



Senegal Plastic Recycling Project

November 2003 — October 2005

A glimpse of the urban and peri-urban landscape in Senegal reveals the problem posed by inadequate waste management. While removal systems exist in the country, they are far from being able to evacuate all of the garbage generated by urban populations, and residents resort to informal dumping on vacant land, leading to the visual impression that any unbuilt property is a landfill. As the construction boom in Dakar continues, vacant land is increasingly cleared of its garbage to make way for buildings, so that rising quantities of garbage have to be concentrated on less and less land. While some garbage is biodegradable, plastic waste is resistant to rot, allowing it to quickly accumulate over time.



Photo: Brendan Baker/Engineers Without Borders

Primary Funder
USAID/Senegal

Techniques and technologies for recycling plastic have been developed in industrialized countries and have also been adapted to low-income countries like Bangladesh and Vietnam. Profitable plastic recycling also exists in Senegal. Private recycling enterprises are buying plastic waste and processing it into new items, but the ability of the industry to grow and keep up with the increasing amount of plastic waste has been stunted by technical constraints.

One of the primary technological challenges faced by the recycling industry is the exorbitant energy cost of operating existing technologies for melting and re-forming plastic into new material. Currently it is not profitable for the industry to melt recycled plastic, which in turn severely limits the range of products that can be produced and the overall volume of plastic that can pass through the recycling industry.

EnterpriseWorks' pilot plastic recycling program in Senegal will address this issue by developing and introducing a new technology for the grinding of plastic waste. By not having to melt the plastic, this technology requires less heat and energy, providing an economical way for recycling enterprises to remake the plastic waste into a wider array of consumer and industrial products.

With the capability to produce a greater number of products, the plastic recycling industry could grow dramatically. For example, the manager of one plastic recycling factory estimates that by being able to manufacture plastic garbage cans, his annual volume of plastic would increase by over 100 tons. And if plastic recycling enterprises are able to process more plastic waste, it will present new income-generation opportunities for waste collection and pre-processing operations.

EnterpriseWorks Worldwide Programs & Strategy

This is a pioneering project activity whose main purpose, besides the obvious reduction of plastic waste and creation of jobs and income, is to identify and develop the technical means to expand the subsector in the future. A system developed in Senegal by EnterpriseWorks and USAID can potentially be replicated in a number of other countries to address the same problem and achieve similar benefits.

OBJECTIVES

- Test and disseminate fine-grinding mill for reducing plastic waste to the consistency of powder.
- Transfer technology to existing plastic recycling enterprises that manufacture new products from plastic waste.
- Develop inexpensive model of coarse grinder for plastic waste to be used by small collection enterprises.
- Identify and train existing and newly forming enterprises to collect, sort, wash, and compact plastic waste in order to sell it to an expanding recycling industry.
- Train local metal shops to produce mills and grinders for sale to collection and recycling enterprises.
- Advertise use of new technologies to get more enterprises interested and involved.