Water and **Environment Support**

in the ENI Southern Neighbourhood region



Technical assistance on sustainable Medical Waste Management Activity No: N-E-PS-1

Consultation and Training Workshop

16 – 18 May 2023

HCW Treatment





Adequacy of Infrastructure



- Adequate infrastructure at handling areas is essential for achieving compliance to standards and guidelines.
- Subsequent to notification of bylaw and other legal provisions, waste generators and producers are required to upgrade their facilities so as to comply with revised standards.
- The following infrastructure is essential for auditing performance of waste generators or handlers:
- (a) Vehicles
- (b) Area of operations
- (c) Upgradation of Combustion Chamber
- (d) Upgraded shredders, autoclaves, microwaves or other treatment tools



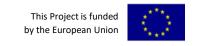


treatment



Health Care Waste Treatment





Health Care Waste Treatment



Biological Procedures	Composting	Composting is the natural, biological decomposition of organic matter by fungi, bacteria, insects, worms and other organisms. Successful composting entails the management of the decomposition process so that it is relatively quick, safe and clean.
	Vermi composting	Vermicomposting is the process of degradation of biodegradable matter through worms. The specialized worms used can speed up the digestion process through the vigorous digestion of the materials.
	Anaerobic Digestion	During anaerobic digestion biodegradable waste is degraded in absence of oxygen. The process occurs due to anaerobic organisms, which results in production of methane as a by-product.



Steam-based treatments:	Autoclaving	Autoclave is a process of steam sterilization under pressure. It is a low heat process in which steam is brought into direct contact with the waste material for a sufficient duration to disinfect the material. This technique has been used for a long time in HCFs for sterilization of reusable medical equipment
	Microwave	Microwave treatment is a steam-based treatment technology where microwave energy generates moist heat and steam by heating the moisture in the waste
	Frictional Heat Treatment	Frictional Heat Treatment: This technology uses both steam as well as dry heat. High-speed rotating shredders generate heat and the moisture in the waste turns into steam.
	Integrated steam-based treatment system	Integrated steam-based treatment system: The integrated steam-based systems combine internal shredding, steam treatment-mixing and drying in a continuous ⁵ unit. Since most autoclaves and hybrid autoclaves



Chemical		Chemical Disinfectants, Alkaline hydrolysis,
treatment		Chemical decomposition are Chemical
		treatment methods.
Burial based	Encapsulati	Encapsulation and Inertization: Encapsulation
Disposal	on	involves the filling of the containers with waste,
Methods	and	adding an immobilizing material and sealing the
	Inertization	container. The process uses either cubic boxes
		made of high- density polyethylene or metallic
		drums. When containers are three quarters
		filled with sharps, pharmaceuticals and chemical
		waste, an immobilizing agent such as plastic
D		foam, bituminous sand, cement mortar or clay is
TAN		poured into







Burial	Sanitary Iandfill	Sanitary landfill: Sanitary landfills are an engineered method, designed and constructed to keep the waste isolated from the environment. There should not be any contamination of the soil, surface, and ground water
	Burial	Burial: Hazardous waste can be buried in a special pit. The bottom of the pit should be at least 2 m above the water table. When the level of the waste reaches up to 30 to 50 cm to the surface of the ground, the pit needs to be filled with dirt, sealed with concrete and a new pit should be dug if necessary.
AN	Septic or	Septic or Concrete Vault: This method can be used for the

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HCW Systems Sustainability:



- HCWM plans are roadmaps towards creating and sustaining good HCWM systems in healthcare facilities.
- Participatory planning promotes stakeholder ownership.
- Funding and human resources allocated to HCWM are essential for sustainability.
- Commitment by the administration, fostering environmental champions among staff, and capacity building can bring success.
- Planning is an adaptive process with periodic review and updating





For more information:











