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SINGAPORE, MALAYSIA AND THE WATER ISSUE: A CONCERN DESECURITISED¹

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This paper focuses on one core issue: is Singapore's water security vulnerable? The answer to that question will determine the prospect for conflict between Singapore and Malaysia over water. In recent years, a number of scholars have contended that Singapore, ostensibly bereft of sufficient domestic water resources, may launch a military strike into Malaysia to secure the water supplies should the latter prematurely terminate the water links. This paper argues otherwise. It bases its conclusions on seven findings:

Singapore's water reserves. Singapore presently operates 14 large-scale impounding reservoirs. The total holding capacity of all these reservoirs amounts to some 140 million cubic metres of water and is sufficient to meet water needs for a sustained period of time.

Optimising the yield from the hydrological cycle. About 2,400 mm of rainfall falls on Singapore yearly, of which 680,000 cubic metres is currently collected daily by the reservoirs in the water catchment areas and the network of stormwater collection ponds built across Singapore's urban districts. The PUB plans to construct more of such stormwater collection ponds in addition to a barrage across Marina Bay to optimise the yield from the hydrological cycle and restock the reserves.

Water Conservation. Singapore has implemented effective conservation policies to check rising demand and foster a culture of prudence in how people use scarce water supplies. The broad framework of this conservation effort includes public education, regular checks by water auditors, tax rebates as an incentive to curb wastage, the manipulation of water tariff rates and additional water conservation taxes to control demand, the regular replacement of water pipes to minimise leaks, and the use of fines as deterrence against the misuse of water. Such conservation policies will dampen demand and relieve the strain on the water reserves.

Alternative Supply (1): Desalination. Singapore's first large-scale desalination plant, capable of desalinating about 140,000 cubic metres of seawater daily, would be operational by 2005. The city-state aims to have an adequate number of desalination plants capable of

¹ Details of the sources used in this paper can be obtained from Joey Long, "Desecuritising the Water Issue in Singapore-Malaysia Relations," *Contemporary Southeast Asia*, (forthcoming 2001).

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producing a combined 400,000 cubic metres of water or more daily by 2011, thereby adding to the existing water stocks.

Alternative Supply (2): Recycling. Singapore is recycling wastewater to also increase its water reserves. It built a prototype recycling plant in 2000, capable of producing 10,000 cubic metres of recycled water daily. The purified water is now sold to wafer fabrication plants but is also potable. Recycled water will meet approximately 15 to 20 percent of the country's water requirements, or some 250,000 cubic metres daily by 2010. Singapore is also producing lower grades of recycled water, namely industrial water, for use by industries. Because this grade of water is cheaper than potable water, industries from the textile and shipyard sectors will be expected to turn to such sources for their daily needs. This will reduce the industries' pressure on the potable water stocks.

Alternative Supply (3): Indonesian Supply. On 28 June 1991, Singapore and Indonesia entered into a formal agreement to pursue a joint water project in Indonesia's Riau province. Singapore will be permitted to import up to 4,546,100 cubic metres of water daily for one century. A report suggests that the Singapore could begin to draw water from Indonesia as early as 2005, through undersea pipelines.

Water Consumption Rate Reaching Steady State. Some four million human consumers and a sizeable number of industrial users in Singapore consume about 1.2 million cubic metres of water daily. This consumption rate is not expected to increase spectacularly in the foreseeable future for three main reasons. First, Singapore's 1.77 fertility rate, which is short of the 2.15 required for the population to replace itself, will lead to its resident population peaking at 3.3 to 3.5 million between 2025 and 2030 and falling thereafter. Assuming that there will not be a dramatic influx of immigrants and foreigners (some 750,000 in 2000), Singapore's population will hover below 4.3 million for the next three decades, capping demand on the water reserves. Second, Singapore's successful water conservation and pricing policies will dampen demand. Third, Singapore is expanding its water reclamation capabilities and cheap recycled water will increasingly replace the water used by industries. The prospect of the daily water consumption rate remaining at little more than 1.2 million cubic metres for the period up to 2010 therefore looks favourable.

Based on these findings, this paper comes to three principal conclusions:

Singapore's water security has been enhanced. A premature termination of the Malaysian water links will not jeopardise the city-state's survivability and be sufficient to trigger war between the two countries. If a water cut-off eventuates after 2010 when the construction of its planned desalination and recycling plants is completed, Singapore will have a comfortable volume of reserves to independently sustain its water needs. If a water cut-off transpires before 2010, the reserves in Singapore's impounding reservoirs, the existing water catchment network and wastewater recycling plants, the ability to purchase water on the international market and the implementation of water rationing can sustain the city-state's water needs indefinitely. Nonetheless, to free itself from an over-reliance on finite volumes of freshwater derived from precipitation, Singapore will certainly expedite the construction of sufficient numbers of desalination and recycling plants.

Diplomatic means will be used to respond to a premature water cut-off. As a matter of principle and in utilising a non-military instrument to punish Malaysia, Singapore is expected to mount a vigorous regional and international diplomatic campaign to seek

international censure of Kuala Lumpur for the water cut-off. If the international community is ranged against Malaysia, it may be compelled to restore the status quo ante at substantial costs to its regional and international standing.

Singapore is not vulnerable to Malaysia's ability to manipulate raw water prices. Malaysia will not be obligated to buy Singapore's treated water after 2003 when it finishes building sufficient numbers of waterworks. Consequently, it will be free to set new rates on the price of raw water it sells Singapore without being obligated to buy more expensive treated water in return.

Singapore may accede to paying higher raw water charges if it is deficient in alternative supplies. If the price of desalted or recycled water, moreover, is costlier than treating more expensive raw water from Johor, Singapore may continue to import water from Malaysia. To erode Kuala Lumpur's ability to use water as leverage, however, Singapore will conceivably accelerate the development of sufficient desalination and recycling plants to wean itself off Malaysian water.

If Malaysia becomes overbearing, Singapore may immediately cease water imports altogether and rely on the water cached in its reservoirs to meet domestic demand and supplement it with additional sources like recycled water and imports of bottled water. A measure of water self-sufficiency will be obtained once all large-scale desalination and recycling plants become operational.

Until desalted or recycled water become cheaper, the ordinary household in Singapore may have to bear the burden of higher water bills arising from the use of expensive alternatives. That prospect, however, will generate little public complaint given the public's ire, attested to by the numerous letters published in the local press, with the threats periodically made by Malaysian politicians to prematurely terminate the water supply.

Whither Now the Water Issue?

By debunking the notion that Singapore is vulnerable to Malaysia's use of the water link as leverage or that an objective foreign threat to Singapore's water supply exists, the water issue can be said to have been desecuritized. The future debate over the Singapore-Malaysia water issue will thus rest on pecuniary considerations since both sides have indicated their desire to continue the water links. Negotiations over a new water pact have regained momentum, following talks between Senior Minister Lee Kuan Yew of Singapore and Prime Minister Mahathir Mohamad of Malaysia in Kuala Lumpur in September 2001. Still, the finer details of the proposed water pact involving new water charges and the ratio of raw and treated water that has been made available for sale by Malaysia have yet to be resolved.

This paper provides five pointers that may facilitate negotiations:

Firstly, both sides will need to press on to bridge their differences, abandon their political baggage and treat the renewal of the water pacts as a joint venture that can reap mutual benefits.

Secondly, Singapore's acceptance, in September 2001, of Malaysia's estimation of the city-state's post-2061 water needs is a correct and an essential first step toward

facilitating the progress of future negotiations. Previous discussions have deadlocked because Singapore ostensibly refused to review the fundamental demographic assumption underlying its negotiating approach for a new water agreement. The September 2001 gesture will provide the assurance that Singapore is not out to profiteer and that its procurement of water from Johor will not be at the expense of Malaysia's needs.

Thirdly, Malaysia needs to realise that if it imposes unreasonably high water charges in a future water agreement, Singapore will make the financial decision to stop buying. Malaysia will not only lose a customer for its raw and treated water but may also lose the other concessions it had secured in the September 2001 talks. A fair price for both raw and treated water needs to be negotiated and agreed on.

Fourthly, parenthetically, positive incentives devised by Singapore can complement and reinforce sound Malaysian pricing policies. The selling price of Singapore's treated water need not increase by similar proportions even though the price of raw water from Malaysia may have risen by fifteen times. This may induce Johor to continue to buy Singapore's treated water and give the southern Malaysian state a stake in ensuring that its raw water is reasonably priced.

Fifthly, Both may also find it useful to pursue the establishment of a joint partnership on water issues. Floated during the September 2001 talks, such a partnership can foster technical co-operation on matters like water treatment and management. Mutual pecuniary and social benefits stand to be gained if co-operation eventually leads to more economical water treatment methods, better efficiency in water-use and the protection of water sources.