

WELCOME ADDRESS BY MR LAWRENCE WONG, MINISTER FOR NATIONAL DEVELOPMENT AND SECOND MINISTER FOR FINANCE, AT THE OPENING OF THE 27TH COMMONWEALTH AGRICULTURE CONFERENCE ON 2 NOV 2016, 9.20AM, PAN PACIFIC SINGAPORE

Your Royal Highness, The Princess Royal

The Right Honourable Patricia Scotland
Commonwealth Secretary-General

Mr Kenny Eng
President of the Kranji Countryside Association,

Excellencies and Distinguished Guests

Ladies and Gentlemen

1 Let me start by extending a warm welcome to Her Royal Highness, the Princess Royal, and to all our guests from overseas. We are very happy that you are visiting Singapore to attend the 27th Commonwealth Agriculture Conference.

2 For more than 50 years, the Conference has been a key platform for members of the Royal Agricultural Society of the Commonwealth to share knowledge, network, and discuss important agricultural issues. Singapore is honoured to be the first country in Asia to host this event.

Global Challenges and Opportunities in Agriculture

3 The theme of this year's Conference - "Agriculture at a Crossroads: Bridging the Rural Urban Divide" is timely. There are several major trends that impact all of us, and challenges which we will have to tackle.

4 The basic issue is how we will be able to feed a growing number of people on this planet. The world's population is likely to rise to nearly 10 billion by 2050, and people would want to consume more and better food than what they are eating today. We should make sure that we are able to do so. To meet this demand, we will need to increase food production by 70% to meet these growing needs.

5 We will not only have more people, but the mix and profile of people will change as well, because more people are moving from rural areas to cities. Currently, there are more people living in urban than rural areas and by 2050, it is estimated that two-thirds of the world's population will live in cities. That means that we will have fewer people in the rural areas and fewer people in farms. That is one concern on the supply side, but there are also other supply risks.

6 Our planet is being accosted by environmental degradation and global warming, all of which will reduce the supply of fresh water and arable land. This presents a double challenge - the shift in global population and demand, and at the same time, the shift in population towards rural areas, and the challenge of global warming and climate change impacting conditions for producing food.

7 Over time, we will face a situation where we have more people demanding and eating more food, but fewer people and less ideal conditions to produce the food. All this means that there will be growing risk of a food shortage, which will be felt most keenly by poor countries.

8 The problems are not just going to be food related, as there will be broader security implications – the stresses from hunger and famine could result in social upheaval and civil strife, exacerbating conditions that lead to failed states. Between countries, competition for food supplies and displacement of people across borders could deepen tensions, and provoke conflict and wars, and we have seen examples of that over the years.

9 In many ways, these fears are not new. For a long time, mankind has been worried about food shortages, resulting from population growth outpacing food production. Human ingenuity has deferred this Malthusian prediction for more than 200 years. But things could still get worse in the future. We are likely to see more stresses on global food production, which will impact the food security of every country, including Singapore.

10 While we face significant challenges, we can overcome them together. One good news is that in two days, the Paris Agreement on Climate Change will come into force (after the threshold for ratification was achieved earlier last month). This is the first universal climate change agreement. It signals the global will to manage climate change and global emissions. I hope that this goes some way to addressing the changing climate and the consequent impact on agricultural production.

11 In tandem, we must also work together to tackle our shared agricultural challenges. The key is to transform this sector into one that is more innovative and productive. Let me share some suggestions to achieve this.

Technology Adoption

12 First, all our farmers will need to adopt technology. Globally, we are already seeing tremendous advances in agricultural technology – helping to turn out more reliable and high-quality food products. If you visit a modern farm, it practically looks like a factory operation. There are sensors there to monitor everything from temperature, humidity and illumination. Data is collected in real time and information is analysed to work out the best regimes for future crops.

13 Developments in environmental control systems enable us to work out the best lighting, heat and humidity for optimal growth and this has resulted in the emergence of commercial-scale indoor farming, which protect crops from environmental impact, and at the same time allows for vertical scaling, intensification and optimisation of agriculture land.

14 Even robots are being deployed on the ground to take over the back-breaking work in the farms – they can identify weeds in fields of vegetables and zap the weeds individually. They can even recognise and pick fruits which are ripe for plucking. The purists may lament on the lack of human touch in farms, but the technology is already being deployed, and is producing benefits for many people who need food, and for the growing numbers of people, who will continue to need more and better food. So all these new advances will increase yields and will reduce the resources required for crop production.

15 Embracing technology is also necessary to nurture the next generation of farmers. Robotics, sensors, closed-loop agriculture systems and the Internet-of-Things make the agriculture sector

interesting and exciting for the young. This new generation can help transform farming into a high-tech profession that requires skillsets like engineering, computing and data analytics. The next generation has different needs interests, and it is important that we continue to excite them and enthuse them, so that more young people can get into this sector.

Research and Development

16 Second, we must continue to invest in agriculture research and development (R&D). Even as farmers embrace existing technologies, we need research to establish new frontiers in food production. The world has seen the benefits of technological breakthroughs in food production. The Green Revolution which started in India and later spread throughout the world made famine become a thing of the past.

17 Now, we need another big push in both the public and private sectors to invest in food research and launch a second Green Revolution. Research will enable us to grow crops that are more resilient to weather and disease which is critical in a future of more unpredictable climate changes.

18 Some of our own research institutions have had some success in this area. We have an institution called the Temasek Life Sciences Laboratory (TLL), which just launched a made-in-Singapore rice called “Temasek Rice” – it is high-yielding, drought and flood resilient, and fortified against fungus and bacteria. The rice strain has already found its way to Indonesia, where it is currently being grown on a small scale, and hopefully it can be done on a commercial scale eventually. We have

also developed superior strains of fish – the Asian Seabass and Mozambique Tilapia – both of which also have faster growth rates. When these strains are commercially ready, our farmers will have access to super fish fry that can enhance production levels.

19 These are some of the research we have done in Singapore. There are similar research efforts taking place around the world, and we will need to strengthen research collaboration, share experiences and scale up best practices. This will provide new answers to how we can feed the world in the future without putting irreparable strains on the Earth's soil and oceans.

Working Together for Global Food Security

20 This leads me to my third and final point, which is that countries need to work together, not only for their own food security, but for global food security.

21 Today, countries tend to work on their own and come up with their own agricultural solutions. Agriculture and food is traditionally seen as a very domestic sector. But many of these solutions are relevant beyond borders. Agricultural technologies developed in Singapore can be adopted in other parts of the world, just as technology from your countries can be introduced to our farmers.

22 Increasingly, many of the issues we face are complex, inter-linked and are global in nature. I will share with you two examples. Some years back, several countries embarked on misconceived green policies to subsidise bio-fuels. The result was that it encouraged farmers to grow

fuel instead of food, and resulted in food shortages and a sharp increase in food prices. We experienced that around 2006 to 2009, and here in Southeast Asia, the growing demand in palm oil for biofuel contributed to illegal slash-and-burn practices to clear the land of unwanted vegetation and peat, and resulted in severe haze pollution and even higher carbon emissions.

23 Another example is the emerging global concern we have with antimicrobial resistance. It is a result of over-use in antibiotics leading to superbugs that are no longer responsive to any of the drugs we have. It is a big global issue that we will all have to face in the coming years. The overuse of antibiotics is often associated with over-prescription by doctors to humans, but in fact, most of our antibiotics are used in agriculture, in animals like chickens, cattle, pigs and fish – evidence that antibiotics use on farms is being transmitted to humans through direct contact with animals and through their meat, eggs and milk.

24 This is a very real threat, as the possibility of a post-antibiotic era is very real. We will need concerted efforts and global action to reduce the overuse and abuse of antibiotics, including phasing out antibiotics from livestock, particularly when they are used for prevention and growth promotion.

25 To avert these global problems, we need a multilateral cooperative effort. We should also step up information sharing among countries to build up knowledge on emerging issues and solutions. This is why forums like the Commonwealth Agriculture Conference are important in

bringing countries together, in sharing ideas and fostering closer cooperation.

Singapore's Approach

26 Singapore will do its part to participate in these global efforts. As a small City-State, land will always be a constraint for us. But in the midst of rapid development and urbanisation in Singapore, we have taken great care to ensure that we preserve our greenery, and we preserve our distinctive and rich biodiversity. Even today in Singapore, nearly half of our island is covered by greenery. We have maintained nearly half of our island in green cover, and maintained huge tracks of rich biodiversity and nature reserves. This will ensure that we do not overly urbanise this place that we have, and so that we can have a harmonious co-existence of rural and urban living together.

27 Our agricultural sector fits into this overall eco-system and plays an important role in our food system. That is why we continue to ensure sufficient agriculture land for farms that are able to harness technologies, leverage on innovation and maximise their productivity. The Government is also supporting these farms with funding for technology adoption and R&D. So while we may be small in size, we believe that we can be a useful "living lab" for urban farming solutions and new technologies.

28 Take leafy vegetables as an example. In this area of vegetable farming, we produce about 10% of our demand now, within Singapore. But we have farmers who are starting to try out new technologies, and different ways of farming. One of them is Sky Greens, which is the

world's first commercial vertical vegetable farm. Its hydraulic water-driven vertical farming system enables it to be resource-efficient and produce up to five times more than traditional vegetable farms. With this and other technologies, we believe we can make a quantum leap in our food production levels and also showcase new technologies, which can be potentially shared with other countries with an urbanised context like Singapore.

Conclusion

29 Agriculture and food will always be a major issue of importance in every country. Even though Singapore's agriculture sector is small, food is something close to every Singaporean's heart. In this time of growing backlash against globalisation, there will be a tendency, and almost a temptation for countries to focus narrowly on their own interests, and keep food production within their own borders. But this will only cause more problems. Food prices will become more unstable, food importers will scramble to secure their own needs, and poor countries will suffer. Ultimately, regional and global cooperation, as well as a concerted push in new technologies and research are critical in resolving our global food challenges.

30 The theme of this conference is a very timely and relevant one given the challenges we face. There is much work that needs to be done in this area, and I wish all of you a fruitful conference, and an enjoyable time in Singapore. Thank you.