

# Protection of the Environment Through the Management and Exploitation of Solid Waste: The Tunisian Experience

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Urbanization and industrial development are responsible for numerous manifestations of pollution. Tunisia has witnessed in the last two decades, as in other developing countries, rapid urbanization due to demographic development and to the creation of several large industrial projects. This contributed to the pollution of surface water and air, in addition to increase in waste.

## The Ways to Eliminate Solid Waste

There are three main ways of disposing of solid waste: the technique of controlled waste dumps, incineration, and the transformation of waste into organic fertilizers.

The Technique of Controlled Waste Dumps: This technique has several disadvantages, in spite of its qualities manifested both in the ease and the low cost of its set up. The disadvantages include significant pollution and danger to the surrounding atmosphere, and the difficulty of locating adequate and large enough spaces.

Incineration: This is a healthy way. However, it also leads to air, water and soil pollution, via the gas escaping from the burning operation and the pollutants intruding into the soil, thus, leading to ground water contamination. In addition, it is an expensive technique, especially in situations where the heating energy is not put to use.

Transformation into Organic Fertilizers: The use of such fertilizers helps in decreasing the costs spent on chemical fertilizers. Its use also contributes to the replenishment of natural elements.

## Urban Domestic Waste Management in View of the Tunisian Experience

A well-organized sorting of domestic waste leads to an economization of primary material and decreases the cost of the collection and treatment of domestic waste. It can amount to the recycling of 30-35% of urban waste.

## Characteristics of Domestic Waste in Tunisia

Kinds	%	Components
material of animal or plant origin	77.6	organic material quick to ferment
paper and carton	8.2	organic material with low or no fermentation
plastic	3.6	
cloth material	1.1	
glass	1.1	solid material
metals	3.8	
other	1.9	



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Characteristics of Domestic Waste in Tunisia: Each Tunisian produces around 500 grams of domestic waste daily. This represents 1.2 million tons yearly, 50% of which is collected in uncontrolled waste dumps, in proximity to the cities.

Biological Transformation of Domestic Waste: Domestic waste in Tunisia is characterized by its high organic content: more than 80%. Since Tunisia suffers from a serious lack of organic fertilizers, an efficient exploitation of domestic waste can be used to replenish the eroding soil. Thus, the technique of biological transformation is the most efficient in treating waste and in fertilizing the soil. However, to adopt this technique in Tunisia successfully, it is necessary to investigate the issue from all angles in order to avoid the pitfalls suffered by other Third World countries:

incompatibility of the transformation operation with the nature of the waste; inefficient marketing operation and high expense of organic fertilizers...

Collection and Recycling of Domestic Waste: The volume of waste resulting from food containers in Tunisia comes to around 200,000 tons per year. Tunisia is currently capable of recycling 50,000 tons yearly. This operation is still in its preliminary phase as far as exploiting primary material: it remains limited to used paper and oils. Among the factors that prevent serious interest in recycling projects and their development is the way of collecting and sorting domestic waste, on the one hand, and the expensive nature of recycling, on the other.

The city of Tunis has undertaken the sorting of carton from garbage centers,

starting January 1991. It was able to obtain a yearly volume of 150 tons that could increase up to 12,000 tons if special equipment is used. The Ministry of the Environment intends to issue a legislation concerning the amount of food containers available in the market, especially plastic containers. The Ministry also projects to develop sorting out techniques and to introduce pilot projects in one of the capital's quarters to be followed by an evaluation and its introduction across the Republic.

However, the success of this experiment depends on the active involvement of the consumers through the organization of media campaigns with the aim of sensitizing public opinion as to the importance of recycling. The media campaign would involve newspapers, television, radio and billboards.

The sensitization of women through media campaigns is of great importance considering their role in household work and their educational impact on the new generation. In this context, women can decrease the volume of domestic waste through: limiting their acquisitions to essentials; avoiding items that can be used only once such as plastic bottles; choosing containers that can be recycled●

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