

SPEECH BY MR LAWRENCE WONG, MINISTER FOR NATIONAL DEVELOPMENT AND SECOND MINISTER FOR FINANCE, AT THE FOOD INDUSTRY CONVENTION, ON 1 NOVEMBER, 9:00 AM, AT MARINA BAY SANDS EXPO AND CONVENTION CENTRE

I am very happy to join you this morning at the third AVA Food Industry Convention. This biennial event brings together food industry leaders, experts, and stakeholders across the entire food supply chain. It provides a platform for the industry to exchange insights on global trends, share best practices, and discuss new ideas. In fact, I was here two years ago and I am very happy to be back here amongst many familiar faces.

2 As a small island nation, Singapore has always been very concerned about our food security. We have limited ability to grow our own food; we have traditionally looked at food as an imported resource. That is why we look at different strategies to mitigate supply risks, particularly by importing from diverse sources. This diversification plan is supplemented with some local production, although the amounts that we produce locally to date have been quite small.

3 Nevertheless, the strategies we have pursued so far have served us well. Singapore has been ranked amongst the world's top countries for food security. This is not ranked by us – it is ranked by independent parties, including the Economist Intelligence Unit. We also have a vibrant food manufacturing industry that benefits from our strong logistics infrastructure.

4 These are significant achievements for a state with no agricultural hinterland. We have just a small land mass. For all that we have achieved, we have to thank all of you here – our farmers, our food manufacturers, and many stakeholders. Thank you very much for all that you have done to contributing to food security in Singapore.

5 We have done well, but what is the next leap in our food journey? The strategies that we have done and pursued to date remain valid, we still need to import, we still need to diversify our food sources. But there is much more we can do in terms of local produce. In particular, there is an opportunity to develop urban farming – not just for

food security reasons, but also to develop it as a new growth industry. There are several reasons for this.

6 First, global food demand is increasing. We know that worldwide, populations are going up; there is a rising middle-class with rising affluence, demanding more and better food. But on the supply side, arable land is decreasing. It is partly due to climate change also taking a toll on food production. This food imbalance will present long term challenges for the world. But it also means opportunities for innovative food producers and solution providers.

7 Second, technology can enable us to explore new frontiers in some of these innovative food solutions, especially with developments in agriculture and food science. We can tap and leverage on these technologies to develop crops that are more resilient to droughts, floods and pests. We can also tap on these technologies to increase the productivity and yield of our farms, producing more food, even with the same amount of land.

8 Third, and most importantly, modern farming is becoming more like manufacturing – and you see this trend around the world. What this means is that farmers can use technology to inform their farming decisions and significantly improve productivity. Farms can tap on sensors, robotics, and the internet-of-things, as well as big data to control their growing environments and better manage production. They can be connected to suppliers, markets, and logistics in real time, and the operations can be remotely monitored and controlled. In fact, modern farms can now be done indoors, and in a vertically stacked, high-rise environment. Technologies in lighting, in clean room, in automation mean that we can have higher and more predictable yields from high-intensity urban vertical farms. We are already seeing examples of this in Singapore.

9 For example, Sustenir Agriculture is an indoor farm that grows hydroponic crops in an industrial building. Through the use of LED lights, automated irrigation, centralised controls, and a precisely controlled input, the farm is able to optimise its products and grow more crops with a shorter time. In fact, I was just grocery shopping the other day and I saw in the supermarket shelves, very nicely packed Sustenir

vegetables – they have kale and a range of vegetables, as well as vegetables from Sky Green. It is already available, and all of us can do our part to buy local produce and eat local produce.

10 Another local example is Apollo Aquaculture's land-based Recirculating Aquaculture System, which reduces water consumption by over 90 per cent. This cuts cost and requires less manpower. Apollo has even brought this vertical, remotely-controlled fish farming technology to Brunei where they have opened up a new farm, and they are targeting to have their first harvest next year.

11 Just as our own local players are looking to expand both in Singapore and overseas, interestingly we also have international players – urban farms based overseas, who hope to do more in Singapore. One example is Panasonic. They started their indoor farm in Singapore in 2013, and it now produces up to 40 crop varieties. It plans to expand its farm size by 50 per cent, which will more than double current production. This is just one example, and we have had expressions of interest from many other players based overseas.

Potential Centre for Urban Food Production

12 All of these trends mean that there is tremendous potential for Singapore to be a centre for urban food production. We have high standards for food safety and quality, strong capabilities in R&D, engineering, and biotech, and strong adjacent industries like food manufacturing and urban logistics. Most importantly, we all know that Singaporeans love our food and we take food very seriously. We can build on these strengths, and grow and transform our food industry.

13 With all this in mind, we are looking at how we can go about bringing the different players together and developing a food cluster in Singapore – potentially by co-locating farms and other related players to create synergies. By clustering the local farmers, local players and related industries together, the proximity can enable farms to have quicker access to technology and food processing options. And with an ecosystem, firms can lower costs through aggregated demand, shared facilities, and

shared distribution networks. Of course, proximity can also help to spur collaboration leading to more innovation.

14 If we have such a food cluster in Singapore, there can be tremendous benefits, not just as an industry for new growth, but also for food security. Imagine if our urban farms can achieve a production rate of 2,000 tonnes of vegetables and 1,000 tonnes of fish per hectare, we would be able to produce more than 10 times what we produce today. Achieving this rate of production is not by any means a stretch of imagination, it has been done before elsewhere, and it is very much doable in Singapore, even at our land price, it can be commercially viable. That means that there is potential to produce half of the fish we consume and one third of the vegetables we consume, on less than 100 hectares of land in Singapore. That would make a significant impact on food security and help us become a food centre in our own right for the region.

15 This clustering strategy – to bring related companies and industry players together is not something new, we have done it before in our history. In the 60s, we developed Jurong Industrial Estate and we became a manufacturing base. Later, we expanded into Jurong Island, and we created Jurong Island, and made Singapore a chemicals hub. We built Biopolis and we developed our biomedical science industry. Time and again we have done this by creating the infrastructure, bringing in companies, growing our own companies, and building a new industry. In fact, we did this for water too. We all know that we are water scarce, limited in our own supply, and we are dependent on others for water. But by developing the water treatment and management industry, we are now a recognised centre for water in the region, and even in the world.

16 There is potential for us to do the same for food in Singapore, to bring our farmers together, our stakeholders and food producers together, grow and increase productivity significantly, and leverage on new technologies. By expanding this sector, we not only enhance our food security, but we also develop a new growth industry that can create jobs for Singaporeans.

17 When you look ahead, there is tremendous potential for us to do more and these are exciting times. The demand for fresh and safe produce is huge. It is not just

our domestic market, but we are also talking about food demand everywhere in the region – which is growing significantly. This translates into opportunities for everyone here.

18 It is very timely that some of our local farmers have just formed the Singapore Agro-Food Enterprises Federation. Their acronym is SAFEF – it is a good acronym, because it means we want good and safe food. We look forward to partnering with SAFEF, as well as food industry champions, with all of you here, to create a thriving and vibrant food industry in Singapore. We have already achieved significant gains in the last 50 years. We have come this far in having very good food security in Singapore. Let us walk this journey together to take the next leap in creating a more vibrant food industry that will help our food security but also make food a new industry in its own right. Let us work together to secure even more success for our food producers and firms, and create more good jobs for Singaporeans in the process.

19 On that note I would like to wish all of you a very productive and successful convention this morning. Thank you very much.