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BT EXCLUSIVE: FOODTECH

Bold solutions needed for Singapore to be more self-sufficient in food

Republic needs to significantly ramp up efforts in agri-tech and innovation to achieve 2030 target: consultants

WED, APR 03, 2019 - 5:50 AM

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Workers at Barramundi Asia's sea cage farm harvesting barramundi. Prof Teng has suggested three key items - leafy greens, fish and eggs - be prioritised for the 30 per cent target. BT FILE PHOTO

Singapore

THE ongoing drive to ramp up the agri-technology sector builds on earlier agency efforts, but the government's goal of raising local food production still calls for bold solutions, industry experts said.

Richard Skinner, strategy partner at consultancy PwC Singapore, noted that Singapore has made gradual progress in the last decade, through skills and tech investments in farms, and more land allocated to farming.

But some observers believe the Republic's goal of producing 30 per cent of its food needs by 2030 - against less than 10 per cent now - is ambitious.

"The drive for investment in agri-tech only began in the recent past," two Deloitte South-east Asia partners added in a joint e-mail, pointing to higher take-up of high-tech farming methods such as vertical farming and hydroponics in the last few years.

But, citing issues such as growing demand and potential import disruptions, they added that "Singapore needs to significantly ramp up its efforts in making the country more food self-sufficient, through the use of agri-tech and innovation".

The Ministry for Trade and Industry (MTI) last month confirmed agri-tech as a new sector for growth, with Senior Minister of State Koh Poh Koon at the head of a multi-agency steering committee to support development.

Paul Teng, adjunct senior fellow at the S Rajaratnam School of International Studies' Centre for Non-Traditional Security Studies, has suggested three key items - leafy greens, fish and eggs - be prioritised for the 30 per cent target, given their strategic value and the progress made so far.

"We have to be very selective in what we think we can produce more of," said Prof Teng, who called the notion of complete self-sufficiency a myth, even in more agrarian markets.

He noted constraints to the type of animal husbandry that the urban environment here can support, like pig and poultry farming, since "certain farming activities have very high potential to contaminate the environment, especially the water supply".





PwC's Mr Skinner, who advises clients on food security and food and agriculture investments, flagged other limitations, such as a shortage of skilled labour and the high cost of land.

He also warned, while begging pardon for the pun, against putting all of Singapore's eggs in one basket, as there could be domestic disruptions like the heavy storm damage seen at Lim Chu Kang farms last year.

While he noted the incremental progress over the past decade - for instance, indoor farming can now involve both mega-greenhouses and high-tech vegetable factories that are "almost like a pharmaceutical plant" - Mr Skinner called the latest "30 by 30" target "hard to meet - and therefore they need to think creatively".

"We would need to have a complete fresh look at how we produce food here," he said, suggesting methods such as indoor, closed-systems farming; higher-value food to justify production costs; the use of data and robotics; and genetically modified organisms and synthetic proteins.

Besides public-private partnerships and private sector-led investments, the Republic could even work with other countries on offshore food production, Mr Skinner said - "maybe using Singapore financing and technology, expertise and people".

Under the latest strategic thrust, MTI agencies, such as the Economic Development Board (EDB), Enterprise Singapore (ESG) and Agency for Science, Technology and Research (A*Star), will work closely with the new Singapore Food Agency (SFA), which opened its doors on Monday.

These agencies will jointly share technical expertise, spur technology adoption and set industry standards, the ministry told BT in a statement.

The National Research Foundation last month pledged up to S\$144 million for research and development (R&D) in areas such as urban food production and future foods as well.

MTI noted that various government agencies have already been supporting food and agri-businesses - whether working alone or in concert.

Past efforts included a briefing for farmers held by ESG and A*Star last year to address strategic priorities such as robotics, process enhancement and product development.

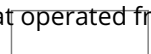
Many projects also come under the former Agri-Food and Veterinary Authority of Singapore (AVA), which has been merged into the new SFA.

For instance, the agency's Marine Aquaculture Centre has worked to breed disease-resistant fish fry and has also tied up with institutes of higher learning to do research on fish genetics, nutrition and health.

Meanwhile, the former AVA set up an Agriculture Productivity Fund in 2014 to help farmers up their yield and lift productivity. The fund had benefited 91 farms by the end of last year, with leafy vegetable production up by 1,124 tonnes and fish production by 406 tonnes, while 46 million more eggs were laid.

Prof Teng called the centralised approach and the formation of the SFA "a positive, natural development".

"In a sense, it's like going back 20, 30 years, when we used to have a Primary Production Department that evolved into AVA, which has more of a regulatory function," he said, referring to a now defunct government unit that operated from 1959 to 2000.



"(The) MTI has identified agri-technology as a new growth sector, with our priorities on industry and enterprise development, R&D, and addressing needs in manpower and regulations in support of the sector," the ministry said in its statement to BT.

"Singapore's existing capabilities in adjacent sectors such as life sciences, speciality chemicals, food technology and advanced manufacturing, as well as our proximity to the large production and consumption market in Asean, position us well to become a leader in domains such as urban agriculture and aquaculture."

Said Prof Teng: "It's timely now to connect all the dots and make a conscious effort to create an ecosystem and move forward. But, and this is a big but here, we need much better coordination, and a concerted effort."

