

# The Controversy of the 2013 Severe Water Disruptions in Selangor, Malaysia: A Critical Analysis

*Kontroversi Gangguan Air Teruk di Selangor,  
Malaysia: Satu Analisis Kritikal*

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## **Abstract**

*The state of Selangor is the most developed state in Malaysia, as such the capability of its water supply system is always on the heel in trying to meet the ever growing demand. The government of the state prior to the 2008 General Election had embarked on an interbasin water transfer project with the aim of boosting the availability of raw water for treatment and subsequently to supply the state with a projected future demand curve. A change in government in 2008 saw a change in emphasis with regard to the water supply system. The present state government is of the view that the interstate water transfer project ought to carry out concurrently with the restructuring of the water supply system of the state. Other parties such as the concessionaires are on an opposite view. As such there was a stalemate regarding the progress of the interstate water transfer and the restructuring of the water supply system. It looked as if the party which wanted to go ahead with the water transfer project hatched the idea that water crisis was imminent in the state. The irony was that when the horn was blown to drum up water crisis issue in the state, it rained, and dams in the state were overflowing. The present state government was more inclined to keep water tariff at its present level, and at the same time urge the concessionaires to commit themselves to the pledge of reducing NRW, which it believes if kept low, can compensate for the increase in demand. As such, a settlement is not in sight yet, but with the backing of the Federal Government, the interstate water transfer project continued, at the same time the restructuring of the water supply system in the state remains a stalemate. This paper analyzes the issue from a non-partisan view.*

**Keywords** *Selangor, water supply, disruptions*

## **Abstrak**

*Negeri Selangor adalah negeri paling maju di Malaysia, dengan itu keupayaan sistem bekalan airnya sentiasa teruja dalam usaha memenuhi permintaan yang sentiasa meningkat. Kerajaan negeri sebelum pilihan raya umum 2008 telah memulakan projek*

*pemindahan air antara lembangan bertujuan meningkatkan ketersediaan air mentah untuk dirawat dan seterusnya membekalkan negeri itu mengikut keluk permintaan masa depan. Pertukaran pemerintah kerajaan negeri dalam tahun 2008 menyaksikan perubahan penekanan dalam perkara sistem bekalan air. Kerajaan negeri sekarang berpandangan bahawa projek pemindahan air antara negeri hendaklah dilaksanakan seiring dengan penstrukturan semula sistem bekalan air negeri berkenaan. Pihak lain, seperti syarikat konsesi berpandangan sebaliknya. Oleh sebab itu berlaku jalan buntu berkaitan dengan kemajuan pemindahan air antara Negeri dan penstrukturan semula sistem bekalan air. Apa yang dilihat ialah pihak yang inginkan projek pemindahan air diteruskan mencetuskan gambaran krisis air tidak dapat dielakkan di negeri ini. Ironinya apabila berita krisis ini digembar-gemburkan, hujan turun dan empangan di negeri ini dipenuhi air. Kerajaan negeri sekarang lebih cenderung untuk mengekalkan tarif air pada kedudukan sekarang dan pada masa yang sama menggesa syarikat konsesi berusaha mengurangkan NRW, yang dipercayai oleh kerajaan negeri sekiranya berada di aras rendah, boleh mengimbal kenaikan permintaan air. Oleh itu, satu penyelesaian masih belum kelihatan lagi, tetapi dengan sokongan kerajaan Persekutuan, projek pemindahan air diteruskan dan pada masa yang sama penstrukturan semula perkhidmatan air masih lagi dalam keadaan buntu. Kajian ini menilai isu ini daripada pandangan non-partisan.*

**Kata kunci** Selangor, bekalan air, gangguan

## **Introduction**

The hot wet equatorial tropical climate enjoyed by Malaysia ensures that water resource is plentiful but when it comes to supplying treated water to homes of consumers and to the industries, it poses a big challenge. The state of Selangor is the most developed state in Malaysia, and as such it has the highest population which directly exerts heavy pressure on the water supply system to cope with the ever increasing demand. The state not only has to cater for huge incessant inflow of migrants into its territory, but also at the same time it has to keep the ever growing demand from its huge industrial sector. As in the case of Malaysia, water resource for the state is obtained from surface water sources such as river basins. There are four major river basins in Selangor, they are the Bernam, the Selangor, the Klang and the Langat river basins. Except for the Bernam river basin which mainly supplies water for agricultural purpose, all other major river basins in Selangor are utilized for the purpose of domestic and industrial water supply. Basically there is no more river basin that can be utilized for the purpose of surface water abstraction for water supply.

## **Statement of the Problem**

To put it very simply, the water supply situation in Selangor, Kuala Lumpur and Putrajaya is in a precarious situation which means that the present capability of the supply system can reach its breakpoint if situation warrants it. This has happened in 1998 when the area was hit by its worst water crisis (Ithnin, 2004). There is every possibility that this debacle can repeat itself.

## Literature Review

### The Entities

SYABAS (Syarikat Bekalan Air Selangor) is the concessionaire entrusted with the distribution of treated water in Selangor. Four other concessionaires namely PUNCAK NIAGA, SPLASH, ABASS and KASB are entrusted with obtaining and treating raw water.

Treated water supplied to consumers is obtained from a number treatment plants as shown in Table 1 below.

**Table 1** Design Capacity of Water Treatment Plants in Selangor (2012)

CONCESSIONAIRES	TREATMENT PLANT	DESIGN CAPACITY (mld)
1 PUNCAK NIAGA	29 PLANTS	1944.15
2 SPLASH	SG. S'GOR PHASE 1 (SSP1- BKT. BADONG)	950
SPLASH	SG. S'GOR PHASE 3 (SSP3 –RASA)	250
SPLASH	SG. S'GOR PHASE 3 (SSP3- BKT. BADONG)	800
3 ABASS	SEMENYIH	545
4 KASB	SG. LABU	105
<b>TOTAL</b>		<b>4494.15</b>

Source: SYABAS (2012)

Table 2 shows that currently the capability of the water supply system in the state of Selangor, Kuala Lumpur and Putrajaya is about 4,500 million litres per day (mld). The amount of treated water that can be supplied to consumers will remain unchanged if there is no further effort to increase water supply in the state, this means that while the water supply capability remains constant, the demand keeps on rising as indicated by Table 2 and Figure 1. Ismail (2009) projected that in 2014 water supply will equal water demand, meaning that beyond that point, the state of Selangor is likely to face water shortage if no effort is carried out to increase supply output.

**Table 2** Current Water Supply Situation in Selangor (in mld)

Year	Demand	Supply
2010	4000	4500
2011	4100	4500
2012	4200	4500
2013	4400	4500
2014	4500	4500

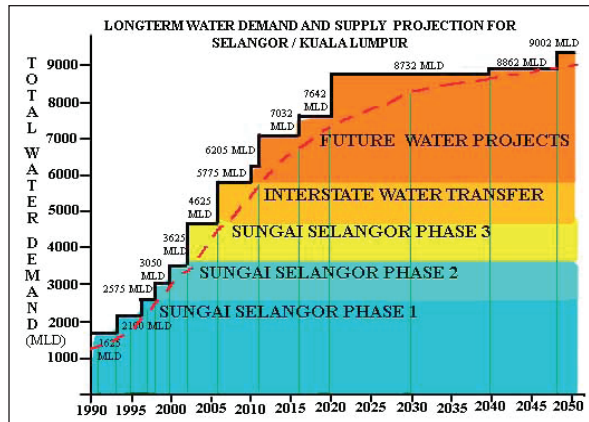


Figure 1 Long Term Water Demand Projection for Selangor, Kuala Lumpur and Putrajaya

## The Langat 2 Project.

In order to address the problem, an inter-state water transfer was envisaged. Under this scheme, water from the neighbouring state of Pahang is stored in a dam called Kelau Dam on the Kelau river which is a tributary of the Semantan river. Water released from the dam will then be drawn at intake points near Kampung Kuala Pertang on the banks of the Semantan river. The water will then be transferred to Kampung Kuala Pangsun in Hulu Langat, Selangor via 44.6 km tunnel before it is treated at water treatment plants in Selangor. This scheme will be able to supply 1,890 mld of water to Selangor. The project is expected to be completed in 2014 (Ismail, 2009).

The 2008 general election saw a change in the government of the state of Selangor, and the political party which now controlled the state had earlier embarked on an election manifesto to provide free 20 m<sup>3</sup> of water to consumers, and it looked as if they are hard-bound to make sure that there will be no water tariff hike within their tenure of administration.

The completion and implementation of the inter-state water transfer will certainly result in a water tariff hike in the state of Selangor. Raw water from this project is slated to be processed at a yet-to-be-built water treatment plant called Langat 2 in Hulu Langat, Selangor. Since the plant is to be placed in Selangor, and under the Federal Constitution of Malaysia, land is state matter, therefore the present administration of the state is reluctant to agree to a completion of the project unless another issue of water services restructuring is also solved concurrently.

## Water Restructuring in Selangor

*Background.* The Malaysian Parliament approved in 2005 amendments to the Ninth Schedule of the Federal Constitution to transfer matters related to WATER SUPPLIES AND SERVICES from the State List to the Concurrent List (except for Sabah and Sarawak). As a result, the Federal Government will regulate the water services

industry in terms of licensing and regulating water services operators. The State Government also retains the power to declare and regulate water resources, water catchment areas and river basins. In 2006, the Malaysian Parliament approved the *Suruhanjaya Perkhidmatan Air Negara Act (Act 654)* or SPAN Act which outlines the roles, functions and scope of work to be undertaken by SPAN and the *Water Services Industry Act (Act 655)* or WSIA which has provisions to cover economic, technical and social regulations as well as protection of consumer interests.

*The Core of Water Restructuring in Selangor.* According to SPAN, the restructuring of the water services in Selangor takes the form of,

1. SYABAS, which is 30% owned by the Selangor State Government, will be licensed under the Act 655, whilst the three water treatment concessionaires namely PNSB, SPLASH and ABBASS, will be authorised under Act 655 to continue to operate until the expiry of their respective concessions, whereby,
  - a. for SYABAS, a service licence to be granted to enable them to operate the water supply services and maintain the related assets. The licence shall be renewed every three years provided that the licensee complies with the licence conditions;
  - b. for PNSB, SPLASH and ABASS, SPAN will impose conditions in the authorisation to be granted;
  - c. a reasonable profit margin will be determined based on operational and financial efficiencies for all the four concessionaires. This will be reviewed from time to time subject to KPIs regulated fully by SPAN;
2. Bulk Supply Rate (BSR) will be revised and renegotiated to a reasonable rate;
3. No tariff increase for water in 2009;
4. Water assets and related liabilities of the four concessionaires (SYABAS, PNSB, SPLASH and ABASS) and the State Government will be acquired by PAAB at 1 x book value, which will be verified by independent auditors appointed by PAAB. Liabilities related to funding of stock/equity acquisition, will not be assumed by PAAB; and
5. Where liabilities exceed asset value, it needs to be further analysed and renegotiated with the Selangor State Government. (SPAN, 2010)

## **Methodology**

The organization of the research was based on qualitative as well as quantitative approach. Data was obtained from publications of the players of water industry in the state of Selangor current at the time of the research.

## **Justification of the Study**

On December 29, 2013 an unscheduled water supply disruption occurred in 82 areas in Kuala Lumpur and Gombak. The disruption was blamed on faulty pumps at Wangsa Maju pump house (Sinar Harian, 2013). By early January 2013, the number

of consumers affected swelled to 500,000 as another pump house at Pudu Hulu Baru went out of order (NST, 2013).

About two weeks later when water supply was 97% restored to the affected areas of Gombak district (The Star, 2013a), water supply disruption occurred in two other places, namely the service areas of Petaling and Semenyih. The disruption in Petaling was blamed on a drop in water level at the Lapangan Terbang Subang reservoir and Bukit Dengkil reservoir. The drop in water level said to be due to the increase in usage of treated water and the supply system could not cope with the increase.

The disruption in the Semenyih area was a result of a treatment plant shut down on January 13, 2013 because of a possible palm oil contamination (The Star, 2013b).

These incidences gave the basis of this study, that whether the disruptions were real or manufactured, or, has water crisis hit Selangor, as claimed by SYABAS (2012) .

## The Study Area

1. The study area is the state of Selangor which is the most developed and richest state in Malaysia (Map 1. In terms of water supply, the service area of the Selangor water supply system includes the state of Selangor and the federal territories of Kuala Lumpur and Putrajaya.



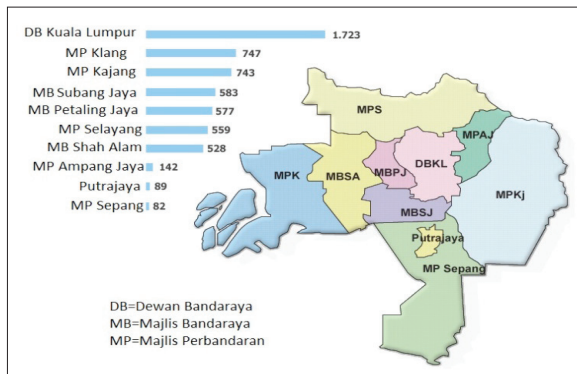
**Map 1** The state of Selangor

The current population of service of the Selangor water supply system is estimated at more 6 million people, with the majority of the people concentrated in areas known as Greater Kuala Lumpur which alone has about 5.7 million people in 2010 (MFTUW, 2013). See Table 3 and Map 2.

**Table 3** Estimated Population of Greater Kuala Lumpur, 2010

Local Government	Population [10 <sup>6</sup> ]
DB Kuala Lumpur	1.723
MP Klang	0.747
MP Kajang	0.743
MB Subang Jaya	0.583
MB Petaling Jaya	0.577
MP Selayang	0.559
MB Shah Alam	0.528
MP Ampang Jaya	0.142
Putrajaya	0.089
MP Sepang	0.082
<b>Greater KL</b>	<b>5.773</b>

Source: MFTUW, 2013



**Map 2** Map Showing Greater Kuala Lumpur

Source: MFTUW, 2013

## Results

A detailed scrutiny of the projected water supply situation in the study area results in the following findings as revealed by Table 4.

**Table 4** Supply Situation Prior to December 2012 Water Disruptions

Period	Supply	Demand	Increase	Increase (%)	Reserve Capacity(%)
2011	4326	4143	-	-	
Jan-June 2012	4436	4299	156	3.6	3.0
November 2012	4436	4406	107	2.42	0.067

Source: Extrapolated from SYABAS (2012). Measurements in million litres per day (mld)



It can be seen that the reserve capacity of the water distribution system in the study area as of November 2012 was merely 0.067 percent, which was extremely low. The reserve margin of water supply is a point of contention among opposing factions in this issue.

In order to meet the short term needs of the water supply system, the Sungai Labu water treatment plant with a design capacity of 105 mld was added in November 2011 to the already operating facilities which services the Kuala Lumpur international Airport (KLIA) and the surrounding areas (KeTTHA, 2011). On top of that, two mitigation projects with the aim of increasing the supply capacity were implemented (Table 5).

**Table 5** Short term mitigation projects to boost supply capacity in Selangor

Mitigation Project	Expected Added Capacity	Expected Completion Date
1	125	March 2013
2	351	2015
Sg. Labu	105	Nov. 2011

Measurement units in mld

With the implementation of the mitigation projects, the water supply output are expected to receive a boost, at least by 2013, but that is far from a complete and long term solution to the problem of water supply in Selangor. If all of the mitigation projects deliver what they were designed for, then the situation would look like what is depicted in Table 6.

**Table 6** Water supply situation in Selangor with contributions from mitigation efforts. The Table shows water supply scenarios if three cushion levels are taken into account.

	2013	2014	2015	2016	2017
<b>A</b> Supply	4596	4596	4846	4846	4846
<b>B</b> Demand (0% cushion)	4427	4569	4773	4985	5205
Excess/deficit (A-B)	169 (3.82%)	27 (0.59%)	73 (1.53%)	139 (2.79%)	359 (6.90 %)
<b>C</b> Demand (5% cushion)	4648	4797	5011	5234	5465
Excess/deficit (A-C)	52 (1.1%)	201 (4.3%)	165 (3.4%)	388 (8.0%)	619 (12.7%)
<b>D</b> Demand (10% cushion)	4869	5026	5250	5483	5726
Excess/deficit (A-D)	273 (5.9%)	430 (9.35%)	404 (8.33%)	637 (13.1%)	880 (18.1%)

Source: extrapolated from SYABAS (2012). Deficits are indicated in red. Measurement unit in mld

It is clear from Table 6, the water supply situation in the state of Selangor remains to be precarious in the near future, even though some mitigation projects may alleviate the supply level to a relatively higher output, but when reserve cushion is taken into account, present and short term mitigations must be able to leap productions to a much higher levels in order to place the water supply situation in a more manageable position.



## Analysis

The political party which helms the government of the state of Selangor plays an important role in this issue. Prior to the 2008 general election, the state was governed by Barisan Nasional (BN), but after the election, the state government changed hand to Pakatan Rakyat (PR). SYABAS is known to be closely related to UMNO, the main component party of the BN. In 2004, SYABAS struck a deal to take over Perbadanan Urus Air Selangor (PUAS) under a 30-year concession deal. On October 2006, SYABAS imposed a 15 percent water tariff hike in Selangor.

## Points of Contention

*Tariff hike.* In April 2009, SYABAS proposed a 37% water tariff hike which will cost consumers RM 15.00 per 20 m<sup>3</sup> of water as opposed to the current rate of RM 11.40 per 20 m<sup>3</sup> with another two subsequent hikes of 25% in 2012 which will push the price to RM 18.80 per 20 m<sup>3</sup> and another 20% increase in 2015 which will raise the tariff to RM 22.60 per 20 m<sup>3</sup> (Selangorkini, 2013). SYABAS maintained that water tariff adjustments are stipulated in the 2004 agreement when the company took over water distribution responsibility (SYABAS, 2013). The government of the day in Selangor did not approve the request, because it says according to the 2004 agreement, if water tariff is to be adjusted, then the NRW (non-revenue water) rate must be lowered, something, according to Selangor state government SYABAS failed to achieve. SYABAS, on the other hand is adamant that it had reduced NRW from 42.78% in 2005 to 33.17% in 2008, saving as much as 328 mld of water (SYABAS, 2012). The Selangor state government countered that according the agreement; the NRW rate has to be lowered 19.98% (Selangorkini, 2013).

*Stalled Water Services Restructuring.* It seems that the Selangor government sees it as a burden to the people when the state government has promised and implemented a free 20 m<sup>3</sup> of water following their success at the 2008 poll. The state government was more in favour of a water restructuring exercise, as stipulated by the Water Services Act 2006. Had the water restructuring been successful, then the state government would have bought assets of the four concessionaires and then allow the federal government to take over these water infrastructures as well as the debts of the state government. The state will then lease the assets from the federal government and continue manage and maintain them.

A successful water restructuring exercise would abort the expected water tariff hike, but this did not materialise. The Selangor state government offered the Federal Government through PAAB (Pengurusan Aset Air Berhad) RM 9.7 billion to take over the assets of the water supply concessionaires, but it was rejected because the valuation was based on capitalized value but the underlying assumptions to determine this value has not been disclosed to PAAB. Also the valuation included 1,601 reservoirs valued at RM 1 billion, and 24,000 km of pipes valued at RM 7.8 billion, which, according to MEWC (2011) were mainly built by and handed over by housing developers and paid for by house buyers. The offer was rejected and a stalemate hovered. The Selangor

state government suggested the issue be solved by international arbitration, but to date there is no decision on it.

*CAPEX.* This has been the point of contention between SYABAS and the Selangor state government for quite some time. CAPEX (capital expenditure) is fund given by the state government to SYABAS for works including reducing NRW. The Selangor government blocked the increase in tariff and denied any compensation to SYABAS, citing failure on SYABAS's part to fulfil terms for water tariff hike including the reduction of NRW. SYABAS on the other hand said that it had carried out CAPEX works including NRW programs to replace old distribution assets to reduce NRW but works were aborted due to CAPEX freeze since July 2008 (SYABAS, 2012). The Selangor state government on the other hand countered that the disbursement of the CAPEX was withheld due to leakages in the expenditure of the fund. It cited an amount of RM 325 millions disappeared. It also cited conflict of interest when the fund was used to buy pipes from a company belonging to the chairman of the concessionaire which involved an amount of RM 375 millions. The fund was also used to renovate offices involving an amount of RM 22 millions, and another RM 600 million were used in direct negotiation, a practice criticized by the Auditor General of Malaysia (Selangorkini, 2013). Subsequently SYABAS sued the Selangor state government.

*The Langat 2 Project.* The Federal Government, through the Ministry of Energy, Green Technology and Water is keen to see that the Langat 2 project to go through, but the Selangor state government insists that water restructuring process which it wants to include the Langat 2 project be dealt with first. As of date, the situation is at stalemate.

## **Discussion**

*Water Crisis?* A crisis is a time of intense difficulty (Oxfordictionaries, 2013). In the case of water supply in the state of Selangor the use of the term *crisis* is a little loose on the part of SYABAS, in the sense that when the reserve margin falls below 3 percent, then a state of crisis has been reached. For that reason, the concessionaire argues that since September 2012, Selangor water supply system had already reached crisis level (SYABAS, 2012).

SYABAS has been steadfast that the current water supply situation in Selangor, Kuala Lumpur and Putrajaya is precarious as indicated by Tables 3, 4 and 6. The government of the state of Selangor has another view, that if the planning and the management of supply are conducted in prudent manner, the so called tight water supply situation can hold for a few more years, possibly up to 2019. The state government is of the view that if the NRW is reduced, then the life span of the current water supply system in the state can be lengthened. It seems that this view could have shaped their thinking about the urgency of the Langat 2 project. On the other hand, it must be borne in mind that the Langat 2 project is massive in size. The bill for the water tunnel from Pahang to Selangor stood at RM 2.481 billion, and on top of that the Langat 2 plant itself costs RM 3.744 billion.

*Influence of Dry Months.* Many parties opposing the government of the state of Selangor had forecasted that by 2014, Selangor will face water crisis. In 2012, the months of April through June had been hot and dry, and as such rainfall was low. This has affected dam levels in the state and it also has an impact of general water usage and as such the treated water reserve capacity dipped to about 2 percent in July 2012 as opposed to industry comfortable level of 20% (SYABAS, 2013). This has prompted SYABAS to get the approval of SPAN (Suruhanjaya Perkhidmatan Air Negara) to the idea of water rationing in Selangor, much to the chagrin of the state government.

Some areas, such as Kuala Lumpur and Hulu Langat did experience water supply disruptions in the final week of June 2012 due to the hot weather which affected water levels in balancing reservoirs. A total of 42,080 accounts were affected (Mstar, 2012).

Following this controversy, rain started to fall in Selangor, and water in the dams was overflowing. Members of the Selangor state government were quick to capitalize on the situation by pointing out that water is plentiful in the state and that water rationing is a remote possibility (Malaysiakini, 2012a) and this was later affirmed by LUAS (Lembaga Urus Air Selangor) (Malaysiakini, 2012b). It seemed that the idea of water rationing in the state was met with scoffs and ridicules by the general public.

When confronted with these scorns, the water concessionaire SYABAS maintained that what was in short supply was treated water and not raw water in the dams. It is steadfast that it has been informing the state government that demand for treated water in Selangor, Kuala Lumpur and Putrajaya increases at a rate of 3.5 percent annually, and that in an effort to meet the demand, some of the 34 water treatment plants are operating beyond their design capacity such as the Sungai Selangor Phase 2 (SSP2), Sg. Langat, Sg. Semenyih and Sg. Batu (The Star, 2012).

As of January 2013, when water disruptions occurred, SYABAS maintained that treated water reserve capacity was only about 1 percent (SYABAS, 2013).

*The December 29, 2012 Water Disruptions.* All parties agreed that the cause of the massive water supply disruption was due to faulty pumps at Wangsa Maju pump house. The main contention of SYABAS was that the pumps were operating above their design capacity and/or overloaded for long periods of time. As for Pump No.2 of the Wangsa Maju Pumping Station, the equipment frequently experienced breakdown of its VSD (variable speed drive), in all cases repair works were done by contractors, but the pump failed to continue operating due to frequent breakdowns of its VSD system which caused instability to the pump (SYABAS, 2013).

The Selangor state government set up a Water Monitoring Committee in order to investigate this incidence. The committee reports that there are five pumps at the Wangsa Maju Pumping Station, which should be operating on a '4 on, 1 standby' (4-1) mode, which is in accordance to the design specifications. The pumps at the station were operating on a '3 on, 1 standby' (3-1) mode. The fifth pump has been out of order for more than a year and was not tended to (Selangorkini, 2013).

Water supply was fully restored one week after the debacle, as opposed to an earlier statement from the chairman of the concessionaire that full restoration was only achievable after the Chinese New Year break which was on February 11 and 12, 2013 (Kosmo, 2013).

*Real or Manufactured?* Water disruptions in Selangor are real. They have not happened only during the tenure of the present government of the state of Selangor, but they have happened before (Ithnin, Jamalia & Nik Nasriah, 2007). That water supply situation in this state is in a tight situation has been acknowledged, and efforts to address the problem have been hatched and implemented. Due to the unique characteristic of this state, such as it is as if a magnet that attracts people to move and settle into it, and the huge inflow of investments into its economy, the progress of water supply sector is grappling to catch up with the rate of development in other sectors, as such, each time a water supply project is completed and implemented, the lifespan of the alleviated relief quickly falls behind the designated target. Therefore to keep abreast with the rate of development in the state of Selangor is really a big challenge for the water supply sector.

The present water situation including the disruptions of the Wangsa Maju Pump House and the closure of the Semenyih on January 13, 2013 clearly tells the precarious state of water supply in Selangor, Kuala Lumpur and Putrajaya. This study is on the view that the status of a crisis has not yet been reached in the state to warrant it be declared crisis-hit and water rationing be sanctioned. The precarious situation now ought to be handled with prudent management, because most of the factors which affect water distribution are related to human decisions.

## **Conclusion**

There is no denying that the state of water supply in Selangor is precarious. Disruptions that occurred are manifestations of the tightness of the situation, as such medium and long term solutions have to be found in order to release the state from the stranglehold of inadequate water supply. At the same time, by declaring a state of crisis is not the right move to depict the precarious nature of the water supply, assuming the forces of nature play their expected roles, such as rains fall during the anticipated months. Should nature be less caring, then the state of Selangor may have to face water crisis, again.

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