SPEECH BY MR KOK THAI LIM, CEO OF SFA

AT THE OFFICIAL LAUNCH OF NATIONAL UNIVERSITY OF

SINGAPORE'S RESEARCH CENTRE ON SUSTAINABLE

URBAN FARMING (SUrF), ON 5TH AUGUST 2022

NUS President Professor Tan Eng Chye

Professors and Distinguished Guests

Ladies and Gentlemen

A very good morning and thank you for inviting me to join you to launch NUS' new research centre for Sustainable Urban Farming, or SURF in short. As the world seeks to develop sustainable food solutions, SUrF will play an important role in Singapore's efforts to be a frontrunner in this fast-growing space.

Challenges in the Food Sector

2.   As you have heard earlier, the world's food supply is facing increasing pressure, with the global population projected to grow by more than 25 per cent to almost 10 billion by 2050.

This is compounded by rising volatility caused by climate change, geopolitical tensions, pandemics and disease outbreaks, posing further challenges to the global food supply. Rising temperatures and increased frequencies of erratic weather patterns have impacted farm outputs. The Intergovernmental Panel on Climate Change estimates that by 2050, global warming may cause crop yields across the world to decline by up to 25 per cent. On one hand, you have the demand for food increasing with rising population. Earlier, you heard about urbanisation that is going to concentrate the people and further accentuate the demand. On the other hand, the way food is being supplied, the way food is being grown and yielded is itself going to go for a decline because of climate change and various other factors.

3.   Pandemics and geopolitical tensions have also caused supply chain disruptions and inflation. Countries are increasingly prioritising their internal needs over international trade. With over 90 per cent of our food imported, Singapore is highly exposed to these supply shocks.

Technology and Innovations as Key Enablers

4.　　Solving the above challenges will require leveraging advancements in science, technology and innovation. Farm technologies such as Artificial Intelligence and sensor technologies can help farms make predictive and informed decisions to maximise productivity. For example, Syngenta, a leading science-based agri-tech firm by ChemChina, developed a Modern Agriculture Platform in China that integrates remote sensing technologies, weather data and warnings of diseases and pests for farmers to make informed decisions to improve soil health, reduce agrochemicals use and improve yield.

5.　　Similarly, technologies like genetic breeding allow farms to explore new crop varieties that are more resilient against climate change, increases yield and has higher nutrition. Unfold, a joint company by Bayer and Temasek, is utilising seed genetics, or germplasm, from vegetable crops to develop new seed varieties that are tailored for the unique indoor environment of vertical farms.

6.	The launch of NUS SUrF will enable us to collaborate with other research institutions and the industry to undertake R&D in advanced breeding strategies, including genomic selection and gene editing, to create leafy vegetable varieties with traits tailored for controlled environments to improve yield and nutritional values of food crops. These will enhance the efficacy of urban farming and eventually, our food security.

Singapore's 30 by 30 Goal

7.	As part of Singapore's food security strategy, Singapore is developing our agri-food industry's capability and capacity to produce 30% of our nutritional needs sustainably by 2030 – what we call the "30 by 30" goal. This is a highly ambitious goal, given Singapore's space constraints and the competing needs of our land for agriculture, housing, industry and defence. This involves evaluating very difficult trade-offs and coming up with innovative solutions to optimise the use of land to best fulfil these competing needs. With less than 1 per cent of our land available for food production, it is important that our farms adopt technology and innovation to grow food in a productive, climate resilient, and resource-efficient way.

8.   For example, our local vegetable farm, Yili, uses weather sensors to determine when to lower their shades and how much to water their plants. Indoor farms, such as Genesis Biome, are also gathering data using sensor technologies to automate their nutrient dosing. Such technologies can help our farmers work smarter and produce more.

9.   The Singapore Food Agency (SFA) is committed to supporting the industry to leverage R&D and technology in their production. As of last year, SFA's Agriculture Productivity Fund (APF) committed more than $50 million in co-funding to support 132 companies to adopt high-tech equipment and farming systems, conduct R&D and test-bed technologies.

10.   An example of an APF beneficiary is Sustenir Agriculture, which was supported by the APF R&D scheme to develop a cloud-based holistic control system, allowing them to access and control not only their farms here in Singapore, but also their farms across the region. The control system is designed to be adaptable, user-friendly, and able to run Sustenir's farms autonomously.

11.   Farms can now tap on SFA's $60 million Agri-Food Cluster Transformation (ACT) Fund, which replaces the APF in supporting farms' adoption of technology and advanced farming systems. SFA further enhanced the ACT this year to provide a higher co-founding quantum of 70% to a wider variety of food types including fruited vegetables, mushrooms, and shrimp. $3.8 million has been committed to 13 projects as of June this year.

12.   The Government is also encouraging the industry to leverage technology and spearhead innovations in sustainable urban food production as well as future foods such as alternative proteins, and food safety science and innovation through the S$144 million Singapore Food Story R&D Programme. To date, over $23 million in funding has been awarded for R&D in sustainable urban food production. We look forward to working closely with the R&D community to develop innovative solutions in this emerging sector.

Singapore as an Agri-Food Innovation Hub

13.   I am very happy to welcome SUrF into the agri-food R&D ecosystem. With its core team of diverse experts from various fields such as science, engineering and computing, SUrF will be a cross-boundary platform for the conduct of integrated multidisciplinary research to develop novel science and technology-based solutions. These solutions can provide our companies with innovative solutions that can improve plant performance and increase food production in the coming decades that can help us mitigate food supply challenges posed by population growth, urbanisation, climate change, pandemics, and other natural calamities. SUrF can also provide thought leadership in the area of sustainable food production and transform Singapore into an agri-food innovation hub for the region.

Conclusion

14.   I look forward to the close collaboration between SFA and NUS, as well as with our local agri-tech farms, Institutes of Higher Learning, and research institutions to spearhead innovation in sustainable urban farming. I wish SUrF the very best in this exciting journey ahead. Thank you.