composting mass has to be transferred to the second compartment by reducing the size of the windrow;
- ✚ After an additional of 3 weeks, the degraded composting mass has to be moved to the last compartment, thus allowing the first 2 compartments to be filled with new composting substrates;
- ✚ The composting process last around 6 to 7 weeks, after which, it can be left for maturation for 2 additional weeks before utilisation. This enables complete stabilisation of the composting mass.

Policy Impact

The Sustainable Waste Management Practices project is a very innovative one and it has enable the Organisation to win the Grand Prize Winner of the Public Service Excellence Award 2014. Many stakeholders, among which the Ministry of Environment, Atics Ltd, Solid Waste Recyling Ltd, the Community of Pointe aux Sables are very interested in this project. The Ministry of Environment has shown its interest in procuring the compost produced at Petit Verger Prison.

The Sustainable Waste Management Practices project falls well in line with the Government objectives in having a sustainable development and in bringing out environmental awareness.

Youth Engagement and Participation

An environment day had been organised last year with the London College where students participated in the environmental Upliftment and cleaning in the vicinity of Petit Verger Prison. Such activities are currently being planned and it aims at engaging youth to become active participants / contributors to making their homes, schools, community better and more sustainable places to live, work and play.

Gender Mainstreaming

Gender is generally associated with equal power and access to choices and resources. It has become increasingly accepted that men and women should play an important role in sustainable waste management and that this role could be enhanced through the strategy of gender mainstreaming. Gender and diversity mainstreaming is the concept of valuing the different implications for women, men and vulnerable social groupss of this project intended outcomes. It is also about integrating the



diverse needs of these groups into the planning and implementation of the project to better reflect the whole communities' development aspirations as well as to increase the sustainability of the project.

An important advantage accounting for the sustained interest in composting activities is that composting integrates well with women's triple roles: household and family care, income generation, and community management. These activities will help women and men detainees to acquire necessary knowledge and techniques in compost making and uses. This will definitely be a stepping stone in their rehabilitation process as well as helping them become financially independent. The involvement of women and men is also crucial to the success of community-based Sustainable Waste Management practices project.

In terms of women's roles as community managers, the NGO, in initiating the composting project, will target pre-existing women's groups in the community. Composting will also provide a forum for women to exchange information and ideas.

Community based waste management can improve social capital of women, men and vulnerable groups by giving them leadership and networking opportunities and building solidarity among them.

Vulnerable groups in this project refers to groups that experience a high risk of poverty and social exclusion. Normally, they do not enjoy meaningful participation in development activities and do not receive the benefit of development interventions. These groups include youth, elderly, disabled, poor, migrants and minority (religious, cultural, ethnic) members of a community.

Replication and up scaling

This innovative eco-friendly project is widely appreciated in the local community as well as to the general public. The local community in the vicinity of Petit Verger Prison, Pointe aux Sables, has been identified as close collaborators in the Sustainable Waste Management Practices at Petit Verger Prison project.

The community has been sensitized on 'Maurice Ile Durable' (MID) concept and motivated to contribute in the sustainable development of Mauritius.

Sensitization campaigns have been organised in the community of Pointe aux Sables. The objectives of the sensitization campaigns were as follows:

- ✚ To disseminate information on the project Sustainable Waste Management Practices at Petit Verger Prison among the community of Pointe aux Sables;
- ✚ To create an awareness on the waste management system in Mauritius;
- ✚ To sensitize the community on the importance of source-segregation practices;



- ✚ To provide guidance on sorting and collection of green wastes;
- ✚ To introduce the concept of composting.

Pamphlets have also been designed and distributed to the inhabitants of the region and provided them with information on waste segregation, compost making and the project at Petit Verger Prison.

Lessons learned

This initiative will help in reducing the amount of wastes going to the landfill and will also show to the community as well as to the detainees that the wastes that are thrown away can be converted into a resource.

It is to be noted that a “Monitoring and Evaluation Committee” has been set-up for this project and the main responsibilities of this committee are:

- ✚ Monitoring of Input;
- ✚ Monitoring of Output;
- ✚ Monitoring and evaluation of finance;
- ✚ Monitoring and evaluation of environmental and social aspect;
- ✚ Monitoring and evaluation of quality.

Members of this Committee are from the Prison Department, Forces Vives of Pointe aux Sables, Atics Ltd, Association Kinouété, University of Mauritius and from the Solid Waste Recycling Ltd.