

Reducing waste in Western Cape landfills

Organic Waste Restriction – 2022

Organic waste that is sent to landfill doesn't harmlessly breakdown. It has a big impact on the environment as it decomposes and releases methane.

The Western Cape Government has implemented a **restriction and prohibition** on organic waste going to landfill.

This newsletter looks at some of the key issues around this topic in more detail.

PROHIBITION
100%
2027

RESTRICTION
50%
2022

National bans and legislative frameworks

Nationwide, landfills are rapidly filling up and new potential sites are in short supply due to the lack of available and suitable land. The Department of Forestry, Fisheries and the Environment (DFFE) has developed regulations in the form of the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008), National Norms and Standards for disposal of waste to landfill (GN No. R. 636 of 2013) to restrict and prohibit certain waste types from going to landfill, and these include abattoir waste, green waste, and liquid waste. The graph below provides the timelines for the restriction and prohibition of these waste types to landfill.

The norms & standards requires 25% diversion of separated garden waste from landfill to take effect within 5 years, and 50% diversion within 10 years, i.e., from 2018 to 2023, respectively. With respect to liquid waste, the regulations state that waste which has an angle of repose less than 5 degrees or waste with a moisture content of less than 40% had to be completely diverted from landfill by August 2019. National government has subsequently published the Draft National Norms and Standards for the Treatment of Organic Waste and the National Norms and Standards for

Organic Waste Composting to fast-track the beneficiation of organic waste. The Draft National Norms and Standards for the Treatment of Organic Waste published as GN No. 275 on the 29th March 2021 aims at controlling the processing of organic waste material at any facility that falls within the threshold as described in paragraph 3 of the Norms and Standards in order to avoid, prevent or minimise potential negative impacts on the biophysical environment.

The National Norms and Standards for Organic Waste Composting was published as GN No. 561 on the 25 June 2021 and indicates that:

- A facility that has the capacity to process more than 10 tons per day of compostable material needs to register in terms of and adhere to the Norms and Standards.
- A facility that has the capacity to process less than 10 tons per day of compostable material needs to only register in terms of the Norms and Standards, and adhere to the relevant municipal by-laws and s28 (duty of care) of NEMA. ●

Organic Waste Diversion Targets as set by the National Norms & Standards



Legislative framework for Organic Waste

Click on the images below to read the full document online.



Western Cape perspective

Information highlighted within DEA&DP's position on dealing with organic waste in the province is listed below. Status quo reports and subsequent guidelines have been developed for abattoir, garden waste and separation of waste at source from 2015 to 2019. In 2017, the WCG made a policy decision to restrict 50% of organics being sent to landfill by 2022 and the prohibition of all organics to landfill by 2027 (Position paper on Organic Waste Management, DEA&DP, 2017). The landfill restriction and prohibition on organics will also ensure that national waste diversion targets are met. In the Western Cape, 40% of all waste delivered to landfill is organic waste, estimated at more than 3-million tons annually. The provincial position is therefore to maximize the prevention strategies and to increase the diversion rates of organic waste from landfills to opportunities that are value adding. Furthermore, all licences issued by the Department have been amended and municipalities are now obligated to submit Organic Waste Diversion Plans. An Organic Waste Diversion Plan will enable that various organic waste types are appropriately benefited locally or within the district municipality and require the following:

Provide a status quo of the municipalities organic waste, including:

- Sources of organic waste
- Volumes disposed at municipal and regional waste disposal facilities
- Current organic waste diversion rate
- Current procedures for diversion from waste disposal facilities

Method as to how verification will be achieved

- Set annual targets and identify procedures that will be implemented to:
 - Reach 50% diversion by 2022
 - Reach 100% diversion by 2027
- Identify procedures/methods to reach diversion targets set

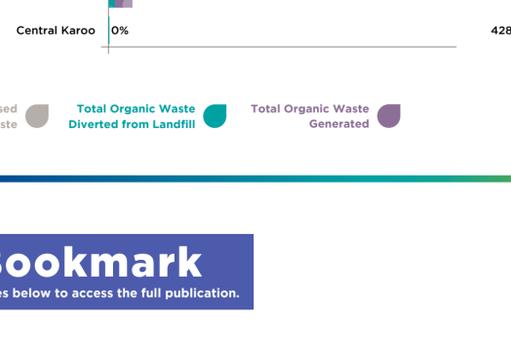
DEA&DP has developed and workshopped a generic diversion plan aimed at assisting municipalities to develop its own diversion plan. Infrastructure and technologies for diversion and beneficiation should also be supported and regional and collaborative approaches should be taken with regards to organic waste minimisation in the Western Cape. To date, 11 out of the 30 Municipalities have submitted organic waste diversion plans to the Department for review.

The Department has partnered with industry bodies such as ORASA to promote alternative organic waste treatment technologies and the association has also been instrumental in assisting the Prince Albert Municipality in the Central Karoo District area with the development of their Organic Waste Diversion Plan. For the ban to work, households, factories, businesses, and restaurants must prioritise source separation. ●

Total Organic Waste Generated in the Western Cape (tonnes)

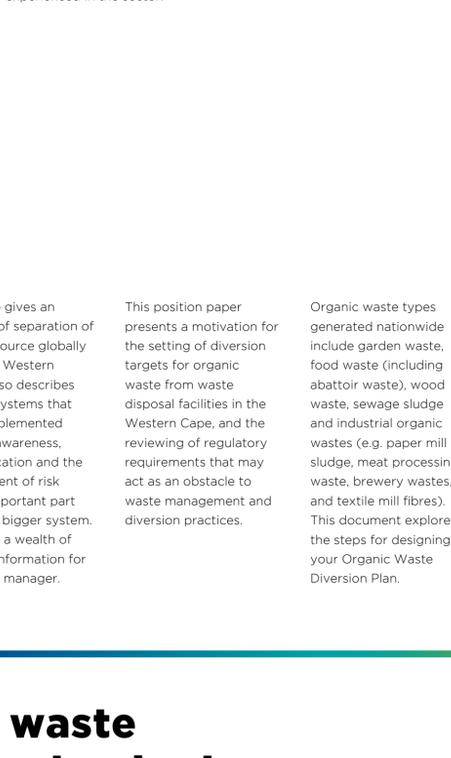


Total organic waste generated vs Total organic waste diverted from Landfill in the WC Province (tonnes) for 2020



The Bookmark

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This guideline provides various role-players in the abattoir sector with the necessary guidance to ensure compliance with the legislation while also providing the various options available for the management of this waste type that ensures the protection of the environment and human health. The guideline also explores the possibility of regional cooperation amongst role players as an option in resolving some of the challenges experienced in the sector.

The guideline adopts the principle of green waste as a resource and proposes various environmentally friendly options for its management and beneficiation. Management techniques and technologies are briefly explored to provide stakeholders in the sector with the required decision making tools when managing green waste.

This guide gives an overview of separation of waste at source globally and in the Western Cape. It also describes different systems that can be implemented and how awareness, communication and the management of risk play an important part within the bigger system. It includes a wealth of practical information for any waste manager.

This position paper presents a motivation for the setting of diversion targets for organic waste from waste disposal facilities in the Western Cape, and the reviewing of regulatory requirements that may act as an obstacle to waste management and diversion practices.

Organic waste types generated nationwide include garden waste, food waste (including abattoir waste), wood waste, sewage sludge and industrial organic wastes (e.g. paper mill sludge, meat processing waste, brewery wastes, and textile mill fibres). This document explores the steps for designing your Organic Waste Diversion Plan.

Alternative waste treatment technologies in the Western Cape

The need for alternative waste treatment technologies (AWTT) such as anaerobic digestion and composting is becoming increasingly important as landfill airspace becomes scarcer. According to a comparative study (AECOM, 2016) on implementing AWTT, there are challenges for the establishment of any AWTT or waste disposal facility ranging from environmental authorisations, permitting, licensing and social issues. The capital expenditure and maintenance costs of technologies for treating waste are substantial and landfilling still appears to be less expensive than AWTT. Further challenges are the constant quality (the absence of waste separation at source and season variation of waste composition causes variation in the quality of the feedstock) and quantity of the feedstock required for the AWTT which may not be guaranteed and limits the availability of waste for AWTT. Alternatively the technology was developed based on international waste streams, and is not suited in a South African context, as our waste streams are different. These challenges could be a contributing factor to the limited AWTT available to treat organic waste in the province as there are several licensed facilities that are currently closed.

organic material generated within the municipality might not be enough to make the project viable. Apart from the quantity, other aspects also need to be considered for the treatment of organic waste, such as transporting of the waste, space constraints at facilities as well as the quality of the waste received. It was recognised that facilities to treat organic waste along with associated budgets are needed. These facilities need to be more strategically placed to ensure that they are in proximity to the waste source. The need for a planning and development forum, which could provide for engagement with various stakeholders, is encouraged. Similarly the Department has held various engagements that performed the function of information sharing opportunities and expert advice with technology experts and various stakeholders.

Despite these challenges the benefits of AWTT are that it transforms organic waste into a valuable resource, contributes to the waste economy through job creation, diverts organic waste from landfill and prevents the generation of greenhouse gases.

Chipping and mulching currently takes place at composting facilities. Anaerobic digestion to produce biogas is a possible option for treating organic waste; however

The distribution of the AWTT facilities for the treatment of organic waste in the province that may be of benefit to stakeholders managing organic waste is provided. ●



1. KNYSNA Sedgfield Sedgfield Composting and Builder's Rubble nsalmons@knysna.gov.za
2. ALBERTINIA SS Composting facility ssorganicspty@gmail.com
3. STELLENBOSCH Langverwacht landscaping Langverwacht@mweb.co.za www.langverwachtlandscaping.co.za 021 880 1853
4. HERMON Tomis Edil Compost www.tomis.co.za 022 448 1680
5. TULBAGH Tulbagh Garden and Builder's Rubble jacobs@witzenberg.gov.za 023 316 8540
6. PRINCE ALBERT HAMLET Prins Albert Hamlet Composting Facility jacobs@witzenberg.gov.za 023 316 8540
7. ATHLONE INDUSTRIAL Ywaste www.ywaste.co.za 021 691 0753
8. MITCHELL'S PLAIN Master Organics info@master-organics.com 021 396 1066
9. BELLVILLE Bellville compost site www.capetown.gov.za/solidwaste 0860 103 089
10. DURBANVILLE Zandam Cheese Biogas project www.zandam.co.za/reference/zandam
11. PHILIPPI Inseco AgriProtein Technologies www.inseco.co.za info@inseco.co.za 087 255 1569
12. CLAREMONT Zero To Landfill (ZTL) Organics www.ztlorganics.co.za 083 696 5138
13. PHILADELPHIA Neutrog Philadelphia www.neutrog.co.za info@neutrog.co.za 021 972 1958
14. MALMESBURY DNA Composting facility 083 256 8168
15. MALMESBURY Reliance Group Trading (Pty) Ltd. www.reliance.co.za info@reliance.co.za 0861 888 784 021 951 3161
16. MALMESBURY Astral / County Fair Facility Anaerobic Digester gerrit.visser@countyfair.co.za 021 804 3013
17. MALMESBURY Cape Dairy Biogas Anaerobic Digester www.bio2watt.com
18. PORTION OF FARM AFDAKSRIVIER 575 Karwyderkraal Composting facility froetze@adm.org.za 028 425 1157
19. GRABOUW Elgin Fruit Juices Anaerobic Digester hein@gcxafrica.co.za 021 859 7160
20. GRABOUW Agri Organics Composting facility www.agriorganics.co.za 021 852 8632

What to do with food waste? Follow the Food Waste Hierarchy.

Both "food waste" and "food loss" encapsulate the overall decrease in total edible food mass that was originally destined for human consumption. Food losses occur during the production, post-harvesting and processing phases of the food supply system. Food waste is defined as something that occurs at the end of the supply chain, during the retail and consumer stages. Together they are referred to as "food wastage".



How consumption and waste contribute to climate change

Production of the products we buy and use cause green house gas emissions and other waste. Its important to note that a key landfill gas, methane, has approximately 25 times the global warming potential than that of carbon dioxide. Food waste sent to landfill and treatment of wastewater also result in these emissions. By using and wasting less, we can reduce emissions.

In South Africa more than 90% of our general waste is sent to our bursting landfill sites.

LESS THAN 10% IS RECYCLED.

10%
greenhouse gas

90%

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