

OUR ENVIRONMENT

SAFEGUARD  
NURTURE  
CHERISH



Published by  
**National Environment Agency**  
Environment Building, 40 Scotts Road, #19-00  
Singapore 228231  
<http://www.nea.gov.sg>

Produced by  
**Ink on Paper Communications Pte Ltd**  
57 Ubi Ave 1, #06-03 Ubi Centre, Singapore 408936  
Tel: (65) 68414028 Fax: (65) 68410943  
<http://www.iop.sg>

Project Manager: Alicia Tan  
Researcher Writer: Tan Chui Hua  
Editors: Marcus Ng, Jennifer Hollie Chen  
Creative Director: Tan Boon Hua  
Photographers: Richard Koh - Amaranthine Photos, Lua Hwa Beng

Copyright © 2012 National Environment Agency

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording or otherwise, without permission of the copyright owner. To the best of our knowledge, information presented in this book is accurate at the time of printing.

National Library Board, Singapore Cataloguing-in-Publication Data

Tan, Chui Hua, 1979-  
Safeguard, nurture, cherish our environment / [researcher writer,  
Tan Chui Hua ; editors, Marcus Ng, Jennifer Hollie Chen]. – Singapore :  
National Environment Agency, c2012.  
p. cm.  
ISBN : 978-981-07-2528-0

1. Singapore. National Environment Agency – Anniversaries, etc.
2. Environment policy – Singapore. 3. Environmental protection – Singapore. 4. Natural resources – Singapore.
5. Hazardous wastes – Singapore – Management. I. Ng, Marcus. II. Chen, Jennifer Hollie.
- III. Singapore. National Environment Agency. IV. Title.

TD171.5                    363.7095957 -- dc23                    OCN794345758

Printed by NPE Print Communications Pte Ltd

FSC logo

# CONTENTS

4	Foreword
6	Chairman's Message
7	CEO's Message
8	A Bold Step Forward
18	Safeguard: A Place To Live
70	Working Among Us
120	And The Weather Tomorrow Is...
136	A Novel Approach
164	The Environment Is Ours
190	A Future We Share
208	A 10-Year Journey For Environmental Sustainability
210	Glossary
212	Acknowledgements
214	References

# Foreword

Dr Vivian Balakrishnan, Minister for the Environment and Water Resources

In the 1960s, a walk around the city area would sometimes entail close encounters with pungent piles of rubbish on the roadside, choked drains and illegal hawkers operating from makeshift stalls with compromised food hygiene. If you happened to be near the Singapore River, the familiar stench would be an indelible memory.

Such was the Singapore many of us grew up in. Fortunately, our early leaders took a strong stand to protect the environment and safeguard public health, way before being clean and green became fashionable. It formed the Anti-Pollution Unit in 1970, and the Ministry of the Environment (ENV) in 1972. In a few decades, the situation was completely transformed. The clean air, clean water, clean land we enjoy today is a result of the government's and our people's commitment to the vision of a safe, clean and sustainable Singapore.

However, protecting the environment is a continuous effort. At the turn of the 21<sup>st</sup> century, it was clear that environmental and public health challenges had become more complex and cross-cutting. ENV thus underwent strategic restructuring to become a lean headquarters focusing on policy issues while a new statutory board, the National Environment Agency (NEA), was formed to take care of operations.

Within the last decade, NEA fulfilled its role to safeguard and enhance Singapore's environment. Through the use of innovative technological solutions, it has improved its situational awareness

and operational capacity. The agency can tell us how our air quality is faring, whether construction sites are flouting noise control regulations or what the weather is going to be like in the next three hours, at all times of the day.

Not only has it made its operations more effective and comprehensive, the agency has also proven itself to be invaluable during many episodes in Singapore's history. One such instance was the SARS outbreak in 2003. Even though the outbreak took place less than a year after NEA's formation, it mobilised its resources swiftly to support Singapore through the crisis, from contact-tracing in the early stage to raising awareness of public hygiene. Another crucial role of the agency is one which many of us are familiar with – that is dengue control and prevention. As the lead agency in Singapore's battle against dengue, NEA has put together a noteworthy strategy which covers swift operational response to dengue outbreak clusters, rigorous scientific research to support vector and pathogen surveillance and effective mass outreach to involve every citizen to do his or her part.

But the greatest transformation NEA has wrought is in its successful partnership with the community to safeguard and cherish our environment. More and more youths, working professionals, retirees, grassroots leaders and corporations are stepping up to be change-makers for the environment, thanks to NEA's efforts over the years. At the same time, NEA has also undergone metamorphosis

and shed the rigid enforcer image of environmental and public health protection. On top of these achievements, NEA is also playing an important role in positioning Singapore as the region's environmental hub, as it actively identifies channels to share and export our environmental solutions.

2012 marks the 10<sup>th</sup> anniversary of NEA. As the agency readies itself for an even more challenging environmental future beset with issues such as climate change and diminishing resources worldwide, it is also time for us to reflect upon how far NEA has come, and the difference it has made to Singapore. Much of the work in environmental and public health protection is hard, onerous and often goes unnoticed. But the beautiful, clean, healthy environment we have today would not have come about if not for the relentless drive of the people behind the work – from ENV times to NEA. Every single person has contributed, from the leaders and management to the professionals and the rank and file. These people deserve our tribute and appreciation. This is the reason for this book, to tell the stories of those who have made a difference in our living surroundings.

As we move forward, I am certain NEA will continue to serve the public well, with the strong sense of pride and dedication it has always displayed. I wish the agency a happy 10<sup>th</sup> anniversary, with many more fulfilling years to come.



# Chairman's Message

Chew Gek Khim, Chairman, NEA



In less than 50 years, Singapore has rapidly urbanised from a country with a population of about 1.89 million to over 5 million today. Concurrently, it has achieved a more than 90-fold increase in Gross Domestic Product. We saw a country with *kampongs* (Malay: villages) and many street vendors transform into a bustling metropolis with a reputation for being one of the cleanest cities in Asia with one of the highest rates of wealth per capita. It is not uncommon for cities with such rapid economic growth to lose their greenery and turn into concrete jungles with massive traffic jams and heavy pollution.

However, we were fortunate enough that Singapore's first prime minister, Lee Kuan Yew, took a keen interest in ensuring that Singapore's environment was protected. Today, Singaporeans enjoy a high quality of life, with good air, access to public parks and minimal pollution despite being one of the most densely-populated countries in the world. Even more noteworthy is the fact that Singapore has the reputation of being amongst the top most liveable cities in Asia.

However, it cannot be assumed that this will always remain the case as our country and our neighbours continue to grow economically and urbanise. The physical constraints that we face in terms of land will require us to balance the needs of economic growth with environmental sustainability even more. We will also see more complex environmental challenges such as climate change, potential trans-boundary environmental pollution which affects Singapore's air and shores, changing demographics and rising public expectations. It cannot be business as usual for NEA.

When I took on the role of Chairman in 2008, climate change arising from the global increase in carbon emissions, pollution, new vector-borne diseases as well as rising sea levels were but some of the challenges that NEA had to deal with. While NEA has achieved

much since it was formed in 2002, further effort must be made for us to work towards higher standards of environmental sustainability.

To prepare NEA to meet future external and domestic challenges, we need to aim for higher environmental standards and targets, because it is environmental sustainability that will enable us to continue to enjoy our current quality of life. However, higher environmental standards cannot be achieved by NEA alone. The community must take ownership. For it is only when our community and businesses are prepared to change the way we conduct business, manufacture and live can we then build a sustainable, liveable and vibrant Singapore, one we can be proud of to call our home.

On our part, we at NEA have to build up new capabilities and leverage on new technology to prepare for these emerging issues. To do so, we must attract and retain talent in NEA. Over the last two years, NEA has been working on a blueprint that will chart the direction for NEA in the next 5 to 10 years. To achieve this, NEA as an organisation must keep up with the times, and remain responsive, resourceful and relevant. With the blueprint in place and implemented, NEA will be on a more robust footing, and our organisation should be confident that we are ready to take on new challenges. The transformation of NEA will enable the organisation to respond better, faster and with greater agility while working together with the community to address local issues and potential environmental risks. The outcome will be a stronger and more resilient NEA.

On behalf of the NEA Board of Directors, I wish NEA a happy 10<sup>th</sup> anniversary.

# CEO's Message

Andrew Tan, Chief Executive Officer, NEA



NEA is an agency which wears many different hats. It safeguards our environment, ensuring that every Singaporean can enjoy clean air, land and water. It covers a wide range of issues, from pollution control, public cleanliness, waste management and resource efficiency to food hygiene and vector control. In many ways, NEA plays a vital role in the lives of Singaporeans.

The work that NEA does allows us to live, work and play in a beautiful, healthy city. With a more complex and dynamic environment and new challenges such as climate change and other emerging threats confronting us, NEA has to be ever ready to safeguard and protect Singapore's environment. Beyond our own efforts, we must be able to enlist the support of every Singaporean to safeguard, nurture and cherish our environment.

When I joined NEA in 2009, my key priority was to transform and equip the agency to become future-ready. NEA needs to develop better, more effective ways to keep Singapore clean and green even as the population grows and urban development steps up. We need to raise our standards for environmental performance, and involve every citizen in our endeavours. Yet at the same time, we must make sure that Singapore stays competitive economically.

We have developed a strategic road map in line with the Sustainable Development Blueprint to achieve our vision of a clean and green Singapore. In this road map, we have four key thrusts — achieve higher environmental standards, deliver better services to the public, build new capabilities in the agency and develop each and every one of NEA's officers. Some of the steps we are taking include further enhancing our air and water quality, raising cleanliness standards, encouraging greater resource efficiency, building better hawker centres with affordable food for all, increasing our efforts in

nurturing Singaporeans to come forth and take ownership of their environment and investing more resources to develop our people to their fullest potential. All these new measures we are putting in place will help position Singapore as the cleanest and greenest city in the region.

NEA's good track record in safeguarding our environmental and public health, operational effectiveness, service standards and engagement of the community puts us in good stead for the future. In the last decade, NEA officers have done their utmost for Singapore's environment. They have made NEA the agency it is today and they will take NEA to greater heights.

This 10<sup>th</sup> anniversary publication acknowledges the efforts of our officers over the last decade and explains our role. It also captures the spirit of the agency, the remarkable dedication our people have demonstrated in their work, from keeping our air, water and streets clean to preventing lapses in public hygiene. I am confident that this culture of excellence will see us through the many challenges ahead.