

Conversations on Sustainable Singapore

Food Security (Food Supply and Food Waste)



Conversations on Sustainable Singapore: Food Security (Food Supply and Food Waste) was co-organised by:

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Green Future Solutions, <http://www.greenfuture.sg>

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We would like to thank everyone who helped us in this conversation, especially:

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1 INTRODUCTION

1.1 Background

The first “Our SG Conversation for the Green Community” was held in Jan 2013, and was initiated by Faizah Jamal, Nominated Member of Parliament (Environment and Heritage) People and Civic Sector, and Eugene Tay, Director, Green Future Solutions. The diverse views of the green community, which included environmental NGOs and groups; individual environment, animal and wildlife activists; and environmental businesses, associations and research academics, added an important voice to the overall national “Our SG Conversation”.

After the conversation, there was feedback that the conversation format was useful in seeking and discussing views and issues, and that there should be more conversations focusing on specific environmental issues and to open them to the public. Subsequently, the second “Our Singapore Conversation on Green Spaces” was organised by Nature Society (Singapore) and Young NTUC in Nov 2013 to focus on green spaces and their importance and conservation.

We hope to have more such conversations on specific environmental topics for the public, as a follow-up to the first and second green conversations. So when we heard news that the review of the Sustainable Singapore Blueprint (published in 2009) is being conducted this year by the Ministry of Environment and Water Resources (MEWR), we thought this was a good opportunity to carry on with the conversations and have the inputs submitted for the review.

1.2 Objectives and Format

To complement other dialogues organised by MEWR, we organised three Conversations on Sustainable Singapore with the objectives to understand people’s thoughts and stories, and to generate constructive and specific suggestions for the Sustainable Singapore Blueprint review.

The Conversations on Sustainable Singapore were held over three sessions and focused on the following topics:

- Energy and Climate Change (energy efficiency, clean energy, and climate change) – 26 Apr 2014
- Waste and the 3Rs (waste management, reduce, reuse, and recycle) – 4 May 2014
- Food Security (food supply and food waste) – 24 May 2014



For each session, 50 seats were opened up to the public, and divided into 5 small groups of 10 people each, with a facilitator and scribe for each group. Participants were also given a 2-page reading material on the topic so that they can read up and come prepared for the session.

For the Food Security (Food Supply and Food Waste) session, the small group discussions first focused on the concerns:

- What are your personal thoughts and stories on this topic (positive/negative)?

Next, there were 2 experts from the public and private sectors sharing more about the topic.

After a break, the second small group discussions focused on the suggestions and solutions:

- How can Singapore do better on this topic? Give SMART (Specific, Measurable, Achievable, Relevant and Time-bound) suggestions on policies, programmes, initiatives or campaigns. The suggestions could involve the public, private and people sectors working together.

Next, the small groups came together to form a big group, and each small group representative shared their top five suggestions. This is followed by a big group discussion on what has been said and what can be done.

1.3 Report Submission

The discussions and suggestions for the third session of the Conversations on Sustainable Singapore: Food Security (Food Supply and Food Waste) are compiled in this report, for submission to MEWR as potential inputs for the Sustainable Singapore Blueprint review.

This report will also be sent to the National Environment Agency (NEA) and the Agri-Food and Veterinary Authority (AVA) for their reference and consideration for action.



2 THOUGHTS AND CONCERNS

The first small group discussions focused on what are the thoughts and concerns of the participants on the topic of Food Security. The questions include:

- What are your personal thoughts and stories on this topic (positive/negative)?

The discussions were summarised and divided into the following categories:

2.1 Food Supply and Production

“I am very concerned that most people seem unaware of Singapore’s vulnerability on food security. We import more than we produce locally (apparently we import 90% of our food). Climate change, droughts, floods in food producing countries can stop them from exporting food to us.”

“The general public does not really care where their food comes from. People don’t really understand, nor want to understand, the full supply chain. Food is too easily purchased.”

“Singapore is so small. Even though we have some urban farms, we will probably have a shortage of food should there be a crisis or a war. This is because we import everything really. We are not going to survive. The sheer quantity we import is huge.”

“I don’t believe in agriculture as Singapore is too small. I feel that industrial farming in Singapore cannot work out, and is not truly sustainable.”

“Businesses don’t order from local farms because there are issues of obtaining sufficient quantity and delivery. It does not make sense to support local farming from an economic or business perspective.”

“Food production has many stages. If we can do something to improve at every stage, it would be ideal. If we can increase the yield, it would be better (currently many farms are under-producing). The need to maximise yield is even greater as competing land uses, climate change and population increase loom over us. I think many Singaporeans don’t feel like food production is facing potential serious problems and obstacles because we are not an agricultural country.”

“There are plans to raise food production but there is the problem of land constraint. Conflict of interest as the government is using land for development instead of food production. This is a concern.”

“It is how we use the land that is the problem. For example, using land for golf courses instead of vegetable farms.”

“Singapore can’t be self-sufficient in grains because we don’t have enough land. However, we can explore integrated or vertical farming, which gives us the ability to grow vegetables, fish and eggs. This has to make financial sense as well.”

“No country can close their borders and grow their own food. We can’t blame Singapore for importing so much food – and this benefits other countries too (e.g. Thailand depends on the export of agricultural products for income). What we need is fairer Terms of Trade to secure imports. And even if we secure imports, you cannot really prevent other countries from restricting exports in a crisis. Singapore will still be vulnerable. We need to look at sustainability at a regional level.”



“We need to change the way we think about the economic direction of our country – is it sustainable to continue aspiring to be a business and financial hub, at the expense of primary production?”

“Singapore is engaging in offshore farming, e.g. at Jilin. Is this a sustainable and ethical strategy?”

“Even though we import most of our food, we are very well-off, as long as we can pay, there should be a supply. As of now, the situation is that we have many sources of supply, enough to cover present demand. I feel that it is not so much a need to increase supply for Singapore as it is to increase local production, so that we can save money and reduce our carbon footprint, to be more environmentally friendly.”

“I want to talk about the problems of urban farming in Singapore. They are so tightly regulated. The RC locks up the farm and only certain people have access. There is a lot of bickering between people on what can be grown, and a lot of unhappiness. You can't just farm and grow anywhere in Singapore – everything is controlled by the RCs. Why can't they just let people try? Isn't it all about getting the community involved?”

“For community farms, there is actually a lot restriction. It has to adhere to HDB or Town Council space requirements, or face measures. So community farm movements can't be as organic as in the US. There is the Community in Bloom programme by NParks. It's more of recreational farming and for leisure. The lack of community farms in Singapore is not because of no space, but due to no ownership.”

“Could we do guerrilla gardening? Just convert random grass patches for food growing?”

“Verge gardening such as growing food on the street is getting popular in Australia. Perhaps we can implement verge gardening in community gardens or under the Community in Bloom programme to allow more elderly people to do some planting. Currently plants grow on the verge by the roadside but are inedible.”

“There is a social enterprise doing community farming and vertical gardens on the roof of *SCAPE. It's a pilot project and there is a lot of potential for more urban farming and community farms.”

“HDB is already growing ornamental plants at the rooftop of car parks. Would be great if they farm edible crops instead, which would also cool the car park.”

“Singapore is very green, but none of it is for agriculture. The trees are all for decorations. Other countries are growing food but our land is used for ornamentation.”

“If we have to have greenery (roadside trees vs fruit trees), we should grow fruit trees instead since the same amount of fertiliser is used.”

“A lot of us have been living in urban areas. We don't have the expertise to do farming. We don't have the hands on experience, and interest.”

“To support community farming, an option is to pay a monthly fee to the farmers. This guarantees them income, and we have more vegetables. So my view is to think locally, because the global problem is a distribution problem. Recognise what we cannot do because of land, but what we can do sustainably.”

“Farming is a difficult job, and also very water-intensive. The government needs to incentivise local farming, and encourage people to eat local and eat healthy. A big problem is poultry – Singaporeans love to eat chicken, but we cannot grow it.”

“So far, food security in terms of meat supply has not been very strong. The government is working on fish hatchery, but no infrastructure for fish farmers to grow fish. There is no waste collection or port facilities to transport fish stocks from the mainland.”

“One of the big questions is how we feed the world by 2050. You need about 10 kg of vegetables to produce 1 kg of meat. By reducing meat consumption by half, the strain on the resources will be much less. This will free up enough food to feed the world by 2050. So in the Singapore context, we can reduce meat consumption by half.”

2.2 Food Waste

“Many Singaporeans are unaware of implications from food waste. They don't finish their food and generate a lot of food waste. Out of sight, out of mind attitude. Food waste problem is caused by how we dispose our trash. In Singapore, everything is dumped unsegregated. We don't see the impact of our waste.”

“Appreciation for food does not come about because we don't see farms and the resources required to put food on the table.”

“Many people have leftovers – we don't realise how hard it is for farmers to get food onto our plates. I think it is because we aren't the ones doing it, so we don't appreciate it.”

“The food waste problem is not just about the end consumer but also about the production. Supermarkets also waste a lot of food. Supermarkets must make sure shelves look well stocked and so they order a lot more food like perishables. We should create a culture that accepts not-so-well-stocked shelves.”

“There is a lot of food wastage from production due to consumer habits. Consumers want pretty-looking foods, so retailers only keep fresh food for one day and throw them away the next day if unsold. Consumers don't want to eat close to expiry food so retailers typically dump food that is close to expiry. Companies end up building up wasteful stocks and preparing a lot of food in advance of demand because people want ready food.”

“There is an aesthetic role in food waste – so much food is wasted based on appearance. My dad was a hawker, and from there I did see how a lot of vegetable leaves were thrown away before food was even prepared because they were ugly.”

“Food is priced too cheap. The actual price doesn’t factor in the cost of food waste. We need to find some way of quantifying the economic cost of food wasted in terms of loss of national income, to push politicians and businesses. But you can’t really raise the cost of food and push it to consumers either, as this will lead to political instability and hoarding.”

“In hawker centres, there is no great “cost” to wasting food, because the food was so cheap to begin with.”

“Restaurants are one of the biggest producers of food waste, especially high end restaurants, which throw away edible food simply because of a dent or burnt mark.”

“How many of us “dabao” at restaurants? More people do so in Hong Kong as compared to Singapore. A few restaurants in Singapore have signs saying that customers will have to pay for excess food on the plate, but this is rarely enforced.”



“Buffets are a problem. How can we change the “buffet mindset” of wanting a surplus of food all the time? Also, restaurants don’t really enforce the rule of charging patrons for taking more than they can consume. This contributes to the problem.”

“For food waste, I feel that there is more we can do. We should be looking into how much we have wasted. In my personal experience, whenever school events have catering buffets, the amount of food wasted is very astounding. Event organisers always order more food than needed, and the leftovers are more or less thrown away, as there are policies in place such that the caterer can’t take back any food even if the whole pan is untouched.”

“For buffets, I think most event organisers order more so they wouldn’t look bad, it’s also a ‘face’ issue.”

“For food retailers and companies, as long as they can pass the costs on to their consumers, they are not concerned about wasting food. However, the consumers themselves also don’t care if they have to pay for food they will waste. I think it’s a problem of mindset – many people have a very economic-based one.”

“At the supermarkets, in the past when you want to buy potatoes or carrots, they will pre-pack in a bag. So when families buy, they will not be able to finish the whole bag and have to throw and waste the rest. I think for some products, it’s the same. But in wet markets, we can buy these products separately.”

“We should limit food wastage from each school. Hostels produce a lot of food (huge quantity but bad quality) and most of my friends throw away the food.”

“Tourism and the F&B industry encourage more choice and oversupply of food, and there is no culture of saving or cutting down.”

“Our clean and green policy is not helping with food security. Clean means hygiene, with regulations to dispose food and can't give excess food. No one wants to take risk. Food industries have restrictions by NEA. Hygiene is placed first.”

“There is no incentive to reduce waste. There is this thing called decision fatigue - if you have to make a conscious decision over and over again to reduce waste without external incentives to do so, your willpower will erode. It takes a lot of willpower for people to do altruistic stuff like be sustainable or reduce food waste.”

“The issue about food waste has often taken a negative slant. A more positive slant could be raising appreciation of food and awareness of where food originated.”

“We have to start educating people about food sources. How many Singaporeans know about agriculture?”

“We should think about the food waste issue positively. Singaporeans are unaware and insensitive. Food waste needs a mass campaign to wake people up and to generate awareness in schools and through the mass media.”

“How is food waste calculated? Are fruit peels a waste? Are durian husks food waste?”

“Government agencies like MINDEF are a good place to start. They need to stop food wastage and look at how much waste is generated.”

“The government has taken steps on food waste, with malls having to report how much waste is generated, including food waste. This is the first step, usually before legislation.”

“There is difficulty in getting government funding for food waste-related projects. There needs to be a newer and more effective model to support bottom-up initiatives and encourage more people to step up.”

“There is this 6-step food recovery process: 1) to reduce resources used; 2) to feed unwanted but edible food to the hungry; 3) to feed animals the unwanted food; 4) to channel food waste to industrial use; 5) waste conversion such as composting; and 6) incineration. For Singapore, we jump straight to the last choice of how waste can be handled. If we could do the other steps too, it would be good.”

“We are a busy society and we have been putting on weight due to poor diet habits – which is why we have the “1,000,000 kg Challenge” by the Health Promotion Board. So I think that having smaller servings would be better. In the past there were a lot more stalls offering different portion sizes, but now there is commonly only one size.”

“Food waste can be used to feed pigs, fish, pets and other animals.”

“In food manufacturing, there is a lot of waste from overestimating the recipe requirements, miscalculations, overproduction, and people don't care about what is wasted. So I think kitchen staff needs to know how to reduce waste.”

“There are companies that take waste fruits and turn them into detergents. Supermarkets give those companies money to take away their food waste because it is more expensive to dump than to give away.”

“Some companies have food waste such as black beans but the volume is too large. There is no capacity from existing recycling companies to handle these food waste or by-products.”

“Food waste is harder to sort, so we should have a technology to compost mixed types of food waste.”

“There is at present not enough demand for food waste to be converted into something more useful. Biological processes, such as using micro organisms to produce bioalcohol, are slow and it takes time to make it large-scale.”

“For Singapore, I think the supply of food waste outstrips the demand for it. Food waste can be given to farms and biofuel companies but there aren’t enough of such places to distribute the waste to. I think the 3Rs are really relevant in this area. We should really try to reduce first, if we’ve done all we could to reduce then the next avenue to explore is reuse, and lastly to recycle. The best would be to reduce, then we don’t even need to find places to distribute the waste.”

“A food recycling company closed down as the logistics and cost of processing food waste was simply too high and not financially viable for them. It is important to have proper sorting of food waste to avoid contamination.”

“In Europe, they separate the waste, but in Singapore it's only one rubbish chute so you can't separate the waste. The newer ones at Punggol have three chutes: biodegradable, recyclables and non-biodegradable.”



3 SUGGESTIONS

The second small group discussions focused on the specific suggestions from the participants on the topic of Food Security. The questions include:

- How can Singapore do better on this topic? Give SMART (Specific, Measurable, Achievable, Relevant and Time-bound) suggestions on policies, programmes, initiatives or campaigns. The suggestions could involve the public, private and people sectors working together.

The suggestions were summarised and divided into the following categories:

3.1 Farming and Production

Increase local food production and provide more help for local food businesses and farms.

- Provide more subsidies and grants, and R&D support for local food businesses and local farmers.
- Reduce rent and land costs for farms, increase the lease of farm land, and set aside more land for farms.
- Organise a 'business plan' competition for organisations and groups to submit food production projects and pitch them to government agencies. The government can pick plausible ideas to implement, provide organisations with feedback on their projects and offer seed funding.

- Introduce a campaign on 'choosing local' to inform people where they can buy local food. Have better labelling and branding in the supermarkets to promote local products.
- Conduct more research on marine farming.
- Explore the farming and consuming of edible insects, which grow faster, have higher nutrient density and require less water and land to rear.
- Have a programme for those serving National Service to be involved in growing food, and army camps could also produce their own food.

Encourage community and urban farming.

- Allow the conversion of roadside or street spaces to grow food, rather than just growing plants for recreational or aesthetic purposes.
- Set up more rooftop farms and grow vegetables, and target to increase the supply of vegetables to 20% by 2020.
- Allow and help community gardens to grow and scale, without too much government regulations.
- Establish community programmes to grow and harvest fruits from fruit trees along the road and educate people on local fruits. The fruits can be collected and shared by residents to increase bonding.
- Extend the Community in Bloom programme to include food security and not just community bonding. The gardens should also look at growing and selling food crops.

3.2 Awareness and Education

Increase awareness of food supply and waste in schools.

- Integrate food supply and waste education into the academic curriculum from primary to tertiary schools (such as biology, chemistry, home economics, health, and hospitality or hotel management). Students should learn where food comes from and why we should not waste food.
- Involve students to grow and harvest food or fruit crops in gardens at schools. This will help them to understand how food is grown and to better appreciate food and waste less.
- Have students volunteer at the urban gardens and farms under the existing Community in Bloom programme.
- Get students to conduct food waste audit in the school and look at how much food they are wasting in the canteen.
- Send students overseas to be involved in farm activities to get them to learn about food production and appreciate the hard work involved to grow food.



Introduce campaigns and measures on food security.

- Start a local food trail programme to educate the public on food supply and production so that they can understand where food comes from. The programme can be driven by trade associations such as the Kranji Countryside Association, supermarkets, and food distributors.
- Have a campaign on food education, including topics on where does your food come from, and minimising food waste. The campaign can be driven by NGOs or the private sector, and supported by the government.
- Develop a labelling scheme for stalls that provide the choice of smaller food portions so that consumers can look out for these stalls.
- Promote mindful eating to reduce over-eating and increase consumer satisfaction with less food.
- Encourage a healthy diet and reduce meat consumption. HPB has a Health Promoting School Canteen programme in primary and secondary schools for students to eat a bento set with a balanced diet of rice, vegetables, fruits and meat. This can also be introduced to adults and the workplace.
- Conduct a study on how food is wasted in Singapore, and look at more specific data on the types of food waste.

3.3 Food Waste Reduction and Redistribution

Introduce measures to increase the distribution of unsold or unwanted food.

- Introduce a Good Samaritan Act to protect the food donors against liability so that they will be more willing to donate excess unsold or unwanted food.
- Work with stakeholders and collectors to look at ways to improve food waste collection for redistribution to the needy.
- Have an Excess Food Waste Matching website for different manufacturers and retailers to trade with each other or work together to ensure their food waste can be given a new lease of life.
- Encourage supermarkets to sell unsold or near expiry food items at a discount to clear stock or give away to charities. Ugly fruits can be sold at discounted rates or given away.
- Set up more Soup Kitchens where unsold food are cooked and given to people who need food.
- Relook the 4-hour consumption time-stamping for catered food, which could result in less giving away of leftovers. The time period could be based on the type of food rather than a blanket expiry time period.
- Set up more Food Banks to collect and distribute unwanted food items to charities.

Implement mandatory reporting of food waste for food manufacturers, distributors and retailers.

- Mandate restaurants and supermarkets to conduct food waste audit and reporting by 2016.
- Introduce a competition for companies with the least food waste. Award and recognise top performing companies, with awards backed by the Singapore Business Federation and other professional associations.
- Extend the current mandatory reporting of waste for large hotels and shopping malls to other sectors such as markets and bakeries.

Introduce more initiatives to reduce food waste.

- Provide funding and technical support for SMEs to help them reduce food waste.
- Explore charging a waste tax for excessive food waste disposal by restaurants and supermarkets, or for big events.
- Introduce tax incentives for supermarkets that reduce food waste.
- Encourage event organisers to prevent over-ordering of food.
- Encourage buffet businesses to enforce their food wastage rule of charging customers more for food waste on their plates.
- Encourage caterers to have a menu comprising of highly perishable food, not-so perishable food, and food that can be kept for longer than four hours.

3.4 Food Waste Recycling

Implement measures to help businesses recycle food waste.

- Develop a green financing scheme for food waste recyclers to set up recycling plants or increase their recycling capacity.
- Acknowledge companies that do proper food waste recycling.
- Set up centralised food waste processing hubs to benefit SMEs so they that can pull together funds to invest in recycling equipment for shared usage.
- Encourage food industries or hawker centres and food courts to co-share food waste digesters. Provide training for the food waste handlers on how to segregate waste properly.
- Increase research funding for higher institutions to find uses for food waste, and what types of food waste can be converted into energy sources.
- Explore the possibility of processing top hoteliers' food waste into pet food.
- Explore segregation of food waste from households for recycling, though using separate chutes, bags or bins.

Encourage composting for households and businesses.

- Increase composting on a local level and teach the elderly to compost food waste. Educate households on food waste segregation and storage.
- Encourage restaurants and hawker centres to compost their food waste, and provide training for food waste segregation.
- Explore the setting up of underground composting facilities for food and horticultural waste. The compost can be used for outdoor farming and gardening in facilities above ground.
- Innovate and make better compost fertiliser for sale to the Southeast Asia region.



4 CONCLUSION

For the Conversations on Food Security (Food Supply and Food Waste), we had a total of 32 participants (out of the 55 participants who registered). There was a mix of people from companies, organisations and students. Despite their different perspectives on food supply and food waste, we feel that they were all concerned about the issues of ensuring food supply, encouraging community farming and reducing food waste, and the need for more action.

This report reflects their thoughts and concerns, and shares their suggestions for a more sustainable Singapore. We hope that their views would be considered for the review of the Sustainable Singapore Blueprint.

Through these conversations, we also hope to increase public awareness, engagement and ownership of sustainability issues in Singapore, and to discuss constructive and specific solutions to address the issues. More importantly, we are planting the seeds that it is possible to nudge or effect environmental change from the bottom-up.



5 PARTICIPANT LIST

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