

AVA:
A LEGACY OF
EXCELLENCE
a commemorative issue



OUR ACHIEVEMENTS AND HERITAGE

A commemorative photo story

Since 2000, AVA has been working with our stakeholders and partners to secure a resilient supply of safe food for Singapore, keep our crops and plants healthy, as well as protect the health and welfare of animals. In these 19 years, AVA strengthened its organisational capabilities, and guided the agri-food sector towards innovation and technology. Defying all odds as a small nation with little to no natural resources, Singapore is put on the world map with internationally recognised standards for food safety, animal health and plant health, and top ranks on the Global Food Security Index. AVA Vision takes you on a walk down memory lane for a glimpse of the challenges we faced and successes we celebrated over the years.

“ The 2018 Global Food Security Index puts Singapore as the Number 1 country in the world in ensuring that citizens have access to safe and nutritious food at affordable prices. This is testimony to the hard work by generations of our staff since AVA’s early days as the Primary Production Department in pre-independence Singapore. ”

*Mr Masagos Zulkifli, Minister for the Environment and Water Resources
Second Reading of the Singapore Food Agency Bill, 12 February 2019*

LEAVING A LEGACY OF EXCELLENCE

Key milestones & achievements of AVA
(1 Apr 2000 – 31 Mar 2019)



The **Agri-Food & Veterinary Authority of Singapore (AVA)** was formed as a statutory board, with an autonomous framework that allowed it to be more responsive and flexible in meeting the challenges ahead.

2000



Following stringent assessments, the Veterinary Public Health Laboratory, the cornerstone of AVA’s food safety regime, was awarded the ISO Guide 25 accreditation (now **ISO/IEC 17025 SAC-SINGLAS**). This accreditation attests to the high standards of food safety testing maintained by AVA.

2001



▲ The **Post-Harvest Technology Centre (PHTC)** was built, with the role to carry out collaborative R&D projects and provide technical expertise to the food industry in the areas of post-harvest handling, food packaging, and quality assessment. PHTC also became the Collaborating Centre for the Southeast Asian Fisheries Development Centre’s (SEAFDEC) **Marine Fisheries Research Department (MFRD)** programme on fisheries post-harvest technology.

The **electronic Dog Licensing System** was launched to allow dog owners to apply for or renew their dog licences online. Previously, dog owners could only do so in person.

The **AVA Phytosanitary Tag** was introduced to facilitate the sale of cut orchid flowers at Changi Airport, allowing tourists to buy pre-packed pest-free orchid flowers without applying for a phytosanitary certificate from AVA.

The **Food Control Division, from the Ministry of Environment, was transferred to AVA** to rationalise food safety functions into one seamless operation, regulating the safety of all food from production to import and wholesale, right up to just before retail.

AVA appointed an **International Advisory Committee of Experts (IACE)** to review and assess the effectiveness of our food safety and biosecurity programmes. The IACE found Singapore's food safety standards to be on par or even ahead of most countries.

The **Animals and Birds Act** was amended to provide enhanced investigative and enforcement powers to AVA. Revisions included increasing the maximum penalty for animal cruelty offences and criminalising abandonment. **All veterinary clinics and hospitals were also required to be licensed by AVA** to ensure professional accountability and safeguard the interests of pet owners.



◀ A **Food Safety Public Awareness programme** was launched to educate consumers on how to better protect themselves against foodborne diseases. As part of the programme, a food safety mascot – Oscar the Food Safety Otter – was introduced.

2002

AVA rose above 2 regional crises that threatened to disrupt food supply to Singapore:

- **Outbreaks of Highly Pathogenic Avian Influenza (HPAI) in several countries** led us to suspend imports of birds and poultry products from affected countries. AVA stepped up control measures and honed our ability to deal with a potential outbreak locally. New testing capabilities were established to specifically detect subtypes of the bird flu virus within seven hours, as compared to the traditional method which took three days.
- An **outbreak of SARS in Singapore** forced the Pasir Panjang Wholesale Centre (PPWC) to close, disrupting our regular vegetable and fruit distribution. To ensure the continued supply of safe and sufficient fruit and vegetables, vegetable distribution was re-channelled to local supermarkets and distributors, without having to go through the PPWC. Import approvals were granted to additional suppliers of Malaysian fruit and vegetables, who either delivered directly to market operators or to the secondary distribution sites set up at Toa Payoh and Eunos. ▶



2003

2003



▲ AVA's **Marine Aquaculture Centre** opened on St. John's Island with the aim to research on and develop technology in tropical marine food-fish aquaculture as well as play a role in increasing Singapore's annual fresh fish consumption.

AVA's **corporate flower**, the Dendrobium AVA was launched.

2004



▲ The **Veterinary Public Health Centre (VPHC)** was officially opened, and the laboratory was appointed as a food testing reference laboratory for pesticide residue testing under the EC-ASEAN programme to strengthen capacity in food testing laboratories.

The import of poultry and products from Malaysia and South Africa was suspended due to an **outbreak of HPAI**. AVA worked with counterparts to create bird flu-free zones in Malaysia, and stepped up our control and surveillance programmes. This enabled imports to resume without compromising animal or public health.

The **Responsible Pet Ownership (RPO) Programme** was launched, with a multi-prong approach to spread the message of “A Pet Is for Life” to the public effectively. Two anchor events, a three-day roadshow at Great World City and an adoption drive in Bishan Park attracted huge turnouts. ▼



2004



▲ The inaugural **Food Safety Awards Night and Food Safety Excellence awards** debuted, which became an annual event to honour food industry members who have consistently maintained high standards of food safety.

AVA attained the **Singapore Quality Class** and the **People Developer Standard** certifications.

The **Good Agricultural Practice for Vegetable Farming (GAP-VF)** certification scheme was launched as a national benchmark for the local production of safe and quality vegetables.

Half a million **AVA-produced sea bass**, which hatched in our pilot commercial-scale hatchery at St. John's Island and grew-out on an offshore farm in Riau, Indonesia, arrived at the Jurong Fishery Port for supply to the local market.

Mandatory microchipping for all newly licensed dogs was implemented to manage pet and stray dog population. The **Dog Licensing and Control Rules** came into effect to instil responsible pet ownership and discourage pet abandonment. A **pet shop grading system** was implemented to raise the level of professionalism and the standards of animal care.

The **Sembawang Animal Quarantine Station (SAQS)** was officially opened with facilities such as dedicated cattery and kennels, as well as for the quarantine of imported dogs and cats to ensure that exotic diseases like rabies are not introduced into Singapore. Singapore remains rabies-free since 1953. ►



2007

2005



▲ The **Animal and Plant Health Centre** began operations, featuring some of the most advanced testing laboratories in the region. As the national reference laboratory for the diagnosis of animal, bird, fish and plant diseases, it provides diagnostic support for AVA's surveillance and monitoring programmes, in order to maintain Singapore's disease-free statuses. The Animal and Plant Health Laboratories also achieved the ISO/IEC 17025 SAC-SINGLAS accreditation.

AVA's Marine Aquaculture Centre (MAC) established a **protocol for the packing of sea bass fry that ensures a 100% survival rate in 36 hours without compromising on quality**. This method allowed the MAC hatchery to supply sea bass fry to farms in the region and beyond.

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2006

AVA's Veterinary Public Health Laboratory developed Singapore's **first screening detection method for Genetically Modified (GM) rice**. The Polymerase Chain Reaction-based screening method further heightened the safety of our imported rice supply by preventing unauthorised GM rice from entering Singapore.

The **Endangered Species (Import and Export) Act 2006**, together with its subsidiary legislations, came into operation, with enhanced enforcement powers and increased penalties for the smuggling of endangered species.

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◀ As part of our efforts to enhance food supply resilience, the **“Eat Well For Less, Choose Frozen Meat”** public education programme was launched to encourage the use of frozen meat as an alternative to chilled meat.

In response to the **melamine-contaminated milk products incident in China**, AVA acted swiftly and was the first country to ban imports and issue a total recall as soon as there was evidence of contamination beyond infant formula. We were also the first country to lift the ban, following a review based on AVA’s risk assessment and management strategy.

AVA attained the **Innovation Class** award.

2008



◀ **Pompanos (golden promfrets)** were successfully spawned by the Marine Aquaculture Centre on a commercial scale in tropical waters for the first time through collaboration with a local fish farm.



◀ A **Vertical Farming System prototype**, expected to yield at least 5 times more crops than that of a conventional soil-based farm, was successfully developed in collaboration with a private company.

2011

2009

AVA underwent a **corporate re-organisation** to recalibrate its vision, mission, and core values, and re-aligned its organisational structure to better tackle the complexities and uncertainties occurring in the world.

The first tranche of the AVA’s **Food Fund** was launched with \$5 million committed to support the diversification of overseas food sources, and to maximise the productivity of local vegetables, food fish and egg farms.

New animal welfare conditions for pet farms were implemented to further improve their standards of animal welfare. We worked closely with pet farms to help them raise their standards.



◀ Working with a local fish farm, AVA successfully tested and commissioned a newly completed **large-scale fish nursery facility at Pulau Semakau**, which included test-bedding of a batch of seabass fingerlings from AVA. Following the success of the test-bedding trial, the farm commenced full-scale operation with a stocking of 300,000 seabass fry derived from AVA’s MAC.

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2010



◀ A public education programme on **egg powder and liquid egg** was launched to raise consumers’ awareness on the alternatives to shell eggs.

Singapore became a **signatory to the International Plant Protection Convention (IPPC)**, which aims to protect cultivated and wild plants by preventing the introduction and spread of pests.

Compulsory formal training for the pet retail industry was introduced to further improve the standards of animal welfare and professionalism in pet shops and pet farms.

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◀ Singapore joined the **Food and Agriculture Organisation of the United Nations (FAO)** as a member, marking Singapore's continued commitment in playing her part in global food security.



◀ AVA organised the inaugural **Food Industry Convention (FIC)** to build a greater understanding amongst food industry on the importance of food security to Singapore. It brings together leaders, experts, and stakeholders from across all sectors of the food industry to exchange ideas and insights.

The Economist Intelligence Unit's latest Global Food Security Index (**GFSI**) ranks **Singapore as 1st in Asia** and 16th amongst 107 countries.

2013



▲ A \$3.85-million **Lorong Halus jetty** was launched to support the operations of fish farms in the eastern Johor Straits. The amenity provided greater convenience and helped these farmers save time in travelling, all of which resulted in higher productivity.

2014

A \$63-million **Agriculture Productivity Fund (APF)** was launched to help both food and non-food farms to increase productivity, with a higher funding quantum to support farmers in adopting systems and equipment.

AVA and Temasek Life Sciences Laboratory successfully **enhanced growth rates of the Asian sea bass by 30%**, following a collaboration since 2009 to breed superior lines of healthier and faster-growing stock.

VPHC was endorsed as **Southeast Asia's first OIE Collaborating Centre for Food Safety**, enabling us to keep abreast of emerging challenges in food safety, as well as new developments in food safety standards and regulations.

The Veterinary Public Health Laboratory (VPHL) gained recognition as the **ASEAN Reference Laboratory for Environmental Contaminants**. In this role, VPHL provides training as well as technical advice and services to ASEAN member countries.

2011 -2012

2011

A **tsunami and nuclear plant disaster in Japan** threatened the safety of food imported from affected prefectures. AVA responded immediately by testing affected products for radioactive contaminants, imposing bans on implicated prefectures, and stipulating the requirement for a certificate of origin to accompany each shipment of Japanese products entering Singapore.

The **registration of food storage warehouses** commenced with the objective to help enhance food traceability and enable AVA to promptly notify warehouses should there be a need for immediate recall of affected products in the event of a major food crisis.

Appointed as the **First Responder on animal-related feedback**, AVA took on the role to lead and coordinate efforts of relevant agencies in responding to public feedback on animal-related issues.

An **animal-rehoming programme** was initiated with 5 animal welfare groups, where we closely collaborate on rehoming efforts and animal-related matters.

2012

The **Vertical Farming System was commercialised** by Sky Greens, and Singapore's first vertical farm was officially launched.

Project ADORE (ADOOption and Rehoming) was launched to allow mid-size mongrels to be kept in HDB flats as pets.

2014



▲ AVA's **headquarters was relocated to Jurong East** from Maxwell Road after 40 years. A new Customer Service Centre was also set up in the new headquarters at JEM Office Tower to streamline processes and enhance customer experience.

The **Good Aquaculture Practice for Fish Farming (GAP-FF)** certification scheme, which sets the benchmark for the production of safe and quality fish, was launched with the aim to raise awareness of local fish farms among consumers, as well as to provide assurance to both retailers and consumers.



◀ AVA and Veredus Laboratories jointly developed the VereVet lab-on-chip application, the **World's 1st biochip to detect multiple avian diseases.**

Amendments were made to the Animals and Birds Act as recommended by the **Animal Welfare Legislation Review Committee.** Following the successful passing of the Private Member's Bill in Parliament, the Codes of Animal Welfare for the Pet Industry and Pet Owners were implemented in 2016 and 2017 respectively.

2015

2016

AVA and Temasek Life Sciences Laboratory **further improved the growth rate of the Asian sea bass**, and developed lines that demonstrated greater omega-3 fatty acid content and resistance towards diseases.

The first shipment of 325,000 **hen shell eggs from Thailand** arrived, after AVA approved farms there to export the produce to Singapore.

Singapore successfully hosted the 38th **Meeting of the ASEAN Ministers on Agriculture and Forestry (AMAF)** and the 16th Meeting of the AMAF Plus Three (AMAF+3). Over a hundred AVA staff were mobilised to ensure the meetings proceeded smoothly for all local and foreign dignitaries and delegates involved. Singapore also previously hosted AMAF meetings in 1989, 1995, and 2006. ▼



◀ Live pigs were imported from Sarawak, Malaysia for the first time. This made Sarawak the second source of live pigs for Singapore, other than Bulan, Indonesia. This was also the first import of live pigs from Malaysia in 18 years.

Through discussions involving the Industry Consultation Panel, AVA developed a **Farm Transformation Map** that will guide the transformation of our farming sector.

The **National Strategic Action Plan on Antimicrobial Resistance (AMR)** was jointly developed by the One Health Antimicrobial Resistance (AMR) Workgroup— comprising the Ministry of Health, AVA, NEA and PUB. Regionally, AVA leads in AMR initiatives to build up Singapore's status as the lead country in coordinating ASEAN efforts in the livestock and aquaculture sectors.

2017

2017

"**The Animal Lodge**", an animal facility in Sungei Tengah, was developed to house about 7,000 animals affected by land leases expiring in Loyang, Seletar, and Lim Chu Kang. AVA worked closely with animal welfare groups and commercial operators in the design and construction of the new facility.



Singapore received the **CITES Secretary-General's Certificate of Commendation** in recognition of its successful interception of an illegal shipment containing 3,235 tonnes of CITES-listed rosewood logs in 2014.

▲ The former Centre for Animal Welfare and Control at Pasir Panjang was relocated to Sungei Tengah and renamed the **Animal Management Centre (AMC)**, comprising offices and amenities such as an animal holding area and quarantine area. AMC also has an expanded exercise yard for dogs, an area for the public to claim lost pets, and an education centre for outreach activities.

Singapore achieves the **No. 1 global ranking in food security** amongst 113 countries, according to the Global Food Security Index.

AVA awarded the **farm land tender** for the first tranche of vegetable plots based a new **'fixed price' tender method**, where the land price was set up-front and the bidders competed solely on concept. This approach ensured that the best concept proposal wins, instead of the highest bid price.

Through the collaborative efforts of AVA, Singapore Land Authority, Early Childhood Development Agency, Ministry of Health, the former Henderson Secondary School would be housing the **first-ever integrated space for urban farming, child care, and healthcare** to cater to the needs of the community living in the area.



The **Singapore Food Agency (SFA)** will be formed on 1 April 2019 under the Ministry of the Environment and Water Resources to oversee food safety and security. SFA will be the lead agency for all food-related matters and bring together all food-related resources and capabilities currently carried out by AVA, the National Environment Agency (NEA) and the Health Sciences Authority (HSA).

All non-food plant and animal related functions of AVA will be transferred to the National Parks Board (NParks) under MND. NParks will be the lead agency for animal and wildlife management, as well as animal and plant health.

The Research, Innovation and Enterprise Council (RIEC) announced that **\$144 million will be set aside support AVA's R&D plan** on sustainable urban food production, future foods, and food safety science and innovation.

2018

2019

2018

2019



◀ The nationwide **Trap-Neuter-Release-Manage programme**, developed by AVA in close collaboration with 11 animal welfare groups, was launched. This scientific and humane approach will sterilise stray dogs and rehome them. Those unsuitable for rehoming will be released at suitable locations, supported by responsible community feeders.

A **'SkillsFuture Earn-and-Learn' work-study programme**, which leads up to a Diploma in Applied Science (Aquaculture) from Temasek Polytechnic, was launched. Under this 12-month course, farms receive up to \$15,000 worth of incentives to defray the cost of training each course participant.



Minister for National Development Mr Lawrence Wong hosted an event to show **appreciation for the work done by AVA** over the past 19 years. A plaque was presented to AVA CEO Mr Lim Kok Thai. The event also comprised the screening of an AVA commemorative video, addresses by Mr Wong and Mr Lim, as well as a buffet lunch for all staff.

OUR HISTORY & HERITAGE



Formation of the Primary Production Department (PPD). The Agriculture, Co-operatives, Fisheries, Rural Development, and Veterinary divisions were integrated under the Ministry of National Development.

1959

Although AVA existed for less than two decades, our history and heritage stretches back to Singapore's colonial years. We built on the good work and foundation laid by our predecessor, the **Primary Production Department (1959 - 1999)**, and advanced the efforts to safeguard food safety, food supply resilience, plant health, as well as animal health and welfare.

1960s

Technical assistance for farmers. We transferred knowledge in farming techniques, animal health management, and helped with the building of poultry houses, and getting the necessary permits. Subsidised services such as poultry inoculation, and sale of improved strains of day-old chicks at a nominal price were also given.

Establishment of Farm School. Built to provide the latest in scientific and technical training specially tailored to suit Singapore's farming requirements to achieve more diversified and intensive methods of agriculture production.



1960s



1960s



Introduction of farm licensing. PPD collected essential information to assist the Government in formulating policies and plans for further development of intensive farming in Singapore.



Establishment of the Primary Production Extension Service. It helped to build relationship and improve the communication between the rural people and the Government. Nine Veterinary Extension Centres were constructed in such rural areas with the aim to improve livelihood of farmers through extension services and assistance schemes.

1960s



▲ Administration of Van Kleef Aquarium came under PPD and grew into a major tourist attraction.

Development of vaccines for Newcastle Disease and Fowl Pox. Newcastle Disease was feared as killer disease of poultry so the vaccination service was popular. We also encouraged the use of modern and scientific techniques in animal breeding and nutrition.

Disbursement of flood relief scheme. During the 1969 floods, 40 poultry farms (among other farms) benefitted from a relief scheme of cash, materials, and loans.

1960s



▲ **Completion of the Central Abattoir, Animal Quarantine Station, and Pig Market at Jurong.** At a cost of about \$6 million, this continuous line system of slaughter achieved high hygienic standards of meat handling and inspection. The UK Government official accorded the Jurong Central Abattoir as an approved establishment for the supply of meat for canning and processing in Singapore for export to UK.

Commencement of operations at Jurong Fishing Port and Central Fish Market. This facility replaced the former Fisheries Port Office at Telok Ayer Basin, as well as two wholesale fish markets – Ellenborough and Clyde Terrace Markets. It now served as the main landing, collecting and wholesale distribution centre for fish in Singapore.

Successful presentation of the Agricultural Show. PPD, the Singapore Stockfeed Manufacturers' Association, and the Singapore Livestock Farmers' Association jointly organised the exhibition, which was declared opened by then Prime Minister Mr Lee Kuan Yew. It attracted about 300,000 visitors from Singapore and Malaysia, and netted a profit of \$40,000 from entrance fees, which was used to promote the interests and welfare of local farmers.



Construction of the **Veterinary Centre** at Kampong Java Road and the establishment of a Pig and Poultry Research and Training Institute. These were developed by the joint effort of the Singapore Government and the United Nations Development Programme (Special Fund).

1970s

Development of effective vaccine for swine fever by animal health laboratories. Swine Brucellosis was also stamped out. Another major pig killer, the Aujeszky's disease, was also effectively controlled. Chicken liver cells were successfully grown for disease diagnosis. ▼



Setting up of the **10th Agricultural and Veterinary Extension Services Centre**. Regular visits to farms were made by extension officers to advise farmers on modern methods of intensive farming and give on-the-spot assistance in solving their problems.

Set up of **meat technology unit**. Laboratory tests and analyses on meat and meat products were conducted here according to internationally accepted standards. The scope of services provided at this lab was then extended to other primary products as well. ►



1970s



◀ Opening of **1st Horticulture and Aquarium Fish Show**. It was opened by Prime Minister Lee Kuan Yew in 1976 at the National Stadium.



◀ **Resettlement of pig farms**. Pig farming was banned in water catchment areas such as Kranji (1977), as well as Kallang and Singapore River basins (1981), affecting more than 3,000 pig farms. Instead, intensive pig farming estates were being developed at Punggol and Jalan Kayu. Efficient vegetable and orchid growers were allotted land that was vacated by pig farmers for intensive farming.



▲ Achievement of a level of **self-sufficiency in certain key food items**. These items included fresh pigs (104%), hen eggs (100%), chicken (80%), and leafy vegetables (50%).

Enactment of Dog (Licensing & Control) (Amendment) Rules. In response to public complaints about the lack of control of licensed dogs in the public, the law now made it an offence for owners to let their dogs out unless they are leashed or under their immediate control.

Control of pigeons and crows. The Dog Control Unit, responsible for the licensing of dogs and control of stray dogs, enlarged its scope of work to include the control of pigeons and crows which were becoming a nuisance in certain areas.



Establishment of Agrotechnology Parks. In 1989, Phase I of Loyang Agrotechnology Park (32ha) was completed to house modern intensive farms, while Phase 1 of Lim Chu Kang Agrotechnology Park (285ha out of 858ha) began in 1989. There were 79 farms covering a total area of 260 ha in the Loyang, Nee Soon, Sungei Tengah (Phase I), Murai and Lim Chu Kang (Phase I) Agrotechnology Parks. These Parks also contribute to Singapore's lead in the worldwide export of tropical ornamental fish and orchids.

1980s



Launch of National Eat Frozen Pork Campaign. In the lead-up to the complete phasing-out of pig farming in Singapore by 1989, the "Eat Frozen Pork Campaign" debuted in 1985 to dispel common misconceptions on frozen pork and raise public awareness of the production, handling, quality and nutritional value of frozen pork. **The first import of live pigs from Pulau Bulan arrived in 1987**, and provided an alternative source of pork.

1980s



Completion of extension of the Jurong Central Fish Market. It included a four-storey fish merchant office building, canteens, bigger market stall space, more parking lots, proper loading/unloading facilities, as well as a field fish quality inspection laboratory on the mezzanine floor of the new extension. The new facilities would enhance the Jurong Fishing Port as an international fishing base for local and foreign vessels.

Opening of Changi Animal and Plant Quarantine Service Centre. The new facility was built to accommodate dogs, cats, wild animals, and birds undergoing quarantine, as well as to store biologicals, and to examine imported meat.

Joining as a Party to the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). This demonstrated Singapore's commitment to wildlife conservation. ▶



Managing the effects of Chernobyl nuclear disaster in Russia. PPD tested all consignments of meat and fish products from Europe for radioactivity, while ensuring that supply of these commodities remained stable. ▶





▲ **Launch of Singapore Quality Egg Scheme (SQES).** It further provides confidence that all eggs produced in Singapore are of the highest grade and freshest found locally. The SQES logo was subsequently revised in consultation with SQES-registered farms in 2011.

1990s

Further expansion of laboratory capabilities. PPD's Veterinary Public Health laboratories produced SPF eggs for disease diagnosis and R&D purposes.

Managing of Nipah virus outbreak in Malaysia. PPD swiftly banned the imports of all live animals, except birds, from Malaysia and closed the abattoirs for complete disinfection. This stopped the spread of the disease and it was stamped out within a week. As Singapore imported all its live pig supply from Malaysia, the ban on the import of Malaysian pigs effectively cut out 70% of our pork supply. Our food supply diversification programme had put in place alternative sources of pork from other countries, and Australian suppliers were quick to fill in the shortage by air freighting in chilled pork.

First in the world to obtain CITES certification to breed captive Arowana, and to microchip Arowana. PPD developed a systematic procedure to tag the Arowana or Dragon Fish, which allows for identification of second generation or "F2" Dragon Fish. A local farm, with PPD's assistance, was the first in the world to obtain CITES certification to breed and export F2 (or beyond) Dragon Fish. ▶



▲ **Establishment of Centre for Animal Welfare and Control (CAWC).** This centre was a merger of the Animal Control Section and the Animal Welfare Section into a one-stop location for all matters pertaining to animal control and welfare.

Gazettal of the Control of Plants Act. This entailed the licensing of fruit and vegetable importers and requiring producer labelling on all such consignments, certification of pesticide operators, and registration of pesticides.

1990s



▲ **Opening of Senoko Fishing Port (SFP).** Built at a cost of \$29 million, the SFP replaced the Punggol Fishing Port to serve as a home base for local fishing fleet. It also won the 5th Singapore Institute of Architects Architectural Design Awards 1998.

Production of a Pet Starter Kit for potential and new pet owners. With the aim to educate the public on responsible pet ownership and proper pet management, PPD made these kits available free-of-charge at CAWC, pet shops, veterinary clinics, and the Society for the Prevention of Cruelty to Animals.

2000s



● **Celebration of PPD's 40th anniversary.** A FoodAgri 21 Exhibition was held at the World Trade Centre Exhibition Halls, where we showcased PPD's past and present achievements to some 36,000 visitors.



Commemorative

SINGAPORE FOOD AGENCY

A new chapter in the Singapore Food Story

Just as AVA had carried on PPD's legacy and went above and beyond, the soon-to-be formed Singapore Food Agency (SFA) will ensure that Singapore's food security is well-placed for the future.

“ Food security is fundamental to our national security. As the lead agency for food-related matters, SFA will be well-placed to work closely with all stakeholders from farm-to-fork to transform the agri-food industry, seize opportunities in the future food landscape, and provide good jobs for Singaporeans.

*Mr Masagos Zulkifli, Minister for the Environment and Water Resources
Second Reading of the Singapore Food Agency Bill, 12 February 2019*



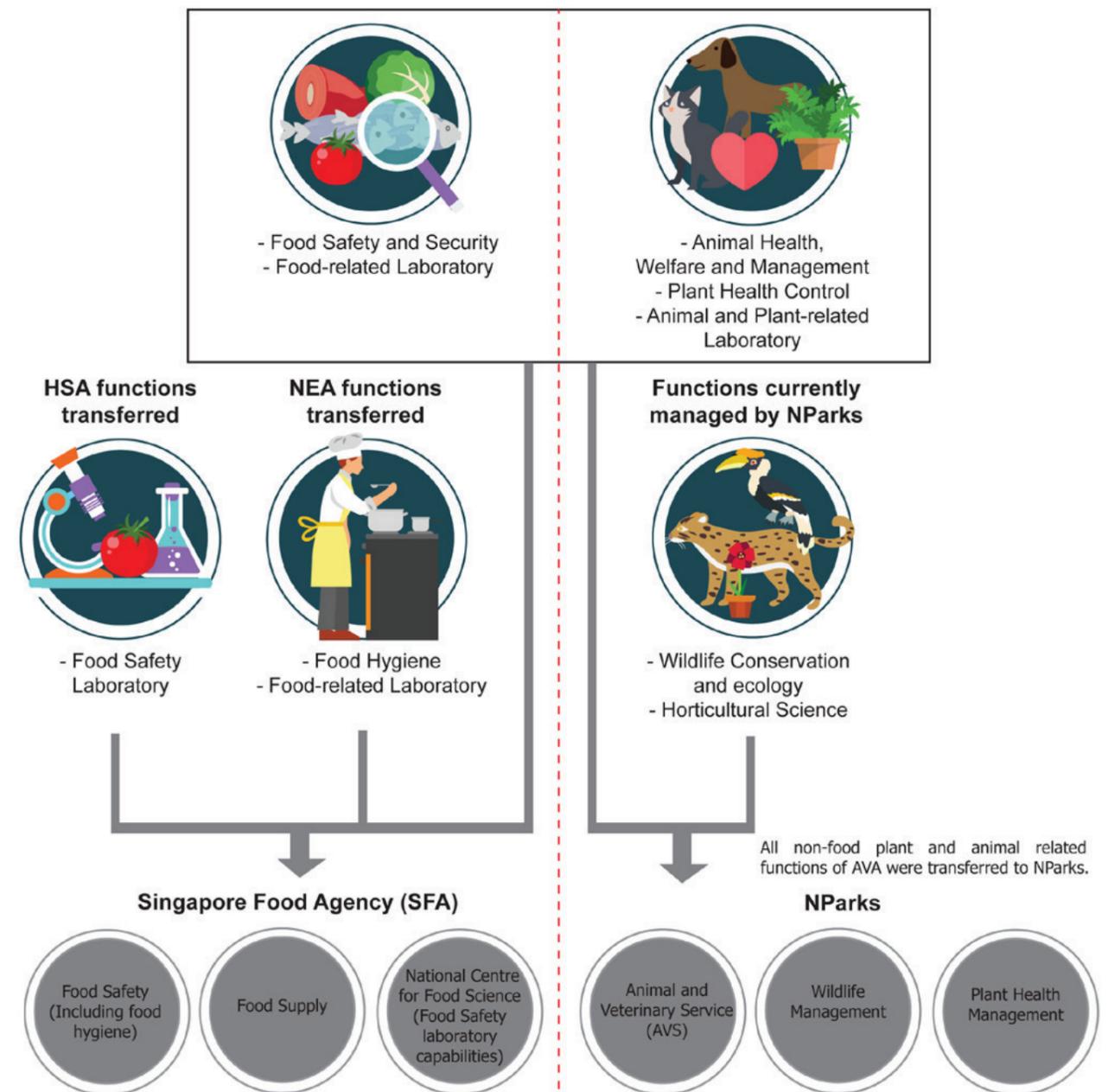
Commemorative

As of 1 April 2019, all food-related functions previously under AVA, Health Sciences Authority (HSA), and National Environment Agency (NEA) will be consolidated into a new statutory board called the Singapore Food Agency (SFA).

In parallel, all plant and animal matters that are unrelated to food will be transferred from AVA to National Parks Board (NParks), which will now be the lead agency for animal and wildlife management, as well as animal and plant health.

A new Animal and Veterinary Service (AVS) will also be formed under NParks as the main touch-point on animal-related issues for pet owners, pet businesses, and animal welfare groups. In addition, it takes on AVA's previous role as the first responder for animal-related feedback, and will continue to uphold high standards in animal welfare and health.

AVA functions distributed





WHAT CAN SINGAPORE LOOK FORWARD TO?

Farm-to-fork model for food safety

This reorganisation and consolidation of food-related capabilities into SFA emphasises the high priority and commitment that the Government places on food safety and security. At the same time, it allows uniform application of measures, faster responses, and more efficient and effective use of resources and expertise.

NEA and AVA's current capabilities in licensing, compliance management, and investigation, as well as HSA's laboratory testing expertise, will

be consolidated in SFA. In addition, SFA will be able to holistically and promptly respond to food safety incidents wherever these occur along the food supply chain (accreditation of overseas farms, import, intermediate processing by central kitchens and retailers, and proper storage and preparation at retail).

Three food baskets approach

SFA will work hand-in-hand with the industry and consumers to enhance Singapore's food security. This will be done via our three "food baskets" approach that comprises (1) diversification of import (see infographic below). A target has also been set to achieve local food production that fulfils 30% of Singapore's nutritional needs by 2030.

SINGAPORE'S THREE FOOD BASKETS

Diversify import sources

Reduces risk of reliance on any one supply source

- Explore more import sources to facilitate the industry's diversification efforts
- Importers of key food items will be required to adopt plans to mitigate the impact of food supply disruptions
- Organise and facilitate food sourcing activities regularly to help industry players find alternative import sources

Grow local

Transform agri-food industry to one that is highly productive and employs climate-resilient and sustainable technologies

30 by 30

We aim to develop the capability & capacity of our agri-food industry to produce 30% of Singapore's nutritional needs by 2030

Singapore's nutritional needs: 20% veg & fruits, 10% proteins

To achieve this, we will:

- Leverage tech to grow more with less
- Leverage tech to farm sustainably
- Develop a pipeline of local agri-talents
- Unlock more spaces (new farmland & sea space) to grow food locally and explore alternative spaces for food production
- Encourage consumers to choose local to sustain a vibrant agri-food ecosystem

Grow overseas

Support our companies to expand and grow overseas so that their produce can be exported back home

- Companies can overcome land and manpower constraints and access new and bigger markets
- Produce can be exported back to Singapore, contributing to our food security



WHAT CAN THE INDUSTRY LOOK FORWARD TO?

Facilitative regulations and R&D ecosystem

As the lead agency for food-related matters, SFA will be well-placed to work closely with all stakeholders from farm-to-fork to transform the agri-food industry, and seize opportunities in the future food landscape.

In fact, the future is already at our doorstep. With new and novel food products emerging, and they have the potential to provide us with a safe and sustainable supply of food, without compromising on taste or health. One example

is plant-based protein with meat-like texture and taste from companies such as Beyond Meat and Impossible Foods.

SFA, together with relevant agencies, must seize such rising trend/opportunity, and make a conscious effort to position Singapore as an agri-food hub – from facilitative regulations that encourage innovation, to creating the necessary R&D ecosystem. To catalyse the agri-tech innovation and co-creation among industry players, we need to strengthen our infrastructure support. To this end, a new 18ha Agri-Food Innovation Park (AFIP) will be developed to bring together hi-tech farming and R&D activities, including indoor plant factories, insect farms, and animal feed production facilities. The first phase of the park will be ready in 2021, with potential for future expansion.

Looking farther into the next generation

In transforming the food landscape, it is critical that we cast our sights farther and lay the foundations for generations after us, and make sure the industry will continue to provide good jobs for Singaporeans.

We will need a new generation of talent in agricultural technologies, with in-depth understanding of urban farming processes and business models, and multi-disciplinary expertise in areas including engineering, info-communication technology, and entrepreneurship. To nurture such talents, there must be a shared vision and strong partnerships between companies, education and training providers, as well as the Government.

Republic Polytechnic, AVA, and the Singapore Agro-Food Enterprises Federation (SAFEF) have put together a SkillsFuture Earn and Learn Programme (ELP) leading to the Part-time Diploma in Applied Science in Urban Agriculture Technology, which is Singapore's first diploma programme in urban agricultural technology. With the ELP, the part-time Diploma will be available to both students and working adults. Eight farms and companies have already agreed to be part of this inaugural ELP run.



Commemorative

AVS UNDER NPARKS

Guardian of animal health/welfare, and plant health

NParks will continue to engage and work with all stakeholders to develop holistic and science-based strategies, and more effective responses to animal health, welfare and management, as well as plant health.

“ I believe that this transfer of functions will leverage NParks’ strengths to amplify the effectiveness of AVA’s approach on animal issues thus far. I look forward to Members’ and Singaporeans’ support for NParks’ expanded role. ”

*Ms Sun Xueling, Senior Parliamentary Secretary, Ministry of National Development
Second Reading of the National Parks Board (Amendment) Bill, 12 February 2019*



Commemorative

WHAT CAN THE PUBLIC AND INDUSTRY LOOK FORWARD TO?

Over the years, AVA has done well to keep Singapore well-protected against zoonotic diseases such as the bird flu and rabies. It also effectively rose to meet citizens’ increasing demands in animal welfare issues by working with multiple and diverse stakeholder groups.

To enhance our approach for animal welfare and management, and plant health control, AVA’s non-food plant and animal-related functions will be transferred to National Parks Board (NParks) to reap synergies with NParks’ current work in wildlife conservation and horticultural science.

NParks will continue to engage and work with all stakeholders to develop holistic and science-based strategies, and more effective responses to animal health, welfare and management, as well as plant health. For example, NParks will be deepen stakeholder collaboration in the management of stray dogs. The synergies created between NParks’ and AVA’s expertise will also benefit wildlife conservation and the ornamental fish industry.

HOW WILL NPARKS MAKE A DIFFERENCE?

First, NParks will provide a one-stop service on animal management and animal welfare issues. A new Animal and Veterinary Service (AVS) will be formed under NParks, as the main touch-point for animal-related issues in any part of our city. Accordingly, AVS will take on AVA’s current role as the first responder for animal-related feedback. AVS will also deepen existing partnerships with veterinarians and animal-related industries to enhance animal health and welfare.

Second, NParks will ensure that efforts to conserve Singapore’s natural heritage are holistic and science-based. It has a comprehensive overview of urban and natural ecologies. The transfer will combine NParks’ expertise in wildlife conservation and horticultural science, and AVA’s in animal and plant health, and animal management.

Third, NParks will oversee disease detection at all potential points of incursion. Disease response can also be enhanced with the consolidation of NParks’ existing expertise in ecology and animal population studies, with AVA’s expertise in veterinary science and diagnostic testing. These will improve the detection of, and response to, zoonotic diseases, and put in place better safeguards for public health.

Rabies vaccination of stray dogs

As part of our effort to keep Singapore rabies-free, AVA, with the support of fish farmers, volunteer veterinarians from private practices, as well as students from Republic Polytechnic and Temasek Polytechnic, has been conducting yearly rabies vaccination for dogs on coastal fish farms since 2015. Starting in December 2018, the rabies vaccination programme was extended to dogs at Pulau Ubin. Together with NParks and SOSD, AVA reached out to residents of Pulau Ubin. AVA veterinarians provided microchipping and free rabies vaccination to the dogs there. Working closely with our stakeholders, the AVS under NParks will develop strong collaborative networks with community animal stakeholders, as well as continue to enhance animal health and welfare and keep Singapore rabies-free.

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Achieving synergy

By combining NParks' expertise in ecology and conservation with AVA's expertise in veterinary science, we have been able to conduct more efficient and effective animal management operations. For example, recently, this synergy resulted in the successful operation involving AVA, NParks, and PUB to humanely trap and relocate a crocodile from the Lower Seletar Reservoir.

Similarly, such synergy will support Singapore's ornamental fish industry in maintaining its status as one of the world's top exporters. With the transfer of non-food related functions to NParks, we will continue to help the industry raise standards, and improve export quality. There will be synergies between the ornamental fish industry and NParks' focus on a biophilic City in a Garden. During our engagement sessions, industry players have said that they are excited about the impending changes to come.

Trap-Neuter-Release-Manage (TNRM) programme

The nationwide TNRM programme was officially launched in November 2018. AVS under NParks, in collaboration with 11 Animal Welfare Groups (AWGs), will continue to work towards our goal of sterilizing more than 70% of the stray dog population in Singapore over five years. After sterilisation, the priority will be to rehome as many of the dogs as possible, where they will have shelter, food and vet care provided by their new owners. The success of the programme will require the continued partnership of our AWGs, veterinarians, and responsible community feeders.



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