

TOWARDS ENVIRONMENTAL SUSTAINABILITY

State of the Environment 2005 Report
Singapore



TOWARDS ENVIRONMENTAL SUSTAINABILITY

State of the Environment 2005 Report
Singapore



Contents

Minister's Message	02	Chapter 3 Land	32	Chapter 7 International Involvement	78
Introduction	04	Chapter 4 Public Health	44	The Way Forward	92
Chapter 1 Air	08	Chapter 5 Community Involvement	56	Annexes	96
Chapter 2 Water	18	Chapter 6 Industry and Innovation	70		



Those familiar with Singapore are aware of our severely limited natural resources. With such a small land area and high population density, every square metre counts.

Where water is concerned, much effort has been expended over the years to assure an adequate supply for all of Singapore's needs.

Other aspects of the environment, such as air quality, vector control and food hygiene, also have a tangible effect on our quality of life and even Singapore's appeal as a city for business and tourism.

Protecting the environment

Thus, from the earliest days of nationhood, we have taken an environmentally cautious approach. Not wanting economic and social progress to be at the expense of the environment, the government sought win-win solutions whenever there were potential conflicts. Because environmental issues touch on the work of virtually every branch of government, close inter-agency cooperation has been the way, with a clear commitment towards the long-term good. This has always been the Singapore way.

Our success is also due in no small part to the contributions and backing of the Singaporean public. Our people have rallied round to support initiatives like Clean and Green Week, NEWater and Singapore's OK. Such public involvement is also part of the Singapore way of getting things done.

Owning and enjoying the environment

Singaporeans have a wonderful capacity for celebrating the environment. For example, the Singapore River has become the scenic backdrop for al fresco dining and buzzing nightlife. Our sparkling reservoirs double as nature reserves and parks, where generations have enjoyed family outings, relaxing jogs and romantic strolls. And in response to public suggestions, we are now opening up these areas to a wider range of recreational activities.

In fact, thousands of Singaporeans regularly take time off their busy schedules to care for the environment, and their numbers are growing. Some act as voices, speaking up on policies, championing the cause and educating their fellow-citizens. Others serve as hands and feet - witness the volunteers patrolling our waterways, residents recycling discarded materials, and students cleaning up their school grounds, parks and beaches. Then there are the silent but supportive majority, who take care not to litter or pollute the environment even as they enjoy its offerings.

This sense of shared ownership and identity among Singaporeans of all ages and from all walks of life is precious and heartwarming. We need to strengthen it further for the sake of our future. As we all breathe the same air, drink the same water, and live on the same land, everyone has an equal stake.

Securing tomorrow's environment

This report paints a picture of where we came from, and what we are doing to ensure a good tomorrow. We have done well, especially given Singapore's unique circumstances. But, as this report spells out, there are some challenges ahead.

The question of sustainability needs to be addressed urgently. We have only begun to scratch the surface. It is increasingly clear that environmental, social and economic sustainability are inextricably linked. It is also clear that Singapore's sustainability will improve if each one of us can modify our habits and make more environmentally friendly choices. Looking at how far we have come, this is neither going to be difficult nor impossible.

With strong fundamentals, commitment and joint ownership by the people, public and private sectors, I am confident that we can enjoy our environment and leave a good legacy for our children.

That, too, is the Singapore way.

Dr Yaacob Ibrahim

Minister for the
Environment and Water Resources



What this report is about

This report tells the environmental part of Singapore's story – achievements to date, current conditions and future challenges. It covers the areas of responsibility of the Ministry of the Environment and Water Resources (MEWR), namely:

- ensuring a clean and hygienic living environment
- managing the complete water cycle – from sourcing, collection, purification and supply of drinking water; to the treatment of used water and recycling into NEWater; as well as storm water drainage.

This also includes the work of MEWR's two statutory boards – the National Environment Agency (NEA) and the Public Utilities Board (PUB).

What Singapore was like

To better understand the report, it is helpful to delve a little into Singapore's environmental history.

A British colony since the 19th century, Singapore gained full independence in 1965. Small in size and lacking natural resources, Singapore faced dire prospects, both economically and environmentally. Among other things:

- Water was supplied to a limited number of consumers in town. As population grew, new sources of water supply had to be found.
- Many households lacked modern sanitation and relied on the manual collection of nightsoil
- Littering and illegal dumping could be observed on land, at coastal areas and in waterways
- Food- and vector-borne diseases were common, often unwittingly spread by itinerant hawkers.

Although the prognosis was poor, we have managed to perform well both economically and environmentally. This can be credited to passionate political leaders, efficient public servants and sheer hard work by Singaporeans at all levels. This winning combination is a recurring theme in the report.



The Singapore River Story

Sir Stamford Raffles, landed on Singapore's north bank in 1819 to start a British trading post. With the establishment of a busy port at its mouth, the Singapore River became the economic lifeline of the city throughout the 19th and into the 20th centuries.

By the 1970s, however, the river had seen better days. The port had shifted away, the river itself was an unsanitary dumping ground for street hawkers, and the historic buildings along its banks fell into disrepair.

The turning point arrived in 1977, when the government launched a massive clean-up of the river. A number of public agencies including those under the then Ministry of the Environment toiled together on the various engineering, architectural, resettlement and construction aspects to breathe new life into the Singapore River. The Herculean task would demand strong commitment from all involved.

By the 1990s the old stench had faded into a bad memory. The once-polluted river and run-down structures have morphed into a clean waterway lined with sensitively restored heritage buildings reborn as eateries, shops and offices.





Hawker centres – an oxymoron?

Food and produce sellers hawking their wares were common sights along the roads and alleys of old Singapore. While this may sound charming and nostalgic, in reality many of these street hawkers practised poor hygiene.

The government therefore decided in the 1960s to re-site the hawkers to permanent locations where they would have access to a clean water supply and proper refuse disposal facilities. These markets/food centres, comprising individually operated stalls under one roof, came to be known as “hawker centres”.



Today, the 128 hawker centres feature prominently in Singaporeans’ everyday life. People from all social backgrounds flock to them for quick, tasty and extremely affordable meals. Every Singaporean has his/her favourite, and some hawker centres have even become tourist attractions.

For further developments relating to this Singaporean phenomenon, see Chapter 4.

The state of Singapore today

Today, Singapore is still small in size and lacking natural resources but the island is clean, green and modern.

Other parameters have also changed. We are now:

Densely populated;
Intensely urbanised;
Highly industrialised;
Economically successful.

These pose new environmental challenges of their own which are discussed in the various chapters.

Although Singapore today enjoys a quality environment, MEWR is already charting a new direction, moving beyond

environmental performance to environmental sustainability. This is one of the three pillars of sustainable development – the other two being economic development and social progress.

For Singapore to be environmentally sustainable, it is clear that we will need to focus on recycling and minimisation of waste, water multiplication, new water sources, and energy efficiency and conservation.

It is also clear that MEWR, NEA and PUB, will not be able to do this on their own. The People, Private and Public sectors will need to take responsibility for, and ownership of, our environment. For a more complete picture, this report also covers developments in these sectors.



A Singapore snapshot

(data as of 2003)

Geographical position = 1° N of the equator

Our warm climate means that organic refuse decays quickly, and that tropical diseases pose a threat.

Land area = 697 square kilometres

Water catchment areas occupy 50% of this limited land area. On top of this, Singapore must fit all land uses that a nation needs, including housing, commerce, industry, schools, hospitals, defence, roads and landfill.

Population = 4.24 million

Unlike our land area, Singapore's population is still climbing at a steady clip. This is essential to our economic growth, as human capital is our only resource.

Per capita GDP = S\$38,000

As affluence increases, so do aspirations and consumerism. These, combined with population growth, cause more waste and harmful emissions to be generated.