

WASTE MANAGEMENT PROJECT PROPOSAL OF MUST UNESCO CLUB

INTRODUCTION

Following the environmental research, participation in greening Africa workshop and the bid for the realisation of sustainable development, the Meru university UNESCO club has drafted a waste management project proposal. This project will empower the local communities to fulfil the global missions such as protection of environment, reduction of poverty level, creation of employment and peace promotion which are the key pillars of UN agenda of 2030.

BRIEF DESCRIPTION OF THE PROJECT/ ENVIRONNEMENT NEEDS :

Urbanization and population growth exert pressure on land, energy, water and ecosystems. Intense charcoal and firewood consumption culminates into deforestation while piles of bio-waste (raw materials for alternative fuels) are allowed to pollute the environment. Over 70% of populations in Kenya depend on charcoal and firewood for cooking and heating especially in educational institutions, hotels, restaurants, tea curing factories and household cooking. The National Environment Management Authority (NEMA) predicts that at the rate of firewood and charcoal consumption, there will be a total depletion of forests by 2050 in Kenya. Current initiatives at energy efficiency through improving cookstove may not be sufficient in absence of finding alternative energy sources.

PROPOSED SOLUTION DESCRIPTION (NAME):

From Vulnerability to Resilience: Communities' Engagement in Recycling Municipal/ur Waste into Fuel Briquettes

GENERAL OBJECTIVES:

Develop capacity of communities to recycle municipal/urban waste into fuels and soil nutrients for protecting forests, promoting organic farming and improving municipal sanitation.

SPECIFIC OBJECTIVES:

1. Produce Information, Education and Communication (IEC) materials to promote awareness of need for environmental preservation; and reduce cultural and psycho-social sensitivities towards reuse of recycled products
2. Develop training programs for education institutions and communities to enable individuals undertake technical, financial and managerial operations of Waste to Wealth Enterprises (WWE)
3. Promote policy frameworks that support the recycling of bio-waste into fuels and soil nutrients
4. Develop inter-sectoral linkages and partnerships for promoting Waste to Wealth Enterprises (WWE)

ADVANTAGES:

In Kenya, 80% of municipal waste is organic and a potential raw material for production of bio-fuels, soil nutrients and biocides

The potential demand for briquettes exist in form of educational institutions, hotels, poultry farms, etc

BENEFICIARIES:

_(highlight who are they specifically and their number approximatively)

1. The youths, women and other groups in the urban who are not engaged in any productive employment.
2. Urban authorities that spend 50% of their budgets on waste management. Waste to wealth enterprises will reduce the budgets following stakeholder's engagement in the waste management
3. Private waste collectors in municipalities who are currently focused on waste collection and disposal. The project will broaden their operations to include waste processing and commodification. Value will be added to their work.

SUSTAINABILITY APPROACH DESCRIPTION:

Given that the project promotes waste to wealth enterprises, its sustainability will be guaranteed by the profits generated from the activities. Since the feasibility of factory-scale briquettes production has been demonstrated. The business scenario is based on monthly production of 20,000 tons of briquettes as shown below;

Capital investment: producing 20,000 kg monthly requires; Electric sheaving machine (\$300); Carboniser (1700); premises (\$5000); automated briquetting unit (\$3200); solar drier (\$2000); packaging and branding devises (\$300); totals **\$12500**.

Routine operational costs: This involves securing bio-waste; labor costs for sorting (\$1200); cost of binders (\$150); Power electricity/diesel (\$210); machine maintenance costs (\$200); packaging and distribution cost (140); management/administrative costs (\$200); Statuary tax (\$300) totals **\$2400**

Briquettes sales; Gross sales from 20,000 Kg at \$ 0.20 per Kg (\$4000); Net profit: *gross sales* minus *total operational costs* \$4000-\$2800 (\$1600). Payback period is 9.3 months (**\$14,900 total start-capital divided by \$1600; net profits**). Based on this proof-of-concept project, it has been estimated that recycling 72,000+ tons of bio-waste generated monthly in Meru county alone could produce 10,800 tons of briquettes monthly; enough to serve 17% of the 200+ schools in Meru county. This potentially generates \$27,600; providing jobs to 1000+ urban dwellers. It proves that the recycling scheme is viable even before considering social-benefit accounting. People who cook using firewood for preparing meals. In the pilot project, cooks are expected to report reduced breathing complications, chest pain and red eyes when using briquettes for cooking.

PERSONS TO BE INVOLVED FOR THE PROJECT IMPLEMENTATION:

Teaching and Non- teaching Staff , Students of Meru University of science and technology and community around the university.

Meru university family will work in partnership with the following public agencies: i) National Water and Sewerage Corporation (NWSC); ii) National Environment Management Authority (NEMA); iii) Ministry of environment and agriculture Meru county.

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