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MALAYSIA | Selangor

Water restructuring exercise must proceed despite leadership change, as economic losses due to water crisis may be significant

The political jousting in the Selangor state government can translate into an economic risk to the country. There is a possibility that a new Menteri Besar in Selangor may review the heads of agreement (HoA) signed between the Federal and State governments. This is despite assertions by the energy, green technology and water minister that the crisis will not affect the restructuring of the state's water industry as the HoA is irrevocable

This report looks at the adverse long-term economic implications of a prolonged water shortage situation in Selangor, if its water industry cannot be restructured.

BACKGROUND

Changing of the guards. The political situation in the Selangor state government is still evolving unpredictably by the day. Whatever the outcome may be, the Selangor water restructuring exercise which has gained massive traction the past year, is at risk of being questioned, reexamined and perhaps some agreements which were made being challenged. Over the past few months, we have seen Puncak Niaga, SYABAS and Kumpulan Perangsong Selangor having accepted the proposed takeover offer; Gamuda and Sweet Water Alliance being defiant in refusing to accept the offer; and the RM994m Langat 2 water treatment plant being awarded to MMC Corp-Ahmad Zaki-Salcon joint venture.

Disruptions in the Klang valley. If the water restructuring exercise is delayed (including the construction of the Langat 2 water treatment plant), it is likely that the state will face water shortages during episodes of drought. The Langat 2 water treatment plant is designed to treat 1,130m litres of raw water a day. Even if water is channeled from Pahang into seven of Selangor's current treatment plants, the plants may not have the capacity to absorb the additional raw water supply. The original design was for the raw water to be transferred directly from Pahang to the Langat 2 plant. According to the National Water Services Commission (SPAN), a total of 821 project applications in Selangor, Putrajaya and Kuala Lumpur as at March 31, 2014 had to be put on hold because adequate water supply could not be guaranteed.

FROM WATER CRISIS TO ECONOMIC LOSSES

Unreliable water supply is a major disruption to economic activities: Lack and poor quality water cause neither small businesses nor major global industries to function reliably and efficiently. It means higher costs for businesses – and ultimately, consumers. Water scarcity poses a risk for a community's long term viability and has a negative impact on its competitiveness. It compromises a community's ability to grow and create jobs.

Main transmission mechanism from crisis to losses: The adverse impact of a water crisis on economic activities will manifest itself via both direct and indirect routes. *Directly*, among others:

- Water crisis will lead to a reduction in agricultural output, leading to food shortages and rising commodity prices, hence reducing trade; and
- Water crisis will result in a reduction of industrial output, especially from industries requiring significant amount of water in its production process

Indirectly, among others, the impact will take the following routes:

- Water crisis will lead to a reduction of the water level at hydropower dams, which will reduce the dam's capacity in generating electricity supply. This will consequently lead to lower economic output
- Water crisis will result in the deterioration in water quality, which will result in the deterioration in quality of health of general population. This will reduce economic activity as a result of lower productivity.

The table below shows examples of water crisis throughout the world and the transmission mechanism leading to a loss in economic output.

Table 1: Examples of economic loss due to water shortage

Nature	Transmission route	Experience
Direct	Water crisis → reduced agriculture output	<ul style="list-style-type: none"> ▪ In late 2010-2011, the northwestern region of China experienced a drought that hit 8 provinces and affected 34 million people. It damaged wheat production and led to an increase in worldwide wheat prices in early 2011. ▪ The World Bank estimated that China's water crisis is reducing its GDP by approximately 2.3% annually, with 1.3% attributable to water scarcity, and the other 1% caused by the cost of water pollution.
Direct	Water crisis → reduced industrial output, especially industries requiring significant amount of water for processing	<ul style="list-style-type: none"> ▪ The semiconductor industry requires massive amount of water. In 2002, Taiwan experienced a severe drought that forced it to explore long-term solutions to protect its industries. ▪ In Kenya between 1999-2001, droughts costs the GDP almost USD2.8b equivalent to 16% of the GDP. The lost to industrial production arising from the subsequent water shortage for hydropower generation was estimated at USD1.4b.
Indirect	Water crisis → reduced water level at hydropower dams → reduced electricity supply → lower economic output	<ul style="list-style-type: none"> ▪ In 2001, a severe drought in Brazil reduced water levels at hydroelectric dams, which accounted for 88% of its generating capacity. Energy supplies was rationed for eight months. ▪ Residential and industrial consumers were forced to cut back their power usage by 20%. Industrial output fell and an estimated 1-2%-points were shaved off GDP growth
Indirect	Water crisis → deterioration in water quality → deterioration in quality of health of general population → reduced economic activity	<ul style="list-style-type: none"> ▪ In 2009, in Zimbabwe, contaminated water due to water shortage causes a cholera outbreak with 4,000 deaths and 100,000 infections. ▪ World Bank estimates the health costs of air and water pollution in China to amount to about 4.3% of its GDP ("Cost of Pollution in China" Report 2007)

WATER SUPPLY DISRUPTIONS AND ECONOMIC ACTIVITIES IN MALAYSIA

A number of water crisis episodes in Malaysia: Malaysia has not been spared of water supply crisis in the last few decades. Many would not forget the disconcerting image of the Durian Tunggal dam in Malacca, which was completely dried up. The situation in 2014 in KL and Selangor has not been benign either, with water rationing exercise being carried out at areas covered by the Sungai Selangor dam.

We find anecdotal evidences of disruption in economic activities. For example:

- Rubber gloves manufacturers reported increase in costs if water supply disruption persists. Costs of transporting water to factories facing water shortage will ballooned 10x the normal rate. According to Top Glove Chairman, Lim Wee Chai, 'there will be forced downtime' on an industry facing escalating fuel and electricity costs.
- 821 project applications were put on hold by end of March by the Selangor state government due to concerns of water shortage.
- In April, according to the Federation Manufacturers of Malaysia (FMM), an electrical product company had to forego a RM40m project due to uncertainty of water supply. According to FMM, 'industries in Selangor will be hit by surging costs should they face water shortages as they would need to source for alternative supplies.'

Manufacturing & agriculture the most vulnerable: Malaysia faces a multitude of risks if the ongoing saga of water shortage were to prolong. Among the areas at risks are the manufacturing, agriculture industries and public health. We tabulate the associated risks below:

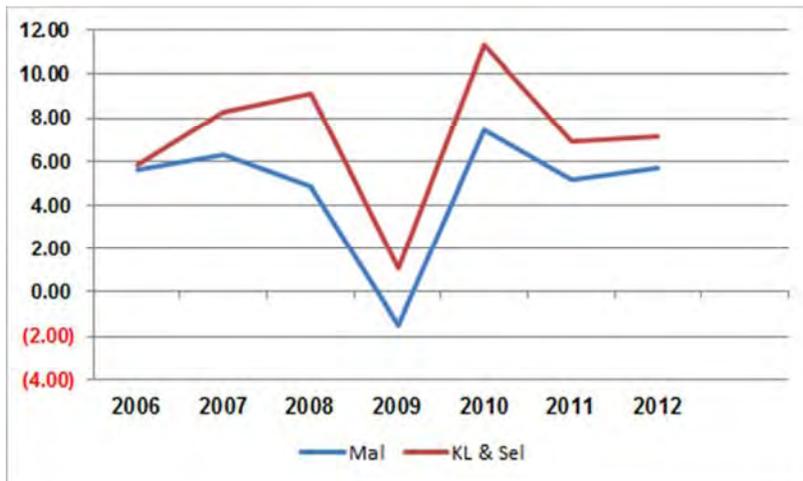
Table 2: Risks due to water shortage

Areas	Risks
Manufacturing industry	<ul style="list-style-type: none"> ➤ Rising operational costs due to transportation of water to manufacturing plants. ➤ Rising operational costs leading to higher pricing pass on to consumers. ➤ Higher products pricing leading to Malaysia products losing competitiveness hence drop in demand for locally made products.
Agriculture sector	<ul style="list-style-type: none"> ➤ Water shortages reduce yields for crop and livestock cultivation. ➤ Drop in food production lead higher food prices and higher inflation. ➤ Malaysia will be forced to import more food than usually required.
Public health	<ul style="list-style-type: none"> ➤ Water shortages forcing the authorities/public, seeking other alternative water sources such as rivers, wells and mining pools which might be contaminated with toxic pollution and organic pollutants. ➤ Rising health issues such as dysentery, diarrhea and other waterborne diseases due to the lack of adequately filtered water.

SIZING UP THE IMPACT OF WATER CRISIS ON ECONOMIC ACTIVITY

KL & Selangor's combined GDP growth correlates with the growth of the national economy. Based on figures from the Statistics Department the Klang Valley states, Selangor and KL are the biggest contributor to the national economy.

Chart 1: YoY GDP growth of Malaysia v KL & Selangor (%)



Source: Dept of Statistics

In 2012 alone the Klang Valley economies contributed RM290.3b in terms of economic activity or 38.6% of the GDP. In terms of industry, the services industry, contributed as much as 71% to the overall economy of the two states and almost 49% to the national industry. The construction industry contributed nearly 21% to the two territories GDP and (on average) nearly 52% to the national construction industry followed by manufacturing which contributed 30%.

Table 4: Contribution of KL & Selangor sectors to the national sectors (%)

	GDP	Agriculture	Mining & Quarrying	Manufacturing	Construction	Services
2005	33.2	3.8	0.2	30.4	49.9	47.3
2006	33.2	4.3	0.2	29.0	50.2	47.7
2007	33.8	4.0	0.2	28.2	51.6	48.2
2008	35.2	4.6	0.2	29.0	52.0	49.0
2009	36.2	5.0	0.2	30.0	51.9	49.1
2010	37.5	5.3	0.2	31.7	52.6	50.0
2011	38.1	5.1	0.2	31.8	54.3	50.0
2012	38.6	5.3	0.3	32.2	52.8	50.1
Average	35.7	4.7	0.2	30.3	51.9	48.9

Source: Dept of Statistics, CEIC, MIDFR

Water crisis affect

According to data from Growing Blue an independent research center dedicated for water information, Malaysia consumes almost 13.4b cubic meter/day for public and commercial use. Of which 5.6b cubic meter/day of water is used for the agriculture industry and 6.3b cubic meter/day is for the production of goods and services. Recently a rubber manufacturing company stated water disruption will hive off topline revenue by almost 6%.

Table 5: Simple simulation of the impact of a KL/Selangor water crisis on national GDP growth.

	KL & Selangor GDP (2012) (RMm)	Assumed reduction in output in the event of a water crisis *	Variance in KL/Selangor GDP during water crisis (RMm)	KL & Selangor GDP during crisis (RMm)	Malaysia's GDP 2012 (RMm)	Malaysia's GDP 2012 adjusted for water crisis (RMm)	M'sia 2012 growth	M'sia 2012 growth assuming a water crisis
Real GDP	290,345		(14,238)	268,657	751,471	737,233	5.6%	3.6%
Agriculture	2,916	-20%	(583)	2,333	54,782	54,199	1.0%	(0.1%)
Mining & Quarrying	179	Neg	Neg	179	63,432	63,432	1.4%	1.4%
Manufacturing	60,082	-5%	(3,004)	57,078	186,748	183,744	4.8%	3.1%
Construction	14,007	Neg	Neg	14,007	26,531	26,531	18.1%	18.1%
Services	205,327	-5%	(10,266)	195,061	409,976	399,710	6.4%	3.8%
Import Duties	7,833	-5%	(392)	7,449	10,001	9,609	15.6%	11.1%

* derived by MIDFR based on components of KL/Selangor GDP
Source: Dept of Statistics & MIDFR

Based on the assumptions that KL & Selangor economic activities contributed almost 35% to the national account, disruption in water supply in the Klang Valley is likely to reduce national output. A 5% to 20% drop in economic activities in sectors such as agriculture, manufacturing and services in KL & Selangor is likely to shave off Malaysia's 2012 GDP growth by at least 2% points. That would be significant and something that the country cannot afford to happen moving towards 2020.

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NEUTRAL	Total return is expected to be between -15% and +15% over the next 12 months.
SELL	<i>Negative</i> total return is expected to be -15% over the next 12 months.
TRADING SELL	Stock price is expected to <i>fall</i> by >15% within 3-months after a Trading Sell rating has been assigned due to negative newsflow.

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NEUTRAL	The sector is to perform in line with the overall market over the next 12 months.
NEGATIVE	The sector is expected to underperform the overall market over the next 12 months.