

• AGRIFOOD & VETERINARY AUTHORITY OF SINGAPORE •



# OUR RECIPE FOR EXCELLENCE



• ANNUAL REPORT 2015/16 •

## VISION

Safe food, healthy animals and plants for Singapore; trusted and respected globally.

## MISSION

- Ensure a resilient supply of safe food;
- Ensure the health & safeguard the welfare of animals;
- Safeguard the health of plants;
- Facilitate agri-trade; and
- Nurture and inspire staff to be the best we can be!

## VALUES (ExCITe)

### Excellence:

- We strive to be the best in all that we do.
- We seek lifelong learning and continuous innovation.

### Care:

- We value and nurture our staff.
- We care for our customers, the community and the environment.

### Integrity:

- We serve with professionalism.
- We treat our customers fairly and honestly.

### Teamwork:

- We trust and respect each other.
- We work as a team and partner our stakeholders to achieve our goals.

## AWARDS & ACCOLADES

### ISO/IEC 17025 SAC-SINGLAS ACCREDITATION

received by:

- Veterinary Public Health Laboratory since 2000, with 10 new tests accredited in FY 2015
- Animal Health Laboratory since January 2005, with 4 new tests accredited in FY 2015
- Plant Health Laboratory since June 2005, with 3 new tests accredited in FY 2015

### WORLD ORGANISATION FOR ANIMAL HEALTH (OIE) COLLABORATING CENTRE FOR FOOD SAFETY

designation received by:

- Veterinary Public Health Centre since May 2014

### MINISTRY OF NATIONAL DEVELOPMENT MINISTER'S (TEAM) AWARD

received for 'Boosting Supply Resilience, Meeting Community Needs and Safeguarding Animal Welfare for *Korban*'

### PUBLIC SECTOR PRO-ENTERPRISE INITIATIVE AWARD (BRONZE)

received for initiative to 'Streamline Inspection Procedure for Chilled Pork'

### PS21 STAR SERVICE AWARD

### PS21 INNOVATION CHAMPION AWARD (MERIT)

### PS21 MOST INNOVATIVE PROJECT/POLICY AWARD (MERIT)

for 'Development of an Animal Disease Lab-on-Chip for the Detection of Multiple Animal Disease Pathogens of Economic and Public Health'

### ONG TENG CHEONG LABOUR LEADERSHIP INSTITUTE'S WORKPLACE PARTNERSHIP AWARD (GOLD)

received jointly with AUSBE-AVA

### LEADING HR PRACTICE (SPECIAL MENTION) AWARD IN LIFELONG LEARNING

### CHIEF INFORMATION OFFICERS (CIO) 100 INDEX 2015 RANKING

received for Animal 'Quarantine Management System'

# OUR RECIPE FOR EXCELLENCE

Serving up a perfect meal requires all the right ingredients. In the same way, AVA's recipe for excellence is a combination of our ingredients for success – robust programmes, vigilance, innovation, and a team of dedicated professionals.

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**ORGANISATIONAL EXCELLENCE**

# CHAIRMAN'S

## STATEMENT



“As I look back at our achievements for the past year in tandem with the celebrations of our nation’s golden jubilee, I cannot help but be filled with pride at the progress that AVA has made in its journey. Even more so given that this will be my final foreword, having retired from the AVA board on 31 March 2016.”

## AVA AT SG50: OUR ESSENTIAL CONTRIBUTION TO NATION-BUILDING

Since our founding as the Primary Production Department (PPD) in 1959, we have grown with Singapore, contributed to Singapore's success, and supported the well-being and livelihoods of Singaporeans.

To address increasing challenges to food safety, animal and plant health, PPD was restructured into AVA in 2000. I had the privilege of being asked by the then Minister for National Development, Mr Mah Bow Tan, to serve on AVA's inaugural Board.

Being a Statutory Board allowed us a more autonomous framework, providing us with the flexibility to respond more nimbly to challenges. AVA has not only prevailed in its duties, but has also grown and evolved in its contributions through its work in food safety, encouraging local production, agri-trade facilitation, animal/plant health, and animal welfare and management.

## CELEBRATING OUR ACHIEVEMENTS FOR FY 2015

SG50 was certainly a momentous year for Singapore, a year of reflection and transition, to gear us towards SG100. It was particularly special for the AVA family, as we celebrated our 15th anniversary, and reflected on how far we have come and how we must transform. Throughout FY 2015, we worked to gear ourselves to be future-ready, and delivered our mission.

### Food security

On the food security front, Singapore was ranked 2nd in the Global Food Security Index. Through this index, the Economist Intelligence

Unit examines and ranks 113 countries based on their performance in affordability, availability, quality and safety of food. Singapore was also ranked 1st among countries in the Asia-Pacific region. This feat speaks strongly of our efforts in food security which we must strive to sustain.

Another key achievement in this field was the signing of the Singapore-FAO MOU at the 39th FAO Conference. The MOU provides a platform to support Singapore-FAO capacity development and increase expertise, knowledge and technology transfer, as well as joint cooperation with other parties. The MOU is an important affirmation to the international community of our excellence in food security.

On the home front, our efforts in extending aid to our coastal fish farms have enabled them to recover from the past plankton bloom, and to upscale their capability and resilience to handle future crises.

### Food safety

Food security would not be complete without our efforts in food safety. We have continued with our work in strengthening food safety regulations. Specifically, we gazetted amendments to the Food Regulations to provide for the use of new additives, claims, and to tighten limits for contaminants so as to better protect consumer health. We also reviewed our inspection regime for food establishments, focusing on a risk-based inspection system to address food risks arising from the evolving landscape of the industry.

In mid-2015, consumption of raw freshwater fish was strongly associated with the uptrend in the number of Group B Streptococcus (GBS) bacteria outbreak which may occasionally cause infections of the skin, joints, heart and brain. The Ministry of Health (MOH), National Environment Agency (NEA) and AVA jointly

investigated the matter. Both AVA and NEA worked closely to ensure that fish intended for raw consumption were closely monitored and tested for safety. With AVA and NEA's efforts, the number of GBS infections was reduced thereafter.

Since AVA was recognised as the collaborating centre for food safety for the World Organisation for Animal Health (OIE) in 2014, we have organised seminars and workshops on food safety for participants in Asia. The objective was to share knowledge and experience that would lead to capacity building and improved standards of food safety in the region.

### **Animal health**

With Singapore being a major trade hub for food and animals, AVA continued to have in place bio-security measures to keep our country free of major animal diseases. For AVA's success in the annual event, Korban, a major religious sacrificial rite observed by the local Muslim community, AVA was presented with the Minister's Award (Team).

Another achievement in animal health was AVA's collaboration with Veredus Laboratories to develop the world's first biochip to detect multiple avian diseases. The VereVet poultry 'lab-on-chip' detects nine pathogens from one sample within 3 hours, which is 2 hours shorter than the conventional method. Going forward, AVA will continue to work closely with its partner agencies and stakeholders to advance and safeguard animal and public health.

### **Animal welfare and management**

AVA commissioned a new Pet Animal Licensing System, an online platform which automates dog licensing application, leading to savings in time and resources for both licensees and AVA, enabling better customer service. AVA

also continued our efforts in caring for animal welfare through prosecution of animal cruelty cases and CITES enforcement, i.e. smuggling of animals and illegal by-products of animals such as ivory.

As First Responder, AVA continued to ensure that a whole-of-government approach is maintained to facilitate effective communication and collaboration among relevant agencies.

### **PARTING WORDS**

It has been my privilege serving with AVA since its inception. I've experienced great joy and satisfaction working together with various parties and stakeholders to steer and grow AVA to where it is today. We have grown and delivered much, and there is more to do. AVA's work is needed more than ever, especially in the dynamic environment we are in.

We must embrace a "growth mind-set" to further deliver on our mission amidst a changing strategic context. AVA must continue its effort in working seamlessly and ceaselessly as a team. Through long-term planning and innovation, AVA needs to continue to strengthen food security, enhance animal welfare, improve plant health, and facilitate agri-trade.

Looking forward to the future, I am positive that AVA will be prepared for challenges and seize opportunities as we continue to: (1) strengthen our partnership with stakeholders; (2) build up our knowledge (technical competencies and becoming a learning organisation); and (3) leverage on innovation to perform our task more effectively and efficiently.

For longer-serving officers who have been onboard since or before AVA's inception in 2000, you have built the strong foundations which AVA enjoys today. To younger staff, may

you continue the hard work of our pioneers, and build even stronger foundations for our next generation.

With these thoughts, may I conclude by conveying my best wishes to Mr Lim Neo Chian, my successor as Chairman. I am confident that he will galvanise the AVA Board, management and staff alike, to steer AVA to greater heights. To CEO Ms Tan Poh Hong, all past and present fellow Board members and management staff of AVA, thank you for the invaluable support and goodwill you have given me during my time in this family. May this family continue to flourish and carry on the good work which our pioneers had bestowed on us.

Thank you, and all the best.



**Koh Soo Keong**  
AVA Chairman

**“AVA must continue its effort  
in working seamlessly and  
ceaselessly as a team. Through  
long-term planning and innovation,  
AVA needs to continue to  
strengthen food security, enhance  
animal welfare, improve plant  
health, and facilitate agri-trade.”**

# BOARD OF DIRECTORS



### 1 MR KOH SOO KEONG (Chairman, till 31 Mar 2016)

- ✦ Managing Director, EcoSave Pte Ltd
- ✦ Chairman, ABL Asia Pte Ltd
- ✦ Chairman, Ascendas Funds Management (S) Ltd
- ✦ Independent Director, NOEL Gifts International Ltd
- ✦ Independent Director, Northern Technologies International Corporation
- ✦ Director, Zerust Singapore Pte Ltd
- ✦ Director, Agape Ace Pte Ltd
- ✦ Director, Orita Sinclair-School of Design, New Media & the Arts Pte Ltd

### 2 MR LIM NEO CHIAN (Deputy Chairman, till 31 Mar 2016) (Chairman, w.e.f. 1 Apr 2016)

- ✦ Deputy Chairman, Gardens by the Bay
- ✦ Director, Singapore Cruise Centre Pte Ltd
- ✦ Director, SCC Travel Services Pte Ltd
- ✦ Director, Home Nursing Foundation
- ✦ Director, Innospring Development Pte Ltd
- ✦ Director, Majulah Holdings Pte Ltd
- ✦ Director, Supreme Wealth Development Sdn Bhd
- ✦ Director, Zhi\*Lim Pte Ltd
- ✦ Director, Economic Development Innovations Singapore Pte Ltd
- ✦ Chairman & Director, Ascendas Hospitality Fund Management Pte Ltd
- ✦ Chairman & Director, Ascendas Hospitality Trust Management Pte Ltd

### 3 MS TAN POH HONG Chief Executive Officer, Agri-Food and Veterinary Authority of Singapore

- ✦ Board Member, Singapore Corporation of Rehabilitative Enterprise (SCORE) (till 31 Aug 2015)
- ✦ Director, Agri-Food Technologies Pte Ltd
- ✦ Member, Liquors Licensing Board
- ✦ Member, Tropical Marine Science Institute Management Board
- ✦ Member, Board of Directors of Industries and Services Co-operative Society Pte Ltd (ISCOS) (w.e.f. 1 Jan 2016)

### 4 MRS LEE AI MING

- ✦ Senior Consultant, Rodyk & Davidson LLP
- ✦ Justice of Peace
- ✦ Member of Board of Visiting Justices
- ✦ Independent Director, Keppel T&T Ltd
- ✦ Member, Singapore Copyright Tribunal
- ✦ Member, Steering Committee for IP Competency Framework

### 5 MR PETER CHIA

- ✦ Chief Operating Officer, Temasek Life Sciences Laboratory Ltd
- ✦ Chief Executive Officer, Temasek Life Sciences Ventures Pte Ltd
- ✦ Commissioner, PT Monfori Nusantara
- ✦ Director, Bioforest Pte Ltd
- ✦ Director, Tridel Biosciences International Pte Ltd
- ✦ Director, JOil (s) Pte Ltd
- ✦ Director, JOil Africa Pte Ltd

### 6 MR YEO GUAT KWANG

- ✦ Assistant Secretary-General, NTUC
- ✦ Chairman, Migrant Workers' Centre
- ✦ Chairman, Centre for Domestic Employees Grassroots Advisor to Aljunied GRC GROs

### 7 MR TAN KOK YAM

- ✦ Chairman, Agri-Food Technologies Pte Ltd

### 8 MR EUGENE WONG

- ✦ Chairman, Crimson Logic Pte Ltd
- ✦ Founder and Managing Director, Sirius Venture Capital Pte Ltd
- ✦ Non Executive Director, Sirius SME Growth Partners I Ltd
- ✦ Non Executive Director, Sirius Angel Fund Pte Ltd
- ✦ Non Executive Director, Sirius Investment Inc
- ✦ Non Executive Director, Japan Food Holdings Ltd
- ✦ Non Executive Director, Jason Marine Ltd
- ✦ Non Executive Director, International Enterprise (IE) Singapore Board
- ✦ Non Executive Director, Neo Group Ltd
- ✦ Non Executive Director, Singapore Kitchen Equipment Ltd
- ✦ Non Executive Director, Cargo Community Network Pte Ltd
- ✦ Non Executive Director, Singapore Cruise Centre Pte Ltd
- ✦ Non Executive Director, Singapore Travel Services Pte Ltd
- ✦ Council Member, Singapore Institute of Directors

### 9 MR DILEEP NAIR

- ✦ Singapore High Commissioner to Ghana
- ✦ Independent Director, Thakral Corporation Ltd
- ✦ Independent Director, Keppel Data Centre Reit Management Ltd
- ✦ Independent Director, Singapore Reinsurance Corporation Ltd
- ✦ Committee Member, Singapore Institute of Directors

### 10 PROF CHAN CHIN TUONG DAVID

- ✦ Lee Kuan Yew Fellow & Professor of Psychology, School of Social Sciences, Singapore Management University (SMU)
- ✦ Director, Behavioural Sciences Institute, SMU
- ✦ Adjunct Principal Scientist, Agency for Science, Technology and Research (A\*STAR)
- ✦ Co-Director, Centre for Technology and Social Behavioural Insights, A\*STAR-SMU
- ✦ Chairman, International Advisory Panel to the National Addictions Management Service and National Council on Problem Gambling
- ✦ Member, Social Science Research Council, Singapore
- ✦ Member, Diabetes Prevention and Care Taskforce, Singapore
- ✦ Member, Board of Directors, Singapore Corporation of Rehabilitative Enterprises
- ✦ Member, Governing Board of the Workplace, Safety and Health Institute
- ✦ Member, International Advisory Panel, Workforce Development Agency
- ✦ Member, International Panel of Experts, Urban Redevelopment Authority (URA)
- ✦ Member, Research and Development Advisory Panel, URA
- ✦ Member, Research Advisory Panel, National Population and Talent Division, Prime Minister's Office
- ✦ Member, Resource Panel for National Environment Agency
- ✦ Member, Public Hygiene Council
- ✦ Member, National Council on Problem Gambling
- ✦ Member, International Advisory Board of the Centre for the Advancement of Research Methods and Analysis, United States

### 11 MS CHUA MUI HOONG

- ✦ Opinion Editor, The Straits Times, Singapore Press Holdings

### 12 MS HARASHA BAFANA

- ✦ Founder & Director, Adam & Hawa Network
- ✦ Board Member, Creative Arts & Culture

### 13 COL (DR) TANG KONG CHOONG

- ✦ Chief of Medical Corps, Singapore Armed Forces

### 14 MR LAU TECK SIEN

- ✦ Partner & Chief Investment Officer, HOPU Investment

# LEADERSHIP TEAM



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## 1 MS TAN POH HONG

✦ Chief Executive Officer

## 2 DR CHEW SIANG THAI

✦ Director-General for Agri-Food & Veterinary Services  
✦ Deputy Chief Executive Officer  
(Regulatory Programmes & Operations)  
✦ Chief Veterinary Officer

## 3 DR TAN LEE KIM, KIM

✦ Deputy Chief Executive Officer (Corporate & Technology)  
✦ Group Director, Planning & Organisational Excellence  
(till 31 Mar 2016)

## 4 DR WONG HON MUN

✦ Group Director, Agri Establishment Regulation

## 5 MS JESSICA KWOK

✦ Group Director, Animal Management (w.e.f. 1 Apr 2016)

## 6 DR CHOO LI NAH

✦ Group Director, Communications & Corporate Relations



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**7 MS MELIN LIM**

✦ Group Director, Corporate Resource Management

**8 MR LESLIE PHUA**

✦ Group Director, Food Establishment Regulation

**9 MR MELVIN CHOW**

✦ Acting Group Director, Food Supply Resilience (w.e.f. 15 Jan 2016)

**10 MRS TAN-LOW LAI KIM**

✦ Group Director, Food Supply Resilience (till 14 Jan 2016)

✦ Group Director, Special Duties (Fisheries & port matters) (w.e.f. 15 Jan 2016)

**11 DR PAUL CHIEW**

✦ Group Director, Laboratories

**12 MR FOO SIANG MING**

✦ Group Director, Technology & Industry Development (till 31 Mar 2016)

✦ Group Director, Planning & Organisational Excellence (w.e.f. 1 Apr 2016)

**13 DR CHUA TZE HOONG**

✦ Group Director, Quarantine & Inspection

**14 DR ASTRID YEO**

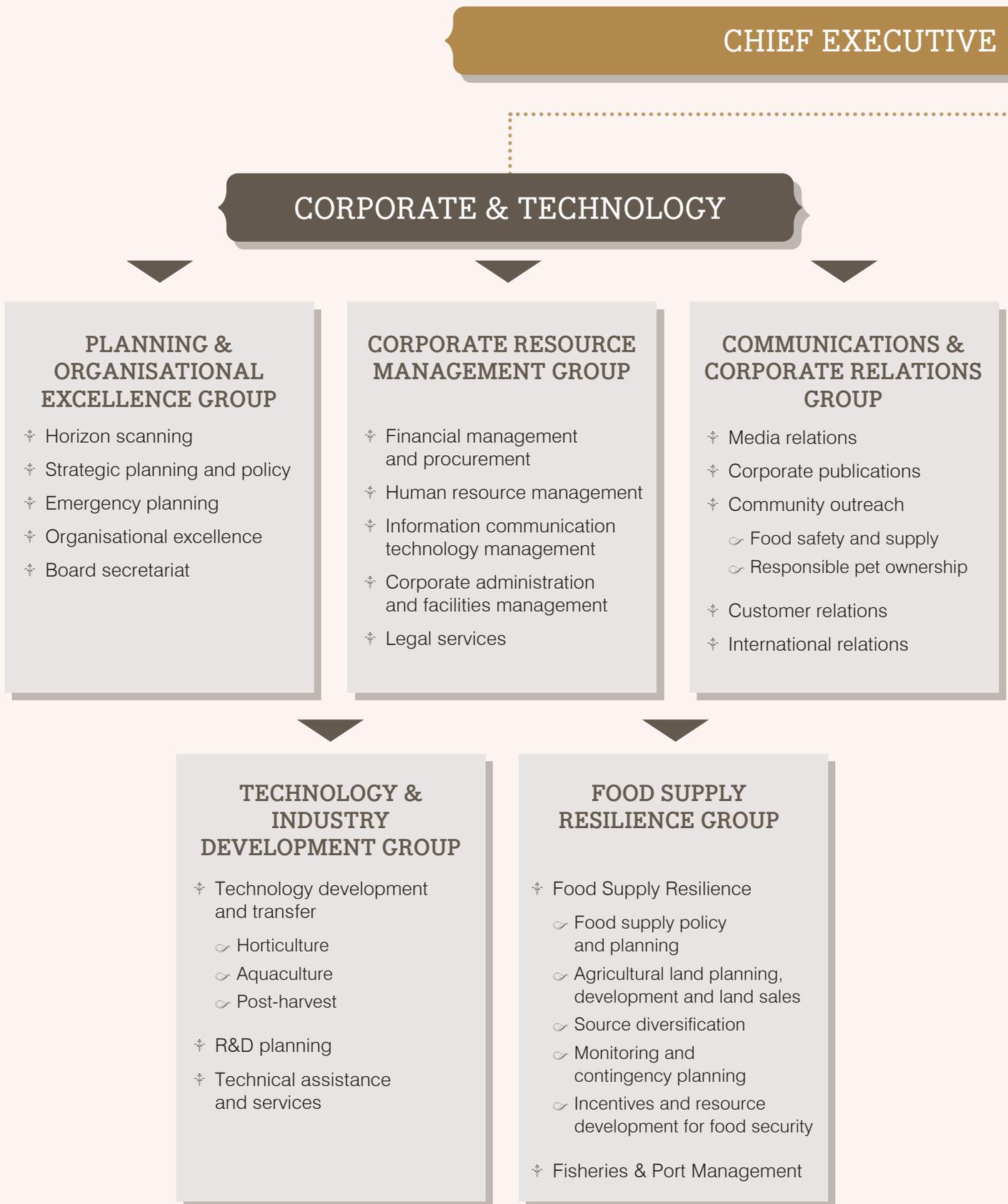
✦ Group Director, Regulatory Administration

**15 DR LEONG HON KEONG**

✦ Acting Group Director, Technology & Industry Development (w.e.f. 1 Apr 2016)

# ORGANISATIONAL CHART

## AND KEY ROLES OF GROUPS



OFFICER (CEO)

REGULATORY PROGRAMMES & OPERATIONS

REGULATORY  
ADMINISTRATION GROUP

- ✦ Policy, legislation and programme review
- ✦ Risk assessment
  - Food safety
  - Animal health
  - Plant health
- ✦ Food source accreditation
- ✦ Investigation and prosecution

QUARANTINE &  
INSPECTION GROUP

- ✦ Import control
  - Food
  - Animals
  - Plants
- ✦ Quarantine services
- ✦ Export facilitation

FOOD ESTABLISHMENT  
REGULATION GROUP

- ✦ Regulation of local food establishments
  - Food factories
  - Slaughterhouses
- ✦ Grading of food factories
- ✦ Technical assistance and services
- ✦ Export facilitation

AGRI ESTABLISHMENT  
REGULATION GROUP

- ✦ Regulation of local farms
- ✦ Regulation of animal and plant establishments and feed mills
- ✦ Regulation of veterinary services and standards

LABORATORIES GROUP

- ✦ Testing, diagnostic services and scientific expertise
  - Food safety
  - Animal health
  - Plant health
- ✦ R&D of new test methodology
- ✦ Export certification testing

ANIMAL MANAGEMENT  
GROUP

- ✦ Animal welfare and management
- ✦ First Responder on animal-related issues
- ✦ Licensing of pet animal establishments
- ✦ Licensing of dogs
- ✦ Investigation and enforcement
- ✦ Stakeholder engagement and outreach





# FOOD SUPPLY **RESILIENCE**

## INGREDIENTS

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1 whole of Proactivity  
2 cuts of Diversity  
1 slab of Productivity  
Several cloves of Capability  
1 dollop of Global outlook

## METHOD

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One of AVA's roles is to ensure that Singapore will always enjoy a wide variety and steady supply of safe food. We do so by strategically diversifying our food sources and boosting local food production.



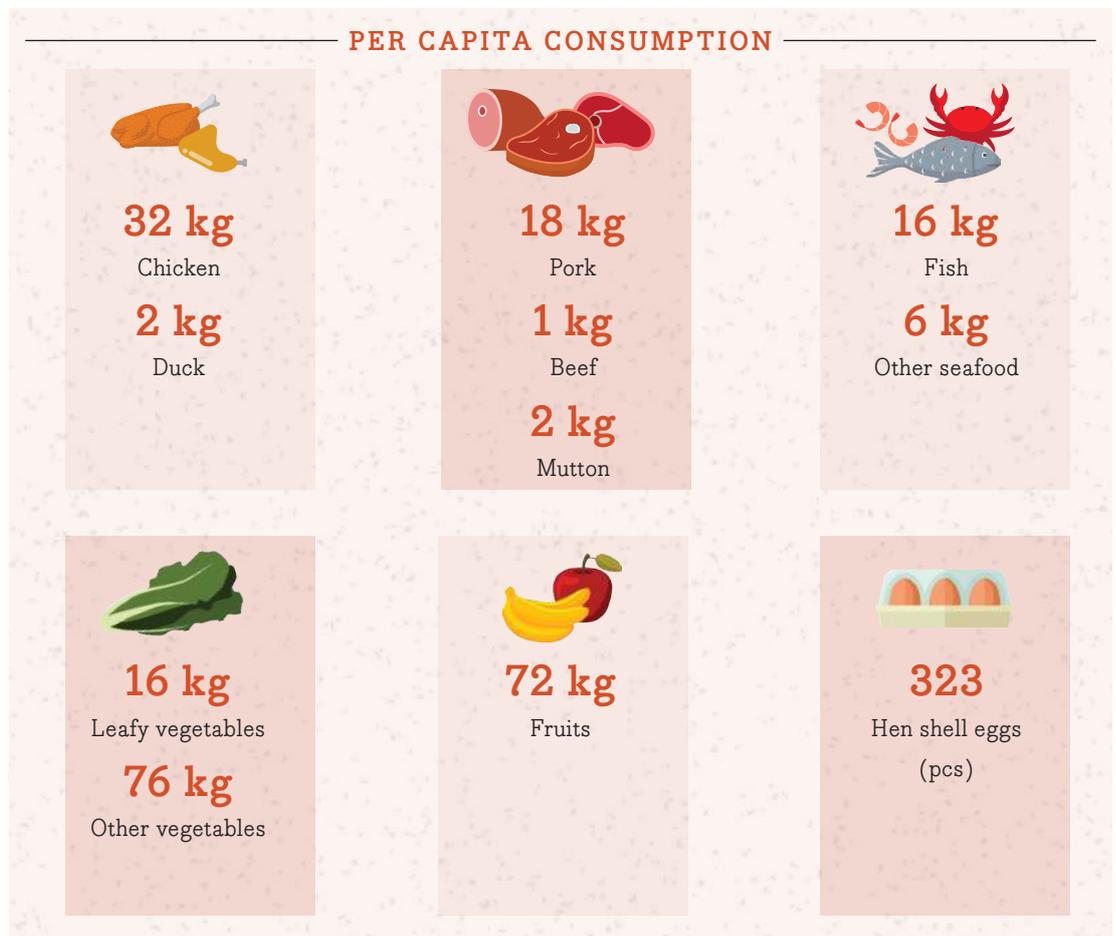
## STRENGTHENING OUR RESILIENCE IN

# FOOD SUPPLY

AVA's food security strategies help us maintain a steady and constant supply of safe food for Singapore. Keeping a close watch on global developments prepares us for potential threats that may impact the nation's food supply. We also continue to reach out to the public to encourage consumers to support local produce.

### AN OVERVIEW OF FOOD SUPPLY IN SINGAPORE

Singapore imports more than 90% of its food from diversified sources – about 170 countries worldwide. Local production of leafy vegetables, fish, and eggs also supplements our food supply. In 2015, local farms produced 13% of the leafy vegetables, 24% of the eggs, and 10% of the fish we consumed.





### WHERE OUR FOOD COMES FROM

	Consumption (tonnes)	Import (tonnes)	Local farms (tonnes)
 Beef	3,246	29,952	—
 Chicken	179,122	185,736	—
 Cooking oil	366,089	482,164	—
 Duck	13,167	13,236	—
 Fish	86,352	99,185	6,536
 Fruits	399,217	444,915	—
 Hen eggs (mil pcs)	1,786	1,370	421
 Mutton	13,768	14,001	—
 Pork	98,552	105,049	—
 Rice	284,245	421,276	—
 Sugar	272,734	342,969	—
 Vegetables	509,359	524,259	23,039

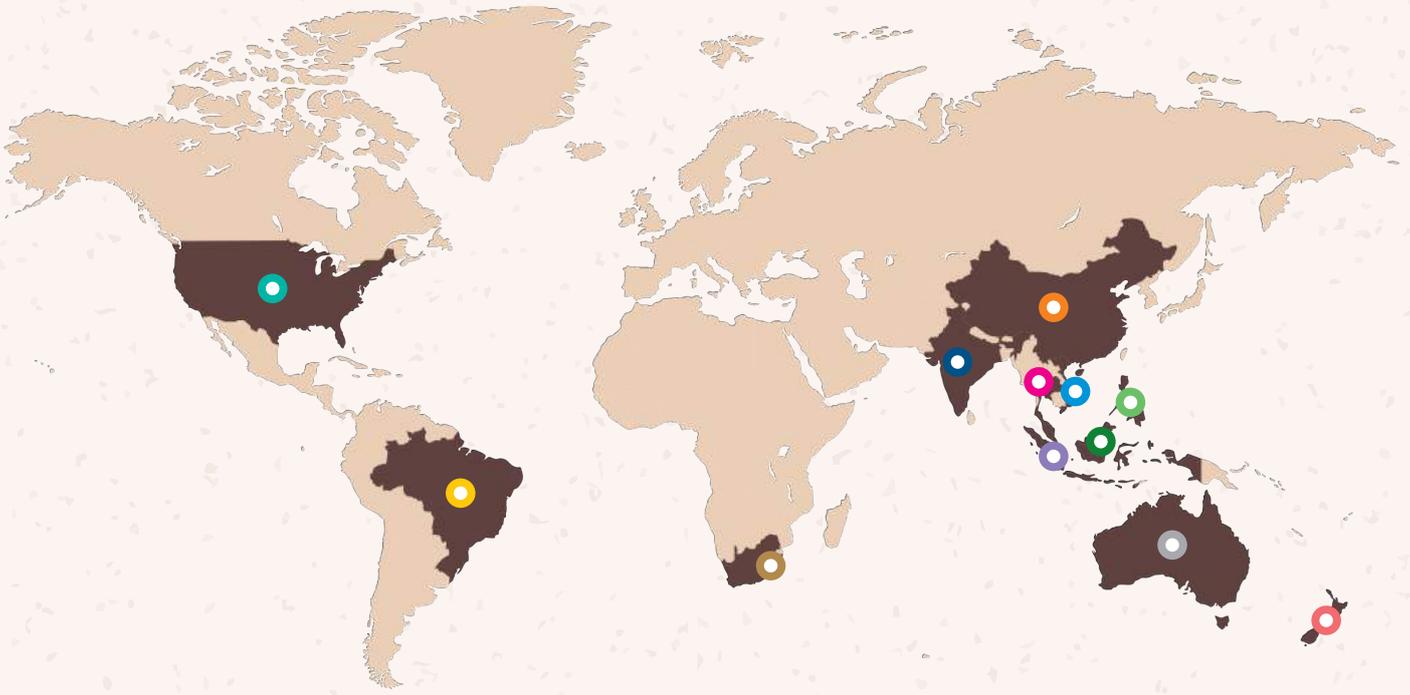
### JURONG AND SENOKO FISHERY PORTS

AVA manages the Jurong and Senoko fishery ports, which serve as wholesale and distribution centres for both locally produced and imported seafood of all forms (live, chilled, and frozen) in Singapore. During the FY, the top five fish exporting countries to Singapore were Malaysia, Indonesia, Thailand, Vietnam, and India.

The Jurong Fishery Port (JFP) serves as an international port of call for foreign-flagged fishing vessels and fish carrier vessels. In FY 2015, a total of 2,688 vessel calls were made at JFP. Some 46,520 tonnes of fish from foreign fishing vessels, local fish farms, as well as imports via land and air, were handled during the FY. Of these, 2,785 tonnes were tuna imports meant for re-export.

Senoko Fishery Port (SFP) continues to serve as the hub for local fishing vessels. In FY 2015, a total of 1,767 vessel calls were made at SFP. Fish merchants operating in SFP handled about 6,170 tonnes of fish from local fishing vessels, local fish farms (land and sea), as well as from imports.

MAJOR SOURCES OF SUPPLY



**UNITED STATES**

- Beef
- Chicken
- Fruits
- Milk
- Pork
- Rice
- Vegetables

**BRAZIL**

- Beef
- Chicken
- Pork

**SOUTH AFRICA**

- Fruits

**PHILIPPINES**

- Fruits

**INDIA**

- Milk
- Rice
- Sugar
- Vegetables

**CHINA**

- Fish
- Fruits
- Vegetables
- Cooking Oil

**THAILAND**

- Fish
- Fruits
- Milk
- Rice
- Sugar
- Vegetables

**VIETNAM**

- Fish
- Fruits
- Rice
- Vegetables
- Sugar

**MALAYSIA**

- Chicken
- Cooking oil
- Duck
- Eggs
- Fish
- Fruits
- Milk
- Sugar
- Vegetables

**INDONESIA**

- Cooking Oil
- Fish
- Milk
- Pork
- Vegetables

**AUSTRALIA**

- Beef
- Cooking Oil
- Fruits
- Milk
- Mutton
- Pork
- Sugar
- Vegetables
- Fish

**NEW ZEALAND**

- Beef
- Fruits
- Milk
- Mutton



## TAPPING INTO NEW SOURCES OF FOOD

We partner the private sector in food sourcing trips and engage key stakeholders to enhance source diversification. During the FY, fruits from new sources in South Africa were brought into Singapore, and import of fruits and vegetables from Indonesia increased. Buying from more sources protects us from potential food shortages and price volatility.

## Increasing fruit and vegetable supply from Indonesia

AVA has been working with Indonesian counterparts through the Indonesia-Singapore Agri-business Working Group (AWG) to encourage bilateral trade in agricultural produce. Fruit and vegetable imports from Indonesia rose by 10% in 2015.



## Importing persimmons and pomegranates from South Africa

AVA led a 31-member delegation to South Africa on 12-18 April 2015 to explore the potential of South Africa as an alternative source of food. Following this trip, an importer successfully brought in persimmons and pomegranates from South Africa in May and June 2015, with additional shipments expected the following year.

## Ensuring bio-secure movement of breeder pigs into Jilin Disease-Free Zone

The Jilin Foot and Mouth Disease-Free-Zone (DFZ) was officially recognised by the China Ministry of Agriculture (MOA), and subsequently endorsed by AVA, in 2012. To kick-start pig rearing activities in the DFZ, breeder pigs from another Chinese province could be brought into the DFZ. We met with MOA officials in July 2015 to discuss a bio-secure movement protocol that would ensure no disease incursion into the DFZ from the introduction of the breeder pigs. AVA will continue to work with MOA to facilitate the commencement of pig rearing in the DFZ.

## POWERING UP LOCAL FARM PRODUCTIVITY AND INNOVATION

Our agricultural sector, though small, plays an important role in Singapore's food security. By producing a measure of food ourselves, we become less vulnerable to any unpredictable supply disruptions from overseas. To achieve greater food security for our future, Singapore's agricultural sector needs to transform to be highly intensive and operate on minimal manpower. AVA is committed to work with farms to achieve this and will continue to support farmers' efforts through technology transfer, sharing of expertise, R&D collaboration, and co-funding on farm upgrades. During the FY, AVA's Food Fund and Agricultural Productivity Fund (APF) have helped increase Singapore's outputs of vegetables, fish, and eggs.

**FOOD FUND**



Supports food diversification efforts & enhances productivity by developing local farm capabilities

Introduced in Dec 2009, with 2 more tranches launched in Aug 2011 & Oct 2013

**\$30.94 million**  
committed

**310**  
projects approved

**\$17.5 million**  
disbursed

**290**  
projects closed

**AGRICULTURE PRODUCTIVITY FUND (APF)**

KEY OUTCOMES:



**12,932**  
man-hours saved



Leafy vegetable production  
**↑ 550 tonnes**



Food-fish production  
**↑ 34 tonnes**



Hen egg production  
**↑ 4 million pieces**



Supports local farms in capability development & increasing productivity

Extended to food-farms & non-food farms

Launched on 14 Oct 2014 to replace the Food Fund

- **\$63 million** budget available until 31 Dec 2019
- **\$2.68 million** committed
- **38** projects approved
- **\$1.13 million** disbursed
- **18** projects closed



### Success stories

A recipient of the Food Fund, Panasonic Factory Solutions Asia Pacific (Panasonic), successfully developed an indoor crop cultivation system that allows year-round cultivation and production of crops. This was achieved through the systematic control of the cultivation environment, including automation of the water irrigation, seeding, and potting processes. The system resulted in manpower savings of about 9,800 man-hours in 2015. Panasonic is working on further enhancing the system.



With support from the Food Fund, Seng Choon Farm's daily production was raised from 410,000 eggs to 450,000 eggs per day in 2015. The improved output was a result of installing the Grower House System and Layer House System for rearing pullets and hens, respectively. These systems helped to reduce manpower and energy consumptions. Seng Choon Farm also received support from the APF to install automatic egg grading and packing machines, a robot washer, and conveyor belt system. Seng Choon expects to see further improvement in productivity through manpower savings of about 15,000 man-hours by December 2016 and a daily production rate of over 600,000 eggs by 2019.

**“Our agricultural sector, though small, plays an important role in Singapore’s food security. By producing a measure of food ourselves, we become less vulnerable to any unpredictable supply disruptions from overseas.”**

### Matching farmers to buyers

Besides providing support in funding, AVA also initiated a business matching session on 11 December 2015 for local fish farmers and buyers (importers, caterers, restaurateurs, and retailers).

By helping to expand their network of buyers, local farmers can have the opportunity to sell more fishes and reduce their stock in anticipation of upcoming plankton blooms.

## PROMOTING LOCAL PRODUCE AND FOOD ALTERNATIVES

In support of local farmers, AVA encourages the public to choose locally farmed produce through our public outreach programme. We also educate consumers on the use of frozen meat as a viable alternative to chilled meat so that consumers can cope better during a sudden supply disruption or price increase. In FY 2015, new outreach initiatives and familiar favourites were carried out.

### New initiatives at offices, restaurants, and education seminar

In April 2015, AVA sponsored a new radio contest titled 'Office Invasion'. An AVA officer and radio deejays from 88.3 Jia FM visited three offices to spread messages on choosing local produce and distributed free lunchboxes.

AVA participated in the Food and Consumer Education Seminar on 19 November 2015 to raise awareness of AVA's role in safeguarding Singapore's food security. A dish made using local produce was served and a Do-it-Yourself planter kit was distributed to over 300 food and nutrition teachers.

### Outreach at roadshows, supermarkets, and cooking workshops

In March 2016, AVA and our food truck partner, Kerbside Gourmet, continued to reach out to working professionals at three roadshow locations. Two dishes made using local produce were distributed to lunchtime crowds. Radio deejays were also invited to interact with visitors and reinforce the message of choosing local produce.

During the inaugural Singapore Restaurant Month (held 1 July – 10 August 2015 in celebration of SG50), local eggs, fish, and vegetables were featured in 50 new dishes created by 50 restaurants. The event, organised by the Restaurant Association of Singapore and supported by AVA, successfully garnered support for local produce from the foodservice industry and consumers.





Further encouraging consumers to buy local produce, AVA worked with NTUC FairPrice to install educational materials at over 100 supermarket outlets during the FY. At selected outlets, we also gave out collaterals to shoppers and organised cooking demonstrations using local produce. At the Food Expo (May 2015) and Asia Pacific Food Expo (November 2015), AVA also engaged chefs to conduct cooking demonstrations using a variety of local produce and frozen meat.

In FY 2015, AVA continued to work with the People's Association to promote the use of local produce at cooking workshops. Participants were given educational materials and encouraged to share what they learned about local produce with other culinary enthusiasts.

### LEARNING FROM THE BEST

AVA led a delegation of farmers and AVA officers to Japan to learn more about its public education efforts for local agriculture and fresh produce. From 17 to 22 May 2015, the delegation met officials in Tokyo, Ibaraki, and Chiba, and visited farm stands. We learned that these farm stands serve as direct sales points for fresh produce from the respective prefectures, and are highly efficient through the adoption of computerised systems that facilitate traceability. Information on items sold is also automatically sent to the farmers' mobile phones during checkout.



Another key learning point was that in Japan, the appreciation for local produce is enhanced through its school curriculum. Most elementary and high schools provide meals that use locally farmed produce, and through these meals, teachers educate students on food nutrition, a balanced diet, and the benefits of consuming local produce.

On 29 October 2015, AVA organised the 2nd Food Industry Convention with Mr Lawrence Wong, Minister for National Development as the Guest-of-Honour. In his opening address, Mr Wong reiterated the need to strengthen our food supply chain through government-industry partnership and continuous innovations. The convention examined the vulnerabilities of the global food supply chain and the risks they pose to Singapore's food security. Subject matter experts were invited to share best practices in managing these risks. More than 400 delegates, mostly from the food industry, as well as from government agencies, research institutions and foreign trade offices, attended. In conjunction with SG50, AVA also produced and screened a video to commemorate the pioneers of Singapore's food industry who played a part to transform our nation over the years.

### REMAINING VIGILANT

On 26 May 2015, AVA conducted its first table-top exercise to test its capability in handling short-term food supply disruption scenarios. Code-named 'Ex-Opes', the exercise also helped to strengthen inter-agency coordination and operational preparedness of our contingency plan. These scenarios were created based on feedback collected from AVA's industry engagement sessions.

On November 2015, another table-top-exercise was also held for the first time to test our crisis management framework and operational readiness in dealing with plankton blooms. A few coastal fish farms participated in the exercise and their contingency plans were assessed.





FOOD  
**SAFETY**



INGREDIENTS

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1 splash of Vigilance  
1 bowl of Regulation  
3 leaves of Competency  
2 halves of Cooperation  
1 bulb of Engagement

METHOD

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Our comprehensive programme of surveillance, inspection, regulation and public education ensures that food in Singapore is safe for consumption. With standards and laboratory competencies that are in line with international ones, Singaporeans can enjoy food with peace of mind.



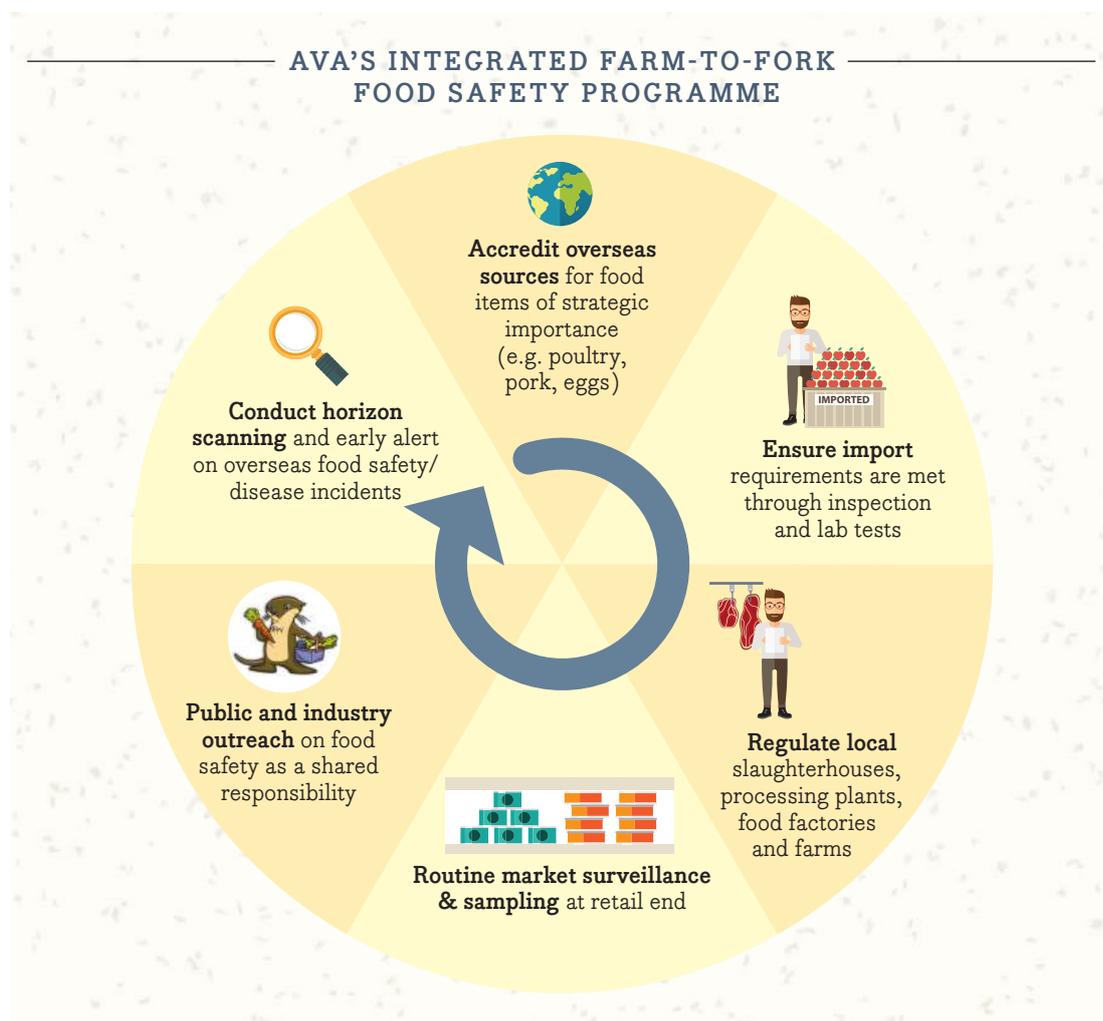
UPHOLDING

# FOOD SAFETY

As the guardian of food safety in Singapore, AVA plays a pivotal role in protecting the well-being of our nation. Our science-based risk management approach, based on international standards, ensures that all imported and locally produced food products can be consumed with peace of mind. We also engage the industry and public to encourage shared responsibility in keeping food safe.

## MAINTAINING A ROBUST FOOD SAFETY REGIME

AVA adopts an integrated food safety system to effectively manage food safety risks from 'farm-to-fork'. Through robust monitoring, surveillance, and enforcement – from the conditions at farms, slaughterhouses and food processing establishments to laboratory testing of food samples – we ensure that food safety standards are maintained.





## DID YOU KNOW?

### EFFORTS TO IMPROVE LOCAL FARM PRACTICES

The Good Aquaculture Practice for Fish Farming (GAP-FF) Certification and Good Agricultural Practice for Vegetable Farming (GAP-VF) Certification schemes are 2 sets of guidelines that help local fish and vegetable farms to improve in areas such as farm maintenance, practices and management. These schemes provide assurance to retailers and consumers by setting benchmarks for the production of safe and good quality fish and vegetables. There are currently 3 GAP-FF and 8 GAP-VF certified farms in Singapore.

In addition, the quality of eggs produced by all 3 local chicken layer farms is assured under AVA's Singapore Quality Egg Scheme (SQES). Under SQES, farms are required to ensure that their facilities are hygienic and quality control monitoring systems are well maintained at all times.

### ENSURING ROBUST AND INTERNATIONALLY RECOGNISED FOOD SAFETY STANDARDS

AVA keeps abreast of global developments to ensure our policies and regulations stay relevant and internationally recognised. In FY 2015, AVA participated in the 39th Codex Alimentarius Commission (Codex) meetings to keep updated on topics such as food safety and quality standards. In addition, AVA's horizon scanning function covers open information from overseas sources to detect signals and developments that can lead to unsafe food entering Singapore. This vigilance supports our food safety surveillance programmes by generating early alerts so that AVA has sufficient lead time to implement appropriate mitigation measures.



We also reviewed Singapore's Food Regulations in consultation with our stakeholders. The Food (Amendment) Regulations 2016 came into effect on 2 February 2016, after taking into consideration feedback from the industry and consultation with the public. The amendments were as follows:

- Provision to allow the use of advantame (a new additive) and bovine lactoferrin (a new ingredient) in infant formula.
- Prohibition of the import, sale and advertisement of raw milk for human consumption.
- Requirement that food products labelled as "organic" (or similar terms) must be certified as organic under an inspection and certification system that complies with the Codex Guidelines for the Production, Processing, Labelling and Marketing of Organically Produced Foods, GL 32-1999; or similar.
- Provision to allow the use of the generic term "modified starches" for labelling purposes.

## REGULATING IMPORTS

In order to ensure resilience in our food supply, AVA proactively seeks to identify and accredit new food sources. Accreditation and inspection visits are conducted to assess their ability to meet our food safety requirements. In addition, we suspend import from sources that pose significant hazards, and reinstate them after they have rectified the hazards. At the point of import, consignments

are subjected to systematic inspections and laboratory testing for pathogens as well as chemical contaminants and residues.

As at 31 March 2016, 37 countries were approved by AVA for export of meat, processed meat, processed egg, canned meat, and table hen eggs to Singapore.

### ACCREDITATION, SUSPENSION & REINSTATEMENT OF FOOD SOURCES

86

Establishments  
accredited



4

Chicken broiler  
farms



2

Chicken  
layer farms



80

Food  
establishments

22

Establishments  
suspended



19

Chicken broiler  
farms



2

Duck  
broiler farms



1

Chicken  
layer farm

17

Establishments  
reinstated



14

Chicken broiler  
farms



1

Duck  
broiler farm



2

Chicken  
layer farms

42

Inspection visits  
conducted



11

Chicken broiler  
farms



3

Duck  
broiler farms



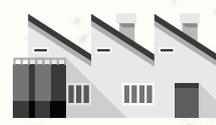
4

Chicken  
layer farms



12

Pig farms



12

Food  
establishments



### Revised import conditions for beef from France

Following the World Organisation of Animal Health's (OIE) reclassification of France as having negligible risk for Bovine Spongiform Encephalopathy (BSE), AVA approved the export of beef cuts derived from cattle of all ages from France to Singapore. However, after a case of BSE was detected in March 2016, OIE downgraded France's BSE status to that of a controlled risk and we subsequently revised import conditions to allow only deboned beef cuts from cattle under 30 months of age to enter Singapore.

### Combatting illegal food imports

As part of efforts to prevent unsafe food from entering Singapore, AVA acted on 490 cases of illegal food imports in FY 2015. Out of these, five cases were prosecuted in court. Offenders were fined up to \$10,000 for illegally importing chicken and mutton samosa, as well as vegetables, among others. As at 31 March 2016, two cases were pending court hearings, while composition fines and written warnings were issued against the remaining cases.



IMPORT SURVEILLANCE, MONITORING,  
INSPECTION & SAMPLING CONDUCTED

Meat &  
meat products



2,187

Traders  
registered

Fish &  
fish products



77,441

Consignments inspected

294,978

Volume of products inspected  
(tonnes)

\$1.3 billion

Value of products  
inspected

8,038

Samples tested

22,827

Import permits issued

\$1.2 billion

Value of products  
approved for import

305,000

Volume of products approved  
for import (tonnes)

2,648

Consignments inspected

4,401

Volume of products inspected  
(tonnes)

\$54.9 million

Value of products  
inspected

1,826

Samples tested

195,902

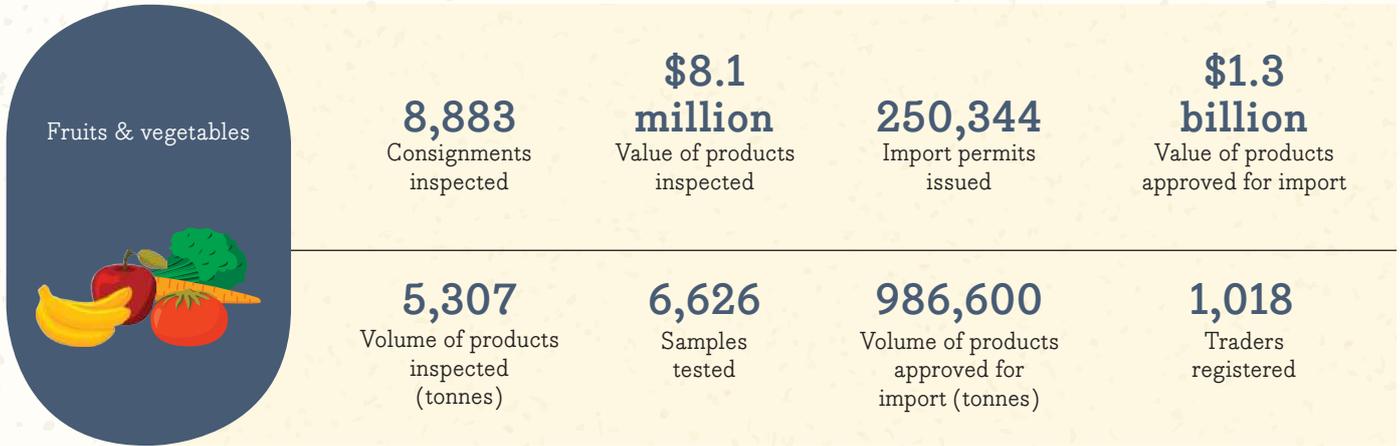
Import permits issued

\$1.4 billion

Value of products  
approved for import

200,600

Volume of products approved  
for import (tonnes)



## REGULATING LOCAL FOOD PRODUCTION

AVA licenses all local farms and food establishments (including processing establishments, slaughterhouses, the abattoir, and cold stores). Site inspections and samplings are carried out to ensure that they comply with our licensing conditions and observe proper food safety and hygiene practices. At the abattoir, all pigs slaughtered are inspected by AVA.

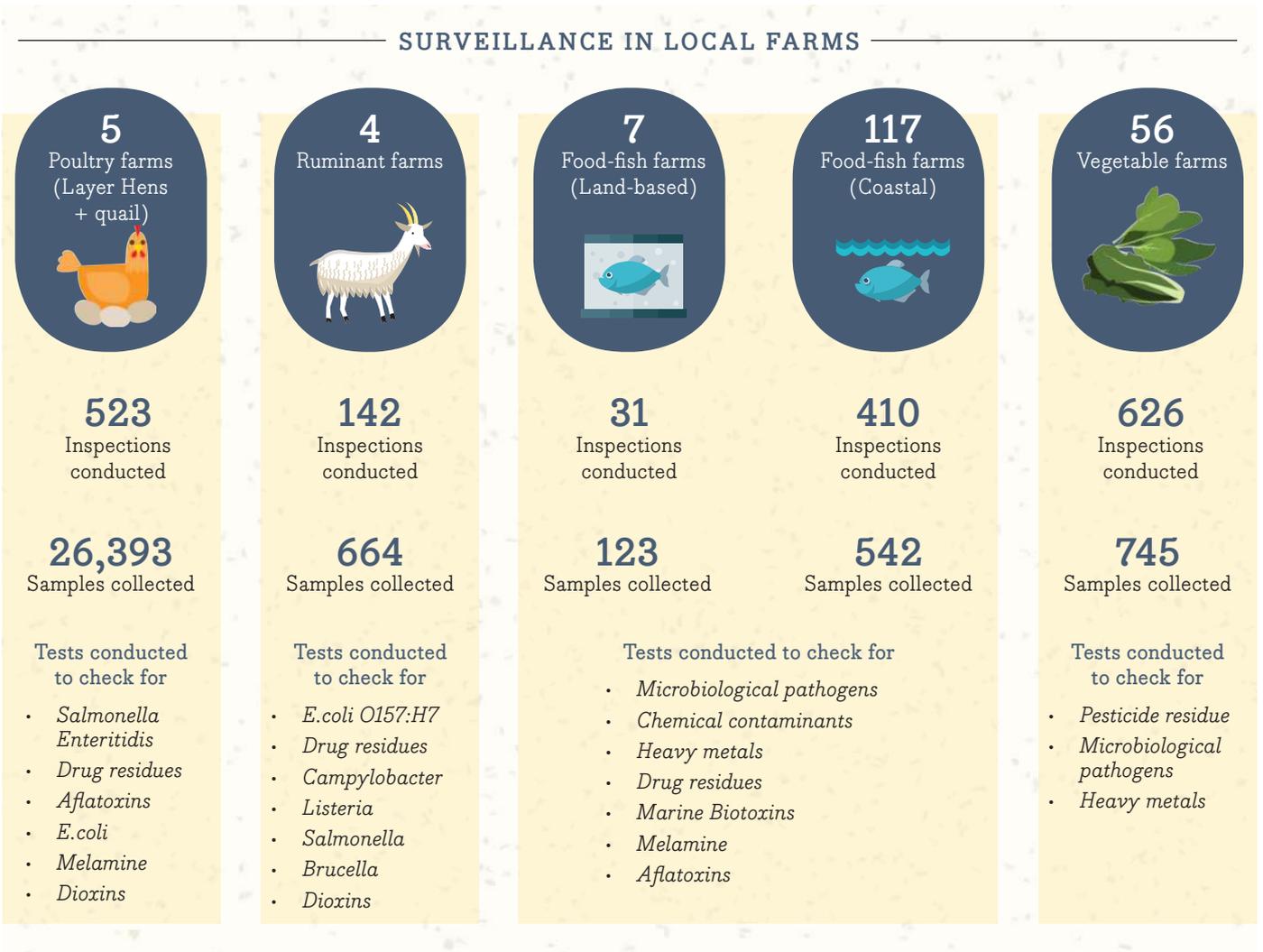
Licensed food establishments also undergo AVA's audit and grading inspections to determine their grading statuses. During these inspections, AVA provides on-site advice to help them improve and upgrade their premises.

In addition, food storage warehouses must be registered with AVA to facilitate food traceability. There were a total of 989 warehouses



registered in FY 2015. This registry enables AVA to promptly notify warehouses if there is a need for an immediate recall of food products. All registered food storage warehouses are subjected to inspections by AVA.

### SURVEILLANCE IN LOCAL FARMS





**SURVEILLANCE, LICENSING & GRADING  
OF LOCAL FOOD ESTABLISHMENTS**



**1,628** TOTAL FOOD ESTABLISHMENTS  
LICENSED

(including 10 chicken slaughterhouses, 4 duck slaughterhouses, and 1 pig abattoir)

**181**



**749**



**475**



**32**



**191**

new establishments  
not due for grading



**9,788** TOTAL INSPECTIONS  
CONDUCTED



Food establishments

- **1,154** for licensing
- **6,657** for surveillance
- **1,708** for grading



Warehouses

- **269** for registration



**18,852** TOTAL SAMPLES  
COLLECTED

**1,733**

from food processing  
establishments

**14,370**

from slaughterhouses

**2,749**

from abattoir

**Facilitating religious slaughtering**

Livestock is also slaughtered for food on religious occasions such as *Aqiqah* and *Korban*. In FY 2015, AVA issued 54 special permits for the religious slaughtering of 3,835 sheep and 19 goats. *Korban* was successfully held on 24 September 2015, with 1,855 sheep from Ireland that complemented the supply of 1,980 sheep from Australia.

AVA officers worked with stakeholders to train relevant personnel on good animal handling techniques, set-up of facilities, and food safety.

Checks and inspections were conducted at various stages from the point of import to slaughter to ensure animal welfare, control, and traceability. *Korban* rites using Australian sheep were assessed to have met Australia's Export Supply Chain Assurance System (ESCAS) requirements.

AVA also received the Ministry of National Development Minister's Award (Team) 2015 for boosting supply resilience, meeting community needs and safeguarding animal welfare for *Korban* 2014.

## ENHANCING COMPETENCIES IN LABORATORY CAPABILITIES

Laboratory testing is the cornerstone of AVA's food safety programme. AVA's Veterinary Public Health Laboratory (VPHL) carries out applied research and development to stay relevant and competent in handling new and existing food-borne hazards.

In FY 2015, we implemented 14 new test methods for the detection of chemical contaminants, drug residues, pesticide residues, additives, food-borne toxins, microbiology and genetically modified materials. New methods of food authentication were also set up. In addition, we enhanced some of our existing methods

to increase the coverage of substances in one single run, as well as to improve the sensitivity and turnaround time required.

VPHL ensures that its tests are accredited according to international standards. The laboratory has been maintaining its accreditation to ISO/IEC 17025 by the Singapore Accreditation Council-Singapore Laboratory Accreditation Scheme (SAC-SINGLAS) since 2000. With 10 new methods accredited by SAC-SINGLAS in FY 2015, the total number of accredited methods now stands at 250. VPHL also benchmarks its testing capabilities by participating in internationally-recognised inter-laboratory proficiency testing programmes. We continued to perform well in these programmes.

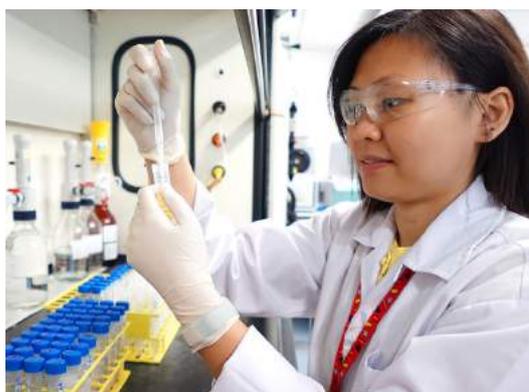
### LABORATORY TESTS CONDUCTED AT VPHL

Function	Samples tested	Laboratory tests performed	Results obtained
Health Certificates 	2,399	10,399	16,679
Import Control 	34,075	150,900	1,590,642
Surveillance 	15,128	91,902	718,102
R&D related 	399	808	1,414
Quality tests 	3,160	7,226	131,410
<b>TOTAL</b>	<b>55,161</b>	<b>261,235</b>	<b>2,458,247</b>



### Key laboratory enhancements

Since the Japan Fukushima disaster in March 2011, AVA has been closely monitoring imports from Japan, as well as some other countries, for radionuclides as part of our routine surveillance. To be better prepared for such incidences, VPHL completed retrofitting of the radionuclide laboratory and acquisition of major equipment in FY 2015. Work is in progress to set up capabilities to detect a wider range of radionuclides (e.g. alpha emitting and beta emitting radionuclides) in food and water, as well as to train our scientists in this area.



In FY 2015, VPHL also expanded its authenticity detection capabilities to cover more species of fish and animal, as well as honey. We currently have two on-going projects with the International Atomic Energy Agency to build

up our laboratory capability in food traceability techniques for rice and milk, using Isotope Ratio Mass Spectrometry, Inductively-coupled Plasma Mass Spectrometry (ICPMS), and Inductively-coupled Plasma Optical Emission Spectrometry (ICPOES).

### New test methods developed by VPHL

- Detection of Rodenticide Alpha-chloralose using LCMSMS
- Detection of Warfarin and Coumatetralyl (anticoagulants) in pork liver and offals using LCMSMS
- A new multi-residues test method for the screening of antibiotics in honey covering more than 100 drugs using the LCMSMS
- Detection of 4-hexylresorcinol in seafood using LCMSMS
- Detection of Curcumin in Durian using the LCMSMS
- Detection of Dimethyl Yellow in Soya bean curd using the LCMSMS
- Quantitation of Methylglyoxal in honey using Liquid Chromatography
- Detection of Equine (Horse) species using Conventional PCR
- Identification of Shark Species by DNA Sequencing
- Enhancement of GCMSMS method to analyse for more than 180 pesticides in 15 mins run per samples
- Determination of monofluoroacetic acid (a highly toxic rodenticide) in milk products using the LCMSMS
- Detection of Rongalite (sodium hydroxymethanesulfinate), an industrial whitening agent that may be exploited illegally as food bleaching agent
- Detection of gossypol in food by LCMSMS
- Detection of GBS in fish and water samples

### New test methods accredited by SAC-SINGLAS

- Detection of Porcine using Real Time PCR
- Detection of corticosteroids and thyrostats (banned drugs for food animals) using the LCMSMS
- Detection of non-steroid anti-inflammatory drugs (NSAIDs) for food using LCMSMS
- Determination of sweeteners in food by LCMSMS
- Detection of Formaldehyde in seafood by UV
- Detection of Shigella spp in food by real time PCR
- Detection of Salmonella spp in food by real time PCR
- Detection of Listeria monocytogenes in food by real time PCR
- Detection of Tetrodotoxins in seafood by LCMSMS
- Detection of Brevetoxins 2, 3 and 6 in seafood by LCMSMS

## MANAGING FOOD SAFETY INCIDENTS

In the event of unexpected food safety incidents, a crisis management structure enables us to respond quickly and maintain public confidence. And as food safety issues get increasingly complex, a One Health platform comprising AVA, the National Environment Agency (NEA), and Ministry of Health (MOH) was established in 2012 to strengthen collaboration between stakeholders in the animal, human, and environmental health sectors.

Under the One Health protocol, when a food-borne disease breaks out, MOH, supported by AVA and NEA, will lead field epidemiological investigations to be conducted at implicated food premises to ascertain the source or cause of the outbreak.

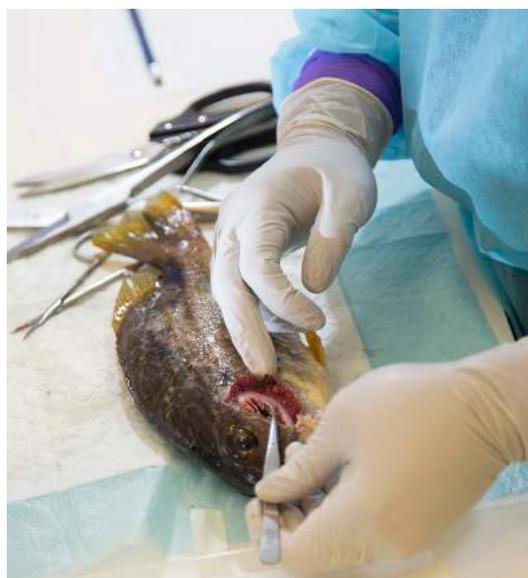
### Containing outbreak of Group B Streptococcus (GBS)

In July 2015, MOH alerted AVA to an increased number of GBS cases being reported, which may have been caused by raw ready-to-eat (RTE) freshwater fish. Laboratory tests conducted by AVA and NEA found such fish to have significantly higher bacterial contamination than saltwater fish, and were likely to present higher risks of infection when consumed raw. To protect public health, a ban was imposed on the use of freshwater fish in all RTE raw fish dishes sold by food retailers. A suspension on the use of saltwater fish in RTE raw fish dishes was also imposed on food stalls and caterers that supply food directly to consumers, until these operators could comply with proper food safety practices. AVA worked closely with NEA to conduct industry engagement sessions and stepped up measures to ensure that the fish intended for raw consumption were closely monitored and tested for safety.

### Managing food poisoning incidents

In February 2016, close to a hundred people became unwell after consuming food from a food retail outlet. As part of the One Health protocol, AVA's laboratories tested samples collected from the outlet, and detected *Listeria monocytogenes* and salmonella (*S. Stanley*) in two food samples. Subsequently, the outlet was suspended from operations, instructed to discard all raw ingredients and condiments, as well as thoroughly cleanse and sanitise its premises and transport vehicles. AVA followed up on this case by checking that the raw ingredients used were safe for human consumption.

**“In the event of unexpected food safety incidents, a crisis management structure enables us to respond quickly and maintain public confidence in the safety of food in Singapore.”**





## Responding promptly to food safety alerts

In FY 2015, AVA responded swiftly to food safety alerts from overseas authorities, media reports, and food manufacturers. By promptly conducting laboratory tests and facilitating recalls of affected imports, we ensured that food safety was not compromised. The following is a summary of such alerts we acted on:

Period	Incident	Actions taken	Outcome
May-Jun 2015	Indian authorities detected unsafe levels of lead in 'Maggi' Masala instant noodles from India and subsequently banned sales of the product in India.	AVA advised local importers to withhold sale of this product, and tested this product along with other brands of imported and locally produced instant noodles.	AVA found the instant noodles in Singapore safe for consumption, and sales of this product were resumed.
Jun 2015	Australian media reported that rodenticides (coumatetralyl and warfarin) may be present in pork from Australia.	AVA implemented a hold-and-test procedure on all pork products from the implicated source. Only those that passed our laboratory tests were released for sale.	Australian authorities provided assurance, including preventive measures taken, to prevent this incident from reoccurring. Upon reviewing these measures, AVA lifted the hold-and-test requirement and allowed the normal import clearance procedure to resume.
Nov 2015	Authorities in Chinese Taipei detected brominated vegetable oil in 'Mountain Dew' drinks made in the US.	AVA traced the implicated batch of product to a local importer.	The importer voluntarily recalled the products for destruction.
Feb 2016	Authorities in Australia and New Zealand detected Salmonella in batches of 'Wash N Toss' pre-packed salad leaves.	AVA instructed importers to recall the implicated batches of this product. In addition, AVA tested samples of the product.	Importers recalled affected batches for destruction. AVA's tests showed that Salmonella was not detected in the samples.
Feb 2016	Manufacturer, Mars Chocolate, voluntarily recalled selected 'Snickers', 'Mars', 'Milky Way', 'Celebrations' chocolate bars in the Netherlands, due to possibility of the products containing pieces of plastic.	AVA instructed importers to recall implicated batches of these products.	Importers recalled affected batches for destruction.
Feb 2016	New Zealand authorities detected non-approved substances (dihydroxyacetone and methylglyoxal) in 'Evergreen' Manuka honey from New Zealand.	AVA worked with importer to recall this product.	Importer recalled the product for return to New Zealand.

## ASSESSING THE SAFETY OF FOOD-CONTACT MATERIALS

As part of risk assessment, AVA conducts surveillance on food products and food-contact materials to ascertain the appropriate risk-mitigating measures required. In FY 2015, we assessed whether certain food preservatives, metal foils, and bottles posed any food safety hazards.

Our assessment of approved preservatives (benzoic acid and sorbic acid) in food showed that the current levels of these chemicals do not pose a health risk to the general population in Singapore.

The safety of aluminium foils, polyethersulfone (PES) baby feeding bottles, and polyethylene terephthalate (PET) plastic bottles were also evaluated, by determining whether these material compositions could migrate into the food/drinks they contain. Our laboratory test results showed that these articles are safe for use with food.

## SUPPORTING FOOD SAFETY ENHANCEMENT IN THE REGION

On 8 June 2015, Singapore and the Food and Agriculture Organisation (FAO) of the United Nations signed a Memorandum of Understanding. This partnership serves as a platform to support capacity development and increase expertise, knowledge, and technology



transfer between Singapore and FAO, as well as with other countries, in areas such as food security and food safety.

As an OIE Collaborating Centre for Food Safety in Southeast Asia, AVA looks for opportunities to partner other institutes on areas related to food safety and to build up the capability of countries in this region and beyond. On 15-19 February 2016, AVA and Japan's Ministry of Agriculture, Forestry and Fisheries co-hosted a seminar on 'Promoting the Harmonisation of Pesticide Maximum Residues Limit (MRL) Setting Process in the Asian Region'. The trainer, Dr Yukiko Yamada, is an internationally renowned expert on pesticide MRL setting and risk assessment. The seminar was attended by 15 participants from AVA and the Health Sciences Authority Singapore.





## SHARED RESPONSIBILITY IN FOOD SAFETY

Food safety is a shared responsibility between the government, industry, and public. We help the industry stay competent and competitive through active engagement and education. And while food industries and the government continue to work together to ensure food sold in Singapore is safe for consumption, it is also important to ensure consumers are equipped with good food safety knowledge as well.

### Engaging and reaching out to the industry

AVA engages and reaches out to the industry via various platforms to enhance its competency in food safety. Through regular meetings and dialogues, we also exchange information and foster mutual understanding. In FY 2015, we continued our CEO dialogue sessions with the industry, in addition to organising a seminar, learning journey, and four roadshows to help the industry build capability.

To mark World Health Day on 7 April 2015, a seminar on safe pesticide usage and laboratory testing of pesticide residues in locally produced vegetables was organised for local vegetable farm operators. In addition, 21 food manufacturers and importers visited VPHL to

better understand laboratory testing processes, and how they are an integral component in Singapore's food safety.

During the FY, AVA also reached out to about 400 employees from various food establishments over four roadshows. We raised their awareness of food safety management, hygiene practices, the HACCP system, as well as good warehousing and manufacturing practices.





In addition, AVA CEO dialogue sessions were held with the Seafood Industries Association of Singapore (SIAS), Singapore Food Manufacturers' Association (SFMA), Singapore Manufacturing Federation (SMF), and Food Manufacturers' Business Cluster (FMBC). The FMBC includes members from SMF, SFMA, SIAS, Poultry Merchants Association, and Singapore Bakery and Confectionary Trade Association. More than 170 industry members participated in these sessions, where topics such as updates on Codex and our Food Regulations were discussed.

### Recognising the best in the industry

The annual AVA Food Safety Awards Night recognises food companies for their sustained

efforts in upholding stringent food safety standards. The event, held on 30 July 2015 at Resorts World Sentosa, was graced by Dr Mohamad Maliki Bin Osman (Senior Minister of State for Defence & Foreign Affairs).

The highlight of the event was the launch of the inaugural Platinum Award. A total of 25 local food establishments received the award in recognition of their excellent track record with an 'A' grading for 20 consecutive years. In addition, six Gold, 10 Silver, 16 Bronze awards, and 92 certificates of commendation were given out. AVA also acknowledged the public education efforts of our food safety partners and renewed the food safety partnership status of nine companies.





### Educating the public

As food contamination can occur at any point in the food chain, it is essential for all of us to play our part in ensuring that food in Singapore is safe. To this end, consumers need to be equipped with knowledge of food safety risks and safe food practices to avoid such risks.

In FY 2015, our public education programme reached out to students, working professionals, grocery shoppers, and the general public through talks, learning journeys and roadshows. In addition, media advertising and social media campaigns were put up during the Food Safety



month of July, in conjunction with AVA's Food Safety Awards Night.

### PUBLIC OUTREACH ACTIVITIES CONDUCTED TO PROMOTE FOOD SAFETY



#### Activities

**8**

school talks

**11**

learning journeys

**2**

workplace talks

Participation in various community events

#### Highlights

Deployment of AVA's Food Safety Bus, which contains interactive modular displays

Appearances by Oscar, the Food Safety mascot; instant photo booth; food safety games; distribution of food safety brochures

#### Outreach

**25,000**  
people

**2,500**  
people

**18**  
food safety roadshows at selected NTUC FairPrice and Cold Storage supermarket outlets

Reached out to  
**27,500**  
people in total





# ANIMAL HEALTH & WELFARE



## INGREDIENTS

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- 1 paw-full of Regulation
- 1 beak-full of Risk analysis
- 1 collar of Laboratory testing
- 1 whisker of Collaboration
- 1 crown of International partnership

## METHOD

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We have successfully kept major animal diseases from entering Singapore through a robust framework of surveillance, laboratory competence and timely policy reviews. We also engage industry partners and the public to safeguard the welfare of animals in our community.



# ENSURING ANIMAL HEALTH

AVA keeps major animal diseases of public health and economic significance out of Singapore. We achieve this through a range of comprehensive and integrated risk-based programmes such as import regulation and inspection, laboratory testing, and surveillance. This integrated system has continued to ensure that animals and humans in Singapore remain healthy and safe from disease threats such as Foot & Mouth disease (FMD), rabies, Nipah virus, Avian Influenza (bird flu), and Bovine Spongiform Encephalopathy (BSE).

## KEEPING OUT ANIMAL DISEASES

AVA strictly regulates the import of animals to safeguard the health and welfare of animals, and prevent the introduction of exotic animal diseases, such as rabies, into Singapore. As part of our surveillance programme, imported poultry and eggs, for example, are regularly sampled to test for bird flu, *Salmonella* spp., and other contaminants. We also work closely with our counterparts and stakeholders to share expertise and exchange information.





### Updating import conditions for horses

On 7 May 2015, AVA approved the import of horses from South Korea on a temporary basis to facilitate their participation in races at the Singapore Turf Club. This provides greater convenience to the horse racing industry.

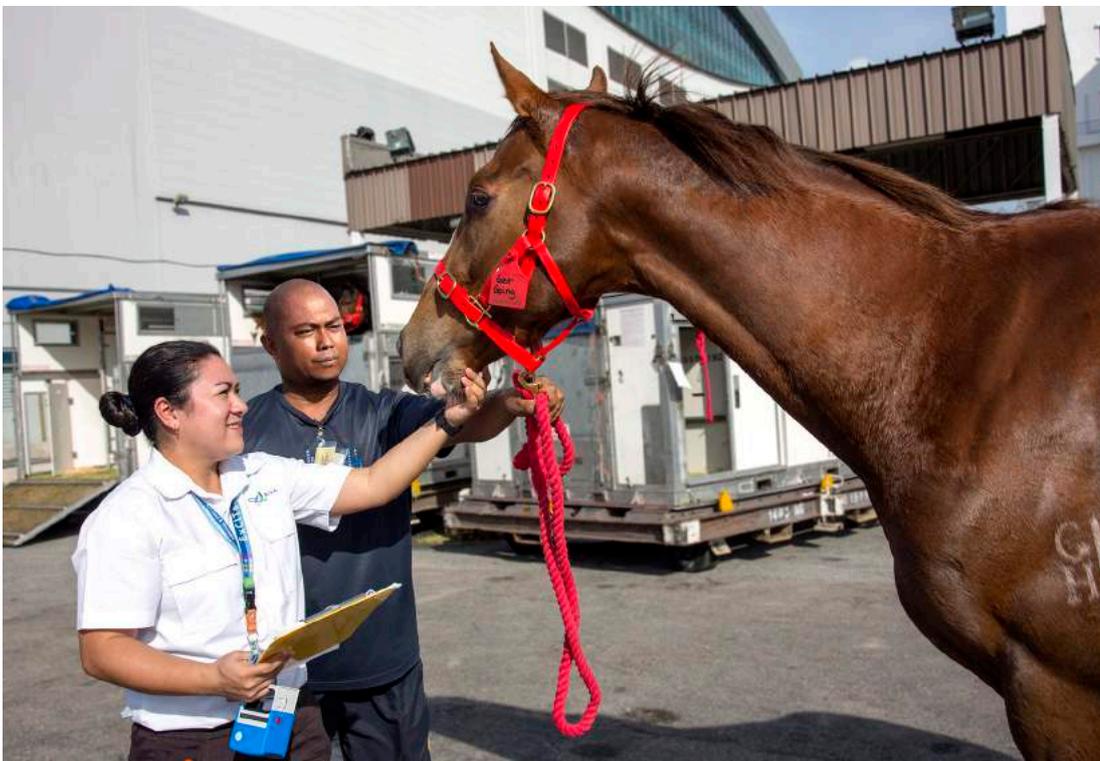
Veterinary conditions for the import of horses into Singapore were amended on 11 May 2015 to facilitate trade, in alignment with OIE (World Organisation for Animal Health) Code's conditions for Glanders. Under this amendment, the requirement for a Mallein Test (which countries had experienced difficulties in performing) is now replaced with the Complement Fixation Test (CFT) – a better method for Glanders detection. To facilitate this, AVA's Animal Health Laboratories also established capabilities for CFT.

On 2 November 2015, the residency requirement for the permanent import of horses was updated to be consistent with that for temporary import. Veterinary conditions for import of horses were also aligned with OIE's guidelines, by updating the outdated testing methods for Piroplasmosis and Surra (*Trypanosoma evansi*).

### DID YOU KNOW?

The Animals and Birds Act was expanded in FY 2015 to include reptiles and amphibians. This allows AVA to regulate these species, both at import and within the local population.

From 12 February 2016, horses that take part in international races or competitions overseas may now re-enter Singapore more easily if they return within 14 days. These horses will now be tested for Equine Infectious Anaemia, Equine Viral Arteritis, and Equine Piroplasmosis after they arrive in Singapore, and will be released from quarantine if their test results are negative. Horses that had been overseas for more than 14 days will continue to be tested for these diseases before arriving in Singapore.



## Combatting animal smuggling

AVA collaborates closely with the Immigration and Checkpoints Authority (ICA) to monitor imports and combat animal smuggling. AVA and ICA's vigilance led to the interception of numerous attempts to smuggle animals such as puppies, birds, sugar gliders, hedgehogs and lizards into Singapore. As the smuggling of animals into Singapore increases the risks of introducing exotic animal diseases such as rabies and bird flu, strict deterrence is necessary and the offenders were fined up to \$10,000 or sentenced to up to 12 months in jail.



## Safeguarding Singapore from rabies

Rabies is a fatal viral disease that can be transmitted to humans by the bite of a rabid animal. Singapore has been free from rabies since 1953 – an impressive achievement given that the disease is endemic to the region and thousands of dogs and cats enter our country each year. Our risk-based system of categorising each country's rabies status and disease control measures has been instrumental in keeping Singapore free from the disease.

In FY 2015, after an outbreak of rabies in the states of Perlis, Penang, and Kedah, Malaysia was reclassified from Category C (controlled risk of rabies) to the higher risk Category D (undetermined risk of rabies) for the import of personal dogs and cats, while the commercial import of these animals was suspended. The Slovak Republic was classified under Category C, following its application for rabies categorisation.

In June 2015 and March 2016, we engaged experts, Dr Anak Agung Putra from Indonesia, and Dr Richard Rubira and Dr Andrea Britton from Australia, to share their experiences in controlling rabies and contingency planning. We benefitted from the experts' in-depth insight and analysis of AVA's proposed rabies outbreak response plans.

## Keeping bird flu at bay

Since 2006, AVA has been assisting Indonesia in the control and management of bird flu outbreaks in Kepri. We continued to do so in FY 2015, as this helps to ensure that bird flu outbreaks in our neighbouring countries do not spread to Singapore. As part of the Kepri programme, AVA officers visited Batam and Bintan regularly during the FY to obtain updates on bird flu outbreaks, and supplied vet authorities in Tanjung Pinang with rapid test kits, disinfectants, and personnel protective equipment when bird flu was detected.

## Disease surveillance on wildlife with NParks

In FY 2015, we continued to collaborate with the National Parks Board (NParks) on the surveillance of diseases in migratory and wild birds in Sungei Buloh Wetland Reserves, Pulau Ubin, and Singapore Botanic Gardens. A total of 410 samples, including those from the swans in the Botanic Gardens, were collected and tested. In collaboration with the National Environment Agency (NEA), we also tested 1,288 urban birds (crows, pigeons, mynahs and others), which were found to be free of bird flu. In addition, a project was initiated to determine the prevalence of Chytrid Fungus (*Batrachochytrium dendrobatidis*) in wild amphibians in Singapore. The fungus causes chytridiomycosis, a fatal infectious disease affecting amphibians.



### Partnering with Malaysia for improved information sharing

At the AVA-Department of Veterinary Services (Malaysia) bilateral meeting held on 8 March 2015, both parties agreed to set up working groups to address pre-export testing protocols, with the aim of preventing the incursion of diseases through high-risk live animals. We also agreed to develop a system to facilitate timely sharing of information on animal disease outbreaks.

### KEEPING WATCH OVER LOCAL FARMS

We continued our surveillance and inspection of local farms for timely detection, treatment, and containment of animal diseases.

### DID YOU KNOW?

AVA also regulates the veterinary profession in Singapore to ensure that veterinarians maintain high standards of expertise, integrity and accountability when providing professional services that comply with the Code of Ethics for Veterinarians. In FY 2015, AVA licensed 353 veterinarians and 77 veterinary centres.

## ANIMAL DISEASE SURVEILLANCE IN LOCAL FARMS

5

Poultry farms  
(layer hens + quails)



Tests conducted to check for

- *Salmonella Enteritidis*
- *Bird flu*
- *Newcastle Disease*

3

Captive bird farms



Tests conducted to check for

- *Bird flu*
- *Newcastle Disease*

4

Ruminant farms



Tests conducted to check for

- *Escherichia coli O157:H7*
- *Campylobacter*
- *Listeria*
- *Salmonella*
- *Brucella*
- *BSE*
- *FMD*
- *Bovine Tuberculosis*
- *Contagious Bovine Pleuropneumonia*

7

Food-fish farms  
(land-based)



Tests conducted to check for

- *Epizootic Ulcerative Syndrome*
- *Red Seabream Iridovirus*

117

Food-fish farms  
(Coastal)



Tests conducted to check for

- *Epizootic Ulcerative Syndrome*
- *Red Seabream Iridovirus*

64

Ornamental fish farms



Tests conducted to check for

- *Koi Herpes Virus*
- *Spring Viraemia Carp Virus*
- *Aeromonas Salmonicida*
- *Megalocytivirus*
- *White Spot Syndrome Virus*
- *Viral Haemorrhagic Septicaemia*
- *Infectious Haematopoietic Necrosis Virus*
- *Epizootic Haematopoietic Necrosis Virus*
- *Infectious Spleen and Kidney Necrosis Virus*

### Managing diseases detected in local farms

In FY 2015, one poultry farm was discovered to be infected with *Salmonella* Enteritidis. The infected flocks were culled and the eggs were sent to an AVA-approved liquid-egg processing plant for pasteurisation, which would kill the bacteria, making the eggs safe for consumption. Isolation orders on the infected flocks were lifted after two rounds of tests cleared them of the virus.

Three ruminant farms remained under an isolation order as they tested positive for *Escherichia coli* (E. coli) O157:H7. E. coli infection can cause severe diarrhoea and kidney damage. The farms were advised to treat their livestock with pro-biotics. The pasteurised milk produced was tested to ensure that it was safe for consumption.

Red Sea Bream Iridovirus was detected in fish samples from a coastal fish farm, and we ensured that the sick fishes were promptly removed. Other marine fish diseases, such as Infectious Spleen and Kidney Necrosis Virus and Viral Nervous Necrosis Virus were detected in some farms, and AVA worked closely with the affected farmers to improve their management of fish health and recommended that they vaccinate their fish to minimise production losses.

Chytrid fungus, a notifiable disease, was detected in ornamental and food frogs. The fatal infection affects amphibians worldwide. Infected batches of ornamental frogs were removed, while infected batches of food frogs were sent for processing immediately to minimise transmission of the disease to susceptible animal populations. In addition, one batch each of imported and local koi (detected with Koi Herpes Virus), as well as a batch of imported crayfish and shrimps (detected with White Spot Syndrome Virus) were disposed.

### Maintaining strict standards in poultry farms

We continued our surveillance of local poultry farms in FY 2015 to ensure that bio-security and bio-segregation measures were strictly adhered to and that poultry houses were bird-proofed so as to prevent contact between wild birds (that may be carrying the bird flu virus) and the local poultry population.

In addition, Personnel Protection Equipment (PPE) is critical in protecting officers involved in bird flu operations. To ensure that AVA officers are competent with the use of PPE, quarterly training sessions were launched in September 2015.

### ENHANCING LABORATORY CAPABILITIES

AVA's Animal Health Laboratories (AHL) is the national reference laboratory for animal diseases and testing of vaccines. In FY 2015, AHL conducted 140,670 laboratory tests to detect and identify diseases in animals, birds and fish.

AHL also expanded its testing capabilities for the molecular detection of *Megalocytivirus*, Parapox virus, and Avian Adenovirus. Competencies on Glanders antibody detection by Complement Fixation test, *Streptococcus agalactiae* Multi-locus Sequence Typing, serotyping of Group B *Streptococcus* by Latex Agglutination Assay, and isolation of *Streptococcus agalactiae* were also enhanced.

Four new tests were accredited under the ISO 17025 scheme in FY 2015, bringing the total to 113 ISO accredited tests:

- FMD antibody ELISA by the Priocheck FMDV NS kit
- Detection of *Batrachochytrium dendrobatidis* by Real-time PCR
- Detection of *Dirofilaria immitis* antigen using IDEXX SNAP test
- Detection of Trichodinids by wet mount examination

AHL continued to attain ISO/IEC 17025 accreditation under the Singapore Accreditation Council – Singapore Laboratory Accreditation Scheme (SAC-SINGLAS), reflecting its commitment to high quality laboratory testing standards in the field of chemical and biological testing.



## DID YOU KNOW?

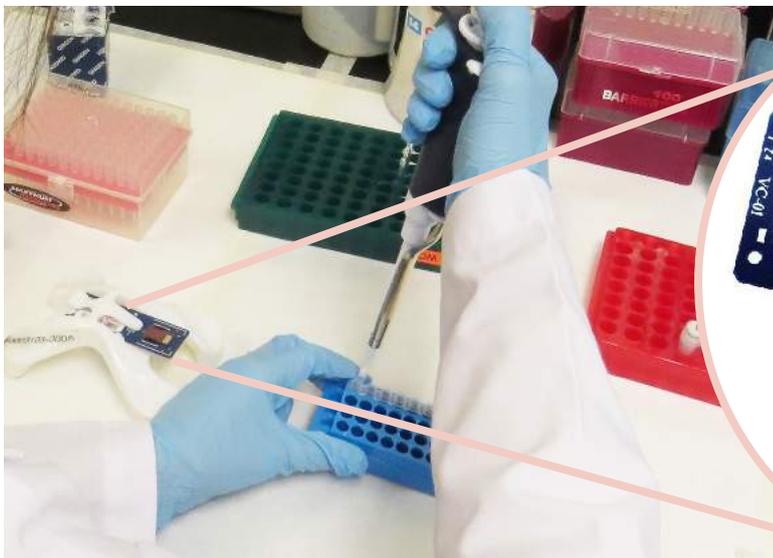
### AVA AND VEREDUS LABS LAUNCHED THE WORLD'S 1ST POULTRY BIOCHIP ('LAB-ON-CHIP') TO DETECT MULTIPLE AVIAN DISEASES

This portable Lab-on-Chip application can detect, differentiate, and identify 9 major infectious poultry disease agents in one sample, using a single disposable biochip.

These disease agents include the Newcastle Disease virus, *Salmonella Pullorum*, *Salmonella Enteritidis*, *Campylobacter*, and bird flu virus.

Using the Lab-on-Chip allows a marked improvement in efficiency compared to the conventional method of testing, which requires different samples for different tests.

On 15 October 2015, this lab-on-chip project received the PS21 Most Innovative Project / Policy Award (Merit).





PROTECTING THE

# WELFARE OF ANIMALS

AVA safeguards the welfare of animals through regulation and education. We work closely with animal welfare groups (AWG) in the area of public education and re-homing. Through a series of outreach activities under our Responsible Pet Ownership (RPO) programme, we not only encourage existing pet owners to be responsible, but also urge potential pet owners to consider adoption as the first option, through our collaboration with 12 AWGs in the re-homing of stray dogs. In addition, AVA regulates research facilities that use animals for scientific purposes in Singapore, to ensure they comply with guidelines on the care and use of these animals.

## RAISING THE STANDARDS OF ANIMAL WELFARE

In FY 2015, AVA reviewed the draft Code of Animal Welfare formulated by the Multi-Stakeholder Collaboration Committee (MSCC). Work is underway to finalise the Code that will set out clear guidelines on animal welfare standards in Singapore. In addition, we supported the MSCC's review of the training curriculum for the pet industry, to ensure that those who are in the pet business are adequately trained in the care and handling of animals. The MSCC, chaired by Mr Alex Yam, Member of Parliament, and comprising representatives from animal welfare groups, the pet industry, the veterinary profession and the community, aims to raise the standard of animal welfare in Singapore.

In FY 2015, we received feedback on 918 cases of alleged animal cruelty. Upon investigation, AVA took enforcement action against 19 cases for violation of animal welfare laws. The other cases were found to be unrelated to animal welfare or cruelty; they pertained mostly to feedback on animal nuisance (e.g. noise, smell, hygiene) and disputes between neighbours.

## REGULATING PET RETAILERS

During the FY, AVA carried out inspections of all 252 licenced pet retailers to ensure compliance with licensing conditions and standards of care for animals. AVA also grades pet shops to encourage them to enhance their standards in animal welfare, as well as to inform the public of the standards of the pet shops they patronise.





## EDUCATING THE PUBLIC

Through the RPO public education programme, AVA educates the public on animal welfare and responsible pet ownership. Under this programme, we work closely with the following animal welfare groups in the areas of public education and re-homing of shelter animals.

- Action for Singapore Dogs
- Agency for Animal Welfare
- Animal Lovers League
- Cat Welfare Society
- Causes for Animals
- Exclusively Mongrels
- House Rabbit Society Singapore
- Humane Society (Singapore)
- Mercylight
- Noah's Ark CARES
- Purely Adoptions
- SOSD Singapore
- Society for the Prevention of Cruelty to Animals
- Voices For Animals

In FY 2015, we reached out to the public through the following pet events, school talks, and learning journeys:

### EVENTS



Organised:  
**MY PET MY FAMILY**  
31 Oct 2015  
Marina Barrage

- 4,500 visitors
- 'Pregnancy & Pets' seminar
- Family kite-painting competition
- Outdoor movie screening of *Marley & Me*
- Adoption drive in partnership with 12 Animal Welfare Groups



Organised:  
**'MY PAWFECT MATCH' AT PET EXPO**  
26-27 Mar 2016  
Singapore Expo

Adoption drive in the form of a 'speed dating' event between shelter dogs and potential pet owners (in partnership with 10 Animal Welfare Groups)

Participated in:  
**KATONG 112 PETS FIESTA**

8-14 Jun 2015

Participated in:  
**PURINA ONE DOGA (DOG AND YOGA)**

12 Jul 2015

Supported:  
**ITE CENTRAL COLLEGE TEAM PAWFEST PET EVENT**

31 Jan 2016

### SCHOOL TALKS

We believe that education can bring about long-term positive changes. In FY 2015, we reached out to 4,756 children and conducted activities that enhanced their learning and appreciation of RPO.

### LEARNING JOURNEYS

In FY 2015, close to 1,000 students participated in learning journeys to AVA's Centre for Animal Welfare & Control (CAWC). These learning journeys provide a meaningful opportunity to meet our volunteer dog trainer and RPO Pet Ambassadors, who help spread our RPO messages. These RPO Pet Ambassadors are animals that were previously surrendered to CAWC. They are exceptionally calm and friendly, and enjoy interacting with people.

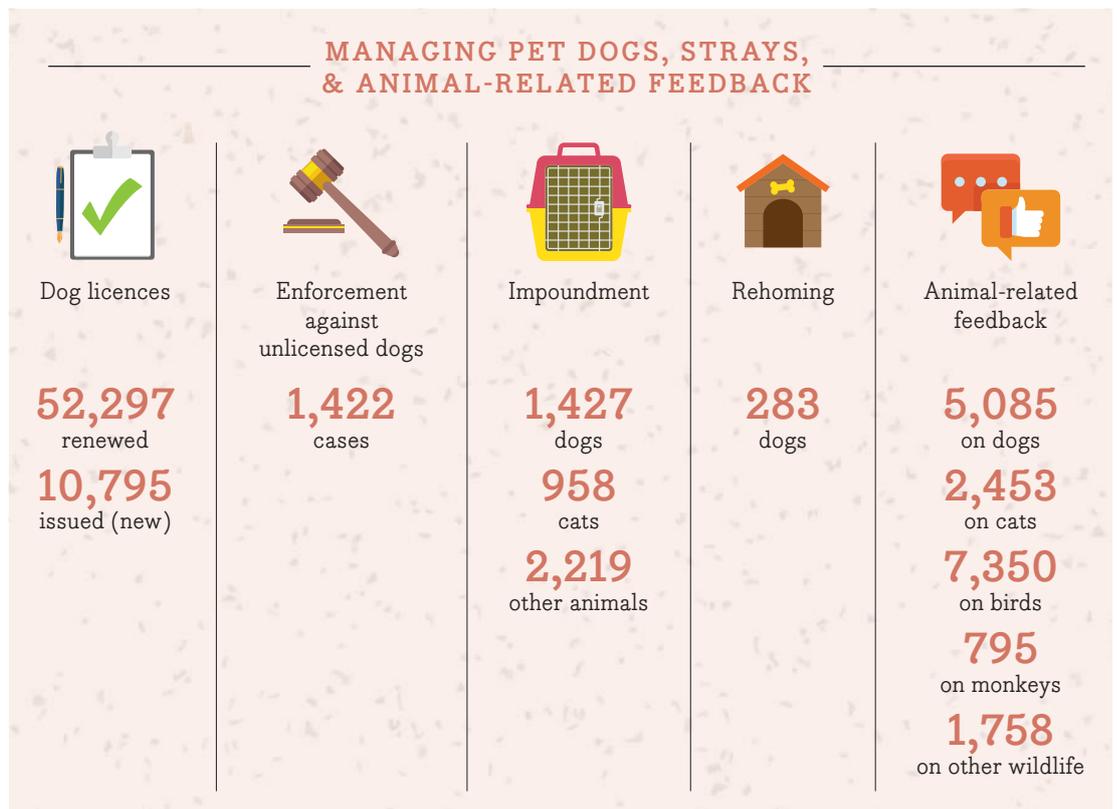


# MANAGING THE **STRAY POPULATION** & ANIMAL-RELATED FEEDBACK

The management of the animal population is an integral part of AVA’s animal and public health framework. In managing animal-related issues, AVA has to balance the diverse interests of different stakeholder groups. In enhancing our animal management strategies, a science-based approach is taken. Our animal control measures are multi-pronged, and include efforts such as education, partnership with animal welfare groups, animal control, and re-homing of impounded dogs.

During the FY, studies on animal control methods were conducted. We also continued to manage animal-related feedback in our role as First Responder. Animal-related issues are often complex, and require the efforts of various agencies to achieve an effective resolution. AVA leads the coordination among relevant agencies for swift follow-up actions.

In addition, as dogs are the main host and transmitter of rabies, AVA also licenses pet dogs to facilitate contact tracing in the event of an outbreak. Dog licensing also establishes accountability for the care and management of dogs by pet owners.





## ENHANCING ANIMAL POPULATION CONTROL MEASURES

In FY 2015, AVA engaged the University of Queensland to conduct a three-year study on the stray dog population in Singapore. By adopting a science-based approach, the study will help us better understand the ecology of local stray dogs and enhance our contingency planning for rabies outbreaks.

In January 2016, AVA also engaged the National University of Singapore on a two-year study on the population and ecology of crows, pigeons, swallows, Asian koels, and chickens. The research will enable us to implement better mitigation or control measures.

We also implemented innovative solutions to manage and control the bird populations in Singapore in FY 2015. A trial completed in February 2016 proved that a non-toxic detergent gel was effective in preventing birds from roosting and potentially creating nuisance



in Choa Chu Kang. In another trial conducted in October 2015, an oral contraceptive was added to bird feed as a method to manage the pigeon population in Palmer Road. As a result, the number of pigeons in the area was considerably reduced. We will be extending this trial to areas along Waterloo Street.







PLANT  
**HEALTH**



INGREDIENTS

---

1 head of Regulation  
1 floret of Surveillance  
1 bunch of Inspection  
3 stalks of Partnership  
3 sprigs of Cooperation

METHOD

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AVA works behind the scenes to keep Singapore's farms and cityscape healthy. A well-established regulatory system and plant health programme helps us to keep important quarantine pests away from Singapore.



SAFEGUARDING

# PLANT HEALTH

AVA protects plants in Singapore's farms, nurseries, and lush cityscape from exotic and emerging indigenous pests that may cause significant economic losses. Our plant health regulatory system of surveillance, inspection, risk analysis, and laboratory testing is globally recognised. Through close partnership with local government agencies and the industry, we have continued to keep the Khapra beetle (stored product pest), Mediterranean and Queensland fruit flies, as well as South American Leaf Blight (fungal disease of rubber), away from our shores.

## KEEPING OUT PLANT PESTS

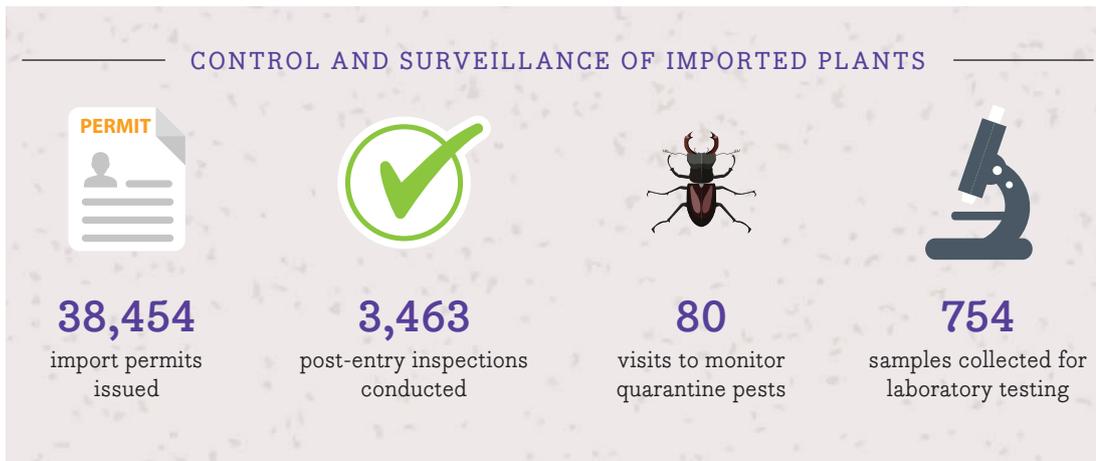
As Singapore imports several species of plants that are not grown locally, AVA works to ensure the smooth import of plants without compromising plant health. Continued vigilance and timely reviews of our processes enable us to effectively prevent and manage plant pest incursions.

Plants and plant products entering Singapore must meet AVA's plant health import requirements. A permit is required and AVA conducts post-entry inspections to ensure compliance. In addition, as part of our monitoring efforts on quarantine pests, surveillance visits are conducted and samples are collected for laboratory analysis.



## DETECTED AND DETAINED

We intercepted a consignment of ornamental plants from Malaysia that contained the quarantine pest, *Chrysomphalus aonidium* (circular scale insect). Exports from the affected Malaysian nurseries were suspended. Establishment of this insect in Singapore would have a drastic impact on the urban landscape. Once detected, prompt action should be taken to contain and eradicate the pest.

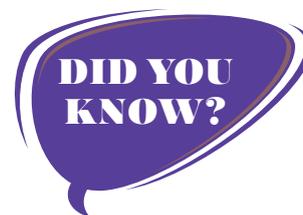


### Reviewing protocols for plant imports from Malaysia

In FY 2015, AVA and Malaysia’s Department of Agriculture (DOA) jointly reviewed the Malaysian Phytosanitary Certification Assurance Scheme’s (MPCA) working protocol to ensure Malaysian nurseries fulfil criteria under the accreditation scheme. The review focused on DOA’s processes such as inspection, laboratory testing, and verification of documentation. Following this review, both parties will work on implementing the proposed phytosanitary measures for Malaysian plant imports to Singapore.

### Refining post-entry inspection of imports

AVA also refined its post-entry inspection process to focus on plants and plant products that originate from high-risk countries where quarantine pests such as the South American Leaf Blight are endemic. We also expanded our inspection coverage to include ‘regulated non-quarantine pests’, to keep their population in check. These refer to non-quarantine pests that nevertheless pose a negative economic impact and are therefore regulated under the International Plant Protection Convention (IPPC). Singapore is a signatory to IPPC, an international plant health agreement that develops the International Standards for Phytosanitary Measures.



#### REGULATING IMPORTED LIVING ORGANISMS

Through the administration of the Bio-security Assurance Arrangement Scheme, AVA regulates the import of living organisms, such as live insects and micro-organisms, which have an impact on the environment. Importers are required to have proper facilities and management procedures to prevent the escape of these living organisms. AVA conducts audits on their facilities and procedures periodically.

## PROTECTING THE HEALTH OF LOCAL PLANTS

AVA monitors establishments involved in the commercial cultivation of plants, flowers, and vegetables to keep them free from targeted quarantine pests and new pest incursions. Under AVA's vigilant watch, pests are detected and controlled in a timely manner.

In FY 2015, AVA conducted 521 surveillance visits and collected 4,328 samples for laboratory testing. The following pests were detected in Singapore, and technical assistance and advice was provided to eradicate or manage the infestations:

Pests detected	What AVA did
Quarantine insect, <i>Chrysomphalus aonidium</i> (Linnaeus) in ornamental plant nurseries and along the streetscapes of Singapore	<ul style="list-style-type: none"> <li>Initiated a delimiting survey island-wide to determine the boundaries of the infestation of this insect pest.</li> <li>Provided technical advisory on physical and chemical control methods, as well as bio-security measures to eradicate the insect in affected farms.</li> <li>Monitored the farms regularly to ensure that the insect pest has been completely eradicated.</li> </ul>
Quarantine nematode, <i>Aphelenchoides fragariae</i> in a horticultural tourist attraction	<ul style="list-style-type: none"> <li>Worked closely with the operator on the removal of affected plants, and chemical treatment of remaining plants.</li> <li>Conducted subsequent sampling to verify the eradication of this nematode.</li> </ul>
Collar rot problem in basil and mint plants in a farm	<ul style="list-style-type: none"> <li>Conducted investigations at the farm and provided appropriate technical advice.</li> </ul>
Fungal wilt disease in a farm	<ul style="list-style-type: none"> <li>Initiated identification of the fungus. Further investigations are in progress.</li> </ul>
Plant health problems at various locations	<ul style="list-style-type: none"> <li>Conducted 19 site visits to diagnose problems and provided appropriate solutions and advice.</li> </ul>

**“Under AVA’s vigilant watch, pests are detected and controlled in a timely manner.”**



## NEW PLANT PESTS AND HOSTS

Three pest species were detected for the first time in Singapore in 2015. AVA provided pest management information to affected farmers, nursery owners and park managers to help them control the pest populations and minimise damages to their plants. We continued to assess the risks, and monitor the spread and distribution of these newly detected pests.



Pest	Host
<i>Aleurodicus dispersus</i> (Family Aleyrodidae)	38 genera of plants belonging to 27 plant families, and more than 100 species including many vegetables, as well as ornamental, fruit, and shade tree crops
<i>Aleurotrachelus trachoides</i> (Family Aleyrodidae)	Plants in the Solanaceae family, e.g. capsicum, chilli, eggplant and relatives, tomato, as well as brassicas, citrus, and cucurbits
<i>Delias hyparete</i> Linnaeus (Family Pieridae)	Coconuts, mangoes, rambutans

## CULTIVATING GOOD SOIL FOR HEALTHY PLANTS

Good soil provides for healthy plants. AVA initiated a collaborative project with Cornell University to develop a set of soil quality indicators for Singapore. These indicators, along with AVA’s soil health testing programme, will enable us to provide local farms with appropriate guidance on how to improve soil quality and increase yields. In FY 2015, we completed a survey to obtain data on soil conditions in vegetable farms. Work is in progress to develop the indicators. Meanwhile, we studied the data collected, and shared the preliminary findings, along with relevant technical advice, with the 20 farms that participated in the project.

AVA also conducts tests to determine levels of organic matter in soil mixes to ensure that the soil used by the landscaping industry meets specifications required by the National Parks Board. In FY 2015, 65% and 40% of soil mix samples tested were found to have lower than specified limits for organic matter and Cation Exchange Capacity (a property of soil which helps it to hold certain nutrients), respectively. AVA provided remedial action to rectify these deviations.

Besides working with the local industry, AVA also collaborates with international partners to improve soil health management. On 28-29 April 2015, AVA and ASEAN Sustainable Agrifood Systems co-hosted the 2nd Meeting of the ASEAN Expert Group on Soil and Nutrient Management. Held in Singapore, the meeting continued to work on the drafting of the ASEAN guidelines for soil and nutrient management.



## ENHANCING LABORATORY CAPABILITIES

AVA's Plant Health Laboratory (PHL) serves as the national authority for plant health, providing analytical and diagnostic services on plant health in Singapore. In FY 2015, PHL performed 23,930 tests and processed 12,209 samples. The following pest identification and control methods were enhanced during the FY:

- **Faster identification of thrips species**

A broad molecular technique for the identification of thrips species (Family Thripidae) was established. Only one test is required to identify the species that the thrips sample belongs to, as compared to the traditional method that requires one test per species.

- **Electronic morphological identification key for thrips**

An electronic morphological identification key was developed for thrips (Family Thripidae) in Singapore and Southeast Asia. By keying important features of a thrips sample into a programme on the LUCID software, we are now able to easily and quickly identify the species of thrips tested.

- **Pictorial identification of important quarantine insect pests**

PHL established and developed morphological diagnostic keys with simple pictorial illustrations of five important quarantine pests. These pictorial diagnostic keys help to improve the speed of insect pest identification.

- **Study on efficacy of insecticides in controlling quarantine pests**

We evaluated the efficacy of existing insecticides on *Chrysomphalus aonidum* (circular scale), which was detected in local nurseries. Results showed that 'Dimethoate' was the most effective pesticide for the eradication of this quarantine insect.

- **Improved system for trapping diamondback moths**

Previously, pheromone traps were used to monitor and manage the population of *Plutella xylostella* (diamondback moths) in local vegetable farms. In FY 2015, we successfully developed an improved trapping system that uses both food and pheromone to lure the insects. This new system, powered by solar energy, has achieved higher trapping efficiency than the existing pheromone traps.

PHL's work is underpinned by a commitment to benchmark our systems against ISO/IEC 17025:2005 standards since 2006. During the FY, the following 3 new tests were accredited, bringing the total number of accredited tests to 28 under the Singapore Accreditation Council – Singapore Laboratory Accreditation Scheme (SAC-SINGLAS):

- Extraction and morphological identification of *Paracoccus marginatus* Williams and Granara de Willink (papaya mealybugs)
- Detection and morphological identification of *Aphelenchoides fragariae* (strawberry crimp/foliar nematode) in ornamental plants
- Determination of zinc in soil

PHL also continued to benchmark its testing capabilities by participating in the inter-laboratory proficiency quality assurance testing programme administered by Wageningen Evaluating Programmes for Analytical Laboratories, the Netherlands. Consistently good performance was achieved in the programme.



## COLLABORATING AND INNOVATING

AVA participated in a collaborative trial to compare the efficacy of modified atmosphere packaging versus methyl bromide fumigation in controlling rice weevils. We played a key role in handling the insects and monitoring their population during the trial. AVA is currently analysing the data collected.

In collaboration with Syngenta Asia Pacific Pte Ltd and Ang Mo Kio Town Council, AVA began a field trial to determine the efficacy of using the insecticide emamectin benzoate to control the infestation of caterpillars of moth (*Polydesma boarmoides*) in rain trees in Ang Mo Kio. Results showed that trees injected with tested dosages of the insecticide suffered significantly lesser tree shoot damage. The trial is expected to be completed in mid-2017.

## ENFORCING SAFE USE OF PESTICIDES

To ensure the safety of our food, the environment and farm workers, all agricultural pesticides used in vegetable, orchid and ornamental plant farms must be registered and approved by AVA. We conduct monthly inspections at farms to ensure that they comply with requirements under the Control of Plants Act. Samples of food crops from these premises are collected for pesticide residue and/or microbial testing.

In addition, we certify pesticide operators who supervise the application of approved pesticides on farms to ensure the safe use of pesticides. In FY 2015, there were 179 AVA-certified pesticide operators and 318 pesticide products approved for agricultural use. We also conducted four training sessions for pesticide operators.





Photo courtesy of: Sky Urban Solutions



# AGROTECHNOLOGY



## INGREDIENTS

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1 scoop of technology  
1 ladle of innovation  
2 tablespoons of creativity  
1 tablespoon of expertise  
1 tablespoon of productivity

## METHOD

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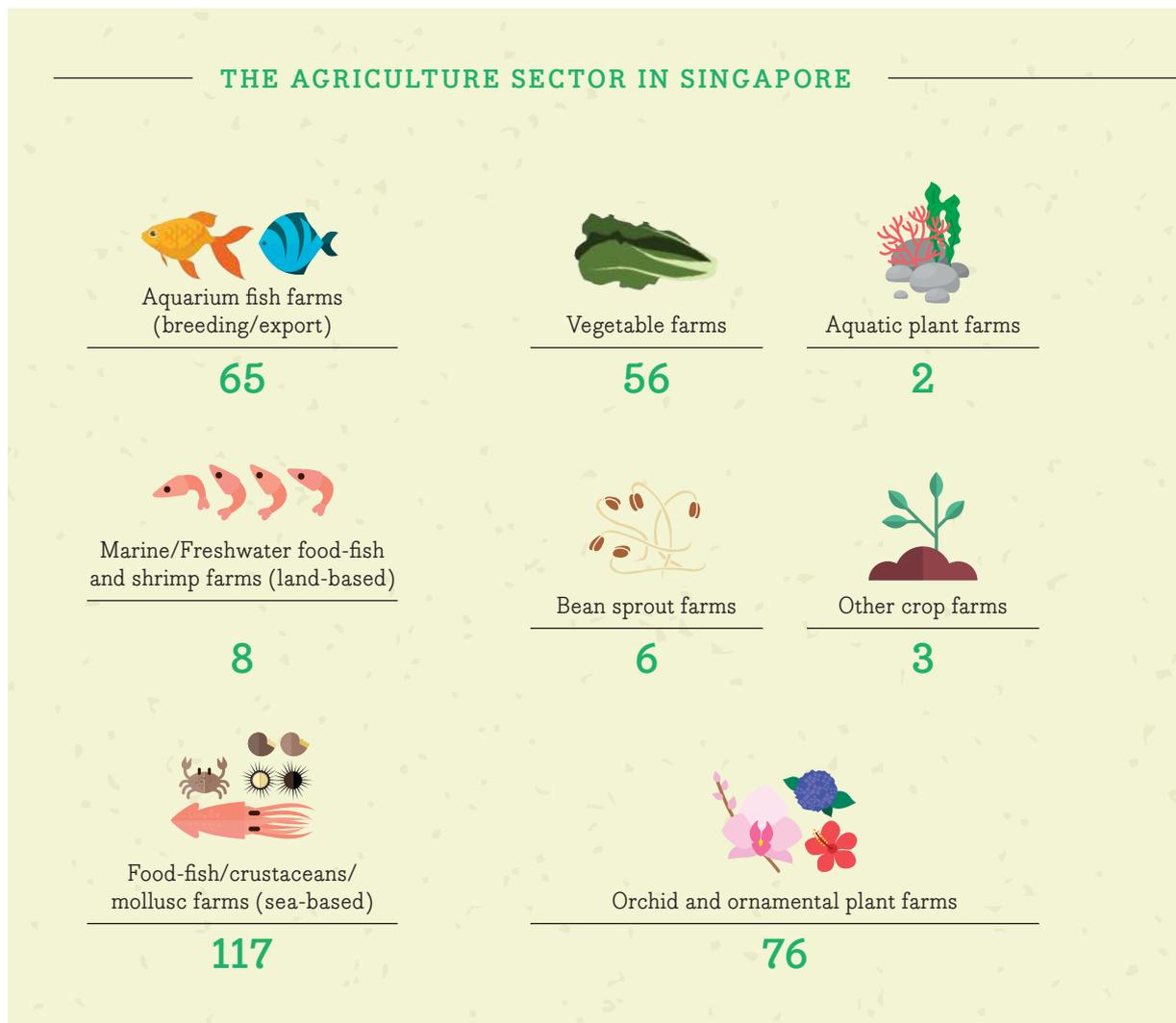
To enhance Singapore's food supply resilience, AVA encourages local farmers to boost productivity through the use of technology and innovative farming solutions.

We conduct research and development on intensive production technologies and actively engage our partners in the process.



HARNESSING  
**TECHNOLOGY**  
 FOR INTENSIVE FARMING

To overcome the constraints of limited resources and safeguard food security in Singapore, AVA harnesses life sciences and technology in the areas of aquaculture and horticulture, to help local farms intensify their production. We also look into ways to extend the shelf-life of food products, and reduce food loss and waste in the supply chain. With our strong commitment to agricultural research and development, Singapore can carve a niche in urban food solutions by establishing itself as a living lab for food production technologies.





## AQUACULTURE

AVA continued to develop and promote the use of Closed Containment Aquaculture Systems (CCAS) and Recirculating Aquaculture Systems (RAS) as effective food fish production methods. These systems, along with technical advisory provided by AVA, allow farms to boost production by mitigating the adverse impact of environmental conditions.

### Developing CCAS as alternative production method for coastal farms

The CCAS, a sustainable alternative to the open net-cage culture method, helps local coastal farms safeguard their fishes from adverse environmental factors. It also includes a water treatment system to maintain optimal water quality for intensive fish culture in an insulated, clean environment. Through a public-private co-innovation partnership project, AVA commissioned five companies to develop CCAS prototypes that cater to different types of coastal farm operations. To encourage local farmers to adopt CCAS, AVA organised a workshop for these companies to introduce their prototypes to fish farmers.

### Increasing hatchery production using RAS

AVA worked with Swee Chioh Fishery, a local land-based fish hatchery, to set up a RAS and develop accompanying culture protocols for large-scale indoor seabass larviculture. With RAS technology, a high level of bio-security can be maintained by reusing treated water. This is an improvement over traditional flow-through systems or outdoor pond cultures, which are susceptible to disease outbreaks and the vagaries of the weather. As a result, Swee Chioh Fishery was able to achieve consistent hatchery production with no diseases encountered. This project is the first known record of successful larviculture of Asian seabass using RAS on a commercial level. With the knowledge acquired through this project, local commercial hatcheries can also explore the use of RAS for production of other marine food fish species.

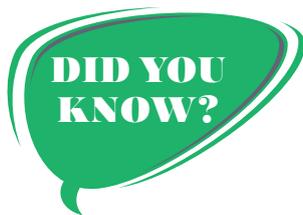
### Helping farmers to handle plankton blooms

AVA closely monitors the water quality around coastal fish farms and provides early warnings when adverse conditions are detected so that farmers can take precautionary measures where necessary. During the FY, a colour-coded SMS alert system was developed to provide farmers with timely warnings of the different stages of a plankton bloom situation, as well as advice on the appropriate actions to be taken.

In addition, we continued to work closely with farms to develop contingency plans for adverse weather conditions. This included equipping farmers with the knowledge of how to rapidly deploy canvas bags to create a simple closed containment unit, which can be used during plankton blooms to safeguard fish stock.

AVA and Temasek Polytechnic collaborated on a training course on contingency planning for coastal fish farms against plankton bloom. A total of 72 farms benefitted from topics covered, such as why plankton blooms occur, and how to deploy and maintain a rapid close containment system. Following the training course, AVA also conducted refresher workshops for farmers. In addition, we kept farmers informed of the available government incentives and assistance schemes they can apply to help defray the costs of implementing such contingency plans.





## EDUCATING THE PUBLIC

Besides training the industry, we also hosted 12 learning journeys to AVA's Marine Aquaculture Centre in FY 2015. Over 300 students, teachers, and members of the public learned about our research and development efforts, and the techniques that enable large scale fish breeding to increase the production of food fish.

In addition to technological sharing and demonstration sessions, AVA also gave a talk on indoor vegetable farming during the National Park Board's Centre for Urban Greenery and Ecology Research Seminar on 1 December 2015. The talk generated considerable interest among urban farming practitioners and the landscaping industry.

## Learning expedition to Chinese Taipei and China

AVA officers and industry partners embarked on a study trip to various indoor fish farming premises in Pingtung, Chinese Taipei and Zhao'an, China. We learned about the technology, processes, building infrastructure requirements, business viability, and operational aspects involved in an indoor farming facility. The delegation found that highly intensive indoor farming is a feasible method for both food and ornamental fish production in Singapore. Our exporters also benefited by establishing business connections with their Taiwanese counterparts.



## HORTICULTURE

Through collaborations with industry partners, AVA continued to conduct research and development on vertical and indoor farming systems, as well as the effective use of fertilisers and alternative planting mediums. These projects have resulted in methods that can improve crop yields and findings were shared with the industry.

### Increasing productivity of vegetable farming

AVA developed an outdoor vertical farming prototype, where leafy vegetables are grown in 8 tiers of PVC troughs, within greenhouses that have plastic roofs and netted sides. The prototype was fitted with a dynamic root floating hydroponic system, and a fertigation system using cocopeat as a growth medium. Trials showed that the prototype was at least 2 to 4 times more productive than conventional farming of *xiaobaicai* and *naibai*.



### Establishing cultivation protocols for indoor farming

AVA established indoor cultivation protocols for Brassicas leafy vegetables (e.g. *xiaobaicai* and *naibai*). The protocols involve using 4-layer planting racks, trays with soil mix, fluorescent lighting, optimal temperature, and relative humidity. Trials showed that such protocols achieved average yields that are comparable to conventional farming. As multiple layers can be used to plant the vegetables, there is potential for productivity to be increased.



### Test-bedding the multi-tier seedling production system

Yili Farm tested the use of AVA's multi-tier vegetable seedling production prototype at its premises, after learning about the prototype's manpower and water saving features. The prototype was demonstrated during an industry sharing session, where AVA also showed farmers the improved quality of seedlings and level of productivity resulting from the prototype. The farm trial demonstrated that seedlings could achieve more than 90% survival rate after transplanting. The farm trial also showed that the prototype can raise the quality of *caixin* seedlings under greenhouse conditions with exposure to fluorescent lighting for only six hours. The crops grown from these seedlings also exhibited good vigour and uniformity.

### Improving vegetable growth by effective use of fertilisers

AVA initiated experiments to determine the effect of applying starter fertilisers with high levels of phosphorus to *xiaobaicai* after the transplanting stage. The vegetables achieved 25% to 43% higher yields. Following this, a farm trial was conducted with Yili Farm. Although the crops were bigger during the early stage of plant growth, both treated and untreated vegetables had similar yields when harvested 32 days after seed sowing. Yili Farm will continue to conduct this experiment on its crops.

### Increasing yields through cocopeat cultivation and drip fertigation

AVA collaborated with Kok Fah Technology Farm to test out the use of a drip 'fertigation' system to maximise the growth of vegetables on cocopeat (non-soil) substrate. This form of cultivation not only allows growing without soil, it also uses less water and enables a degree of automation in fertilising through the drip irrigation system. AVA provided advice on the drip fertigation layout, as well as on the experimental design and quality assessment of the vegetables. Findings demonstrated that the crop cultivated in cocopeat had higher yields and comparable nutrient content. Kok Fah Technology farm has invested in building a test-site to further explore soilless cultivation and maximise productivity.

### Strengthening competencies in hydroponic farming

AVA is collaborating with Sumitomo Chemical Ltd to develop an optimised urban hydroponics farming system that can be replicated for use on rooftops of buildings in Singapore. Through this project, we aim to develop a successful model that supports large scale urban farming in Singapore. Research and trials on Japanese vegetable varieties are currently being conducted at AVA's Sembawang Research Station. The collaboration, which also involves Kaneko Seeds Co Ltd, SanTerra, and Ngee Ann Polytechnic, is supported by the Ministry of National Development and Economic Development Board.



## POST-HARVEST

To strengthen food supply resilience, AVA continued to engage in research projects to extend the shelf-life of food to reduce food loss and waste.

### Assessing trial shipments of chilled shell eggs from Brazil

To diversify Singapore's egg supply, AVA brought in trial shipments of chilled eggs from Brazil and conducted experiments to establish their safety, quality, shelf-life and cold chain requirements. The eggs have passed tests for bird flu, drug residue, microbiological limits, and freshness. We also found that the eggs could be further stored at either 4°C or 22°C upon arrival to achieve a shelf-life of 30 days. Findings from the shelf-life study were shared with the industry. In addition, a technical guide on the quality assessment and good handling practices of chilled eggs was published and disseminated to egg farmers and importers in October 2015.



### Extending shelf-life of food with the use of modified atmosphere packaging (MAP)

AVA collaborated with ITE College East and a private company, Hai Sia Seafood to investigate the efficacy of MAP in extending the shelf-life of fish fillets. It was found that the shelf-life of chilled threadfin fish fillets could be extended from three days to 10 days, by using a MAP bag (made from ethylene vinyl alcohol) and an optimum gas composition of 60% carbon dioxide and 40% nitrogen. Other companies have expressed interest in the MAP application.

In addition, AVA collaborated with a local fresh produce company to research on extending the shelf-life of pre-cut, minimally processed vegetables through optimisation of the gas composition in MAP. The results of this project will be shared with the local industry in FY 2016.





### Using light-emitting diode (LED) to preserve vegetable quality

An AVA-NUS collaborative research project, completed in January 2016, showed that illumination using short-wavelength LED lights was an effective method to preserve the post-harvest quality of spinach and lettuce. This method provides a non-thermal alternative for the inactivation of food-borne pathogens. The nutritional content of the leafy vegetables was also enhanced by various wavelengths of visible light. This method will be tested in a commercial setting in FY 2016.



### Minimising post-harvest loss in vegetables

Working with Massey University, AVA studied the effect of four packaging treatments on the shelf-life of *kai lan*, *chye sim*, and *kang kong*. We found that greater deterioration was observed in leafy vegetables packed in partially-sealed bags compared to those in fully-sealed bags. To minimise post-harvest loss, leafy vegetables should be packed in fully-sealed packaging bags made of polypropylene and oriented polypropylene. Complete findings of the research will be published as guidelines for distribution to the fresh produce industry.

### Enhancing poultry feed using okara

AVA is partnering the Nanyang Technological University (NTU) of Singapore to transform okara, a by-product of soy milk manufacturing, into an ingredient in nutritious poultry feed. Using recycled okara can lower the cost of poultry feed while also reducing local food waste. A bio-transformation trial, conducted in the laboratory and on-site at the premises of the food waste collector, showed an increased nutritional content. AVA shared the research findings with Chew's farm, which is keen to collaborate with AVA and NTU to further optimise the nutritional content of okara.

### Upgrading industry competency

In FY 2015, AVA continued to assist the food industry in upgrading its technical competency through seminars and workshops on advanced post-harvest technologies. Findings of our research projects were also shared.

17 Jun 2015

AVA conducted a half-day seminar on the air purification technologies to adopt in packing houses, warehouses, and distribution centres, in order to extend shelf-life of fresh produce. A handbook titled 'Good Handling Practice in Packing House for Vegetables' was also produced and distributed.

16 Nov 2015

Two seafood experts from Australia, along with local research institutes, were invited to speak at a seminar on 'Value-adding and Cold Chain for Seafood'. AVA also presented research findings on:

- Recycling edible fats found in mullets, which are high in omega-3 fatty acids.
- Using MAP to extend the shelf-life of chilled fish fillets.

11 Jan 2016

A workshop was conducted to equip fish merchants and handlers at fishery ports with proper hygiene and sanitation skills. Topics on fish freshness and icing for fish preservation were also covered. In addition, participants learned practical lessons on proper grooming, hand-washing techniques, as well as the preparation and usage of detergent and sanitizers.





# AGRI-TRADE



## INGREDIENTS

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1 bowl of Regulation  
1 cup of Facilitation  
1 pot of International recognition  
1 scoop of Regional partnership  
1 spade of Wildlife protection

## METHOD

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AVA facilitates and promotes agri-trade by staying updated on global developments and forging international partnerships.

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**FACILITATING**

**AGRI-TRADE**

AVA facilitates Singapore's agri-trade by maintaining close ties with the international community, as well as engaging and collaborating closely with industry partners. Besides facilitating trade, AVA also regulates the import and export of endangered species.

### **FACILITATING IMPORTS**

AVA manages a fine balance between its dual roles as regulator and trade facilitator. In FY 2015, we streamlined food import requirements for traders and travellers, without compromising food safety.

#### **Enhancing import clearance process for fruits and vegetables from Malaysia**

High-risk fruits and vegetables from Malaysia are subject to AVA's hold-and-test procedure. Only those that pass our laboratory tests are released for sale. To speed up import clearance and ensure the safety of high-risk produce imported from Malaysia, AVA and its Malaysian counterparts co-developed the 'Guidelines for Packaging of Pre-packed Fresh Produce to Singapore'. By choosing to source from approved exporters who adhere to these guidelines, importers can have their consignments released for distribution more quickly, without having to wait for pesticide residue analysis results. In FY 2015, joint audits and assessments on two exporters were conducted. Approval has been granted to these exporters for facilitated clearance of fresh produce starting 1 June 2016.

#### **Easing import restrictions for travellers**

With changes in the categorisation of risk for BSE by the World Organisation for Animal Health (OIE) and re-evaluation by AVA, travellers are now allowed to bring in processed beef and beef offal from Belgium, Denmark, Finland, France, Japan, Sweden, the Netherlands, and US. These countries have been re-classified as countries with negligible risk.



#### **LENDING A SPORTING HAND: IMPORT OF HORSES FOR SEA GAMES**

AVA facilitated the import of 21 horses for the 28th Southeast Asian (SEA) Games held in June 2015. AVA worked closely with Sport Singapore, the Equestrian Federation of Singapore, and Singapore Turf Club on the moving and housing of the horses for this important regional event, playing an important role in ensuring their health and welfare.

Also, the allowance for food appliances entering the country used to be capped at 5kg or \$100 per person. This allowance was for personal usage and the limit was meant to prevent the possibility of unsafe food appliances from being brought in for sale. Over the years, we have tested imported utensils and found that the non-compliance rate has been very low. As such, AVA removed the quantity restriction on individuals bringing in food appliances, such as cutlery sets for personal use, following requests received from the public.



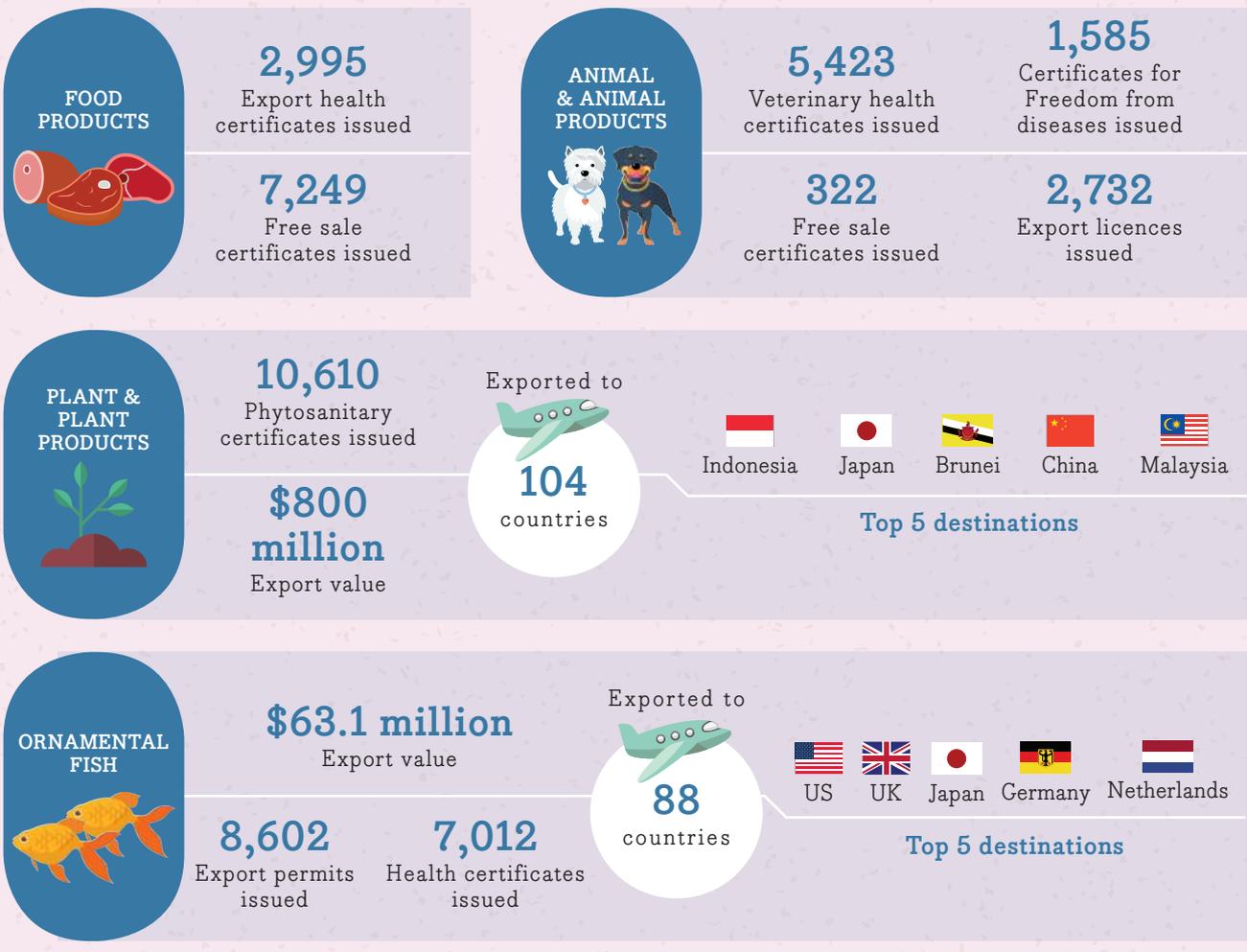
### CELEBRATING BILATERAL RELATIONS: IMPORT OF AUSTRALIAN KOALAS

Four koalas, on loan from Australia to commemorate 50 years of strong bilateral relations with Singapore, arrived on 13 April 2015. AVA worked with the Australian Department of Agriculture, Wildlife Reserves Singapore, and other government agencies, to facilitate the import of these koalas. To ensure animal health, AVA officers examined the koalas and verified their import and veterinary health documents upon their arrival. We also made sure that quarantine and housing facilities were adequate for their health and welfare. Eucalyptus leaves, which koalas feed on, had to be imported weekly and inspected to safeguard plant health in Singapore. Additionally, health checks and export certification were conducted to facilitate the koalas' return to Australia in February 2016.

## FACILITATING EXPORTS

AVA facilitates the export of food, plants, and their products, as well as ornamental fishes, animals, and animal products, by issuing internationally recognised certificates and permits. In FY 2015, we also helped the industry meet new export requirements for horses and ornamental fish, and embarked on pilot projects to promote Singapore as a transshipment hub for food.

### PERMITS, LICENCES AND CERTIFICATES ISSUED TO FACILITATE EXPORT



### Promoting Singapore as a transshipment hub

Under a pilot project with the Singapore Tourism Board and International Enterprises Singapore (IES) to promote Singapore as a transshipment hub, a local company was permitted during the FY to import meat products from non-approved sources into Singapore, store them at AVA-licensed cold rooms, and then supply them to cruise liners. This pilot project also involved re-exporting New Zealand dairy products to regional countries via Singapore. In addition, AVA and IES are collaborating in a separate pilot project for New Zealand chilled meat to transit in Singapore, en-route to countries in the European Union.

### Meeting new export requirements for horses and ornamental fish

To facilitate the export of horses to New Zealand and Australia, AVA ensures that

stringent bio-security and traceability protocols are maintained at the quarantine facilities of the Singapore Equine Quarantine Station and Wildlife Reserves Singapore. In FY 2015, these facilities were audited by the Australian Department of Agriculture and New Zealand Ministry for Primary Industries, and were found to have met the relevant requirements.

On 1 March 2016, the Australian Department of Agriculture imposed a new requirement for imported ornamental freshwater fish (belonging to the gourami, cichlid and poeciliid families) to be tested free from *Megalocytivirus*. To facilitate pre-export testing of these fishes, AVA's Animal Health Laboratories established and validated the test for *Megalocytivirus* using the real-time polymerase chain reaction (PCR) method.



#### WORKING WITH THE INDUSTRY THROUGH BUSINESS CLUSTERS

During the FY, AVA continued to engage the industry and help it stay globally competitive through the Ornamental Fish Business Cluster (OFBC) and Orchid Business Cluster platforms. As part of leadership renewal, Mr Lim Meng Huat (Apollo Aquarium Pte Ltd) was appointed as OFBS's new chairman in September 2015, while the immediate past Chairman, Mr Kenny Yap (Qian Hu Corporation Limited), was appointed Advisor.





## REGULATING TRADE IN ENDANGERED SPECIES

As the national authority for implementing and enforcing the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) agreement, AVA works closely with stakeholders to prevent over-exploitation of endangered animals and plants. In FY 2015, AVA issued a total of 14,369 CITES permits and certificates to regulate wildlife trade. AVA

also facilitated the commercial re-export of wildlife not categorised under CITES, through the issuance of 343 Non-CITES certificates/'B' statements.

During the FY, we also kept a close watch on the illegal trade of wildlife in Singapore, and worked closely with Singapore Customs to detect and intercept wildlife and products smuggled through Singapore.



### CASES OF ILLEGAL ANIMAL & PLANT IMPORTS (LISTED UNDER CITES) INTERCEPTED

11

CASES

2

prosecuted in court

8

compounded with fines

1

warning issued

### TYPES OF ILLEGALLY IMPORTED ANIMAL PRODUCTS SEIZED

2 smugglers jailed 15 months for illegally importing:



#### Black pond turtles

- 206 black pond turtles seized on 9 July 2015
- Worth est. S\$100,000
- Protected under CITES; trade is prohibited

Freight forwarders compounded S\$5,000 for each count of failure to exercise due diligence to ensure the following consignments were legitimate:



#### Ivory tusks, rhinoceros horns & animal teeth

- 4.6 tonnes of illegal ivory, 4 rhinoceros horns, 22 pieces of animal teeth seized on 16 May 2015
- Protected under CITES; trade is prohibited
- Worth est. S\$8 million



#### Ivory and pangolin scales

- 2.25 tonnes of illegal ivory tusks, 646kg of pangolin scales seized in December 2015
- Protected under CITES; trade is restricted



#### Red sandalwood

- 581 pieces (10 tonnes) of red sandalwood seized on 3 March 2016
- Protected under CITES & listed under the Endangered Species (Import and Export) Act; CITES permits required

## FORGING STRONGER INTERNATIONAL RELATIONS

In FY 2015, AVA continued to participate actively in regional and international meetings and forums. AVA attended the following high-level international meetings to discuss cooperation in areas such as food security, food safety, fisheries, livestock, crops, as well as sanitary and phytosanitary measures.

8 May 2015	Dr Mohamad Maliki Bin Osman (Senior Minister of State for Defence & Foreign Affairs), accompanied by Ms Tan Poh Hong (Chief Executive Officer for AVA), led the Singapore delegation to attend the Group of 20 Agriculture Ministers meeting in Turkey.
24-29 May 2015	Dr Chew Siang Thai (Director-General & Deputy Chief Executive Officer for Regulatory Programmes & Operations, AVA) led a delegation to attend the 83rd General Session of the World Organization for Animal Health (OIE) in France.
8 Jun 2015	Dr Mohamad Maliki Bin Osman, accompanied by Ms Tan Poh Hong, led the Singapore delegation to attend the Food and Agriculture Organisation (FAO) of the United Nations conference in Italy.
6 Jul 2015	Dr Mohamad Maliki Bin Osman and Ms Tan Poh Hong attended the 5th meeting of the Singapore-Myanmar Joint Ministerial Working Committee in Myanmar.
6-11 Jul 2015	Dr Chew Siang Thai led a delegation to attend the 38th Plenary Session of the Codex Alimentarius Commission in Switzerland.
11-12 Aug 2015	Ms Tan Poh Hong and Ibu Yusni Emilia Harahap (Director General of Processing and Marketing for Agriculture Products, Directorate General of Processing and Marketing for Agriculture Products, Ministry of Agriculture, Indonesia) co-chaired the 11th Indonesia-Singapore Agri-business Working Group Meeting in Indonesia.
12-14 Aug 2015	Dr Tan Lee Kim (Deputy Chief Executive Officer for Corporate & Technology, AVA) led the Singapore delegation to attend the Special Senior Officials Meeting (SOM)-36th AMAF and Special SOM-14th AMAF Plus Three (AMAF+3) meetings in Myanmar.
10-11 Sep 2015	Ms Tan Poh Hong led the Singapore delegation to attend the 37th ASEAN Ministers on Agriculture and Forestry (AMAF) and the 15th Meeting of the AMAF+3 meetings in the Philippines.





## SUPPORTING FISHERIES DEVELOPMENT IN SOUTHEAST ASIA

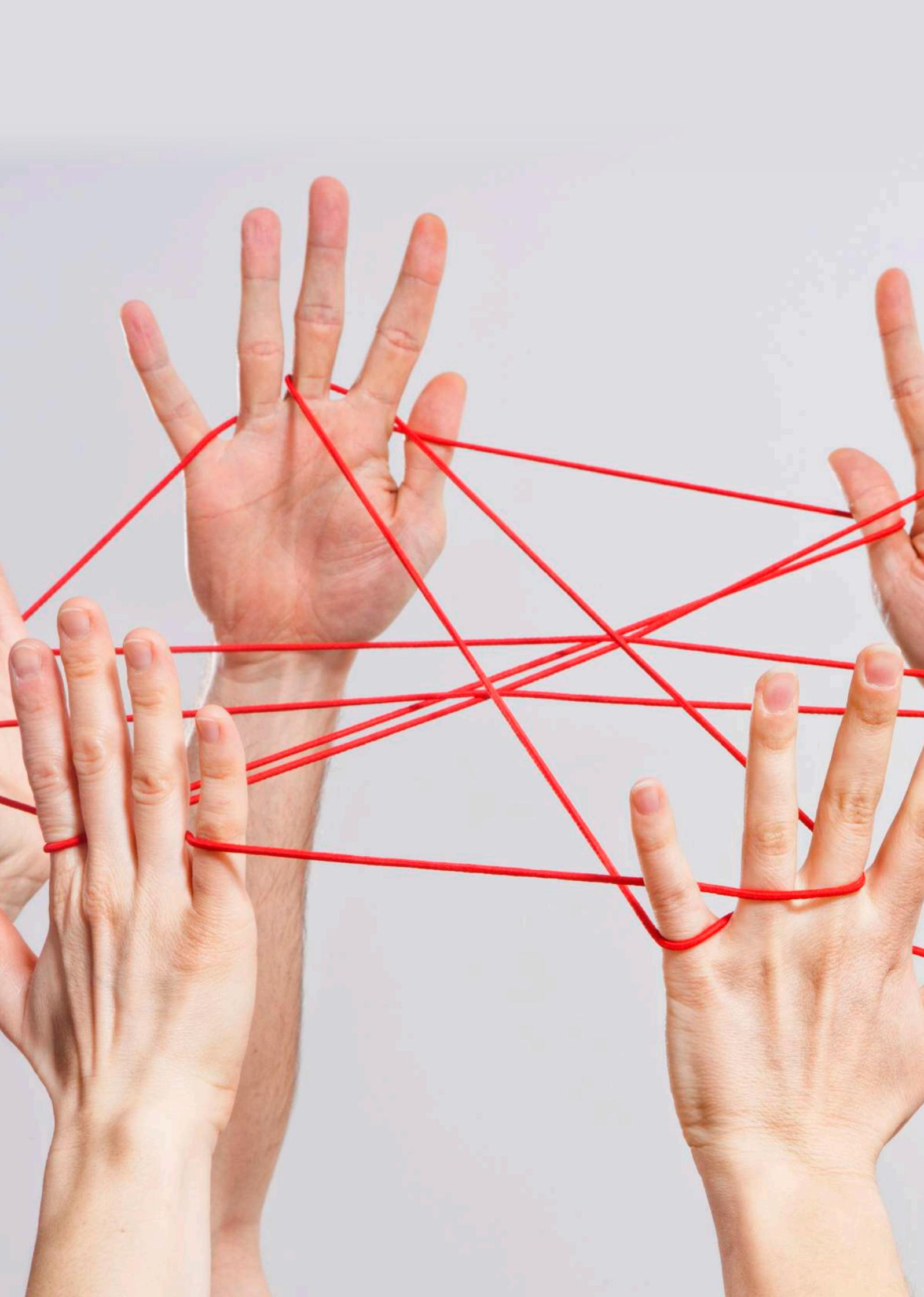
AVA, as a collaborating centre of the Southeast Asian Fisheries Development Centre (SEAFDEC), promotes the post-harvest technology development of fisheries in the region, by implementing activities under the Marine Fisheries Research Department (MFRD) programme. In FY 2015, our initiatives were focused on traceability, management of bio-toxins and harmful algal blooms, and cold chain management.

19-20 May 2015	To kick-start a new project on the cold chain management for seafood, AVA organised a regional meeting to plan the details and schedules of related activities. As part of the planning process, two resource speakers from the local seafood industry were invited to share their experiences in implementing cold chain management.
Aug 2015	A technical compilation of 'Regional Guidelines on Traceability System for Aquaculture Products in Southeast Asia' was completed, and key outcomes were presented to member countries. AVA also organised a regional technical consultation on harmful algal blooms. Topics on toxic harmful algal bloom occurrences and their management in the region were discussed.
17-19 Nov 2015	A regional workshop on Cold Chain Management for Seafood was conducted at AVA's Post-harvest Technology Centre. Two subject experts from Australia were invited to share best practices.
2015 till mid-2016	Member countries (excluding Cambodia) conducted bio-toxins monitoring surveys.

## HOSTING DISTINGUISHED VISITORS

Over the FY, AVA received several foreign dignitaries and overseas officials for exchanges and collaborative work. Many came to learn about our regulatory control and functions, as well as to tour our facilities and centres.

8 Sep 2015	His Excellency Hazel Ngubeni <i>High Commissioner of South Africa to Singapore</i>
22 Oct 2015	His Excellency Inia B. Seruiratu <i>Minister for Agriculture, Rural &amp; Maritime Development, and National Disaster Management, Fiji</i>
29 Oct 2015	Mr Zhang Huanqiu <i>Jilin City Mayor</i>
30 Oct 2015	Tan Sri Datuk Amar Haji Mohamad Morshidi bin Abdul Ghani <i>Sarawak State Secretary</i>
11 Nov 2015	Dr Roy A. Sparringa <i>Chairman, National Agency of Drug and Food Control, Indonesia</i>
3 Dec 2015	Mr Wang Yunxiu <i>Vice-Chairman, Standing Committee of Jilin Provincial People's Congress</i>
14 Jan 16	Mrs Cherry Tse <i>Permanent Secretary, Hong Kong Food and Health Bureau (Food), Special Administrative Region of the People's Republic of China</i>
15 Jan 16	Ms Lyn O'Connell <i>Deputy Secretary, Department of Agriculture and Water Resources, Australia</i>
9 Mar 16	Dr Larry Marshall <i>Chief Executive, Australia Commonwealth Scientific and Industrial Research Organisation</i>
17 Mar 16	His Excellency Haruhisa Takeuchi <i>Ambassador of Japan to Singapore</i>
28 Mar 16	Pehin Yasmin <i>Minister for Energy and Industries, Brunei</i>





ORGANISATIONAL  
**EXCELLENCE**

INGREDIENTS

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1 armful of Innovation  
1 grasp of Communication  
1 handful of Professionalism  
1 pinch of Creativity  
1 fistful of Dedication

METHOD

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At AVA, we continue to nurture core values of excellence, care, integrity and teamwork in our people. We harness technology and drive innovation in our work processes to ensure excellence in the service we provide to the public and our customers.



PURSUING  
**EXCELLENCE**

At AVA, we seek to constantly improve our organisational strategies and service delivery. As a progressive organisation, we harness technology to find new and innovative ways to improve work processes.

### REFINING STRATEGIES FOR ORGANISATIONAL EXCELLENCE

AVA's corporate strategy and planning is aligned with our roadmaps for food security, food safety, animal and plant health, and animal welfare and management. As technology, R&D, and innovation support these roadmaps, AVA also developed a Technology, Research and Innovation (TRI) Framework in FY 2015. In addition, we revised our communications and engagement strategy to build greater public trust and improve our preparedness in handling crises, with a renewed focus on stakeholder engagement. AVA's enterprise risk management approach and corporate performance indicators were also reviewed during the FY to ensure that we stay up-to-date and nimble in handling key operational and organisational risks.

### REINFORCING OUR VALUES

To promote a culture of excellence, the annual Organisational Excellence Festival took place on 6-27 October 2015. Held in conjunction with Public Service Month, the theme was 'Scaling Greater Heights'. These events highlighted the three key elements of recognition, celebration, and reinforcement of the culture of excellence in AVA. About 500 officers participated in the three-week festival.

The inaugural 'ExCITables Award' was presented to four officers who exemplified our corporate values of Excellence, Care, Integrity, and Teamwork (ExCITE). In an effort to encourage staff to adopt these ExCITE values, a quarterly campaign was launched. Communications materials and collaterals were sent out to remind staff of each ExCITE value.



**“AVA’s corporate strategy and planning is aligned with our roadmaps for food security, food safety, animal and plant health, and animal welfare and management.”**



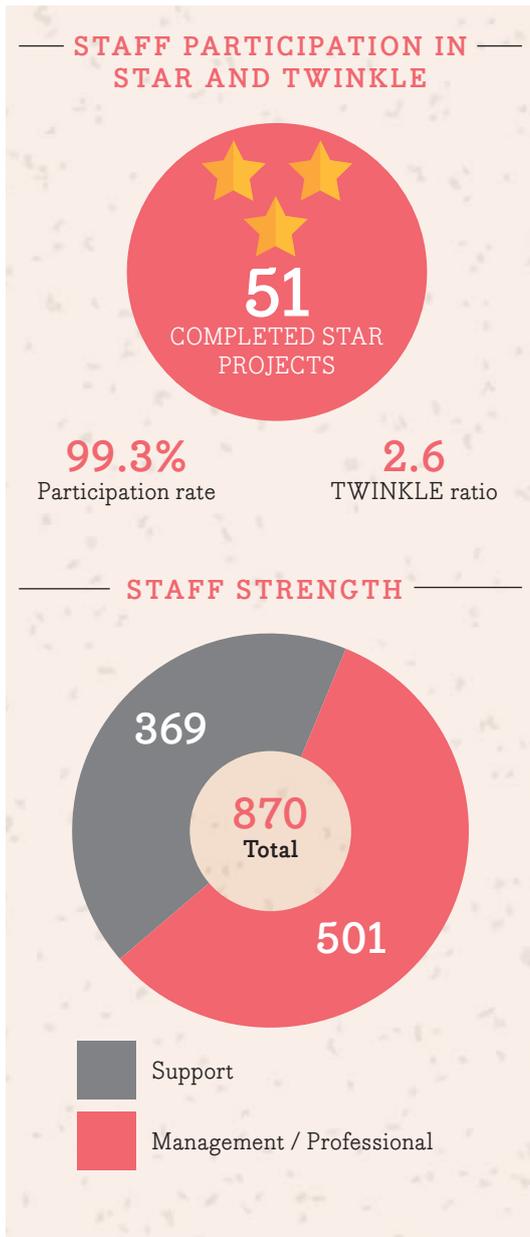
## REINVIGORATING A SPIRIT OF INNOVATION

We value and encourage innovative ideas and solutions through the AVA STAR (**S**triving and **A**iming for Excellence through **T**eamwork) and TWINKLE (**T**apping **W**ild and **I**nnovative Ideas for **K**nowledge, **L**earning and **E**xchange) schemes.

## Twinkling with new ideas

In FY 2015, a total of 51 ideas were generated from two 'Twinklethons' – an ideation platform where officers brainstormed on two topics: 'How to better promote teamwork' and 'How to make use of drones and sensors to help us work better'. From these ideas, 14 suggestions on promoting teamwork were implemented and 20 suggestions on the use of drones and sensors were accepted. Working groups were also formed to explore the implementation of feasible ideas.

To further ignite the spirit of innovation in AVA, we launched the AVA Innovation Day, where activities such as STAR project presentations, workshops, and learning journeys were organised for staff. Officers were encouraged to adopt the RAISE framework (which takes into consideration factors such as **R**esources required; **A**ssessment of risks; **I**mpact of idea; **S**trategic alignment to the organisation's vision and mission; and **E**ffectiveness) in their STAR projects.



## HARNESSING INFOCOMM TECHNOLOGY FOR ENHANCED PERFORMANCE

In efforts to mitigate cyber threats, we adopted measures such as code scanning, penetration and vulnerabilities tests, and monitoring services in FY 2015 to enhance our Infocomm Technology (ICT) security.

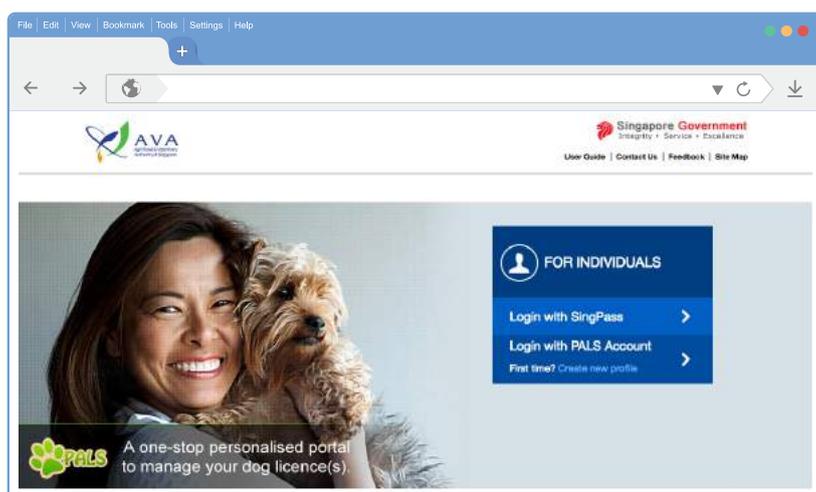
AVA continues to tap on mobile technology to enhance the efficiency of inspection work. This has helped our inspectors increase productivity, as they can now input and submit inspection findings immediately on-site.

## PUTTING OUR CUSTOMERS FIRST

In order to put the public at the centre of all we do, it is important for us to inculcate a service-oriented culture in AVA. In FY 2015, AVA implemented several initiatives to enhance service delivery and bring greater convenience to our customers.

### Bringing convenience to pet dog owners

To make it more convenient for pet dog owners to carry out transactions related to their licences, such as application, renewal, or transference of ownership, AVA launched an improved online Pet Animal Licensing System (PALS) in January 2016. In developing the system, we engaged dog owners in a focus group discussion to understand their needs and hear their suggestions on how the system could help to improve their experience.



### Improving written communications

To improve the clarity and quality of written correspondence with our customers, AVA's Write it Right! (WiR) initiative was launched on 14 October 2015, as part of AVA's Service Day. During the launch, our leadership team pledged their support towards this initiative by taking part in a stage game that showcased their knowledge of our WiR Writing Guide. The Writing Guide and 10 pieces of revamped correspondences, jointly developed by AVA and the British Council, were made available to all staff during the FY. In addition, over 200 officers attended a course entitled 'Transform your Company's Correspondence' to enhance their writing skills. A WiR taskforce, comprising representatives from every Group in AVA, disseminated regular eDMs featuring applicable writing tips that officers found useful.

### Analysing customer feedback

A Service Excellence Team (SET) was formed in June 2015 to help us better manage customer complaints, compliments, and feedback. The team will also identify and analyse the root causes for pain points, propose and track the implementation of solutions, and determine whether complaints are isolated or recurring in nature. Strategic improvement plans will then be developed from these findings to enhance customer experience.

To better understand the concerns of our frontline officers, and express appreciation for their work, the SET accompanied the Quality Service Manager during visits to the different AVA centres during the FY, where issues and concerns raised were extended to the relevant Groups to follow up on.

### Improving our service delivery

AVA participated in the Service Management Framework Consultancy project led by the Public Service Division (PSD). We worked with PSD's appointed consultants to identify our priority area as well as develop the blueprint strategies and implementation roadmaps.

### Providing a seamless customer experience

To bring greater convenience to our customers, AVA has been developing a customer service portal that will provide seamless access to all AVA services. This is in tandem with the development of a new Customer Relationship Management System that will enable us to track responses more effectively and identify trends for more informed decision-making. A change management plan was put in place to keep staff informed of the progress of the system's development, what to expect, upcoming activities, and their involvement. In the months leading up to the system's implementation, communication activities through our Change Champions and various communications channels will be increased.



### Determining satisfaction levels

During the FY, AVA began working on a Customer Satisfaction Survey to be conducted in May 2016. Through the survey, we aim to understand customers' satisfaction levels and the public's perception of AVA. Our service staff will also be invited to share their opinion of our service levels and delivery. The surveys will enable us to ascertain our current service state and identify areas for service improvements.

### ACHIEVING RECOGNITION FOR ORGANISATIONAL EXCELLENCE

On 10 July 2015, AVA received the Leading HR Practice (Special Mention) Award in Lifelong Learning for our efforts in staff development and collaboration with the union to promote lifelong learning. The award is organised annually by the Singapore Human Resource Institute.

AVA and AUSBE-AVA received the Ong Teng Cheong Labour Leadership Institute (OTCI) Workplace Partnership Award (Gold), after achieving three consecutive OTCI Workplace Partnership Awards. This award recognises the efforts made by the AVA management and union in strengthening mutual understanding and cooperation through bipartite programmes.

AVA's Quarantine Management System (QMS) was ranked among the 2015 Chief Information Officers (CIO) 100 Index, an annual award event which recognises regional enterprises and organisations that have excelled through creative and innovative IT projects. Launched in 2013, QMS is an electronic platform that makes quarantine applications easier and faster for pet owners and importers. It allows electronic submission of documents, self-service checks, online payment, and automated email alerts.

On 25 November 2015, AVA's initiative to 'Streamline Inspection Procedure for Chilled Pork' received the Public Sector Pro-Enterprise Initiative Award (Bronze). Given out by the Pro-Enterprise Panel (PEP), the award recognises agencies that have been proactive in initiating pro-enterprise changes that improve service delivery and reduce business compliance costs. AVA's new sampling and inspection procedure for Australian chilled pork, which is more effective and efficient, has resulted in time-savings for importers as consignments can be released earlier for sale.





# CARING

## FOR OUR PEOPLE, COMMUNITY AND THE ENVIRONMENT

At AVA, we value our staff and continuously strive to cultivate a cohesive work environment that inspires and motivates them. Besides helping our staff to build esprit de corps, we also encourage them to lead a healthy lifestyle. The AVA Staff Recreation Committee (ASRC) organised a wide range of recreational, health, and family-oriented activities throughout the FY.

### BUILDING BONDS

In FY 2015, AVA organised and joined various events to promote family and staff bonding, encourage a healthy lifestyle, and raise awareness of corporate social responsibility.



5 Sep 2015  
MND Family Day

**70 AVA staff**  
joined about  
8,000 MND officers and  
family members for a  
fun-filled day at Universal  
Studios Singapore.



12 Oct 2015  
AVA Active Day

Active Day kicked off at the AVA headquarters with nostalgic traditional games such as 'chaptah'. This was followed by a health talk that provided tips on stress management.

**More than 80 officers**  
took part in the New Great Singapore Workout. The same health talk was also conducted separately at AVA's Sembawang Research Station and Veterinary Public Health Centre (VPHC) on 28 and 29 October 2015, respectively.



18 Nov 2015  
AVA charity bazaar

**\$22,150**  
was raised and donated to Kumpung Senang.



30 Nov 2015  
AVA private movie screening

**234 AVA officers**  
and family members attended special movie screenings of 'The Hunger Games: Mockingjay Part 2' and 'The Good Dinosaur'.



## SERVING THE COMMUNITY WITH OUR SKILLS AND KNOWLEDGE

AVA's Master Grower programme, launched in February 2015, reaches out to the community to build up a pool of trained vegetable growers. Through this programme, we aim to improve the public's appreciation of how food is produced. In FY 2015, we trained about 200 participants from 60 different community gardens who have in turn reached out to more than 600 community gardeners within their estates. The programme also trained volunteer trainers who will be able to provide vegetable growing advice to other community gardeners from FY 2016 onwards.

## PROMOTING A GREEN ENVIRONMENT

AVA received the Green Mark Platinum Award in 2015 for both 'Office Interior' and 'Data Centre' categories, in recognition of our green initiatives and measures to encourage conservation. During the FY, we continued to encourage our staff to adopt eco-friendly initiatives via lunchtime talks and eDMs. We also remained committed to energy conservation by participating in Earth Hour on 19 March 2016. In addition, an Environmental Sustainability Committee was formed in support of the whole-of-government effort in the 'Public Sector Taking the Lead in Environmental Sustainability' initiatives.



18 Mar 2016  
AVA Dinner and Dance

**540 AVA officers**

and family members joined in the party held at Ritz-Carlton Singapore.



Bi-monthly  
AVA fruit day

To promote general well-being and encourage staff to lead a healthy lifestyle, all staff continued to receive a fruit every 2 months.



Annual  
Health screening

About  
**500 staff** took part in the 2015 health screening exercise conducted at AVA headquarters and VPHC.



22 Mar 2016  
AVA traditional Chinese medicine health talk

About  
**40 AVA staff** attended the lunchtime talk by Eu Yan Sang to learn more about traditional Chinese health remedies.



MNDRC activities

AVA also tied up with the Ministry of National Development Recreation Club (MNDRC) to organise the following programmes for our staff:

- Tiger Brewery Tour
- Basic Photography Workshop
- Standard Chartered Marathon
- Public Service Chinese Chess Competition
- Public Service Sports and Family Day
- Civil Service Club Walks



**DEVELOPING**

OUR PEOPLE

We believe that people are our greatest resource. When they find personal fulfilment in their work, they will in turn contribute wholeheartedly to our organisation and our society. We continue to invest in developing the skills and competence of our officers to enable them to reach their full potential.

**CELEBRATING EXCELLENCE  
IN OUR PEOPLE**

In FY 2015, 17 AVA officers were bestowed with National Day Awards for their invaluable contributions and commitment to the public sector. The awards comprised one Silver Public Administration Medal, two Bronze Public Administration Medals, two Commendation Medals, four Efficiency Medals, and eight Long Service Medals. In addition, 2 officers received the PS21 Star Service Award and Innovation Champion Award (Merit).

**BUILDING EXCELLENCE  
THROUGH EDUCATION  
AND LEARNING**

During FY 2015, we continued to encourage lifelong learning through a core training framework comprising generic core training, functional and technical training, professional development, leadership development, and individual learning plans. We attained an average of 9.3 learning days per staff.

Highlights of learning opportunities included:

- Three undergraduate scholarships awarded in the areas of veterinary science and life science.
- One postgraduate scholarship in the area of food safety awarded.

- Five training sponsorships awarded for the pursuit of a Specialist Diploma in One Health, which was co-developed by AVA, the National Environment Agency, and Ministry Of Health in October 2015. The diploma will deepen the expertise of officers in public health matters and also enhance collaboration among One Health agencies. AVA officers also gave lectures on topics such as food safety, food hygiene, epidemiological methods to food-borne diseases, as well as risk assessment, surveillance, and outbreak response.
- A sharing session on One Health topics delivered by David Heymann, Professor of Infectious Disease Epidemiology, London School of Hygiene and Tropical Medicine. AVA officers also gained insights into emerging and re-emerging diseases, and the paradigm shift from rapid detection and response to prevention at source.
- An inaugural Animal Health Course, which provided a broad overview of animal health and animal disease-related topics. Current and former AVA officers were invited to share their expertise and experience on topics such as fish farming, animal husbandry, and farm management in poultry farms.
- A talk on aquaculture and managing plankton bloom, given by Mr Patrick White (FAO consultant), Emeritus Professor Patrick Sorgeloos (Ghent University), and Mr Donald Anderson (Woods Hole Oceanic Institute).

# PERFORMANCE INDICATORS

## VETERINARY PUBLIC HEALTH & FOOD SAFETY

### Outcome Indicators / Objectives

OBJECTIVE	OUTCOME INDICATORS	PERFORMANCE
Ensure a resilient supply of safe and wholesome food to Singapore	Number of cases of food-borne illnesses per 100,000 population directly attributable to AVA	2.19
	Number of key food items that has less than 50% of supply from a single country	Achieved for key food items – pork, chicken and fish, except for hen eggs and leafy vegetables

### Output Indicators

ACTIVITY	VOLUME
To hold business cluster meetings/ trade association meetings	13 business clusters meetings were held
To conduct food sourcing missions/ study trips	1 food sourcing trip conducted
To monitor the compliance status of locally manufactured/ processed food with Food Regulations	92.1% of the total number of inspections conducted in FY 2015 was in compliance with the Sale of Food Act and the Wholesome Meat and Fish Act.  90.5% of the total number of samples collected in FY 2015 was in compliance with the Sale of Food Act and the Wholesome Meat and Fish Act.
To conduct inspection and sampling of export consignments within three working days	100% achieved as we routinely inspect (and sample from) consignments on dates as requested by exporter.
To process application for food establishments' licenses within five working days from the date of receipt of application	100% of applications for food establishments' licenses were processed within five working days from the date of receipt of application.

## ANIMAL & PLANT HEALTH

### Outcome Indicators

OBJECTIVE	OUTCOME INDICATORS	PERFORMANCE
Safeguarding animal and plant health	Percentage of freedom from important animal and plant disease outbreaks	96.5% freedom or free from outbreaks of at least 112 out of 116 important animal and plant diseases

### Output Indicators

ACTIVITY	VOLUME
To provide laboratory diagnostic and analytic services to identify and manage animal diseases and plant pests, as well as soil health related problems	164,600 tests

## FOOD SUPPLY AND TECHNOLOGY

### Outcome Indicators

OBJECTIVE	OUTCOME INDICATORS	PERFORMANCE
Management of the local agri-industry (farming sector)	Level of productivity of vegetable, fish, and layer farms in Agrotechnology Parks and coastal fish culture farms	<ul style="list-style-type: none"> <li>Eggs: 8.55 million pcs/ha</li> <li>Coastal fish farms: 45 tonnes/ha</li> <li>Land-based food fish farms: 13 tonnes/ha</li> <li>Leafy vegetables: 119 tonnes/ha</li> </ul>

### Output Indicators

ACTIVITY	VOLUME
Accreditation of overseas food sources	42 inspection trips
Number of food samples tested	55,161 samples
Number of laboratory tests performed	261,235 tests
To manage farms in Agrotechnology Parks and fish farming zones	262 land-based farms and 117 coastal farms

## AGRI-TRADE FACILITATION SERVICES

### Outcome Indicators

OBJECTIVE	OUTCOME INDICATORS	PERFORMANCE
Facilitate trade of animal, plant and food product	Ensure no more than 0.3% of certified export consignments are rejected from importing countries	Fulfilled, with 0.008% of certified export consignments that were rejected by importing countries

### Output Indicators

ACTIVITY	ACTUAL VOLUME
To issue export and import documents for animal, plant, and food products	<ul style="list-style-type: none"> <li>Food Export Certificates: 4,380</li> <li>Free Sale Certificates: 5,884</li> <li>Veterinary Certificates: 4,033</li> <li>Export Health Certificates: 5,864</li> <li>CITES Certificates: 9,078</li> <li>Phytosanitary Certificates: 6,849</li> </ul>

## INTERNATIONAL AND REGIONAL COMMITMENTS

### Outcome Indicators

OBJECTIVE	OUTCOME INDICATORS	PERFORMANCE
Represent the government internationally on matters related to or connected with the agri-food and veterinary sectors	Fulfil Singapore's international obligations in SEAFDEC, ASEAN, APEC, and CITES	Fulfilled
	Singapore's interests in agri-food and veterinary services are not compromised	Achieved

### Output Indicators

ACTIVITY	VOLUME
To manage the Marine Fisheries Research Department (MFRD/ SEAFDEC) programmes through the provision of infrastructure (land, buildings and supporting facilities) and local staff	Implemented successfully and in a timely manner all regional projects and activities under the MFRD/ SEAFDEC programmes, i.e. 3 regional projects and the SEAFDEC information programme.
To participate in relevant meetings and activities of AMAF, OIE, SEAFDEC, CITES, CODEX Alimentarius, Bilateral, WTO FTA, APEC, ASEM and IPPC	Participated in 121 relevant meetings and activities

# ❖ FINANCIAL ❖

## STATEMENTS

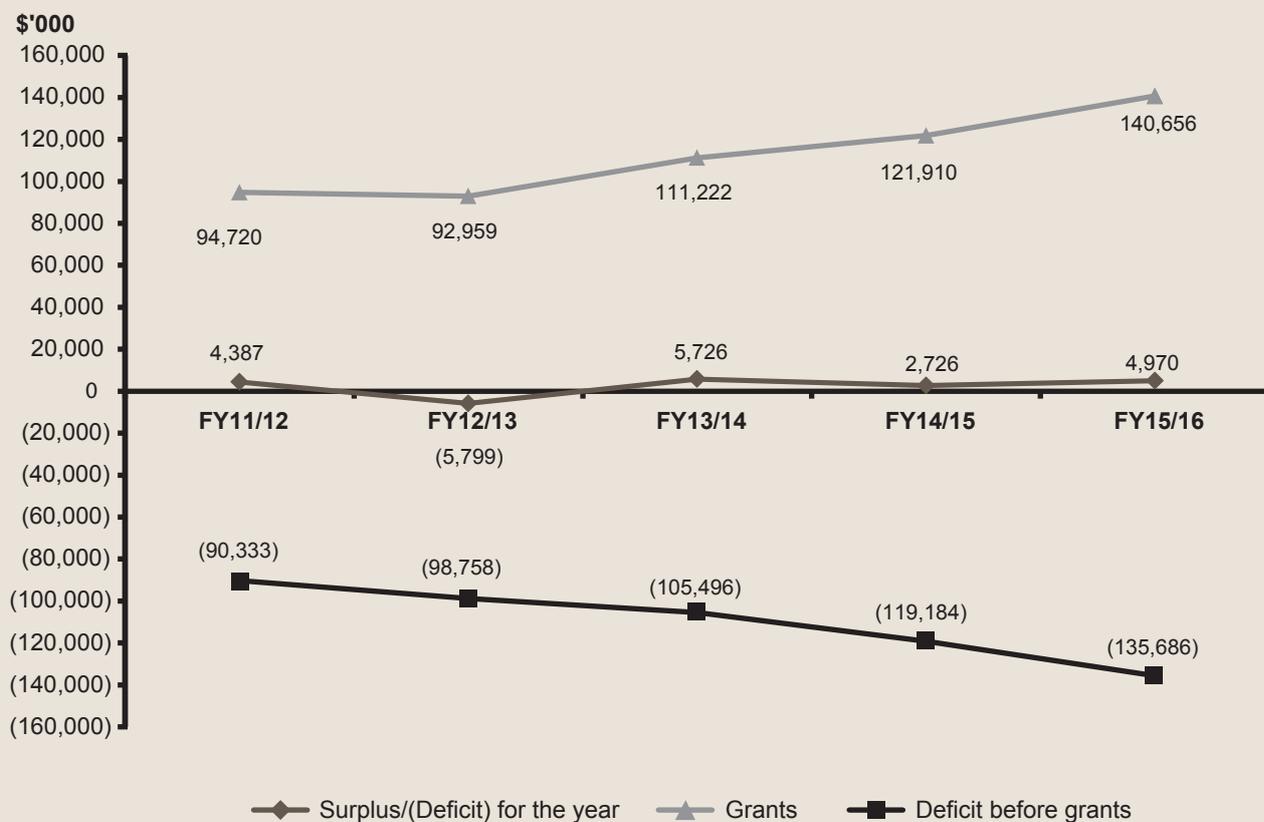
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# FIVE-YEAR FINANCIAL SUMMARY OF THE GROUP

## INCOME AND EXPENDITURE

	FY11/12	FY12/13	FY13/14	FY14/15	FY15/16
	\$'000	\$'000	\$'000	\$'000	\$'000
Income	37,024	35,405	36,242	36,967	36,591
Grant	94,720	92,959	111,222	121,910	140,656
Total income	131,744	128,364	147,464	158,877	177,247
Expenditure	126,463	134,163	140,572	155,691	171,328
Surplus/(Deficit) before contribution to Consolidated Fund and taxation	5,281	(5,799)	6,892	3,186	5,919
Contribution to Consolidated Fund	(893)	-	(1,162)	(459)	(949)
Taxation	(1)	-	(4)	(1)	-
Surplus/(Deficit) for the year	4,387	(5,799)	5,726	2,726	4,970

## SURPLUS/(DEFICIT) FOR THE YEAR



# FIVE-YEAR FINANCIAL SUMMARY OF THE GROUP (continued)

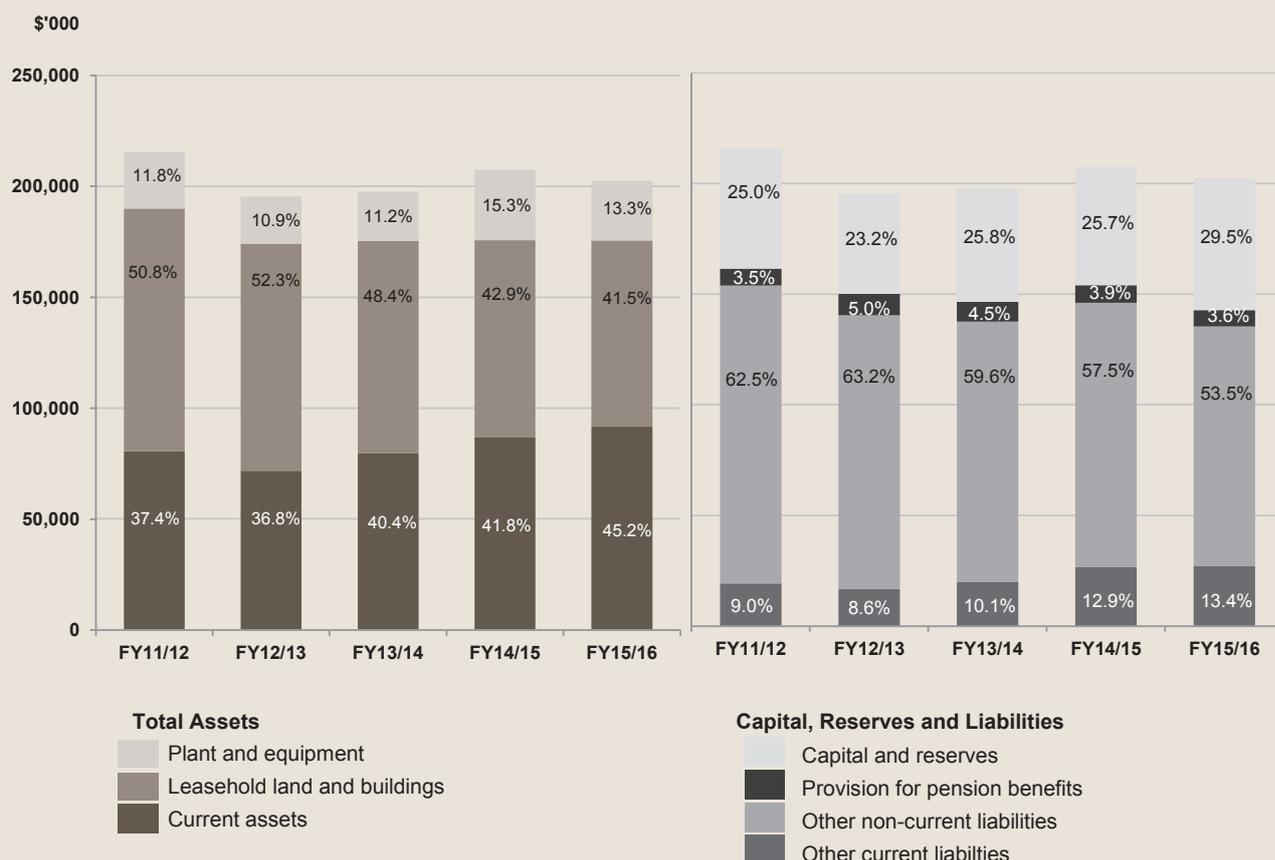
## FINANCIAL POSITION

As at 31 March 2016, the Group's total assets amounted to \$202.5 million (31 March 2015:\$207.4 million). Property, plant and equipment which stood at \$110.9 million accounted for 54.8% of the total assets (31 March 2015: 58.2%).

Capital, reserves and liabilities of the Group totalled \$202.5 million as at 31 March 2016 (31 March 2015:\$207.4 million). Of the \$202.5 million, capital and reserves totalled \$59.8 million and other non-current liabilities stood at \$108.3 million. Provision for pension benefits and other current liabilities accounted for \$7.4 million and \$27 million respectively.

	FY11/12	FY12/13	FY13/14	FY14/15	FY15/16
	\$'000	\$'000	\$'000	\$'000	\$'000
<b>BALANCE SHEET</b>					
Plant and equipment	25,454	21,321	22,151	31,665	26,895
Leasehold land and buildings	109,322	102,286	95,658	89,029	84,032
Current assets	80,648	71,832	79,751	86,752	91,614
<b>Total assets</b>	<b>215,424</b>	<b>195,439</b>	<b>197,560</b>	<b>207,446</b>	<b>202,541</b>
Capital and reserves	53,866	45,342	51,067	53,406	59,814
Provision for pension benefits	7,618	9,689	8,893	8,009	7,362
Other non-current liabilities	134,649	123,514	117,750	119,283	108,307
Other current liabilities	19,291	16,894	19,850	26,748	27,058
<b>Total capital, reserves and liabilities</b>	<b>215,424</b>	<b>195,439</b>	<b>197,560</b>	<b>207,446</b>	<b>202,541</b>

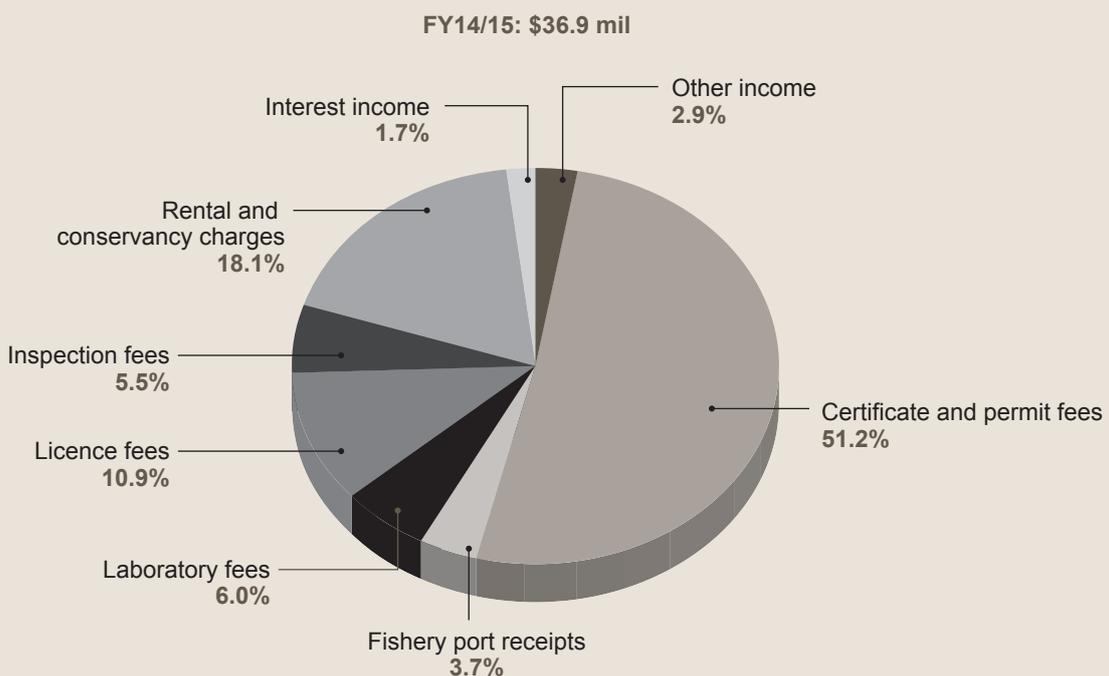
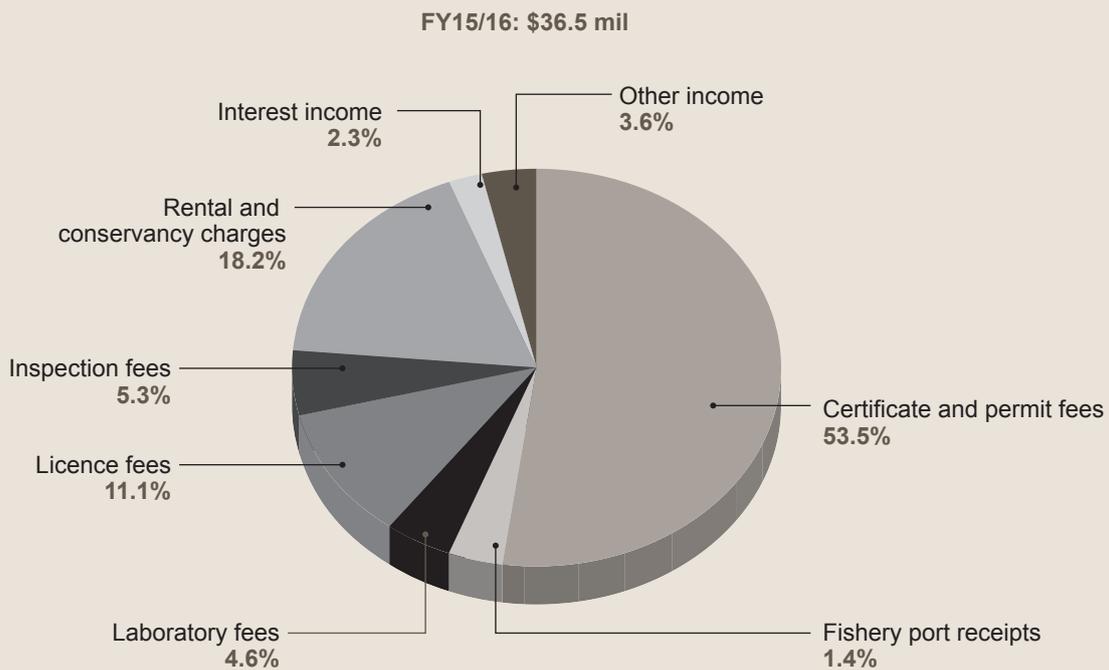
## FINANCIAL POSITION



# FINANCIAL REVIEW

## INCOME

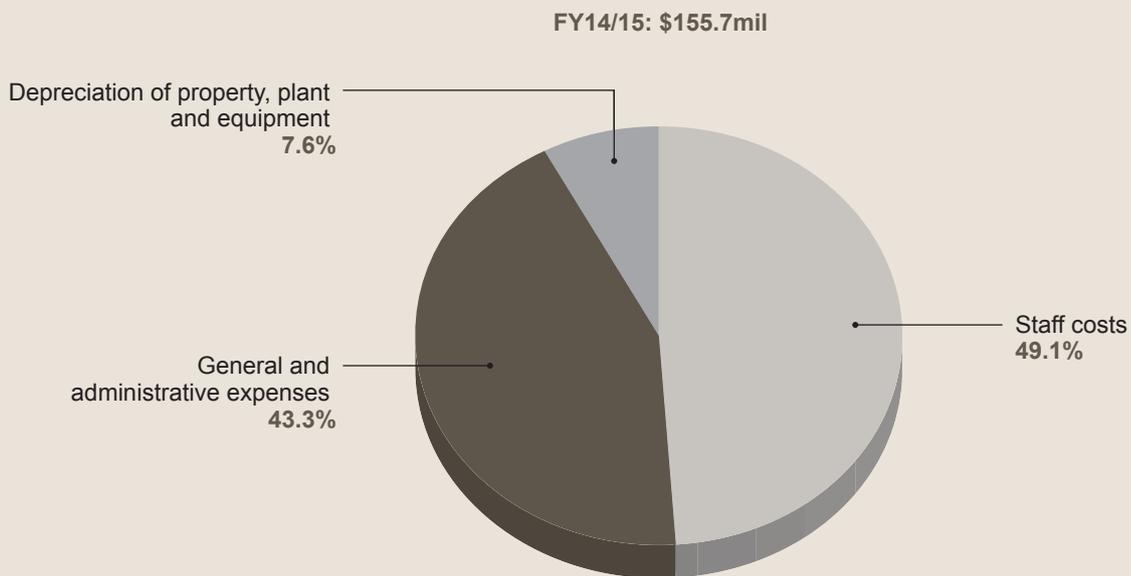
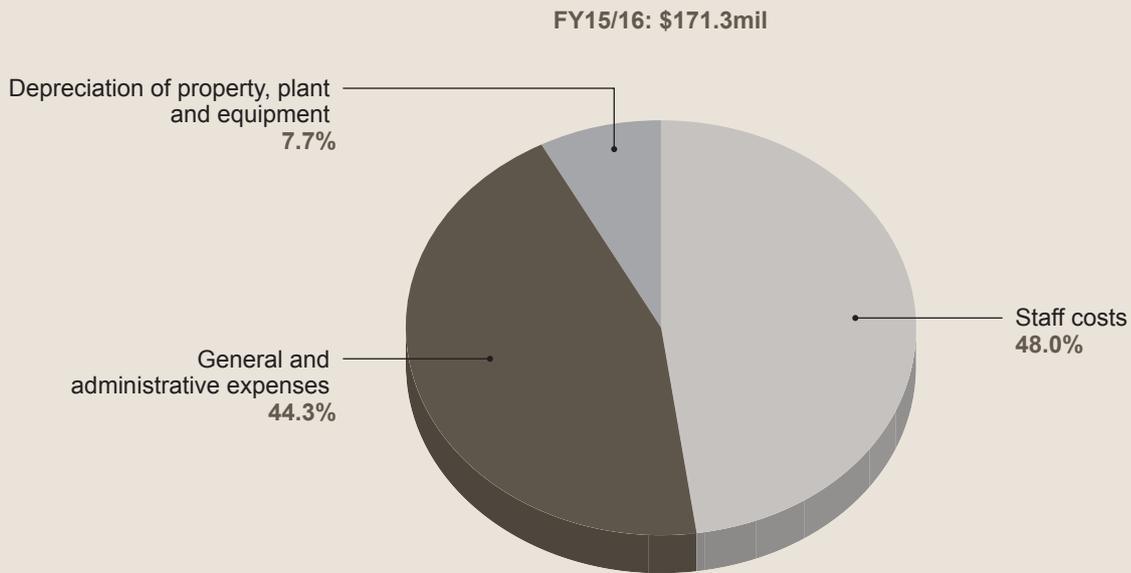
The Group's income comprised mainly certificate and permit fees (53.5%); rental income from the fishery ports (18.2%); and licence fees (11.1%). The Group's income decreased by \$0.4 million (1%) to \$36.5 million in FY15/16 as compared to \$36.9 million in FY14/15.



# FINANCIAL REVIEW (continued)

## EXPENDITURE

The Group's expenditure comprised mainly staff costs (48%), general and administrative expenses (44.3%) and depreciation (7.7%). The Group's expenditure increased by \$15.6 million (10%) for the financial year ended 31 March 2016. The increase was attributed mainly to an increase in general and administrative expenses.



## STATEMENT BY THE BOARD

FOR THE YEAR ENDED 31 MARCH 2016

In our opinion, the accompanying statement of financial position, statements of comprehensive income, statements of changes in equity of the Agri-Food and Veterinary Authority (the "Authority") and the Group and the statement of cash flows of the Group together with the summary of significant accounting policies and other explanatory notes thereto as set out on pages 9 to 44 are drawn up in accordance with the provisions of the Agri-Food and Veterinary Authority Act (Cap. 5, 2001 Revised Edition) and Statutory Board Financial Reporting Standards so as to give a true and fair view of the state of affairs of the Authority and the Group as at 31 March 2016, and the results and changes in equity of the Authority and the Group and changes in cash flows of the Group for the year ended on that date.

On behalf of the Board



Lim Neo Chian  
Chairman



Tan Poh Hong  
Chief Executive Officer

1 July 2016

# INDEPENDENT AUDITOR'S REPORT

FOR THE YEAR ENDED 31 MARCH 2016

## Independent auditor's report to the Agri-Food and Veterinary Authority

### **Report on the financial statements**

We have audited the accompanying financial statements of Agri-Food and Veterinary Authority (the "Authority") and its subsidiary (collectively, the "Group"), which comprise the statements of financial position of the Authority and the Group as at 31 March 2016, and the statements of comprehensive income and statements of changes in equity of the Authority and the Group and the consolidated statement of cash flows of the Group for the year then ended, and a summary of significant accounting policies and other explanatory information.

### ***Management's responsibility for the financial statements***

Management is responsible for the preparation and fair presentation of these financial statements in accordance with the provisions of Agri-Food and Veterinary Authority Act Cap. 5, 2001 Revised Edition (the "Act") and the Statutory Board Financial Reporting Standards and for such internal control as management determines is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

### ***Auditor's responsibility***

Our responsibility is to express an opinion on these financial statements based on our audit. We conducted our audit in accordance with Singapore Standards on Auditing. Those standards require that we comply with ethical requirements and plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgement, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the Authority's preparation and fair representation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Authority's internal control. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

### ***Opinion***

In our opinion, the consolidated financial statements of the Group and the statement of financial position, statement of comprehensive income and statement of changes in equity of the Authority are properly drawn up in accordance with the provisions of the Act and Statutory Board Financial Reporting Standards so as to present fairly, in all material respects, the state of affairs of the Group and the Authority as at 31 March 2016 and the results and changes in equity of the Group and the Authority and cash flows of the Group for the year ended on that date.

AGRI-FOOD AND VETERINARY AUTHORITY AND ITS SUBSIDIARY  
**INDEPENDENT AUDITOR'S REPORT**

FOR THE YEAR ENDED 31 MARCH 2016

**Independent auditor's report to the Agri-Food and Veterinary Authority**

**Report on other legal and regulatory requirements**

***Management's responsibility for compliance with legal and regulatory requirements***

Management is responsible for ensuring that the receipts, expenditure, investment of moneys and the acquisition and disposal of assets, are in accordance with the provisions of the Act. This responsibility includes implementing accounting and internal controls as management determines are necessary to enable compliance with the provisions of the Act.

***Auditor's responsibility***

Our responsibility is to express an opinion on management's compliance based on our audit of the financial statements. We conducted our audit in accordance with Singapore Standards on Auditing. We planned and performed the compliance audit to obtain reasonable assurance about whether the receipts, expenditure, investment of moneys and the acquisition and disposal of assets, are in accordance with the provisions of the Act.

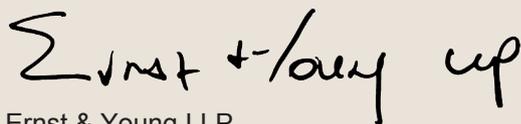
Our compliance audit includes obtaining an understanding of the internal control relevant to the receipts, expenditure, investment of moneys and the acquisition and disposal of assets; and assessing the risks of material misstatement of the financial statements from non-compliance, if any, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. Because of the inherent limitations in any accounting and internal control system, non-compliances may nevertheless occur and not be detected.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion on management's compliance.

***Opinion***

In our opinion:

- (a) the receipts, expenditure, investment of moneys and the acquisition and disposal of assets by the Authority during the year are, in all material respects, in accordance with the provisions of the Act.
- (b) proper accounting and other records have been kept, including records of all assets of the Authority and of its subsidiary incorporated in Singapore of which we are the auditors whether purchased, donated or otherwise.



Ernst & Young LLP

Public Accountants and  
Chartered Accountants  
Singapore

1 July 2016

**STATEMENTS OF FINANCIAL POSITION**

AS AT 31 MARCH 2016

	Notes	The Authority		The Group	
		FY15/16 \$	FY14/15 \$	FY15/16 \$	FY14/15 \$
<b>CAPITAL AND RESERVES</b>					
Share capital	4	1,439,156	1,000	1,439,156	1,000
Accumulated surplus		57,929,451	52,948,896	58,374,769	53,405,241
		<b>59,368,607</b>	<b>52,949,896</b>	<b>59,813,925</b>	<b>53,406,241</b>
Represented by:					
<b>NON-CURRENT ASSETS</b>					
Property, plant and equipment	5	110,926,507	120,694,341	110,926,507	120,694,341
Subsidiary	6	2	2	–	–
		<b>110,926,509</b>	<b>120,694,343</b>	<b>110,926,507</b>	<b>120,694,341</b>
<b>CURRENT ASSETS</b>					
Prepayments		928,076	945,620	930,856	945,620
Trade and other receivables	7	2,487,699	1,627,784	2,600,439	1,653,857
Operating grant receivable from Government		14,609,568	18,840,211	14,609,568	18,840,211
Capital and other grant receivable from Government		4,855,693	1,327,916	4,855,693	1,327,916
Cash and cash equivalents	8	68,253,826	63,485,508	68,617,406	63,984,522
		<b>91,134,862</b>	<b>86,227,039</b>	<b>91,613,962</b>	<b>86,752,126</b>
<b>CURRENT LIABILITIES</b>					
Trade and other payables	9	20,782,402	20,052,563	20,816,182	20,120,496
Amount due to Government	9	13,888	108,686	13,888	108,686
Rental, security and other deposits	9	2,646,291	2,440,027	2,646,291	2,440,027
Capital and other grants received in advance	10	(132,526)	1,160,001	(132,526)	1,160,001
Deferred income		2,765,053	2,409,240	2,765,053	2,409,240
Provision for pension benefits	11	1,913,566	2,161,925	1,913,566	2,161,925
Provision for contribution to Consolidated Fund		949,415	508,580	949,415	508,580
Income tax payable		–	–	–	807
		<b>28,938,089</b>	<b>28,841,022</b>	<b>28,971,869</b>	<b>28,909,762</b>
<b>NET CURRENT ASSETS</b>		<b>62,196,773</b>	<b>57,386,017</b>	<b>62,642,093</b>	<b>57,842,364</b>
<b>NON-CURRENT LIABILITIES</b>					
Provision for pension benefits	11	5,447,993	5,846,778	5,447,993	5,846,778
Deferred capital grants	12	108,019,224	118,996,228	108,019,224	118,996,228
Provision for reinstatement costs		287,458	287,458	287,458	287,458
		<b>113,754,675</b>	<b>125,130,464</b>	<b>113,754,675</b>	<b>125,130,464</b>
		<b>59,368,607</b>	<b>52,949,896</b>	<b>59,813,925</b>	<b>53,406,241</b>
<b>Net assets of MFRD Fund</b>	<b>13</b>	<b>129,047</b>	<b>213,552</b>	<b>129,047</b>	<b>213,552</b>

*The accompanying notes form an integral part of these financial statements.*

**STATEMENTS OF COMPREHENSIVE INCOME**

FOR THE YEAR ENDED 31 MARCH 2016

	Notes	The Authority		The Group	
		FY15/16	FY14/15	FY15/16	FY14/15
		\$	\$	\$	\$
<b>INCOME</b>					
Certificate and permit fees		19,557,595	18,937,625	19,557,595	18,937,625
Fishery port receipts		524,219	1,362,210	524,219	1,362,210
Laboratory fees		1,697,466	2,213,826	1,697,466	2,213,826
Licence fees		4,066,514	4,041,387	4,066,514	4,041,387
Inspection fees		1,947,351	2,056,952	1,942,551	2,027,305
Rental and conservancy charges		6,673,126	6,699,432	6,673,126	6,699,432
Interest income		824,728	630,527	827,656	632,796
Other income		1,147,986	865,316	1,301,916	1,052,571
		<b>36,438,985</b>	<b>36,807,275</b>	<b>36,591,043</b>	<b>36,967,152</b>
<b>EXPENDITURE</b>					
Staff costs	14	82,618,845	76,667,154	82,617,965	76,663,374
General and administrative expenses	15	75,848,084	67,243,651	76,012,003	67,388,748
Depreciation of property, plant and equipment	5	13,083,804	11,829,046	13,083,804	11,829,046
Gain on disposal of property, plant and equipment		(40,171)	(13,732)	(40,171)	(13,732)
		<b>171,510,562</b>	<b>155,726,119</b>	<b>171,673,601</b>	<b>155,867,436</b>
<b>DEFICIT BEFORE GRANTS</b>		<b>(135,071,577)</b>	<b>(118,918,844)</b>	<b>(135,082,558)</b>	<b>(118,900,284)</b>
<b>GRANTS</b>					
Operating grants	16	127,111,930	109,514,811	127,111,930	109,514,811
Transfer from capital and other grants received in advance	10	153,600	40,862	153,600	40,862
Transfer from deferred capital grants	12	13,390,841	12,354,815	13,390,841	12,354,815
		<b>140,656,371</b>	<b>121,910,488</b>	<b>140,656,371</b>	<b>121,910,488</b>
<b>SURPLUS BEFORE CONTRIBUTION TO CONSOLIDATED FUND AND TAXATION</b>		<b>5,584,794</b>	<b>2,991,644</b>	<b>5,573,813</b>	<b>3,010,204</b>
Contribution to Consolidated Fund	18	(949,414)	(459,946)	(949,414)	(459,946)
Income tax expense	19	–	–	(46)	(811)
<b>SURPLUS FOR THE YEAR</b>		<b>4,635,380</b>	<b>2,531,698</b>	<b>4,624,353</b>	<b>2,549,447</b>
<b>OTHER COMPREHENSIVE INCOME:</b>					
Actuarial gain on defined benefit plan	11	345,175	176,807	345,175	176,807
Other comprehensive income, net of tax		345,175	176,807	345,175	176,807
<b>TOTAL COMPREHENSIVE INCOME FOR THE YEAR</b>		<b>4,980,555</b>	<b>2,708,505</b>	<b>4,969,528</b>	<b>2,726,254</b>

*The accompanying notes form an integral part of these financial statements.*

**STATEMENTS OF CHANGES IN EQUITY**

FOR THE YEAR ENDED 31 MARCH 2016

	Note	Share Capital \$	Accumulated surplus \$	Total equity \$
<b>The Authority</b>				
Balance at 1 April 2014		1,000	50,628,391	50,629,391
Surplus for the year		–	2,531,698	2,531,698
Other comprehensive income for the year, net of tax		–	176,807	176,807
Total comprehensive income for the year		–	2,708,505	2,708,505
Dividend	4	–	(388,000)	(388,000)
Balance at 31 March 2015 and 1 April 2015		1,000	52,948,896	52,949,896
Equity injection for the year	4	1,438,156	–	1,438,156
Surplus for the year		–	4,635,380	4,635,380
Other comprehensive income for the year, net of tax		–	345,175	345,175
Total comprehensive income for the year		–	4,980,555	4,980,555
Balance at 31 March 2016		1,439,156	57,929,451	59,368,607
<b>The Group</b>				
Balance at 1 April 2014		1,000	51,066,987	51,067,987
Surplus for the year		–	2,549,447	2,549,447
Other comprehensive income for the year, net of tax		–	176,807	176,807
Total comprehensive income for the year		–	2,726,254	2,726,254
Dividend	4	–	(388,000)	(388,000)
Balance at 31 March 2015 and 1 April 2015		1,000	53,405,241	53,406,241
Equity injection for the year	4	1,438,156	–	1,438,156
Surplus for the year		–	4,624,353	4,624,353
Other comprehensive income for the year, net of tax		–	345,175	345,175
Total comprehensive income for the year		–	4,969,528	4,969,528
Balance at 31 March 2016		1,439,156	58,374,769	59,813,925

*The accompanying notes form an integral part of these financial statements.*

**CONSOLIDATED STATEMENT OF CASH FLOWS**

FOR THE YEAR ENDED 31 MARCH 2016

	FY15/16	FY14/15
	\$	\$
<b>CASH FLOWS FROM OPERATING ACTIVITIES</b>		
Deficit before grants	(135,082,558)	(118,900,284)
Adjustments for:		
Depreciation of property, plant and equipment	13,083,804	11,829,046
Gain on disposal of property, plant and equipment	(40,171)	(13,732)
Property, plant and equipment written-off	539,534	425,314
Interest income	(827,656)	(632,796)
Provision for pension benefits	235,145	257,248
Operating deficit before working capital changes	(122,091,902)	(107,035,204)
Changes in working capital excluding cash and cash equivalents:		
Prepayments	14,764	(118,273)
Trade and other receivables	(721,843)	(314,667)
Trade and other payables	1,539,840	7,396,413
Amount due to Government	(94,798)	108,686
Rental, security and other deposits	206,264	28,903
Deferred income	355,813	159,827
Provision for pension benefits	(537,114)	(964,301)
Provision for reinstatement costs	–	287,458
	(121,328,976)	(100,451,158)
Payment of contribution to Consolidated Fund	(508,579)	(1,113,760)
Payment of income tax	(853)	(5,101)
Net cash used in operating activities	(121,838,408)	(101,570,019)
<b>CASH FLOWS FROM INVESTING ACTIVITIES</b>		
Purchase of property, plant and equipment (Note A)	(8,518,063)	(7,603,309)
Proceeds from disposal of property, plant and equipment	8,333	26,580
Interest income received	602,917	431,082
Net cash used in investing activities	(7,906,813)	(7,145,647)
<b>CASH FLOWS FROM FINANCING ACTIVITIES</b>		
Dividends paid	–	(388,000)
Injection of equity (Note 4)	1,438,156	–
Government grants received	132,939,949	96,660,536
Cash generated from financing activities	134,378,105	96,272,536
Net increase/(decrease) in cash and cash equivalents	4,632,884	(12,443,130)
Cash and cash equivalents at beginning of year	63,984,522	76,427,652
Cash and cash equivalents at end of year (Note 8)	68,617,406	63,984,522

**Note A:**

During the financial year, the Group acquired property, plant and equipment with an aggregate cost of \$7,710,133 (FY14/15: \$15,152,390) of which \$3,316 (FY14/15: \$847,470) is yet to be paid as at the end of the financial year. Cash payments of \$8,518,063 (FY14/15: \$7,603,309) were made to purchase property, plant and equipment.

*The accompanying notes form an integral part of these financial statements.*

# NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 MARCH 2016

## 1. GENERAL INFORMATION

The Agri-Food and Veterinary Authority (the "Authority") is a statutory board established under the Agri-Food and Veterinary Authority Act (Cap. 5, 2001 Revised Edition) under the purview of the Ministry of National Development ("MND"). As a statutory board, the Authority is subject to the directions of the MND and is required to implement policies and comply with instructions from its supervising ministry and other government ministries and departments such as the Ministry of Finance.

The registered office is at 52 Jurong Gateway Road, #14-01, Singapore 608550.

## 2. PRINCIPAL ACTIVITIES

The principal activities of the Authority are:

- (a) to regulate the safety and wholesomeness of food for supply to Singapore;
- (b) to promote and regulate animal and fish health, animal welfare and plant health;
- (c) to promote, facilitate and regulate the production, processing and trade of food and products related to or connected with the agri-food and veterinary sectors;
- (d) to develop, manage and regulate any agrotechnology park, agri-biotechnology park, mari-culture park, fishing harbour, and any other agri-food and veterinary centre or establishment;
- (e) to promote the development of the agri-food and veterinary sectors;
- (f) to advise and make recommendations to the Government on matters, measures and regulations related to or connected with the agri-food and veterinary sectors;
- (g) to represent the Government internationally on matters related to or connected with the agri-food and veterinary sectors; and
- (h) to carry out such other functions as are imposed upon the Authority by or under the Agri-Food and Veterinary Authority Act (Cap. 5, 2001 Revised Edition) or any other written law.

## 3. SIGNIFICANT ACCOUNTING POLICIES

### 3.1 *Basis of preparation*

The financial statements of the Authority are prepared in accordance with the provisions of the Agri-Food and Veterinary Authority Act (Cap. 5, 2001 Revised Edition) and Statutory Board Financial Reporting Standards ("SB-FRS"), including related Interpretations. They are prepared under the historical cost basis, except as disclosed in the accounting policies below.

The financial statements are presented in Singapore Dollars (SGD or \$).

# NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 MARCH 2016

## 3. SIGNIFICANT ACCOUNTING POLICIES (continued)

### 3.1 *Basis of preparation (continued)*

#### Significant accounting estimates and judgements

The preparation of the Group and Authority's financial statements requires management to make judgements, estimates and assumptions that affect the reported amounts of revenues, expenses, assets and liabilities, and the disclosure of contingent liabilities at the end of each reporting period. However, uncertainty about these assumptions and estimates could result in outcomes that could require a material adjustment to the carrying amount of the asset or liability affected in the future periods.

The key assumptions concerning the future and other key sources of estimation uncertainty at the end of each reporting period, that have a significant risk of causing a material adjustment to the carrying amounts of assets and liabilities within the next financial year are described below.

#### (i) Depreciation of property, plant and equipment

Property, plant and equipment are depreciated on a straight-line basis over their estimated useful lives. Management estimates the useful lives of these property, plant and equipment to be within 3 - 30 years. The carrying amount of the Authority and Group's property, plant and equipment as at 31 March 2016 is \$110,926,507 (FY14/15: \$120,694,341). Changes in the expected level of usage and technological developments could impact the economic useful lives and the residual values of these assets, therefore future depreciation charges could be revised.

#### (ii) Provision for pension benefits

The cost of defined benefit pension plans as well as the present value of the pension obligation are determined using actuarial valuations. The actuarial valuation involves making various assumptions. These include the determination of the discount rates, future salary increases and mortality rates. Due to the complexity of the valuation, the underlying assumptions and its long-term nature, defined benefit obligations are highly sensitive to changes in these assumptions. All assumptions are reviewed on a yearly basis. The net benefit liability as at 31 March 2016 is \$7,361,559 (FY14/15: \$8,008,703). Further details are provided in Note 11.

In determining the appropriate discount rate, management considers the market yields on government bond as Singapore is not considered to be a country with deep corporate bond market.

The mortality rate is based on publicly available mortality tables for Singapore. Future salary increases are based on historical data.

Further details about the assumptions used are provided in Note 11.

**NOTES TO THE FINANCIAL STATEMENTS**

FOR THE YEAR ENDED 31 MARCH 2016

## 3. SIGNIFICANT ACCOUNTING POLICIES (continued)

3.2 *Changes in accounting policies*

The accounting policies adopted are consistent with those of the previous financial year except in the current financial year, the Group has adopted all the new and revised standards and Interpretations of SB-FRS (INT SB-FRS) that are effective for annual periods beginning on or after 1 April 2015. The adoption of these standards and interpretations did not have any effect on the financial performance or position of the Authority and the Group.

3.3 *New SB-FRS and INT SB-FRS issued but not yet effective*

The Authority and the Group have not adopted the following new or revised SB-FRSs and INT SB-FRSs that have been issued as of the reporting date but are not yet effective.

<b>Description</b>	<b>Effective for annual periods beginning on or after</b>
SB-FRS 114 Regulatory Deferral Accounts	1 January 2016
Amendments to SB-FRS 27 Equity Method in Separate Financial Statements	1 January 2016
Amendments to SB-FRS 16 and SB-FRS 38 : Clarification of Acceptable Methods of Depreciation and Amortisation	1 January 2016
Amendments to SB-FRS 111 Accounting for Acquisitions of Interests in Joint Operations	1 January 2016
Improvements to SB-FRSs (November 2014)	
(a) Amendments to SB-FRS 105 Non-current Assets Held for Sale and Discontinued Operations	1 January 2016
(b) Amendments to SB-FRS 107 Financial Instruments: Disclosures	1 January 2016
(c) Amendments to SB-FRS 19 Employee Benefits	1 January 2016
Amendments to SB-FRS 110 & SB-FRS 28 Sale or Contribution of Assets between an Investor and its Associate or Joint Venture	1 January 2016
Amendments to SB-FRS 1: Disclosure Initiative	1 January 2016
Amendments to SB-FRS 110, SB-FRS 112 and SB-FRS 28: Investment Entities: Applying the Consolidation Exception	1 January 2016
SB-FRS 1001 Accounting and Disclosure for Non-Exchange Revenue	1 January 2017
SB-FRS 115 Revenue from Contracts with Customers	1 January 2018
SB-FRS 109 Financial Instruments	1 January 2018

# NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 MARCH 2016

## 3. SIGNIFICANT ACCOUNTING POLICIES (continued)

### 3.3 *New SB-FRS and INT SB-FRS issued but not yet effective (continued)*

With the exception of SB-FRS 115, SB-FRS 1001 and SB-FRS 109, the Authority and the Group anticipate that the adoption of these SB-FRSs and INT SB-FRSs in future periods will not have a material impact on the Authority and the Group's financial statements. The nature of the impending changes in accounting policy on adoption of SB-FRS 109 is described below.

#### SB-FRS 115 Revenue from Contracts with Customers

SB-FRS 115 establishes a five-step model that will apply to revenue arising from contracts with customers. Under SB-FRS 115, revenue is recognised at an amount that reflects the consideration which an entity expects to be entitled in exchange for transferring goods or services to a customer. The principles in SB-FRS 115 provide a more structured approach to measuring and recognising revenue when the promised goods and services are transferred to the customer i.e. when performance obligations are satisfied.

Key issues for the Group include identifying performance obligations, accounting for contract modifications, applying the constraint to variable consideration, evaluating significant financing components, measuring progress toward satisfaction of a performance obligation, recognising contract cost assets and addressing disclosure requirements.

Either a full or modified retrospective application is required for annual periods beginning on or after 1 January 2018 with early adoption permitted. The Group is currently assessing the impact of SB-FRS 115 and plans to adopt the new standard on the required effective date.

#### SB-FRS 1001 Accounting and Disclosure for Non-Exchange Revenue

SB-FRS 1001 specifies the financial reporting requirements for recognition, measurement and disclosure of non-exchange revenue received by Statutory Boards (SBs). Revenue is recognised when the SB obtains control of the resources or has an enforceable claim to the resources and shall initially be measured at its fair value at the date of acquisition. SBs are required to disclose sufficient information to enable users of financial statements to understand the nature, amount, timing and uncertainty of revenue and cash flows arising from non-exchange revenue.

Early adoption is permitted. The Group is currently assessing the impact of SB-FRS 1001 and plans to adopt the standard on the required effective date.

#### SB-FRS 109 Financial Instruments

SB-FRS 109 introduces new requirements for classification and measurement of financial assets, impairment of financial assets and hedge accounting. Financial assets are classified according to their contractual cash flow characteristics and the business model under which they are held. The impairment requirements in SB-FRS 109 are based on an expected credit loss model and replace the SB-FRS 39 incurred loss model.

SB-FRS 109 is effective for annual periods beginning on or after 1 January 2018 with early application permitted. Retrospective application is required, but comparative information is not compulsory. The Group is currently assessing the impact of SB-FRS 109 and plans to adopt the standard on the required effective date.

# NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 MARCH 2016

### 3. SIGNIFICANT ACCOUNTING POLICIES (continued)

#### 3.4 *Functional and presentation currency*

Items included in the financial statements of each entity in the Group are measured using the currency that best reflects the economic substance of the underlying events and circumstances relevant to that entity (the functional currency). The consolidated financial statements of the Group and the financial statements of the Authority are presented in Singapore dollars, which is also the functional currency of the Authority.

#### 3.5 *Basis of consolidation*

The consolidated financial statements comprise the financial statements of the Authority and its subsidiary as at the end of the reporting period. The financial statements of the subsidiary used in the preparation of the consolidated financial statements are prepared for the same reporting date as the Authority. Consistent accounting policies are applied to like transactions and events in similar circumstances.

All intra-group balances, income and expenses and unrealised gains and losses resulting from intra-group transactions and dividends are eliminated in full.

Subsidiary is consolidated from the date of acquisition, being the date on which the Group obtains control, and continues to be consolidated until the date that such control ceases.

Losses within a subsidiary are attributed to the non-controlling interest even if that results in a deficit balance.

A change in the ownership interest of a subsidiary, without a loss of control, is accounted for as an equity transaction. If the Group loses control over a subsidiary, it:

- de-recognises the assets (including goodwill) and liabilities of the subsidiary at their carrying amounts at the date when controls is lost;
- de-recognises the carrying amount of any non-controlling interest;
- de-recognises the cumulative translation differences recorded in equity;
- recognises the fair value of the consideration received;
- recognises the fair value of any investment retained;
- recognises any surplus or deficit in profit or loss;
- re-classifies the Group's share of components previously recognised in other comprehensive income to profit or loss or retained earnings, as appropriate.

**NOTES TO THE FINANCIAL STATEMENTS**

FOR THE YEAR ENDED 31 MARCH 2016

## 3. SIGNIFICANT ACCOUNTING POLICIES (continued)

3.6 *Property, plant and equipment and depreciation*

Property, plant and equipment are stated at cost less accumulated depreciation and impairment losses, if any.

Recognition and measurement

All items of property, plant and equipment are initially recorded at cost. Subsequent to recognition, property, plant and equipment are measured at cost less accumulated depreciation and any accumulated impairment losses. The cost includes the cost of replacing part of the property, plant and equipment and borrowing costs that are directly attributable to the acquisition, construction or production of a qualifying property, plant and equipment. The cost of an item of property, plant and equipment is recognised as an asset if, and only if, it is probable that future economic benefits associated with the item will flow to the Group and the cost of the item can be measured reliably.

Subsequent cost

When significant parts of property, plant and equipment are required to be replaced in intervals, the Group recognises such parts as individual assets with specific useful lives and depreciation, respectively. Likewise, when a major inspection is performed, its cost is recognised in the carrying amount of the plant and equipment as a replacement if the recognition criteria are satisfied. All other repair and maintenance costs are recognised in profit or loss as incurred.

Depreciation

Depreciation is computed utilising the straight-line method to write off the cost of the assets over their estimated useful lives as follows:

	<u>Years</u>
Leasehold land and buildings	10 - 30 (over the period of the lease)
Motor vehicles and vessels	10
Mechanical and electrical equipment	10
Furniture and fittings	5 - 8
Laboratory tools and equipment	8
IT equipment	3 - 8

No depreciation is provided on development work-in-progress. Development work-in-progress is transferred to the various categories of property, plant and equipment and depreciated upon the completion of the development project.

The carrying values of property, plant and equipment are reviewed for impairment when events or changes in circumstances indicate that the carrying value may not be recoverable.

Depreciation methods, useful lives and residual values are reviewed, and adjusted as appropriate, at each reporting date as a change in estimates.

For acquisitions and disposals during the financial year, depreciation is provided from the month of acquisition and to the month before disposal respectively. Fully depreciated assets are retained in the financial statements until they are no longer in use.

# NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 MARCH 2016

## 3. SIGNIFICANT ACCOUNTING POLICIES (continued)

### 3.6 *Property, plant and equipment and depreciation (continued)*

An item of property, plant and equipment is derecognised upon disposal or when no future economic benefits are expected from its use or disposal. Any gain or loss on de-recognition of the asset is included in profit or loss in the year the asset is derecognised.

### 3.7 *Subsidiary*

A subsidiary is an entity that is controlled by the Group. The Group controls an entity when it is exposed, or has rights, to variable returns from its involvement with the entity and has the ability to affect those returns through its power over the entity.

In the Authority's separate financial statements, shares in the subsidiary are stated at cost less allowance for any impairment loss on an individual subsidiary basis.

### 3.8 *Impairment of non-financial assets*

The Group assesses at each reporting date whether there is an indication that an asset may be impaired. If any indication exists, or when an annual impairment testing for an asset is required, the Group makes an estimate of the asset's recoverable amount.

An asset's recoverable amount is the higher of an asset's or cash-generating unit's fair value less costs of disposal and its value in use and is determined for an individual asset, unless the asset does not generate cash inflows that are largely independent of those from other assets or groups of assets. Where the carrying amount of an asset or cash-generating unit exceeds its recoverable amount, the asset is considered impaired and is written down to its recoverable amount.

Impairment losses of continuing operations are recognised in profit or loss, except for assets that are previously revalued where the revaluation was taken to other comprehensive income. In this case, the impairment is also recognised in other comprehensive income up to the amount of any previous revaluation.

A previously recognised impairment loss is reversed only if there has been a change in the estimates used to determine the asset's recoverable amount since the last impairment loss was recognised. If that is the case, the carrying amount of the asset is increased to its recoverable amount. That increase cannot exceed the carrying amount that would have been determined, net of depreciation, had no impairment loss been recognised previously. Such reversal is recognised in profit or loss unless the asset is measured at revalued amount, in which case the reversal is treated as a revaluation increase.

# NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 MARCH 2016

## 3. SIGNIFICANT ACCOUNTING POLICIES (continued)

### 3.9 *Financial instruments*

#### (a) *Financial assets*

##### Initial recognition and measurement

Financial assets are recognised when, and only when, the Group becomes a party to the contractual provisions of the financial instrument. The Group determines the classification of its financial assets at initial recognition.

When financial assets are recognised initially, they are measured at fair value, plus, directly attributable transaction costs.

##### Subsequent measurement

Non-derivative financial assets with fixed or determinable payments that are not quoted in an active market are classified as loans and receivables. Subsequent to initial recognition, loans and receivables are measured at amortised cost using the effective interest method, less impairment. Gains and losses are recognised in profit or loss when the loans and receivables are derecognised or impaired, and through the amortisation process.

Loans and receivables comprise cash and cash equivalents and trade and other receivables.

##### De-recognition

A financial asset is derecognised when the contractual right to receive cash flows from the asset has expired, or when it transfers the rights to receive the contractual cash flows on the financial asset in a transaction in which substantially all the risks and rewards of ownership of the financial asset are transferred. Any interest in transferred financial assets that is created or retained by the Group is recognised as a separate asset or liability. On de-recognition of a financial asset in its entirety, the difference between the carrying amount and the sum of the consideration received and any cumulative gain or loss that had been recognised in other comprehensive income is recognised in profit or loss.

# NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 MARCH 2016

## 3. SIGNIFICANT ACCOUNTING POLICIES (continued)

### 3.9 *Financial instruments (continued)*

#### (b) *Financial liabilities*

##### Initial recognition and measurement

Financial liabilities are recognised when, and only when, the Group becomes a party to the contractual provisions of the financial instrument. The Group determines the classification of its financial liabilities at initial recognition.

All financial liabilities are recognised initially at fair value plus, directly attributable transaction costs.

##### Subsequent measurement

After initial recognition, financial liabilities that are not carried at fair value through profit or loss are subsequently measured at amortised cost using the effective interest rate method. Gains and losses are recognised in profit or loss when the liabilities are derecognised, and through the amortisation process.

##### De-recognition

A financial liability is derecognised when the obligation under the liability is discharged or cancelled or expired. When an existing financial liability is replaced by another from the same lender on substantially different terms, or the terms of an existing liability are substantially modified, such an exchange or modification is treated as a de-recognition of the original liability and the recognition of a new liability, and the difference in the respective carrying amounts is recognised in profit or loss.

### 3.10 *Impairment of financial assets*

The Group also assesses at each reporting date whether a financial asset or a group of financial assets is impaired.

#### *Financial assets carried at amortised cost*

For financial assets carried at amortised cost, the Group first assesses whether objective evidence of impairment exists individually for financial assets that are individually significant, or collectively for financial assets that are not individually significant. If the Company determines that no objective evidence of impairment exists for an individually assessed financial asset, whether significant or not, it includes the asset in a group of financial assets with similar credit risk characteristics and collectively assesses them for impairment. Assets that are individually assessed for impairment and for which an impairment loss is, or continues to be recognised are not included in a collective assessment of impairment.

If there is objective evidence that an impairment loss on financial assets carried at amortised cost has been incurred, the amount of the loss is measured as the difference between the asset's carrying amount and the present value of estimated future cash flows (excluding future credit losses that have not been incurred) discounted at the financial asset's original effective interest rate. The carrying amount of the asset is reduced either directly or through use of an allowance account. The impairment loss is recognised in the profit or loss account.

# NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 MARCH 2016

## 3. SIGNIFICANT ACCOUNTING POLICIES (continued)

### 3.10 *Impairment of financial assets (continued)*

When the asset becomes uncollectible, the carrying amount of impaired financial assets is reduced directly or if an amount was charged to the allowance account, the amounts charged to the allowance account are written off against the carrying value of the financial asset.

To determine whether there is objective evidence that an impairment loss on financial assets has been incurred, the Company considers factors such as the probability of insolvency or significant financial difficulties of the debtor and default or significant delay in payments.

If, in a subsequent period, the amount of the impairment loss decreases and the decrease can be related objectively to an event occurring after the impairment was recognised, the previously recognised impairment is reversed to the extent that the carrying amount of the asset does not exceed its amortised cost at the reversal date. The amount of reversal is recognised in the profit or loss.

### 3.11 *Cash and cash equivalents*

Cash and cash equivalents comprise cash and bank balances with banks; and cash with the Accountant-General's Department ("AGD"). Cash with AGD refers to cash that is managed by AGD under Cash Liquidity Management ("CLM") as set out in the Accountant-General's Circular No. 4/2009 Centralised Liquidity Management for Statutory Boards and Ministries.

### 3.12 *Provisions*

Provisions are recognised when the Authority and the Group have a present obligation (legal or constructive) as a result of a past event, it is probable that an outflow of resources embodying economic benefits will be required to settle the obligation, and a reliable estimate of the amount can be made.

The Authority and the Group review the provisions annually and where in their opinion, the provision is inadequate or excessive, due adjustment is made.

### 3.13 *Share capital*

Shares are issued to the Minister for Finance ("MOF"), the body incorporated by the Minister for Finance (Incorporation) Act, for all equity financing received from the Government. The shares issued are classified as equity and are valued at the considerations received for the issuance of the shares.

### 3.14 *Dividends*

Dividends proposed by the Authority are not accounted for in capital and reserves as an appropriation of accumulated surplus, until they have been declared by the Authority. When these dividends have been declared and approved by the Authority, they are recognised as a liability.

# NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 MARCH 2016

## 3. SIGNIFICANT ACCOUNTING POLICIES (continued)

### 3.15 *Income*

Income is recognised to the extent that it is probable that the economic benefits will flow to the Group and the income can be reliably measured, regardless of when the payment is made. Income is measured at the fair value of consideration received or receivable, taking into account contractually defined terms of payment and excluding taxes or duty. The following specific recognition criteria must also be met before income is recognised:

- (a) Certificate and permit fees are recognised as income when certificate or permits are issued.
- (b) Licence fees are recognised as income on time proportion basis.
- (c) Income from the rendering of services which comprises berthing fees, laboratory fees and inspection fees, is recognised when the service is rendered.
- (d) Rental and conservancy charges and vehicle entry fees are recognised as income on a straight-line basis over the period of the lease.
- (e) Interest income is recognised on a time proportion basis using the effective interest method.
- (f) Other income comprises mainly fines which are accounted for when received.
- (g) Deferred income relates to annual licence fees received in advance from licensees and is recognised in the profit or loss over the remaining period of the licences.

### 3.16 *Grants*

Government grants and contributions from other parties utilised for the purchase or construction of property, plant and equipment are taken to the Deferred Capital Grants Account.

Non-monetary grants related to assets are taken at their fair values to the Deferred Capital Grants Account.

Deferred capital grants are recognised in the profit or loss over the periods necessary to match the depreciation of the assets purchased or received with the related grants. On disposal of the property, plant and equipment, the balance of the related grants is taken to the profit or loss to match the net book value of the property, plant and equipment disposed.

Grants and contributions received for the purchase or construction of property, plant and equipment but which are not yet utilised are taken to the Capital Grants Received in Advance Account.

Operating grants whose purpose is to meet the current financial year's operating expenses are recognised as income in the same financial year.

Grants are recognised only when there is reasonable assurance that the Authority would comply with the conditions attaching to those grants, and the grants would be received.

# NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 MARCH 2016

## 3. SIGNIFICANT ACCOUNTING POLICIES (continued)

### 3.17 *Employee benefits*

#### (i) Short-term employee benefits

Salaries and bonuses are recognised when the services giving rise to the payment obligation have been satisfactorily rendered by the employees.

#### (ii) Defined contribution plans

The Authority and the Group contribute to the Central Provident Fund (CPF), a defined contribution plan regulated and managed by the Government of Singapore, which applies to the majority of the employees. The contributions to CPF are charged to the profit or loss in the period in which the related service is performed.

#### (iii) Employee leave entitlements

Employee entitlements to annual leave are recognised when they accrue to employees. Accrual is made for the unconsumed leave as a result of services rendered by employees up to the end of the reporting period.

#### (iv) Defined benefit plans

The net defined benefit liability or asset is the aggregate of the present value of the defined benefit obligation (derived using a discount rate) at the end of the reporting period.

The cost of providing benefits under the defined benefit plans is determined separately for each plan using the projected unit credit method.

Defined benefit costs comprise the following:

- Service cost
- Net interest on the defined benefit liability
- Re-measurements of defined benefit liability

Service costs which include current service costs, past service costs and gains or losses on non-routine settlements are recognised as expense in profit or loss. Past service costs are recognised when plan amendment or curtailment occurs.

Net interest on the defined benefit liability is the change during the period in the defined benefit liability that arises from the passage of time which is determined by applying the discount rate to the defined benefit liability. Interest on the defined benefit liability is recognised as expense or income in profit or loss.

Re-measurements comprising actuarial gains and losses are recognised immediately in other comprehensive income in the period in which they arise. Re-measurements are recognised in retained earnings within equity and are not reclassified to profit or loss in subsequent periods.

# NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 MARCH 2016

## 3. SIGNIFICANT ACCOUNTING POLICIES (continued)

### 3.18 *Leases*

#### Operating leases - lessee

Leases of assets in which a significant portion of the risks and rewards of ownership are retained by the lessor are classified as operating leases. Payments made under operating leases (net of any incentives received from the lessor) are taken to the profit or loss on a straight-line basis over the period of the lease.

When an operating lease is terminated before the lease period has expired, any payment required to be made to the lessor by way of penalty is recognised as an expense in the period in which termination takes place.

#### Operating leases - lessor

Assets leased out under operating leases are included in land and building and are stated at cost. Rental income (net of any incentives given to lessees) is recognised on a straight-line basis over the lease term.

### 3.19 *Contribution to Consolidated Fund*

The contribution to the Consolidated Fund is required under Section 3(a) of the Statutory Corporations (Contributions to Consolidated Fund) Act (Cap.319A). The contribution rate and the framework governing such contributions are determined by the Ministry of Finance.

Accounting surplus would be used for the purpose of computing the contribution and the contribution is accounted for on an accrual basis.

### 3.20 *Income tax*

#### (a) Current income tax

Current tax assets and liabilities for the current period are measured at the amount expected to be recovered from or paid to the taxation authorities. The tax rates and tax laws used to compute the amount are those that are enacted or substantively enacted by the date of the statement of financial position.

Current taxes are recognised in the statement of comprehensive income except that tax relating to items recognised directly in equity is recognised directly in equity.

# NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 MARCH 2016

## 3. SIGNIFICANT ACCOUNTING POLICIES (continued)

### 3.20 *Income tax*

#### (b) Deferred tax

Deferred income tax is provided using the liability method on temporary differences at the date of the statement of financial position between the tax bases of assets and liabilities and their carrying amounts for financial reporting purposes.

Deferred tax assets and liabilities are recognised for all temporary differences, except where the deferred tax arises from the initial recognition of an asset or liability in a transaction that is not a business combination and, at the time of the transaction affects neither the accounting profit nor taxable profit or loss.

The carrying amount of deferred tax assets is reviewed at each date of the statement of financial position and reduced to the extent that it is no longer probable that sufficient taxable profit will be available to allow all or part of the deferred income tax asset to be utilised. Unrecognised deferred tax assets are reassessed at each date of the statement of financial position and are recognised to the extent that it has become probable that future taxable profit will allow the deferred tax asset to be utilised.

Deferred tax assets and liabilities are measured at the tax rates that are expected to apply to the year when the asset is realised or the liability is settled, based on tax rates and tax laws that have been enacted or substantively enacted at the date of the statement of financial position.

#### (c) Goods and services tax ("GST")

Revenues, expenses and assets are recognised net of the amount of goods and services tax except:

- Where the goods and services tax incurred in a purchase of assets or services is not recoverable from the taxation authority, in which case the goods and services tax is recognised as part of the cost of acquisition of the asset or as part of the expense item as applicable; and
- Receivables and payables that are stated with the amount of goods and services tax included.

The net amount of goods and services tax recoverable from, or payable to, the taxation authority is included as part of receivables or payables in the statement of financial position.

**NOTES TO THE FINANCIAL STATEMENTS**

FOR THE YEAR ENDED 31 MARCH 2016

**4. CAPITAL ACCOUNT***Share capital*

	The Authority and the Group			
	FY15/16		FY14/15	
	No. of shares	\$	No. of shares	\$
At beginning of the financial year	1,000	1,000	1,000	1,000
Equity injection for the year	1,438,156	1,438,156	–	–
At end of the financial year	1,439,156	1,439,156	1,000	1,000

In November 2008, the Ministry of Finance implemented the Capital Management Framework which aims to sensitise Statutory Boards to the opportunity cost of capital utilised by the Statutory Boards to perform their functions. Under this framework, the Authority issued share certificates to the Minister for Finance, a body incorporated by the Minister for Finance (Incorporation) Act (Cap. 183, 1985 Revised Edition) on 6 March 2009 for 1,000 shares for a consideration of \$1,000. The shares carry neither voting rights nor par value.

During the year, a further \$1,438,156 (2014/2015: \$nil) was injected into the Authority for project funding. The recognition of equity injection is based on the accounting policy of the Authority as stated in Note 3.13.

*Dividend*

In accordance with the Capital Management Framework for Statutory Board, the Authority declared and paid a dividend of \$nil for the financial year ended 31 March 2016 (FY14/15: \$388,000).

AGRI-FOOD AND VETERINARY AUTHORITY AND ITS SUBSIDIARY  
**NOTES TO THE FINANCIAL STATEMENTS**  
 FOR THE YEAR ENDED 31 MARCH 2016

5. PROPERTY, PLANT AND EQUIPMENT

	Leasehold land and buildings	Motor vehicles and vessels	Mechanical and electrical equipment	Furniture and fittings	Laboratory tools and equipment	IT equipment	Development work-in- progress	Total
	\$	\$	\$	\$	\$	\$	\$	\$
The Authority & Group								
Cost:								
At 1 April 2014	185,248,146	3,700,809	19,431,410	5,411,270	42,149,083	7,227,457	5,551,619	268,719,794
Additions	–	–	273,995	7,510,104	1,710,848	323,400	5,334,043	15,152,390
Disposals/written off	–	(67,700)	(689,086)	(536,149)	(2,604,801)	(577,813)	(425,314)	(4,900,863)
Transfers	–	–	57,400	–	576,766	344,150	(978,316)	–
At 31 March 2015 and 1 April 2015	185,248,146	3,633,109	19,073,719	12,385,225	41,831,896	7,317,194	9,482,032	278,971,321
Additions	–	309,343	129,950	3,225	2,900,803	411,882	3,954,930	7,710,133
Disposals/written off	–	(292,652)	(90,487)	(760,261)	(765,495)	(108,501)	(3,951,272)	(5,968,668)
Transfers	1,774,965	–	324,893	(3,096,387)	273,267	6,122,735	(5,399,473)	–
At 31 March 2016	187,023,111	3,649,800	19,438,075	8,531,802	44,240,471	13,743,310	4,086,217	280,712,786
Accumulated depreciation:								
At 1 April 2014	89,590,546	2,021,445	17,584,539	5,026,455	31,028,535	5,659,115	–	150,910,635
Depreciation for the year	6,628,305	351,526	687,822	630,953	2,785,965	744,475	–	11,829,046
Disposals	–	(67,700)	(686,793)	(535,027)	(2,597,463)	(575,718)	–	(4,462,701)
At 31 March 2015 and 1 April 2015	96,218,851	2,305,271	17,585,568	5,122,381	31,217,037	5,827,872	–	158,276,980
Depreciation for the year	6,772,272	337,642	297,383	1,592,092	2,881,990	1,261,407	–	13,142,786
Disposals/written off	–	(292,653)	(89,493)	(380,737)	(762,103)	(108,501)	–	(1,633,487)
Transfers	–	–	–	(943,510)	–	943,510	–	–
At 31 March 2016	102,991,123	2,350,260	17,793,458	5,390,226	33,336,924	7,924,288	–	169,786,279
Net book value:								
At 31 March 2016	84,031,988	1,299,540	1,644,617	3,141,576	10,903,547	5,819,022	4,086,217	110,926,507
At 31 March 2015	89,029,295	1,327,838	1,488,151	7,262,844	10,614,859	1,489,322	9,482,032	120,694,341

**NOTES TO THE FINANCIAL STATEMENTS**

FOR THE YEAR ENDED 31 MARCH 2016

## 5. PROPERTY, PLANT AND EQUIPMENT (continued)

During the year, assets classified as development work-in-progress amounting to \$3,850,243 was transferred to the Ministry of National Development.

## 6. SUBSIDIARY

	The Authority	
	FY15/16	FY14/15
	\$	\$
Unquoted equity shares, at cost	2	2

The subsidiary, which is incorporated in Singapore, is as follows:

Name of company	Principal activity	Equity interest	
		FY15/16	FY14/15
		%	%
Agrifood Technologies Pte Ltd	Consultancy services	100	100

The financial statements of the subsidiary are audited by K.A. Seah & Co.

## 7. TRADE AND OTHER RECEIVABLES

	The Authority		The Group	
	FY15/16	FY14/15	FY15/16	FY14/15
	\$	\$	\$	\$
Trade receivables	1,760,244	1,262,849	1,872,984	1,288,922
Less: Allowance for impairment	(44,823)	(42,182)	(44,823)	(42,182)
Net trade receivables	1,715,421	1,220,667	1,828,161	1,246,740
Other receivables	772,278	407,117	772,278	407,117
Total trade and other receivables	2,487,699	1,627,784	2,600,439	1,653,857
Add: Cash and cash equivalents (Note 8)	68,253,826	63,485,508	68,617,406	63,984,522
Total loans and receivables	70,741,525	65,113,292	71,217,845	65,638,379

## NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 MARCH 2016

## 7. TRADE AND OTHER RECEIVABLES (continued)

Trade receivables are non-interest bearing and are generally on 30 days (FY14/15: 30 days) terms. They are recognised at their original invoice amounts which represent their fair values on initial recognition.

Other receivables are unsecured, interest-free and repayable on demand.

## 8. CASH AND CASH EQUIVALENTS

	The Authority		The Group	
	FY15/16	FY14/15	FY15/16	FY14/15
	\$	\$	\$	\$
Cash and bank balances	68,253,826	63,485,508	68,311,093	63,681,137
Fixed deposits with financial institutions	–	–	306,313	303,385
	<u>68,253,826</u>	<u>63,485,508</u>	<u>68,617,406</u>	<u>63,984,522</u>

Cash and bank balances include \$68,355,538 (FY14/15: \$63,551,687) of cash held with Accountant General's Department ("AGD"). All Statutory Boards and Ministries are required to participate in the Centralised Liquidity Management ("CLM"), whereby the AGD will centrally manage the cash of Statutory Boards and Ministries to achieve greater efficiency. The Authority participated in the CLM with effect from 3 December 2009. The average effective interest rate of the cash with the AGD as at 31 March 2016 was 1.21% (FY14/15: 0.85%) per annum.

## 9. TRADE AND OTHER PAYABLES

	The Authority		The Group	
	FY15/16	FY14/15	FY15/16	FY14/15
	\$	\$	\$	\$
Trade payables	8,787,993	6,472,851	8,821,773	6,540,784
Amount payable with respect to capital expenditure	3,316	847,470	3,316	847,470
Accrued operating expenses	11,991,093	12,732,242	11,991,093	12,732,242
Total trade and other payables	<u>20,782,402</u>	<u>20,052,563</u>	<u>20,816,182</u>	<u>20,120,496</u>
Add:				
Amount due to Government	13,888	108,686	13,888	108,686
Rental, security and other deposits	2,646,291	2,440,027	2,646,291	2,440,027
Total financial liabilities	<u>23,442,581</u>	<u>22,601,276</u>	<u>23,476,361</u>	<u>22,669,209</u>

Trade payables are non-interest bearing and normally settled on 30-day terms.

**NOTES TO THE FINANCIAL STATEMENTS**

FOR THE YEAR ENDED 31 MARCH 2016

## 10. CAPITAL AND OTHER GRANTS RECEIVED IN ADVANCE

	The Authority and the Group	
	FY15/16	FY14/15
	\$	\$
Balance at the beginning of the financial year	1,160,001	1,892,560
Received/receivable during the financial year	1,035,328	7,814,848
Transfer to Deferred capital grants (Note 12)	(2,174,255)	(8,506,545)
Transfer to statement of comprehensive income	(153,600)	(40,862)
	<hr/>	<hr/>
Balance at the end of the financial year	(132,526)	1,160,001

During the year, the Authority received and paid \$11,771,026 (FY14/15: \$710,746) to government agencies and private companies in relation to several development projects.

## 11. PENSION BENEFITS

The Authority operates a defined benefit scheme for certain employees under the provisions of the Pension Act (Cap. 225, 2004 Revised Edition). Defined retirement benefit obligations due to pensionable officers are recognised in the statements of financial position in accordance with the Pensions Act (Chapter 225, 2004 Revised Edition). The pension liability is determined based on the last drawn salaries of the respective pensionable officers and the pensionable officers' cumulative service period served with the Authority at the time of retirement, assuming that all pensionable officers work till the age of 60 years and opt for fully commuted gratuity on retirement. The Authority does not need to bear any medical liabilities for pensionable officers upon their retirement.

The following table summarises the components of benefit expense recognised in the income statement and the amounts recognised in the statement of financial position for the plan:

	The Authority and the Group	
	FY15/16	FY14/15
	\$	\$
Current service cost	119,261	135,737
Interest cost on benefit obligation	115,884	121,511
	<hr/>	<hr/>
	235,145	257,248

**NOTES TO THE FINANCIAL STATEMENTS**

FOR THE YEAR ENDED 31 MARCH 2016

## 11. PENSION BENEFITS (continued)

Changes in the present value of the defined benefit obligation are as follows:

	The Authority and the Group	
	FY15/16	FY14/15
	\$	\$
Balance at the beginning of the financial year	8,008,703	8,892,563
Interest cost (Note 14)	115,884	121,511
Current service cost (Note 14)	119,261	135,737
Actuarial gain on valuation	(345,175)	(176,807)
Payments during the financial year	(537,114)	(964,301)
Balance at the end of the financial year	7,361,559	8,008,703

The provision for pension benefits is payable as follows:

	The Authority and the Group	
	FY15/16	FY14/15
	\$	\$
Within one year	1,913,566	2,161,925
After one year	5,447,993	5,846,778
	7,361,559	8,008,703

The actuarial valuation of the present value of the defined benefit obligation was carried out as at 31 March 2016 by a qualified independent actuary using the projected unit credit method in accordance to SB-FRS 19.

The actuarial assumptions used in computing the pension benefits are:

	FY15/16		FY14/15
	Discount rate:	Active employees	0.81% per annum
	Retirees	1.92% per annum	
Salary inflation:	2.00% per annum		2.00% per annum
Mortality rate:	S0408 Singapore mortality table		S0408 Singapore mortality table
Retirement age:	60 years old		60 years old

## NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 MARCH 2016

## 11. PENSION BENEFITS (continued)

The sensitivity analysis below has been determined based on reasonably possible changes of each significant assumption on the defined benefit obligation as of the end of the reporting period, assuming if all other assumptions were held constant:

	Change in assumption	Impact on defined obligation	
		Increase in assumption	Decrease in assumption
Discount rates			
- Active employees	0.25%	(16,439)	16,594
- Retirees	0.25%	(123,401)	129,226
Future salary increases			
- Active employees	0.25%	20,962	(20,845)
- Retirees	0.25%	–	–
Mortality rates			
- Active employees	10%	(85)	85
- Retirees	10%	(119,518)	129,993

The Authority's defined benefit pension plans are funded by the Authority.

The Authority expects to contribute \$286,680 (FY14/15: \$221,977) to the defined benefit pension plans in the financial year ending 31 March 2017.

The average duration of the defined benefit obligation at the end of the reporting period is 7 years (FY14/15: 6 years).

## 12. DEFERRED CAPITAL GRANTS

	The Authority and the Group	
	FY15/16	FY14/15
	\$	\$
<i>Government grants</i>		
Balance at beginning of the financial year	118,996,228	117,749,995
Transfer from capital grants (Note 10)	2,174,255	8,506,545
Transfer from operating grants (Note 16)	4,089,825	5,094,503
Asset transfer to MND (Note 5)	(3,850,243)	–
	<u>121,410,065</u>	<u>131,351,043</u>
Grants taken to statement of comprehensive income		
- to match depreciation	(12,878,444)	(11,780,368)
- to match disposals	(4,387)	(12,848)
- to match capital items expensed-off	(508,010)	(561,599)
	<u>(13,390,841)</u>	<u>(12,354,815)</u>
Balance at the end of the financial year	<u>108,019,224</u>	<u>118,996,228</u>

## NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 MARCH 2016

## 13. MFRD FUND

This fund was transferred to the Authority on 1 April 2009 to be held in trust for activities undertaken by the Marine Fisheries Research Department ("MFRD")/Southeast Asian Fisheries Development Centre ("SEAFDEC") in Singapore.

The assets and liabilities of the fund are as follows:

	The Authority and the Group			
	FY15/16		FY14/15	
	S\$	US\$	S\$	US\$
ACCUMULATED SURPLUS	129,047	95,428	213,552	155,446
Represented by:				
CURRENT ASSETS				
Cash and bank balances	19,015	14,061	11,034	8,032
Fixed deposits	110,032	81,367	202,518	147,414
	129,047	95,428	213,552	155,446
Net current assets, representing net assets	129,047	95,428	213,552	155,446

The income and expenditure of the fund for the years ended 31 March 2016 and 2015 are as follows:

	The Authority and the Group			
	FY15/16		FY14/15	
	S\$	US\$	S\$	US\$
INCOME				
Interest from fixed deposits	743	550	748	544
Less:				
EXPENDITURE				
General and administrative expenses	85,248	63,038	69,630	50,684
	(84,505)	(62,488)	(68,882)	(50,140)

Note: For purpose of making references to financial statements of other departments of SEAFDEC, items in the income and expenditure and assets and liabilities had been translated to United States dollar ("US\$") at the exchange rate prevailing at balance sheet date of US\$1 = S\$1.3523 (31 March 2015: US\$1 = S\$1.3738).

**NOTES TO THE FINANCIAL STATEMENTS**

FOR THE YEAR ENDED 31 MARCH 2016

## 14. STAFF COSTS

	The Authority		The Group	
	FY15/16	FY14/15	FY15/16	FY14/15
	\$	\$	\$	\$
Salaries, allowances and bonus	68,777,709	64,598,068	68,777,709	64,598,068
Central Provident Fund contributions	7,901,507	6,924,151	7,901,507	6,924,151
Pension benefits (Note 11)	235,145	257,248	235,145	257,248
Other staff costs	5,704,484	4,887,687	5,703,604	4,883,907
	<u>82,618,845</u>	<u>76,667,154</u>	<u>82,617,965</u>	<u>76,663,374</u>

	The Authority and the Group	
	FY15/16	FY14/15
	\$	\$
Staff costs include key management remuneration as follows:		
Short term employee benefits	4,633,431	4,798,000
Post-employment benefits	135,978	39,328
	<u>4,769,409</u>	<u>4,837,328</u>

Key management refers to the leadership team who have the authority and responsibility for planning, directing and controlling the activities of the Authority.

**NOTES TO THE FINANCIAL STATEMENTS**

FOR THE YEAR ENDED 31 MARCH 2016

## 15. GENERAL AND ADMINISTRATIVE EXPENSES

	The Authority		The Group	
	FY15/16	FY14/15	FY15/16	FY14/15
	\$	\$	\$	\$
Transport and travel	749,495	707,942	771,078	719,757
Office supplies	832,855	893,019	833,191	893,682
Laboratory supplies	3,247,488	2,373,839	3,247,488	2,373,839
Utilities	2,189,527	2,649,052	2,189,527	2,649,052
Rental - operating leases	7,429,842	7,196,571	7,431,872	7,199,498
Rental - others	14,313	23,657	14,313	23,657
Maintenance of office premises	7,449,404	7,230,830	7,449,404	7,230,830
Maintenance of information systems	9,453,716	9,533,568	9,453,716	9,533,568
Maintenance of office and laboratory equipment	2,124,239	1,889,390	2,124,239	1,889,390
Auditors' remuneration	79,000	76,000	81,200	78,200
Laboratory fees	6,551,982	5,566,571	6,551,982	5,566,571
Public education	1,294,447	1,206,410	1,294,447	1,206,410
Professional fees	619,576	852,627	735,578	955,941
Estate management fee	3,674,466	2,825,244	3,674,466	2,825,244
Board honorarium	132,341	110,779	149,221	127,659
Goods and services tax	3,870,005	3,410,126	3,870,005	3,410,126
Security services	1,774,349	1,708,264	1,774,349	1,708,264
HPAI expenditure	441,330	576,329	441,330	576,329
Property tax	1,451,500	1,448,300	1,451,500	1,448,300
Food fund	5,377,055	5,628,338	5,377,055	5,628,338
Payment to international organisations	2,807,293	2,692,928	2,807,293	2,692,928
Property, plant and equipment written off	539,534	425,314	539,534	425,314
Other operating expenses	13,744,327	8,218,553	13,749,215	8,225,851
	<u>75,848,084</u>	<u>67,243,651</u>	<u>76,012,003</u>	<u>67,388,748</u>

**NOTES TO THE FINANCIAL STATEMENTS**

FOR THE YEAR ENDED 31 MARCH 2016

## 16. OPERATING GRANTS

	The Authority and the Group	
	FY15/16	FY14/15
	\$	\$
Received/receivable during the financial year	131,201,755	114,609,314
Transfer to deferred capital grants (Note 12)	(4,089,825)	(5,094,503)
	<hr/>	<hr/>
Transfer to statement of comprehensive income	127,111,930	109,514,811
	<hr/> <hr/>	<hr/> <hr/>

## 17. TOTAL GOVERNMENT GRANTS

Total grants received/receivable from the Government since the establishment of the Authority are as follows:

	The Authority and the Group	
	FY15/16	FY14/15
	\$	\$
Capital grants	299,873,820	298,838,492
Operating grants	1,169,778,899	1,038,577,144
	<hr/>	<hr/>
	1,469,652,719	1,337,415,636
	<hr/> <hr/>	<hr/> <hr/>

## 18. CONTRIBUTION TO CONSOLIDATED FUND

The contribution to the Consolidated Fund is required under section 3(a) of the Statutory Corporations (Contributions to Consolidated Fund) Act (Cap. 319A). The contribution rate and the framework governing such contributions are determined by the Ministry of Finance. The contribution is based on 17% (FY14/15: 17%) of the surplus for the year.

	The Authority and the Group	
	FY15/16	FY14/15
	\$	\$
Current year provision	949,415	508,580
Over provision from prior year	(1)	(48,634)
	<hr/>	<hr/>
	949,414	459,946
	<hr/> <hr/>	<hr/> <hr/>

**NOTES TO THE FINANCIAL STATEMENTS**

FOR THE YEAR ENDED 31 MARCH 2016

**19. INCOME TAX EXPENSE**

The major components of income tax expense for the years ended 31 March 2016 and 2015 are:

	The Group	
	FY15/16	FY14/15
	\$	\$
Current income tax expense	–	807
Under provision in respect of prior years	46	4
	<u>46</u>	<u>811</u>

A reconciliation between tax expense and the product of accounting profit multiplied by the applicable corporate tax rate for the years ended 31 March 2016 and 2015 are as follows:

Surplus before contribution to Consolidated Fund and taxation	5,573,813	3,010,204
Less: The Authority's surplus before contribution to Consolidated Fund and income tax expense	5,584,794	2,991,644
	<u>(10,981)</u>	<u>18,560</u>
Income tax at statutory rate of 17% (FY14/15: 17%)	(1,867)	3,155
Singapore statutory stepped income exemption and tax rebate	–	(2,348)
Non-deductible expenses	112	–
Deferred tax assets not recognised	1,755	–
Under provision of income tax expense in respect of prior years	46	4
	<u>46</u>	<u>811</u>

As at 31 March 2016, the Group has unabsorbed losses of approximately \$10,000 (2015: nil) available for set-off against future taxable income, subject to compliance with the relevant provisions of the Singapore Income Tax Act and agreement within the tax authorities.

Deferred tax asset arising from the unabsorbed tax losses have not been recognised since there is no reasonable certainty of their realisation in future periods.

**20. CAPITAL COMMITMENT**

Capital expenditure contracted during the financial year but not provided for in the financial statements amounted to \$11,347,607 (FY14/15: \$18,706,141) at the end of the reporting period.

**NOTES TO THE FINANCIAL STATEMENTS**

FOR THE YEAR ENDED 31 MARCH 2016

## 21. OPERATING LEASE COMMITMENTS

*As lessee*

The future minimum payments under non-cancellable operating leases for office premises and office equipment that were contracted at the reporting date but not recognised as liabilities are as follows:

	The Authority and the Group	
	FY15/16	FY14/15
	\$	\$
Not later than one financial year	7,158,187	8,347,601
Later than one financial year but not later than five financial years	15,939,251	23,031,918
	<u>23,097,438</u>	<u>31,379,519</u>

The leases for office premises which were contracted with rent payable will expire from 31 May 2016 to 2 December 2019.

*As lessor*

The future minimum amounts receivable under non-cancellable operating leases for the premises at the Authority's Fishery Ports that were contracted at the reporting date but not recognised as receivables are as follows:

	The Authority and the Group	
	FY15/16	FY14/15
	\$	\$
Not later than one financial year	4,797,106	5,015,668
Later than one financial year but not later than five financial years	3,691,179	6,365,470
	<u>8,488,285</u>	<u>11,381,138</u>

The leases on the premises of the Authority's Fishery Ports which were contracted with rent receivable will expire from 30 April 2016 to 14 March 2019.

**NOTES TO THE FINANCIAL STATEMENTS**

FOR THE YEAR ENDED 31 MARCH 2016

**22. SIGNIFICANT RELATED PARTY TRANSACTIONS**

The Authority is a statutory board incorporated under the Agri-Food and Veterinary Act (Note 1). As a statutory board, all Government ministries and departments, statutory boards and Organs of State are deemed related parties of the Authority.

During the year, the Authority has significant transactions with its supervisory ministry, the Ministry of National Development, and other related parties listed below, other than statutory charges and transactions disclosed elsewhere in the financial statements

	FY15/16	FY14/15
	\$	\$
Expenditure paid to:		
Ministry of National Development	5,435,466	5,028,124
Health Sciences Authority	6,504,201	5,506,970
Subsidiary	880	3,780
Grants/Income received from:		
Ministry of National Development	126,154,811	96,960,788
Subsidiary	4,814	29,647
Amount due to:		
Ministry of National Development	–	9,343
Amount due from:		
Ministry of National Development	19,147,599	20,168,127

**23. FINANCIAL RISK MANAGEMENT**

The Authority and Group are exposed to financial risks arising from its operations and the use of financial instruments. The key financial risks include currency risk, interest rate risk, credit risk and liquidity risk.

The Authority and Group's overall risk management strategy seeks to minimise adverse effects from the unpredictability of financial markets on the Authority and Group's financial performance.

**(a) Currency risk**

Currency risk is the risk that the fair value or future cash flows of a financial instrument will fluctuate because of changes in foreign exchange rates. The Authority and the Group have minimal exposure to foreign exchange risk as they transact mainly in Singapore dollars.

**NOTES TO THE FINANCIAL STATEMENTS**

FOR THE YEAR ENDED 31 MARCH 2016

## 23. FINANCIAL RISK MANAGEMENT (continued)

(b) *Interest rate risk*

Interest rate risk is the risk that the fair value or future cash flows of a financial instrument will fluctuate because of changes in market interest rates.

The Group's interest-bearing financial instruments relate mainly to cash with AGD. The interest rates for Cash with AGD are based on deposit rates determined by the financial institutions with which the cash are deposited and are expected to move in tandem with market interest rate movements. The Authority and the Group are of the view that any fluctuation in interest rates is not likely to have a significant impact on the surplus before contribution to consolidated fund and taxation and to retained earnings.

(c) *Credit risk*

Credit risk is the risk that one party to a financial instrument will cause a financial loss for the other party by failing to discharge an obligation.

The maximum exposure to credit risk for the Authority and the Group are as follows:

	The Authority		The Group	
	FY15/16	FY14/15	FY15/16	FY14/15
	\$	\$	\$	\$
Trade receivables	1,760,244	1,262,849	1,872,984	1,288,922
Other receivables	772,278	407,117	772,278	407,117
<b>Total</b>	<b>2,532,522</b>	<b>1,669,966</b>	<b>2,645,262</b>	<b>1,696,039</b>

The Authority and the Group have no significant concentrations of credit risk. The Authority and the Group have policies in place to ensure that sales of products and services are made to customers with appropriate credit history, and that surplus funds are placed with reputable banks.

## (i) Financial assets that are neither past due nor impaired

Trade receivables and other receivables that are neither past due nor impaired are with creditworthy debtors with good payment track record with the Authority and the Group. Cash and cash equivalents that are neither past due nor impaired are placed with banks with high credit ratings.

## NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 MARCH 2016

## 23. FINANCIAL RISK MANAGEMENT (continued)

## (c) Credit risk (continued)

## (ii) Financial assets that are past due and/or impaired

There is no other class of financial assets that is past due and/or impaired except for trade receivables. The ageing analysis of trade receivables (gross) is as follows:

	The Authority		The Group	
	FY15/16	FY14/15	FY15/16	FY14/15
	\$	\$	\$	\$
≤ 90 days	160,391	48,574	241,391	49,474
> 90 days	53,441	74,312	75,942	74,312

Based on historical default rates, the Group believes that no impairment allowance is necessary in respect of trade receivables past due up to 90 days. These receivables are mainly arising by customers that have a good credit record with the Group.

The changes in impairment loss in respect of trade receivables during the year are as follows:

	The Authority and the Group	
	FY15/16	FY14/15
	\$	\$
Balance at beginning of the financial year	42,182	25,838
Amount charged for the year	39,198	36,460
Amount written off	(3,408)	(3,951)
Amount written back	(33,149)	(16,165)
Balance at end of the financial year (Note 7)	44,823	42,182

**NOTES TO THE FINANCIAL STATEMENTS**

FOR THE YEAR ENDED 31 MARCH 2016

## 23. FINANCIAL RISK MANAGEMENT (continued)

(d) *Liquidity risk*

Liquidity risk is the risk that an entity will encounter difficulty in meeting obligations associated with financial liabilities. Liquidity risk may result from an inability to sell a financial asset quickly at close to its fair value.

The Authority and the Group's liquidity risk is minimal as the Authority and the Group maintain sufficient cash balances and internally generated cash flows to finance their operating activities and committed liabilities. In addition, the Authority is financially supported by grants primarily from the Government.

The table below summarises the maturity profile of the Group's financial instruments at the end of the reporting period based on contractual undiscounted payments:

	≤ 1 year	
	FY15/16	FY14/15
	\$	\$
<b>The Authority</b>		
<i>Financial assets</i>		
Trade and other receivables	2,487,699	1,627,784
Cash and cash equivalents	68,253,826	63,485,508
	70,741,525	65,113,292
<i>Financial liabilities</i>		
Trade and other payables	20,782,402	20,052,563
Amount due to Government	13,888	108,686
Rental, security and other deposits	2,646,291	2,440,027
	23,442,581	22,601,276
<b>The Group</b>		
<i>Financial assets</i>		
Trade and other receivables	2,600,439	1,653,857
Cash and cash equivalents	68,617,406	63,984,522
	71,217,845	65,638,379
<i>Financial liabilities</i>		
Trade and other payables	20,816,182	20,120,496
Amount due to Government	13,888	108,686
Rental, security and other deposits	2,646,291	2,440,027
	23,476,361	22,669,209

## NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 MARCH 2016

### 24. FAIR VALUE OF ASSETS AND LIABILITIES

#### *Fair values*

The fair value of a financial instrument is the amount at which the instrument could be exchanged or settled between knowledgeable and willing parties in an arm's length transaction, other than in a forced or liquidation sale. Fair values are obtained from quoted market prices, as appropriate.

#### *Financial instruments whose carrying amounts approximate fair value*

Management has determined that the carrying amounts of cash and cash equivalents, receivables, payables and accruals, amount due to Government and rental, security and other deposits reasonably approximate their fair values because these are mostly short term in nature or is assumed to approximate their fair values.

### 25. CAPITAL MANAGEMENT

The Authority and the Group's objectives when managing capital are to safeguard the Authority and the Group's ability to continue as a going concern and to support the Authority's mission. Under the Capital Management Framework for Statutory Boards, the Authority is expected to declare annual dividend to the Minister for Finance, a body incorporated by the Minister for Finance (Incorporation) Act, in return for any equity injection. The annual dividend to be declared is based on an agreed formula stipulated by the Ministry of Finance in the Finance Circular Minute No. M26/2008.

There were no changes in the Group's approach to capital management during the year.

The Authority and its subsidiary are not subject to externally imposed capital requirements.

### 26. AUTHORISATION OF FINANCIAL STATEMENTS FOR ISSUE

The financial statements of the Authority and its subsidiary for the year ended 31 March 2016 were authorised for issue by the Board Members of the Authority on 1 July 2016.





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