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**APPY TRAVELS**  
WeChat eyes global expansion, P16-18

**GREEN POWER**  
Helping Asia meet clean energy needs, P32



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# Running dry

SOLUTIONS IN SHORT SUPPLY AS WATER SHORTAGES DESTROY CROPS AND LIVELIHOODS ACROSS ASIA

By **PEARL LIU** in Hong Kong  
*For China Daily Asia Weekly*

**R**ecord high temperatures, changing and erratic rain patterns, a lack of investment, poor policy environments and a general lack of awareness have led to one of the worst and longest droughts in recent memory. The drought stretches from West to East Asia, and from the dry north of China and Mongolia to the southern reaches of the dangerously low Mekong River in Southeast Asia.

The need to better preserve water globally, drought conditions or not, was underscored during World Water Day on March 22. Across much of the region, the day came and went virtually unnoticed. Desperate drought conditions have become the mainstay across large tracts of Asia. Some of the most dramatic fallout of the drought have been felt in India, where thousands waited for rains that never came, and saw their crops fail and debts pile up. P Chengal Reddy, secretary general of the Consortium of Indian Farmers

Associations, stressed how frustrating the situation is: "More than 60 percent of India's agriculture depends on the monsoon (season), which means heavy rains. "Currently we see 30-40 percent of farmland receiving less than normal rain since last year." At 73, Reddy has been working with Indian farmers for more than five decades. "This could be the worst ever," he said. "We have gone from 50 feet deep 30 years ago to 1,000 feet in search of water now." As many as 22 out of 32 of the bigger cities in India face daily water

shortages. Figures by the international charity WaterAid suggest that 75.8 million Indians, or 5 percent of a total population of 1.25 billion, have to buy water at high rates or use supplies contaminated with sewage or chemicals. Other parts of Asia too have been hit hard by shortages of water or outright drought. The problem is increasingly serious and quite visible throughout large parts of Pakistan, Mongolia, North China and Southeast Asian countries around the Mekong River, like Vietnam.

**SEE "WATER" P5**



**Cover Story**  
Waterways help to build bridges, page 6  
Ensuring a steady flow, page 7



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## CoverStory

# Water: In short supply

FROM PAGE 1

In fact, the Mekong, a source of water for hundreds of millions of people, is at its lowest level since 1926. Japan has also been affected by dry conditions.

Whatever the cause of the droughts, according to NASA, February 2016 proved the warmest February on record for 137 years.

In Thailand, the reservoirs of four dams along the Chao Phraya, the river with the largest watershed in the country, are at their lowest levels in more than two decades and could run out of water by July unless significant rain falls between now and then.

Thailand's Ministry of Agriculture has called on farmers to switch to crops that need less water or downsize their spring-summer plantings.

During a press conference earlier this year, Suthep Noipairoj, director-general of Thailand's Royal Irrigation Department, said: "This year (will) see the lowest irrigation water level since 1994."

In March, China opened a dam to alleviate drought in neighboring countries such as Vietnam, Cambodia, Laos, Myanmar and Thailand.

"This is quite alarming," Ong Choon Nam, director of the National University of Singapore's Environmental Research Institute, told *China Daily Asia Weekly*. "It is pretty serious across the region."

"Last year was already one of the hottest years, and this year we might see the temperature going up further."

And it is not just fluctuating temperatures, he added, as the rainfall pattern has also changed. "It has become very erratic and unpredictable. The effects of drought tend to spread throughout society and the economy like so many dominoes."

Agriculture production becomes affected almost immediately by drought and lower production leads to higher food prices and inflation. As food prices go up, farmers' incomes drop.

For the rest of the population, drought translates into shortages of water to bathe in, drink or cook and higher food prices can exacerbate poverty. A major export commodity and source of food in Asia is rice, which grows in water.

In Thailand, the world's second-largest rice exporter, rice fields exist along the Chao Phraya River in the country's central region. This year, more than 64,000 hectares of rice paddies will be damaged by drought.

So far this year, Thailand has produced around 4.6 million tons of rice, a 14.5 percent drop in paddy production compared to the same



A farmer shows the dried out soil from his field, in Bang Pla Ma district, Suphanburi province, a two-hour drive north of Bangkok. In Thailand, more than 64,000 hectares of rice paddies will be damaged by drought this year.

AFP

period in 2015. The total area covered by rice paddies has fallen by about 10 percent in this timeframe, and the number of rice plantations in nearby Vietnam has also dropped by about 10 percent.

And it is not just rice. Other crops such as sugar and palm oil are all suffering the effects of the drought.

Palm yields and crude palm oil output are decreasing in Malaysia, the second-largest producer in the world. In December 2015, the country's crude palm oil production dipped to 1.4 million tons, down more than 15 percent month-on-month.

A month earlier, production had dropped 18 percent, according to statistics from the Malaysian Palm Oil Board. Drought was to blame in both cases.

It is unclear how long the drought this time will last, according to Cecilia Tortajada, a senior research fellow at the Institute of Water Policy at the Lee Kuan Yew School of Public Policy in Singapore.

"But last time, in 2002 in India, more than 10 million hectares of crops and more than 250 million people were affected and this will ultimately result in (drops) in the country's economy, the GDP number."

A big cause of the ongoing and widespread drought is the El Nino weather pattern that happens every few years and causes unusual warming of the Pacific Ocean. The pattern generally lasts for a year.

El Nino causes heavy rains in some areas, but that heavy rain comes at the expense of rainfall elsewhere, which drops significantly.

Neil Wang, global partner and greater China president at Frost & Sullivan, a global consultancy, said: "Global climate change, resulting from the increase in energy consumption, the cutting down of forests, and other human activities, leads to the increasing pressure of drought around the world."

Some studies show that global warming is likely to increase total

rainfall, he added, while making the distribution even more imbalanced.

"As a result, we observe flooding and erosion in some regions, simultaneously with drought in some others, especially in underdeveloped countries which are in shortage of capital and well-established water resources facilities."

While nature and global warming play a big role in the current drought, they are not the only culprits. Weak policies and waste are also a concern.

Tortajada from the Institute of Water Policy said the situation of India's agriculture is bad, but it is not only because of the drought.

"We blame the government which has not prepared for it," she said. "Farmers do not get long-term funding support as well as technical assistance, like farmers get in other countries."

She pointed out that although the drought is certainly affecting China, the impact on agriculture and the lives of farmers will not be as severe as in India.

"So it depends on your system or how much support your farmers get from the government."

Reddy from the Consortium of Indian Farmers Associations said that Chinese agricultural output can grow at least 6 percent annually, but in the past 30 years or more, India has not achieved more than 2 percent.

"This is devastating and the drought makes us more helpless," he added.

The improper utilization of water resources is a major cause of drought, according to Wang from Frost & Sullivan.

"For many developing countries, the water supply and wastewater treatment facilities are usually outdated or in improper operation due to poor management skills, leading to poor efficiency of water resources utilization," Wang said.

A better water management system, including funding, improved infrastructure as well as a stronger focus on education could help.

One example of how effective water management can go a long way toward alleviating even the most dire of conditions may be found in Israel, which has a growing agriculture sector despite being in a virtual desert.

"Actually, a majority (of countries) in Asia, except Japan, are not doing a good job in terms of water management," said Ong of the National University of Singapore, who has worked as a consultant with the World Health Organization for nearly 20 years.

"Geographically, Japan is very lucky — there is enough rain and it is well balanced, but that is also because there is better water governance."

Governments, as well as individuals, should change their mindset that takes water for granted, he said, and pay more attention to water supply and sanitation.

According to the Asian Development Bank (ADB), the region needs at least \$59 billion in investment to improve water supply and \$71 billion for improved sanitation to meet these basic needs.

Vijay Padmanabhan, a technical adviser for the Water Sector Group with the ADB, said: "We are seeing a lot of utilities have been built to (deal with) water management, but there is a significant amount of work needed."

There has been some progress, he added, but it just cannot match the speed at which the water problem is worsening in the region.

"We lack the enabling environment to make access to water supply and sanitation available to most, if not all."