



MEDIA FACTSHEET

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FACTSHEET ON FOOD WASTE MANAGEMENT IN SINGAPORE

Background

1 The amount of food waste generated in Singapore has increased by about 40 per cent over the last 10 years. In 2017, the amount of food waste generated was equivalent to the weight of more than 54,000 double-decker buses. When food is thrown away, the resources used to grow and deliver the food to our tables are wasted. Poorly managed food waste can also cause vector and odour problems, contaminate recyclables and hamper our recycling efforts.

2 To conserve precious resources, there is a need to minimise food wastage and recycle or treat unavoidable food waste. This starts with avoiding food wastage and excess food production. Where this is not possible, excess food should be re-distributed. Lastly, food waste should be segregated for recycling and treatment.

3 Currently, most of the recycled food waste is homogenous food waste from food manufacturing (e.g. soya bean waste and bread waste), which is converted into animal feed. Owners and operators of several premises, including hotels, shopping malls and schools, are also segregating their food waste for treatment using on-site food waste treatment machines.

Minimising food wastage

4 The preferred method to manage food waste is to avoid generating it. Hence, the focus of our current stakeholder engagement efforts is to encourage food wastage avoidance.

Consumers

5 NEA launched a food wastage reduction publicity and outreach programme in November 2015 to increase awareness of the food waste situation in Singapore, as well as to encourage consumers to adopt smart food purchase, storage and preparation habits that can help them minimise food wastage. Since its launch, NEA has further developed the programme to enhance and expand its initiatives.

6 Some of the highlights from the programme include a handy guide with tips on reducing food wastage, which can be viewed at www.cgs.sg, and a 'Love Your Food' Recipe Contest that encouraged the public to submit creative recipes that make use of common types of leftover food. The top four winners had their recipes developed into a video series, and the top 20 winners also had their recipes featured in the updated online handy guide. NEA has also recruited and trained more than 500 Food Wastage Reduction Ambassadors

to date, providing them with knowledge on food wastage reduction and encouraging them to share the tips with their friends and families.

7 NEA has been working with Community Development Councils, grassroots leaders and stakeholders to support ground-up initiatives related to reducing food wastage. For example, NEA partnered the North East District to roll out the 'I Love My Food @ North East' programme in November 2016. In support of the 'I Love My Food @ North East' programme, Punggol East Citizens' Consultative Committee and Rivervale Court Residents' Committee initiated a Community Food Waste Recycling Project and Love @ Food Community Programme at Punggol East Eco-Carnival 2017 to promote awareness on food waste minimisation and recycling in the community.

Private sector

8 To help the food and beverage (F&B) industry reduce food wastage, NEA and the Agri-Food & Veterinary Authority (AVA) have launched food waste minimisation guidebooks for food retail establishments, supermarkets and food manufacturing establishments to further reduce food waste across the supply chain. The guidebooks provide a step-by-step guide and case studies to help such establishments develop a food waste minimisation plan tailored to their needs. The guide can be viewed at the food waste management webpage at www.nea.gov.sg/food-waste-management.

9 As part of the programme, NEA also collaborates with businesses and organisations to display outreach materials on their premises and conducts talks and roadshows to encourage consumers to cherish and not waste food. To date, NEA has collaborated with 50 entities, including supermarkets, food retail establishments, schools and other organisations.

Schools

10 NEA is also working with schools to spread awareness on the importance of minimising food wastage. NEA supports the schools by providing educational resources such as posters, a toolkit, videos, exhibits, games and presentation materials on food waste reduction that schools can use.

Redistribution of unsold / excess food

11 NEA encourages consumers and food establishments to donate their excess or unsold food to organisations such as The Food Bank Singapore, Food from the Heart, Willing Hearts and Fei Yue Community Services. NEA's food wastage reduction guide for consumers includes a list of non-governmental organisations that the public can approach to donate excess food (such as canned and dry packaged goods). Similarly, the food waste minimisation guidebooks for food retail establishments, supermarkets and food manufacturing establishments include a list with the contact details of food distribution organisations. To address food safety concerns, guidelines on the proper handling and re-distribution of unsold and excess food have been incorporated into the guidebooks.

Developing novel solutions to treat food waste

On-site food waste treatment systems

12 In January 2016, NEA launched a pilot project to test the feasibility of using on-site systems to treat food waste at hawker centres. Based on the results from the pilot at Block 628 Ang Mo Kio Ave 4 Market and Food Centre, NEA has established that it is viable to use on-site systems to treat food waste at hawker centres if there is sufficient scale and active participation of the stall-holders to segregate the food waste. On-site food waste treatment

systems have been implemented in seven hawker centres, and the insights gathered from the pilot are used to identify more hawker centres and markets for the implementation of food waste treatment options such as at Kampung Admiralty and Yishun Park hawker centres.

13 To further promote source-segregation and food waste recycling, NEA also supports companies to implement food waste minimisation projects, such as on-site food waste treatment systems under NEA's 3R Fund. NEA has so far co-funded 21 on-site food waste treatment systems at premises such as Resorts World Sentosa, Grand Copthorne Waterfront Hotel and Amara Hotel under the 3R Fund.

Off-site food waste treatment systems

14 Since December 2016, NEA and PUB, Singapore's National Water Agency, have been piloting a project whereby source-segregated food waste is collected from various premises for treatment with used water sludge at a co-digestion demonstration facility located at the Ulu Pandan Water Reclamation Plant. The aims of the pilot are to assess 1) the viability of collecting and transporting source-segregated food waste for off-site treatment, and 2) the potential to increase biogas production by co-digesting used water sludge and food waste.

15 Under the pilot, participating organisations are required to segregate food waste from other types of general waste on-site, and place it into dedicated food waste bins. Food waste that can be accepted for co-digestion include all raw/cooked food waste. Waste that cannot be accepted includes all non-food items, such as cardboard/paper waste, food packaging and wrappers, and hard shells and husks.

16 NEA has worked closely with the appointed food waste collector and participating stakeholders to promote and implement good practices on proper food waste segregation within their premises. Currently, about 14 tonnes of food waste are being collected daily from 23 premises for transportation to the demonstration facility, up from 3 tonnes of food waste collected at the beginning of the project. The 23 premises are:

S/N.	Name	Type
1	Maju Camp	Army Camp
2	Kranji Camp	
3	Clementi Camp	
4	Mandai Hill Camp	
5	Bukit Timah Market/Food Centre	Market/Hawker Centre
6	Tiong Bahru Market	
7	Timbre+	
8	Ngee Ann Polytechnic	School
9	National University of Singapore	
10	University Town	
11	United World College of South East Asia (Dover Campus)	
12	Tanglin Trust School	
13	Canadian International School	Learning Institute
14	Civil Service College	
15	Mealbox at Biopolis	Food Court/Canteen
16	Symrise Asia Pacific Pte Ltd	
17	National University Hospital	Hospital
18	Tian Sheng Fresh Produce	Food Distributor
19	Pasir Panjang Wholesale Centre	Wholesale Centre
20	Sheng Siong HQ	Supermarket
21	Creamier TBR Pte Ltd	F&B Outlet

22	Plain Vanilla	
23	Forty Hands	

17 The food waste collected is transported to PUB's co-digestion demonstration facility. The demonstration facility is designed to treat up to 40 tonnes of combined food waste and used water sludge. Used water sludge contains organic materials. Anaerobic bacteria can convert these organic materials in biogas. The inclusion of food waste into the mix produces more biogas from the anaerobic digestion process compared to the digestion of used water sludge alone, thereby enhancing energy generation.

18 As the pilot has demonstrated that it is feasible to collect food waste from various premises for transportation to an off-site facility for treatment and conversion into biogas, NEA and PUB will be working together to implement the process at the upcoming Tuas Nexus water and waste treatment plant.

Building up local R&D capabilities

19 NEA is also looking into research & development (R&D) opportunities and considering developing pilot plants to test-bed innovative ways to recycle food waste. For example, NEA is working with the Agri-Food & Veterinary Authority (AVA) to encourage food manufacturers to carry out R&D and test-bed innovative solutions such as converting soya bean waste into useful products in our food chain. Through this and other projects, NEA hopes to build up local R&D capabilities and develop novel solutions in the management of food waste.

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