

**Waste**

**(WS06)**

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| **Fact Sheet WS06: Recycle organic waste onsite to produce compost** |
| **Overview** |
| *Objective* | Implement significant reduction in waste management costs and reduce carbon footprint by adopting on-site composting practices. |
| *Action* | Install small-medium scale bins/composters |
| *Key Challenges* | * Long Composting Duration;
* Low Nutrient and Agronomic Value;
* Detection of Pathogenic Microbes in Composts;
* High fixed and operating costs for In-vessel systems; and
* Finding a market to the produced compost (This is applicable if the product is not consumed within the site).
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| *Regulatory Aspects* | * Environment Law No. 4 of 1994 amended by Laws 9/2009 and 105/2015 and its Executive Regulations state the legal requirements for siting treatment and disposing sites. Moreover, the disposal of rejects from treatment sites shall be within a controlled or engineered landfill.
* Environment Law No. 4 of 1994 amended by Laws 9/2009 and 105/2015 and its Executive Regulations state the legal ambient air emission limit, noise limit, and the treated wastewater discharge limit to marine environment.
* Decree 44/2000 indicates the allowable limit for wastewater disposal to public sewage network. Law 48/1982 and its executive regulations indicate the allowable limits for disposal of treated wastewater to water bodies.
* Law 53/1966 - Organic Fertilizer production for trading states all the requirements and the production procedure relevant for production of compost
* Decree No. 717/2019 issued by the Ministry of Housing, Utilities, and Urban Communities obligates following the “Egyptian Code of Design Principles and Implementation Conditions for Municipal Solid Wastes Management Systems" in MSW projects.
* Egyptian Code of Design Principles and Implementation Conditions for Municipal Solid Wastes Management Systems
* This code specifies the specifications of compost produced at such composting facilities.
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| **Process** |
| *Complexity* | Low to Moderate – organic waste recycling |
| *Equipment & Material*  | There is a range of methods for composting, from simple “no-tech” methods, to windrow methods, to specialized bins that accelerate the composting process. Generally, the simpler methods are cheaper and slower, while the engineered systems are faster, require less space, and afford more control over the composting process, reducing risks of odors. |
| *Human Resources* | Engineers and manual labours |
| **Considerations** |
| *Advantages* | * Composting is a safe way of managing organic wastes
* Reduces methane emissions from landfills and lowers carbon footprint.
* Reduces the need for chemical fertilizers.
* Used as marketing tool to increase the number of customers.
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| *Disadvantages* | * Composting process associated with odor production and release of greenhouse gases (CO2, SO2, and NO2)
* Not all organic wastes can be used for composting
* separating compostable materials (e.g., yard waste, vegetable cuttings, fruit peels) from non-compostable waste (e.g., plastics, meat and fatty food waste, metals) as they are generated from source
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| **Impact/Benefits** |
| *Environmental* | * Reduced manpower requirements for waste handling and disposal
* Reduced haulage and landfill tipping fees
* Revenue from the sale of recyclables (if not consumed within the facility) and decreased consumption of chemical fertilizers
* Protection from insect and rodent infestations;
* Reduction of fire hazards
* Improved community relations
* Compliance with government regulations and codes
* Reduced odors and improved aesthetics and sanitation; and
* Increased guest satisfaction.
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| *Employment Opportunities* | Moderate – technical labors |