



TEMASEK
FOUNDATION
ecosperity

Developing Sustainable Solutions

ANNUAL REPORT 2017/18



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Temasek Foundation Ecosperity is a Singapore-based non-profit philanthropic organisation established in 2016 that seeks to marshal ideas and innovations to address environmental, biological and other adversities that endanger people and the sustainability of our planet.

It funds and supports ideas and innovations for actual applications through commercialisation and enterprise, to bring about impactful improvements to the liveability of our world, especially in cities.

Temasek Foundation Ecosperity is a member of the Temasek Family of Foundations, which was established by Temasek to better serve the evolving needs of the wider community, reinforcing its approach to sustainable giving.

Board of Directors and Chief Executive

Chairman	Mr Teo Ming Kian Chairman, Vertex Venture Holdings Limited
Director	Dr Howard Califano Director, SMART Innovation Centre
Director	Mr Khoo Teng Chye Executive Director, Centre for Liveable Cities
Director	Mrs Trina Loh Former Group Managing Director, GuocoLand (Singapore) Pte Ltd
Director	Ms Janet Sarah Neo Global Strategy Head, Global Green Growth Institute
Director	Mr Tan Cheng Gay Chairman and Chief Executive Officer, EnGro Corporation Limited



From left to right: Mr Zhuang Chenchao, Mr Rajiv Wahi, Mrs Trina Loh, Mr Teo Ming Kian, Mr Tan Cheng Gay.

Director	Mr Rajiv Wahi Director, Aris PrimePartners Asset Management Pte Ltd
Director	Mr Zhuang Chenchao Managing Director, Zebra Global Capital Co-founder and Former Chief Executive Officer, Qunar.com
Chief Executive	Mr Lim Hock Chuan Temasek Foundation Connects Temasek Foundation Ecosperity

Staff Team

Ms Heng Li Lang
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Communications and Partnerships


Mr Anders Soh
Manager, Programmes and
Partnerships

Ms Angeline Wong
Manager, Administration and
Programme Management

Mr Jeffrey Tong
Associate Manager,
Programmes and Partnerships



From left to right: Dr Howard Califano, Ms Janet Sarah Neo, Mr Khoo Teng Chye, Mr Lim Hock Chuan.

A decorative pattern of stylized, light green leaves arranged in a circular, sunburst-like formation around the central text.

**WE FIRST FOCUS OUR
MISSION TO ENHANCE
THE LIVEABILITY OF
SINGAPORE AND
OTHER CITIES.
AND TO DO IT IN
AN ENDURING
AND SUSTAINABLE WAY.**

Chairman's Message

Plugging into green innovation

Our planet is under stress. Climate change has brought about extreme weather. Floods, storms, heat waves and forest fires have taken many lives, broken many families and caused untold misery. Infectious diseases spread faster, crossing borders readily. Air, water, food – essentials of living, are being contaminated. Eco-diversity is threatened with deforestation. Accelerating urbanisation will exacerbate this deteriorating situation. Temasek Foundation Ecosperity was launched in 2016 as a philanthropic organisation to encourage, facilitate and catalyse ideas and innovations to solve the causes of some of these problems.

The task is huge. Hence we first focus our mission to enhance the liveability of Singapore and other cities. And to do it in an enduring and sustainable way.

Cities are where people concentrate, resources consumed, waste generated. They are getting denser. Many more are emerging. If we can bring about solutions, systems and capabilities against such environmental, biological and other adversities affecting the cities, better yet, pre-empt them, these could find more widespread applications.

Long has been the belief that development, hence prosperity, has to be compromised for ecological sustainability. We don't think so. Hence our name – Ecosperity – to lend emphasis that each reinforces the other and brings opportunities for the other.

We know there are people with ideas and passionate in wanting to confront adversities they identify with.

To them, we encourage them to step up, borrowing a rallying call I used in another initiative:

**I SEE THIS BIG PROBLEM.
I HAVE THIS INNOVATIVE SOLUTION.
IT COULD FAIL.
BUT IMAGINE, WHAT IF IT'S SUCCESSFUL.**

Our world will become even more liveable, an even better place, for all of us and generations to come.

Many have stepped up. We have supported 12 projects to achieve specific sustainable goals in FY17/18, which is an increase from four supported projects in FY16/17. Committed funding in FY17/18 also saw a 188 per cent increase to S\$17.3 million, from S\$6.0 million in FY16/17.

The numbers themselves do not show the full picture of how the new Foundation and the Ecosperity belief are being embraced by the community and like-minded partners. Without their support, we would not have been able to plug into as many innovative solutions, and help propel them towards actual applications and eventual impact on our lives. We look forward to these projects bringing real benefits for people in Singapore and beyond, and through their successes, inspire many more and start a virtuous cycle of fruitful innovation to address the challenges that will only become greater.

Looking ahead, we want to extend our call beyond our national boundary, just as these issues cut across countries – to rally contributions and foster collaboration in this common fight against the adversities confronting humankind. This will also mean more concerted efforts to work with stakeholders to spread knowledge and expertise, promote thought leadership and engage on a deeper level to build a more vibrant community joined in the common cause to enhance the liveability of our cities.

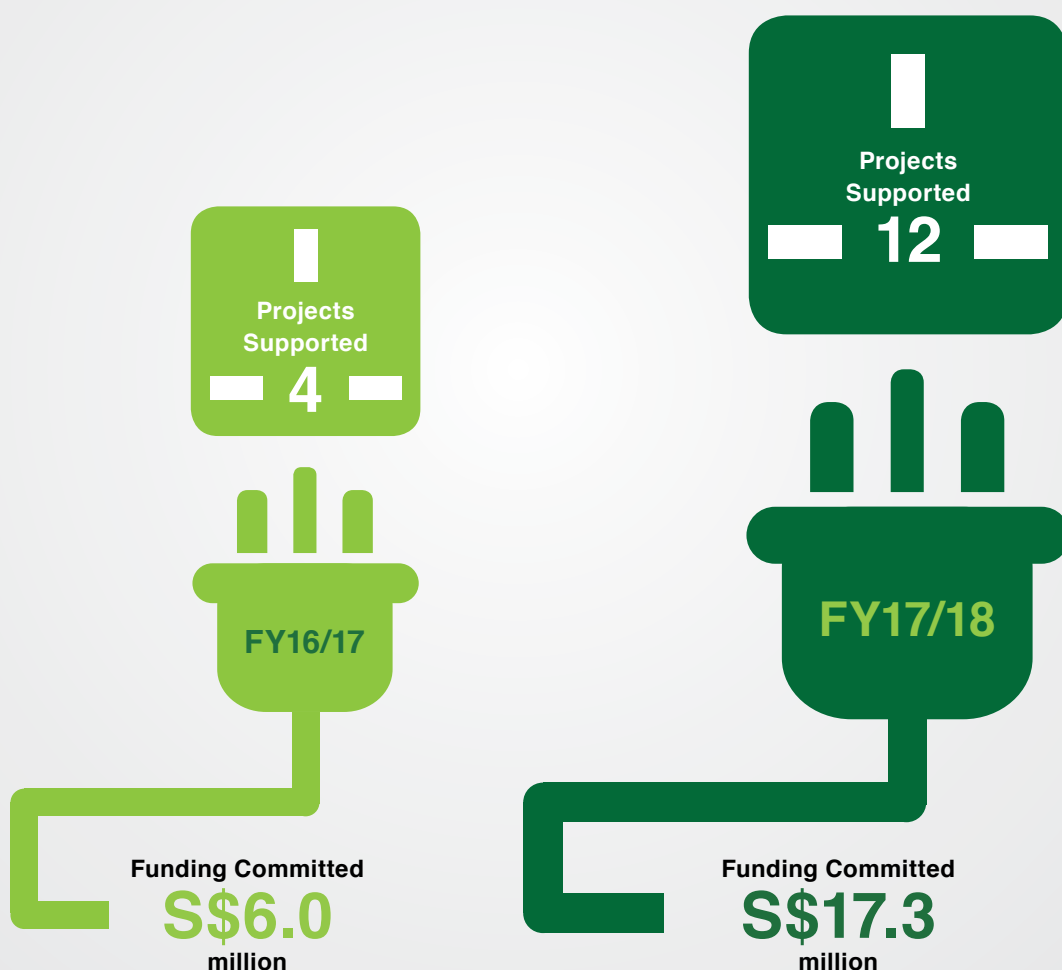
We hope you will join us as we continue to work towards leaving a lasting and sustainable impact on the world, for our children and grandchildren.

Mr Teo Ming Kian
Chairman

Key Highlights

Temasek Foundation Ecosperity funds translational research that are at Technology Readiness Level 6 or above, in order to help researchers produce operational prototypes which can then be developed into commercial products, benefitting Singapore and beyond. In addition to funding, we also help researchers link up with partners and platforms for test-bedding, as well as potential investors for the next stage of development.

Since its establishment in 2016, the Foundation has made three open calls for proposals on improving liveability and sustainability, which include but are not limited to areas such as: air; biodiversity; chemical safety; energy; food; infectious disease management; land; noise; waste management; water; and weather and climate. Proposals are assessed competitively and with regard to their potential impact, in terms of their desirability, technical feasibility and commercial viability.



Building an ABC World

Temasek Foundation Ecosperity is committed to the realisation of the Ecosperity aspiration – where prosperity is twinned with a treasured ecology. We work with partners and fundees to build a better and more sustainable future for all – an ABC World of

active economies, beautiful societies, and a clean earth, and support Temasek's contributions to the 17 United Nations Sustainable Development Goals (SDGs).¹ The Foundation's 16 projects advance seven out of 11 applicable SDGs.



¹ Visit www.un.org/sustainabledevelopment/sustainable-development-goals for more information on the SDGs.

Spotlight: Active Economy

The following projects support the achievement of an active economy: in terms of reducing the adverse environment impact of cities, including air quality; reducing food waste and food loss; reducing waste generation through prevention, reduction, recycling and reuse; and developing reliable and resilient infrastructure.

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RESPONSIBLE CONSUMPTION AND PRODUCTION

FOOD WASTE TRACKER

Generating insights using image recognition technology to reduce food waste.

Good For Food Pte Ltd

UPCYCLING FOOD WASTE

Converting fermented food waste into fish feed.

Temasek Life Sciences Laboratory

BLACK SOLDIER FLIES

Converting organic waste to animal feed and fertiliser for sustainable food production.

National University of Singapore

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SUSTAINABLE CITIES AND COMMUNITIES

'VORTEX' FANS

Fans using the Vortex principle to provide outdoor cooling.

Vortec Pte Ltd

'N95' RESPIRATORY MASKS FOR CHILDREN

New masks with add-on ventilation fan designed for young children.

Innosparks Pte Ltd

OUTDOOR EVAPORATIVE COOLING

Evaporative air coolers for outdoor spaces.

Innosparks Pte Ltd

HYDROGEL TO LOWER HUMIDITY

Piloting of a coating to reduce relative humidity and improve thermal comfort.

National University of Singapore

Researchers at the National University of Singapore are piloting a coating that can reduce relative humidity and improve thermal comfort.

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INDUSTRY INNOVATION AND INFRASTRUCTURE

QUANTUM KEY DISTRIBUTION ENCRYPTOR

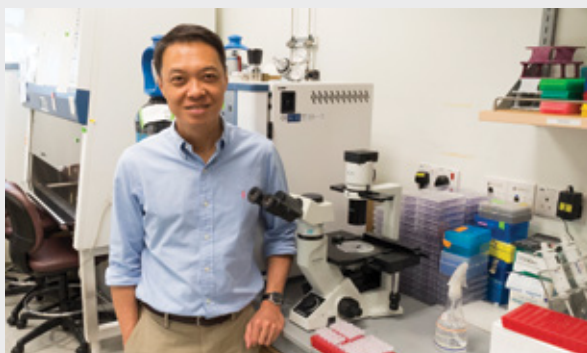
Quantum-safe encryption devices.

S-Fifteen Pte Ltd

Spotlight: Beautiful Society

The following projects support the achievement of a beautiful society: in terms of ensuring sustainable food production systems and resilient agricultural practices; supporting the research and development of vaccines and medicines of communicable and noncommunicable diseases; and ending the epidemics of tropical diseases.

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Tychan made ready the world's first Zika antibody for clinical trials in a record nine months.

THERAPEUTICS FOR VIRUSES

Building a quick response to mass disease outbreaks.

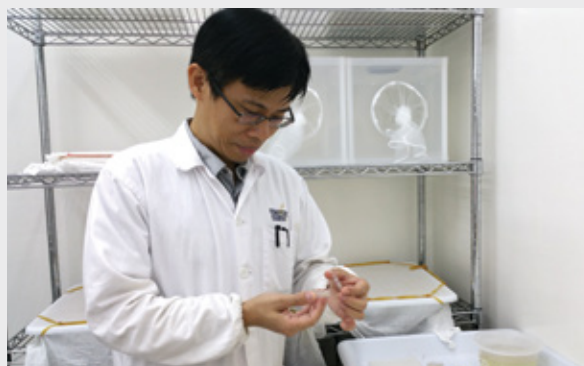
Tychan Pte Ltd



BIO-BASED PESTICIDES

Developing alternative pesticides based on plants and gene repression techniques.

Temasek Life Sciences Laboratory



Temasek Life Sciences Laboratory is developing bio-friendly pesticides that can exterminate mosquitoes without affecting other living organisms.

2

COMMUNITY FARMING

Stackable, closed-loop farming for high-volume food production.

Edible Garden City

URBAN RECIRCULATION AQUACULTURE SYSTEM

Indoor vertical system for high-volume fish production.

Temasek Life Sciences Laboratory



Spotlight: Clean Earth

The following projects support the achievement of a clean earth: in terms of reducing the degradation of natural habitats and halting the loss of biodiversity; mobilising for sustainable forest management; and ensuring affordable, reliable and modern energy services.

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HYDROGEN FUEL CELLS

Renewable energy storage solution.

EPS (S) Pte Ltd

7

AFFORDABLE AND CLEAN ENERGY

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ENDANGERED SPECIES CONSERVATION

Reproduction of endangered species using induced pluripotent stem cells.

ESCAR

BIODIVERSITY FOR DRAGONFLY HABITAT

Establishment of dragonfly habitat and research on its potential against natural pests.

Garden City Fund

FIRE MONITORING ANALYTICS

Generating fire activity reports to provide insights on occurrence and distribution over land use/types.

National University of Singapore's Centre for Remote Imaging, Sensing and Processing

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LIFE ON LAND

Financial Highlights

STATEMENT OF FINANCIAL POSITION

As at 31 March 2018

	31 March 2018 \$	31 March 2017 \$
Assets		
Non-current		
Plant and equipment	12,429	11,558
Current		
Grant receivable	5,402,811	326,700
Prepayment	6,273	-
Cash and cash equivalents	571,743	779,735
Total assets	5,980,827	1,106,435
	5,993,256	1,117,993
Accumulated funds		
Funds	5,610,767	803,157
Liabilities		
Current		
Other payables	382,489	314,836
Total funds and liabilities	5,993,256	1,117,993

STATEMENT OF FINANCIAL ACTIVITIES

As at 31 March 2018

	Year ended 31 March 2018 \$	Period from 1 June 2016 (the date of incorporation) to 31 March 2017 \$
Incoming resources		
Programme grants	2,720,705	2,231,035
Operating and capital grants	945,496	292,508
Total incoming resources	3,666,201	2,523,543
Resources expended		
Programme expenses	2,720,705	2,231,035
Depreciation of plant and equipment	8,054	716
Employee benefit costs	657,306	206,389
General and administrative expenses	280,136	85,403
Total resources expended	3,666,201	2,523,543
Net incoming resources	-	-

The Directors' statement, independent auditor's report, and full details of the financial statements are available at www.temasekfoundation-ecosperity.org.sg.

About the Temasek Family of Foundations

Since inception in 1974, Temasek has established 18 endowments focusing on building people, building communities, building capabilities and rebuilding lives. The endowments were regrouped in 2016 under six Temasek Foundations, to better plan and deliver community programmes under their respective mandates.



Temasek Foundation

Cares focuses on improving the lives of underprivileged

individuals, families and communities in Singapore, which include the elderly, those needing palliative care and people with special needs. In addition to its existing endowment, Temasek Foundation Cares also manages four others – the Balaji Sadasivan Endowment for healthcare capability building, the Ee Peng Liang Endowment for social services capability building, the Health and Wellness Endowment that focuses on preventive health and the general well-being of the community, and the Temasek Emergency Preparedness Fund for enhancing community emergency resilience and preparedness.



Temasek Foundation

Connects seeks to build bridges and promote

dialogue and mutual understanding across international communities. Its programmes reach out to leaders from the public, private and people sectors in ASEAN and Asia. These programmes advance collective knowledge and mutual understanding in key areas that are important to Singapore and on a global front. The Foundation manages the Hon Sui Sen Endowment and the S Rajaratnam Endowment.



Temasek Foundation

Ecosperity champions sustainability of our ecosystem, in order to enhance sustained liveability

in Singapore and beyond. It funds translational research that brings about enduring solutions, systems and capabilities against environmental, biological and other adversities affecting our community. Temasek Foundation Ecosperity manages the Sustainability Endowment.



Temasek Foundation

Innovates supports programmes which focus

on developing innovative and practical solutions for a better life through research and development. It aims to strengthen research capabilities by nurturing talents and encouraging cross collaborations. The Foundation manages two endowments – Singapore Millennium Foundation and a science, technology, engineering and mathematics endowment which supports Temasek Life Sciences Laboratory, a biomolecular research institute.



Temasek Foundation

International partners Singapore and international

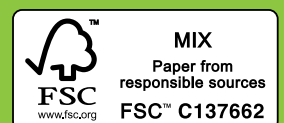
organisations to fund and support capability building programmes in the areas of healthcare, education, public administration, urban management and disaster response in Asia and beyond. These programmes enable human and social capital development, contributing towards a more vibrant and connected global community, with positive networks of cooperation. The Foundation manages the STEP Endowment, which focuses on social and cultural activities, leadership, environment and innovation, to help youth in Asia build bridges of friendship, goodwill and understanding.



Temasek Foundation

Nurtures supports programmes which focus on

education and professional development, with the aim of building a community of passionate learners who contribute to society. Through its six endowments, the Foundation develops talent and fosters learning and growth, especially for the young in the areas of music, arts, sports, mathematics and science, engineering and technology.



This report is printed on environmentally friendly paper.



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