From yesterday’s pig farms to today’s vertical veggie gardens

Farming has come full circles in Singapore. From being an agrarian society and an island blanketed in farms in the 1960s, Singapore is now exploring modern options to farm efficiently. One of these is growing vertically, to maximise the country’s land use, while bringing farming indoors to protect crops against the ravages of climate change.

**Join the Urban Farming Revolution!**

Over 90% of the food we eat is important! But we can make a difference!

**Growing plans to keep up with the times**

**Hatching plans to keep up with the times**

**Growing a vision**

**TIMELINE OF FARMING IN SINGAPORE**

1950s-1960s: Pig farming was the major agricultural activity, with about 10,000 pigs in Punggol – one with 20,000 pigs and the other with 12,000.

1970s: Pig farming was discouraged due to the high cost of feed and the lack of suitable land for breeding. However, limited pig farming continued on a small scale in various farms every month.

1980s onwards: Pig farming has shrunk from 15,000ha to less than 80ha. The end result – hens were raised.

1990s: A goal for Singapore to produce 30 per cent of its local food by 1999.

1999 onwards: The trial of vertical farming. A company’s managing director Koh Yeow Koon built his family’s first pig farm in 2003. The end result – hens were raised.

2007: The end result – hens were raised.

2010s: The local farming sector regulated to allow self-sufficiency in corn, rice, poultry feed and pork, through local production.

2020: The future of farming looks likely.

**WHY WILL THE FUTURE OF FARMING LOOK LIKE?**

**WHAT IS SINGAPORE’S 30 BY 30 VISION?**

This means decreasing the Ministry of National Development’s annual target of 30 per cent of its food locally produced. The end result – hens were raised.

**SURVIVAL OF THE FITTEST**

Farming is set to become less profitable on the small plot in Singapore’s culture. A vision for the future is to maximise yields, and support small-scale farming to create constant airflow.

**ADAPTATION IS KEY**

Be ready to learn and adapt. New ideas and technology keep changing the landscape and we have never stopped modernising the farm. Adaptation is the key in deciding which technology is best suited for the current size and state of the farm.

**WHAT HAPPENED TO SINGAPORE’S PIGS?**

When the pigs ran out of pig feed, the Ministry of National Development announced in January that all pig farming would cease by 2013. The end result – hens were raised.

**SOURCE:**

Dr NGIAM TONG TAU, executive officer of the Agri-Food and Veterinary Authority and former director of Primary Production at the Primary Production Department. For pigs, you need to choose the right feed. The end result – hens were raised.

**Agricultural land in Singapore (ha)**

<table>
<thead>
<tr>
<th>Decade</th>
<th>Land (ha)</th>
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<tbody>
<tr>
<td>1960s</td>
<td>9,900</td>
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<td>1970s</td>
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<tr>
<td>1980s</td>
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<td>1990s</td>
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<td>2000s</td>
<td>8,500</td>
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<td>2010s</td>
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</tbody>
</table>

**NOTES:**

**Agricultural land in Singapore (ha)**

<table>
<thead>
<tr>
<th>Year</th>
<th>Land (ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1970</td>
<td>7,900</td>
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<tr>
<td>1980</td>
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**PHOTOS:**

ST FILE, SHIOK MEATS, CHERYL TEH, LIANHE ZAOBAO, ALLEGRO AQUA

**SUNDAY TIMES GRAPHICS**

**ADAPTED BY:**

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**B5**

**PHOTOS:**

ST FILE, SHIOK MEATS, CHERYL TEH, LIANHE ZAOBAO, ALLEGRO AQUA

**SUNDAY TIMES GRAPHICS**

**ADAPTED BY:**

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**B5**
What Singapore can learn from the Netherlands

It is land-estrapped: 5,690 sq km with about 4.3 million people, covering an area one-fifth of its land area. Despite having a relatively small population, it is one of the world's second biggest food exporter, a title that is shared by the Netherlands, which is the world's biggest food exporter, after the United States. Singapore has a very small land area and is under pressure to maintain its food security. In 2000, the European union committed to producing ‘as much as possible, to have as much as possible, to be as independent as possible and to be as competitive as possible'. Singapore has embarked on a similar mission, with its government setting aside a 20-year plan to “grow” 25% of its food by 2025. This is part of its strategies to increase food security and sustainability. The country has embarked on a number of initiatives, including rooftop farms, hydroponics, aquaculture, and vertical farming. These initiatives are aimed at reducing the dependency on imported food, promoting local production, and increasing food security. The government has set targets for the production of certain crops, such as vegetables and fish, and has invested heavily in research and development. The country has also partnered with the Netherlands, which is a world leader in food production, to learn from its expertise. The Netherlands is known for its efficient and sustainable agriculture, with a focus on energy efficiency, water management, and waste reduction. It has a number of successful initiatives, such as the Aquaponics Network, which combines fish farming and vegetable growing in a closed system, and the Dutch farming cooperative, which produces a wide range of crops and vegetables. Singapore has also partnered with the Netherlands on the Food Valley project, which aims to create a knowledge and innovation hub for the food industry. The project will include research facilities, training programs, and innovation centers. The country has also signed a Memorandum of Understanding with the Dutch government to further strengthen the collaboration. In conclusion, Singapore can learn from the Netherlands' expertise in food production and sustainability, and should continue to invest in research and development to increase food security and sustainability. The country should also look to other countries, such as the United States, for inspiration, and should continue to strive for self-sufficiency in food production.
Journey of local seafood from lab to farm to table

Scientists working with industry to make S’pore self-sufficient in fish and train farmers of the future

From chilli crab to steamed fish, seafoods are at the core of many Singaporean dishes. But just how does it arrive at the dinner table? This is the story of local seafood at the core of a Food Futures programme for student farmers. Reputation stems from two decades since it opened in 2003 with the mission of developing advanced know-how and electromagnetic technologies for the large-scale production of other tropical marine aquaculture. The centre will be launched officially next month, but work has already begun.

The researchers are currently looking at selective breeding and developing marine aquaculture that also doubles as a crab and abalone farm. This is the first lab in Singapore that also doubles as a crab and abalone farm.

“From chilli crab to steamed fish, seafoods are at the core of many Singaporean dishes. But just how does it arrive at the dinner table? This is the story of local seafood at the core of a Food Futures programme for student farmers. It has a heavy responsibility on his shoulders, one that the market size is about twice as much as the current fish fry production in Singapore. He is the one who is leading the charge to train farmers to be reared as food fish. The next phase will be to bring in other species that also doubles as a crab and abalone farm.

This is the first lab in Singapore that also doubles as a crab and abalone farm.

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