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EXPERIENCE SINGAPORE



Helping Myanmar

S'pore strengthens its cooperation with Myanmar



Pole Position

S'pore obtains observer status at Arctic Council



Water World

Manatees and more at S'pore's river-themed wildlife park

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COOPERATION PROGRAMME



WORLD WATER DAY 2013

Coming together for water



Ed's Note

Dear readers,

As an island state, Singapore is surrounded by water. And Singapore is indeed fortunate to be able to tap on technological advancements to produce clean water for consumption as well as commercial and industrial purposes. A precious resource in so many ways, it is the theme of this issue of *Experience Singapore*, and perhaps a timely rejoinder of water's impact in our lives.

Find out how Singapore celebrates this precious resource during the annual World Water Day activities in **Coming together for water**.



↑ **River Safari**,
pg 6

Water also serves strategic purposes for Singapore's relevance as an international seaport, which sits on the path of one of the busiest sea routes in the world. In **Pole position**, learn more about the significance of Singapore being granted observer status in the Arctic Council in May 2013.

A new river-themed attraction is also making waves as Asia's first and only river-themed wildlife park. In **Water world**, read about the River Safari which offers visitors close encounters with freshwater inhabitants from profiled rivers such as the Amazon, Mississippi, Congo, Nile, Ganges, Murray, Mekong and Yangtze.

Like a constant and steady stream, Singapore's collaboration with our friends in capacity-building is an ongoing initiative. **Old friends and neighbours** details how Singapore and Myanmar have deepened ties through an enhanced

technical assistance package – the Singapore-Myanmar Technical Cooperation Programme.

We hope that you will find the magazine a good read.

Teo Lay Cheng

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Focus

WATER CONSERVATION

Coming together for water

Singapore celebrates World Water Day each year, spreading the message of water conservation to ensure that the country's demand for water is sustainable. **WORDS BY FAIROZA MANSOR**

Photos courtesy of PUB: Angie Ng

THE LAST 50 YEARS has seen Singapore diversify its water supply, but merely putting in place the infrastructure to supply water is not enough. As Singapore's population and economy continue to grow, the need to conserve water has become increasingly important. The annual World Water Day (WWD) — designated by the United Nations General Assembly to mark the importance of water in daily life — is observed in Singapore every year in a bid to encourage the country's residents to adopt better water consumption habits.

This year, about 35,000 people commemorated WWD on 16 March, with the theme "Every Drop Counts". Celebrations were held across 11 sites, including Marina Barrage, the Lorong Halus Wetland (Serangoon Reservoir), Kallang River @ Bishan-Ang Mo Kio Park, Jurong Lake and Lower Seletar Reservoir. The festivities at Marina Barrage — built →



→ Singapore's Prime Minister Lee Hsien Loong joined 3,000 people in the formation of a giant water droplet on the rooftop of the Marina Barrage



to create Singapore's 15th and only city reservoir — took centrestage as Singapore's Prime Minister Lee Hsien Loong and Minister for the Environment and Water Resources, Dr Vivian Balakrishnan, joined in the celebrations.

The event kickstarted with a morning walk which was conceived as a reminder of the challenges faced by people from countries with little or no access to clean water. PM Lee officially launched WWD by pouring a pitcher containing raw water collected from various reservoirs in Singapore into a tray, to symbolise the importance of reservoirs as a source of water supply. Thereafter, he joined 3,000 people in the formation of a giant water droplet on the roof top of Marina Barrage. This formation represents the importance of collective efforts in saving water.

↑ The giant water droplet formed by 3,000 participants

Addressing those present, PM Lee urged Singaporeans to work together to conserve water. "In many countries, people don't have access to clean water. Here in Singapore, we've got clean water in our reservoirs, from our taps, in our homes, in our lives," he said. We need to work together to use this precious resource responsibly, he added, calling water conservation a "national project".

Other activities organised included a sailing clinic conducted by the Singapore Sailing Federation, a story-telling segment by the National Library Board and a mass yoga session on the green roof of Marina Barrage.

Singaporeans from other parts of the island were not left out. Over at Lorong Halus Wetland, a landfill

"In Singapore, we've got clean water in our reservoirs, from our taps, in our homes, in our lives. We need to work together to use this precious resource responsibly."

MR LEE HSIEN LOONG, SINGAPORE'S PRIME MINISTER



↑ Minister for Defence Dr Ng Eng Hen (left) and Sam Tan, Mayor of Central Singapore District at Bishan - Ang Mo Kio Park



FOUR NATIONAL TAPS

Singapore's water comes from the following sources

LOCAL CATCHMENT WATER

Two-thirds of Singapore's land area is water catchment, and rainwater is collected and stored in 17 reservoirs around the island, making it the only city in the world where urban stormwater harvesting is carried out on such a large scale.



NEWATER

NEWater, introduced in 2003, is produced by purifying treated used water using advanced membrane technologies namely, microfiltration, reverse osmosis and ultraviolet disinfection. NEWater is safe for drinking, but has mainly been used for industrial and air-con cooling purposes at wafer fabrication parks, industrial estates and commercial buildings. During dry months, NEWater is also used to top-up Singapore's reservoirs.

IMPORTED WATER

Singapore continues to import water from the state of Johor, Malaysia, under the 1962 Water Agreement which will be in effect until 2061.

DESALINATED WATER

Desalinated water has been a part of Singapore's water supply since 2005. Sea water goes through a pre-treatment process to remove suspended particles. In the second stage, the water undergoes reverse osmosis, the same technology used in the production of NEWater. After treatment, desalinated water is blended with treated water before it is supplied to homes and industries in the western part of Singapore.



now transformed into a wetland teeming with biodiversity, about 1,000 residents living in the North-Eastern part of Singapore gathered for a mass picnic. Joining in a mass clean-up of Lorong Halus and Serangoon Reservoir in kayaks was Coordinating Minister for National Security and Minister for Home Affairs and Deputy Prime Minister Teo Chee Hean.

Over at Jurong Lake, in the western part of Singapore, an art installation sculpture made from 11,121 used plastic water bottles was unveiled. Made by students from Bukit View Secondary School over a period of two months, the sculpture illustrated the amount of water, a whopping 4,560 litres, consumed by an individual in Singapore over 30 days. The art installation was meant to remind individuals on how they can play their part to cut down on water usage.

→ Water Wally, the mascot for water conservation

↓ Students took home tangible reminders of the importance of conserving water



→ Dragonboating on Marina Reservoir was part of the programme at the Marina Barrage

EMBRACING TECHNOLOGY

Singapore shared its water management strategy at the 2nd Asia-Pacific Water Summit (APWS) held in Chiang Mai, Thailand on 20 May 2013.

The Summit was organised by the Thai government to explore – among other issues – the various challenges in securing water resources and mitigating water-related natural disasters.

Dr Vivian Balakrishnan, Singapore's Minister for the Environment and Water Resources told regional leaders and development agencies how Singapore – with the involvement of private companies – integrated its storage and drainage systems to ease the huge strain water and sanitation networks come under due to rapid development.

Singapore has also implemented new water purifying technologies such as reverse osmosis on a large scale. Using such technology ensures that the price of water charged to the consumer is the actual cost of producing it – this in turn encourages people to conserve water and "send the correct signals to private sector investors", said Dr Balakrishnan. It also meant they had the incentive to work with the Government in producing the best water.



Water World

Visitors to the newly-opened River Safari can discover up close the freshwater habitats found in some of the world's most iconic rivers.

WORDS BY FAIROZA MANSOR



ASIA'S FIRST AND ONLY

river-themed wildlife park, Singapore's River Safari can easily double up as the set of an Indiana Jones adventure movie — except that its exotic plants and animals are as real as they come.

The park, which opened its doors to the public on 3 April 2013, offers close encounters with river inhabitants including river giants and megafishes such as the Mekong Giant Catfish and the Giant Freshwater Stingray. Considered one of the world's largest fresh-

water fishes, the Mekong Giant Catfish can grow up to 3m in length and the stingray can reach 5m.

Then there is the Giant River Otter, one of the world's biggest species, at up to 1.8m in length. It can be viewed at the Amazon River zone, one of the eight river habitats in the park. The other rivers profiled are the Mississippi, Congo, Nile, Ganges, Murray, Mekong and Yangtze.

A wide, meandering path allows visitors to explore the 12-hectare park with ease. At every turn, visitors will be "immersed" in a different river zone, its freshwater habitat displayed in an aquarium designed



to replicate a cross-sectional view of a particular river. Besides these, the Amazon River and the Yangtze zones also have special exhibits, most notable of which are of course, the Giant Pandas Kai Kai and Jia Jia.

On loan from the China Wildlife Conservation Association, the two pandas make their home at the Giant Panda Forest, located in the Yangtze River zone. In Wild Amazonia in the Amazon River zone, visitors can get a close-up view of species that are only safe to look at from behind a glass wall — like anacondas and piranhas.

← Colourful fishes such as the Jewel Cichlid can be seen at the Congo River exhibit

↑ The Red Panda also makes its home at the Giant Panda Forest

↓ The Mekong Giant Catfish is one of the star attractions at the Mekong River zone



When the **AMAZON RIVER QUEST** opens at the end of this year, visitors can board a boat that brings them up close to more than 30 fascinating animal species that live along the edges of the Amazon River. These include the **jaguar, Brazilian Tapir, and Giant Anteater.**



← Manatees swim gracefully in the 22m high Amazon Flooded Forest zone

→ Crowd favorites Kai Kai and Jia Jia hold court at the Giant Panda Forest

The centrepiece of the Amazon Flooded Forest is the stunning 22m-high aquatic display of the South American rainforest that is submerged every year during the rainy season, when the river rises. Here, about 18 animal species including manatees and arapaimas — the world's largest scaled freshwater fish — swim among giant trees.

As Mrs Anna Steidman, 41, a tourist from the United Kingdom, said: "[River Safari] is nothing like I've ever seen before. It's a rare opportunity to see what lives in fresh, river waters which are normally murky in the wild."

All in, there are about 5,000 animal specimens representing 300 animal species (including 42 endangered species) and more than 150 plant species on show. As Mrs Steidman's eight year-old son, Louis, said, "I feel like a great explorer here!"



"[River Safari] is nothing like I've ever seen before. It's a rare opportunity to see what lives in fresh, river waters which are normally murky in the wild!"

MRS ANNA STEIDMAN,
tourist from the United Kingdom

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SPOT THEM!

IF THE PANDAS ARE NAPPING IN THEIR DENS OR JUST NOT IN FULL VIEW, THERE ARE STILL PLENTY OF EXOTIC ANIMALS TO LOOK OUT FOR

The endangered **PADDLEFISH** (above) at the Mississippi River zone is a curious sight with its spatula snout — called a rostrum — and a large mouth which is always open as it swims about, to trap food.



The ferocious **AFRICAN TIGERFISH** can be seen at the River Nile zone. It has dagger-shaped teeth that can rip giant chunks out of a prey.



The **CHINESE GIANT SALAMANDER** at the Yangtze River Zone is the world's largest amphibian.



The pair of **GIANT RIVER OTTERS** — a critically endangered species — at the Wild Amazonia enclosure are amazingly active — they never seem to stop for a moment of rest.



Old friends and neighbours

Singapore and Myanmar deepen ties through collaboration in capacity-building.



“SINGAPORE AND MYANMAR ARE OLD FRIENDS.” Singapore President Tony Tan Keng Yam made this point during Singapore’s first State Visit to Myanmar in April 2013. Speaking at the State Banquet hosted by Myanmar President U Thein Sein, President Tan also described Singapore as a steadfast supporter of Myanmar’s development.

Singapore has been providing technical assistance to Myanmar bilaterally under the Singapore Cooperation Programme (SCP), and under the Initiative for ASEAN Integration (IAI). The IAI is a programme initiated by Singapore to help the new members of ASEAN enhance their capacities to promote regional integration.

DOING MORE

When Myanmar embarked on its reform process, Singapore supported Myanmar’s reforms by offering an enhanced technical assistance package — the Singapore-Myanmar Technical Cooperation Programme (SMTCP) — during President U Thein Sein’s State Visit to Singapore in January 2012. The SMTCP is designed to support Myanmar’s reform process through capacity-building in economic development, human resource development and public administration.

← Myanmar President U Thein Sein (left) welcoming Singapore President Tony Tan during the latter’s State Visit to Myanmar in April 2013.



← Myanmar Union Minister in the President's Office U Soe Thane receiving a briefing on Singapore's experience in urban planning at the Urban Redevelopment Authority (URA) during his visit in December 2012.



Since the launch of the SMTCP, we have conducted 35 training courses and study visits for Myanmar officials in legal affairs, banking and finance, public housing and urban planning.

These included high-level programmes, such as the study visit led by Myanmar Union Minister in the President's Office U Soe Thane in December 2012. The delegation learnt about Singapore's Foreign Direct Investments (FDI) and industrial policies, as well as our experience in industrial park development.

In April 2013, Myanmar Union Attorney-General Dr Tun Shin also led a legal study visit to Singapore. Following the visit, Singapore conducted a legal workshop for the Myanmar Attorney-General Office in June 2013.

“We are very keen on helping Myanmar. If this country takes off, it's good for ASEAN.”

**SINGAPORE'S EMERITUS SENIOR MINISTER
GOH CHOK TONG**

We are also implementing a comprehensive suite of training courses for Myanmar officials to help prepare them for Myanmar's ASEAN Chairmanship in 2014.

A NEW CHAPTER

Both Governments are continually exploring ways to broaden collaboration in new areas such as agriculture and finance.

↑ Myanmar Deputy Minister for Information U Ye Htut giving a mock media interview as part of the strategic media management workshop in Singapore, April 2013.

“We are very keen on helping Myanmar. If this country takes off, it's good for ASEAN,” said Singapore's Emeritus Senior Minister Goh Chok Tong during a bilateral visit to Myanmar in June 2013.

In particular, Singapore is doing more in the area of vocational education to help Myanmar build up a pool of skilled workers to attract foreign investments into the country. In April 2013, the Singapore Government announced its plan to set up a modest vocational training institute (VTI) in Yangon. The VTI will help train Myanmar trainers in areas such as hospitality, electrical skills and electronics, engineering services, and facilities management. The VTI is expected to train its first batch of trainers next year.



← Legal workshop for the Myanmar Attorney-General Office in June 2013.



Pole position

Singapore's latest role as observer in the Arctic Council gives it front row seats to making a difference for the world's ocean resources.

WORDS BY ARTI MULCHAND

AFTER A YEAR and a half of lobbying, Singapore has been granted observer status in the Arctic Council. Comprising eight member states — the United States, Russia, Canada, Iceland, Denmark (representing Greenland and the Faroes), Finland, Norway and Sweden — the Council acts as a high-level intergovernmental forum for political, economic, environmental and scientific cooperation in the Arctic. Singapore joins the ranks of 11 other countries with observer status, which allows attendance at Council meetings and contribution to the Council's subsidiary bodies.

Singapore's observer status was announced in the Swedish High North city of Kiruna in May this year. The interest of Singapore, a tropical city-state, in the icy north might be baffling at first sight, but the rapid thawing of the Arctic ice cap has far-reaching consequences for the Republic.

In a statement following the good news, Singapore Prime Minister Lee Hsien Loong said,

"We look forward to contributing to the work of the Arctic Council. Singapore is not situated in the Arctic, but developments there — whether the melting of the ice cap or opening of new sea routes — will have important implications for Singapore as a low-lying island and international seaport."

GAINING INSIGHT

As an observer, Singapore will get to attend working group sessions and be able to share experiences and expertise on maritime issues, and give it an insight into significant changes in the region that will have an impact on the country. For one, the melting ice has made way for a new shipping route in the north which cuts travel time from Europe to Asia by half. This route, which last year carried 46 vessels and 1.2m tonnes of cargo, a third more than in 2011, could divert shipping that now goes through the Suez Canal and Singapore, one of the world's busiest ports.

Also, as a low-lying island,





↑ The meeting room in Kiruna City Hall before the Ministerial Meeting began.

↔ A pair of ice breakers built by Keppel Singmarine.

“Singapore is not situated in the Arctic, but developments there — whether the melting of the ice caps or opening of new sea routes will have important implications for Singapore as a low-lying island and international seaport.”

SINGAPORE PRIME MINISTER LEE HSIEN LOONG

Singapore is especially vulnerable to rising sea levels. To be able to react effectively, it needs a front-row seat to any changes on this front.

Being granted observer status in the Arctic Council also marks a significant change in how the world sees Singapore; not just as a maritime nation but as a country with a part to play in protecting the world’s ocean resources. The Arctic region — which

includes the Barents and Norwegian seas — is home to one-fifth of the world’s fisheries.

“Singapore is now an ocean state with an important maritime sector,” said Singapore’s Special Envoy for Arctic Affairs Kemal Siddique.

The Arctic Council was set up in 1996, and its rotating two-year chairmanship was handed over to Canada at the May 15 ministerial meeting. Besides Singapore, five other nations — China, India, Italy, Japan and South Korea — were also granted observer status on the council, bringing the total number of observer nations to 12. Existing observer nations are Britain, Germany, France, the Netherlands, Poland and Spain.

A NEW FRONTIER

Over the last few years, Singapore has been deepening its understanding of the region and marketing its expertise in shipping, coastal management and maritime governance. In his role as Special Envoy for Arctic Affairs, Ambassador Siddique visited and established contact with the eight Arctic states, as well as several Arctic indigenous communities including the Saami and the Inuit.

Singapore has plenty to gain from a strong foothold in the north.

Besides being rich in seafood, the Arctic, by some estimates, now holds 13 per cent of the world’s undiscovered oil reserves and 30 per cent of undiscovered gas deposits. With significant expertise in LNG extraction infrastructure, Singaporean firms are

well placed to contribute their expertise in this area. The Centre for Offshore Research and Engineering at the National University of Singapore, and the Agency for Science, Technology and Research have also been researching several related areas including oil exploration in the harsh, sub-zero climate.

AIDING DEVELOPMENT

Singapore also has broad expertise in running major port facilities, and could help develop port infrastructure for the predicted shipping boom. Meanwhile, the Republic has been developing vessels, drilling rigs and oil rigs that can be used in the Arctic region. Five years ago, Keppel Singmarine built Asia’s first two icebreakers for Russia’s Lukoil. The icebreakers can operate in temperatures as low as minus 45 degrees Celsius, and cut through ice blocks of more than 1.7m thick. The company is now working on the world’s first Arctic ice-worthy and green jack-up floating oil rig. Also in the works is the next generation of vessels such as Arctic lifeboats.

With an established track record of responsible maritime policies, Singapore will be able to contribute in areas such as oil spill prevention and maritime traffic management. For example, the Maritime and Port Authority of Singapore has committed up to S\$100 million over the next few years in incentives to owners of Singapore-flagged vessels that can create energy-efficient and environment-friendly ship designs.

Finally, Singapore has a continued stake in ensuring freedom of navigation and the peaceful resolution of maritime disputes. Ambassador-At-Large, Tommy Koh chaired the United Nations Convention on the Law of the Sea about 30 years ago. Back then, the law marked a milestone which provided a framework for the global governance of the world’s oceans and seas.

It now plays an even more important role with the world’s coastal population projected to grow to six billion by 2025; and as more and more of the ocean’s resources is harvested.

