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LEGAL IMPLICATIONS ON THE CORPORATISATION OF MALAYSIA WATER SERVICES AND INSIGHT FROM SINGAPORE WATER SERVICES INDUSTRY

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ABSTRACT

The corporatisation of Malaysia's water services marks a significant shift in governance and regulation, transitioning from public ownership to corporatised entities operating under the asset-light model. This article explores the legal implications of this transition, focusing on the Water Services Industry Act 2006 (WSIA) and the related legal framework. Through doctrinal legal analysis, this study examines the impact of corporatisation on governance, tariff setting, financial sustainability, and regulatory compliance. The analysis also highlights the federal government's role in providing financial support, while addressing challenges faced by water operators—particularly the need to balance commercial objectives with public service obligations amidst low tariffs and operational inefficiencies. Insights from Singapore's water services industry also offer valuable lessons for Malaysia, particularly in relation to governance and public-private partnerships (PPPs) that promote sustainable water management. The findings suggest that while corporatisation presents potential benefits, significant challenges remain in ensuring that regulatory frameworks are equipped to support both efficiency and public service delivery. The study concludes by recommending improvements to Malaysia's water services governance, informed by lessons from Singapore, and by addressing key regulatory and financial obstacles.

Keywords: Corporatisation, Malaysia, water services, legal implications, governance, regulation.

INTRODUCTION

The water services sector in Malaysia has undergone substantial reforms, particularly with the move towards corporatisation, which marked a significant shift in governance and operations. In 2005, constitutional amendments and new legislation transferred water supply from solely state jurisdiction to a shared federal-state responsibility. This led to the enactment of the Water Services Industry Act 2006 (WSIA) and the National Water Services Commission (SPAN) Act 2006, establishing a new centralised regulatory framework. These reforms aim to enhance efficiency, accountability, and sustainability in water service delivery. Corporatisation involves transforming public sector entities into corporatised entities operating under private sector principles, while remaining publicly owned. The corporatisation of water services in Malaysia has introduced significant changes in governance, regulation, and financial sustainability. However, this shift has raised questions about the effectiveness of the current legal frameworks, particularly in balancing the commercial objectives of corporatised entities with public service obligations. Hence, this article explores the legal implications of this transition, focusing on how corporatisation influences regulatory frameworks, governance structures, and stakeholder interests in order to answer the question of how the current legal framework, particularly the WSIA, affects the corporatisation of water services in Malaysia.

HISTORICAL DEVELOPMENT OF WATER SUPPLY INDUSTRY IN MALAYSIA

Historically, water supply in Malaysia started with early human settlements, evolving significantly over time (Mala-Jetmarova et al., 2015). Initially, water supply systems were developed by the British in the 1800s, with piped water distributed to urban households by the end of the 19th century (Akademi Sains Malaysia, 2014). However, the water delivered was untreated, relying on raw water from watercourses for domestic needs. Significant advancements were found through the establishment of the first slow sand filter plant in Ampang, Kuala Lumpur (in 1906) and the first rapid sand filter plant in Ayer Hitam, Penang (in 1934) (Elojali, 2011).

Additionally, the legal and regulatory framework in Malaysia began with the enactment of the Water Act 1920, regulating water resources protection in Penang, Kuala Lumpur, and Malacca, followed by state enactments to regulate each state’s water resources and supply. Until the early 21st century, water supply was predominantly a public service managed by state governments, leading to inefficiencies and infrastructural challenges. The concept of privatisation was introduced to address these issues, involving private sector participation to finance water infrastructure (Chin, 2008; Eiken, 2012).

METHODOLOGY

This study adopts a doctrinal legal analysis to examine the regulatory frameworks surrounding the corporatisation of water services in Malaysia. The analysis focuses on key legal instruments, such as the WSIA and the SPAN Act. The study investigates how these statutes influence governance, tariff setting, financial sustainability, and regulatory compliance in the water services sector. The methodology involves assessing the legislative measures and their enforcement mechanisms to understand the legal and regulatory challenges that arise from corporatisation.

In addition to evaluating Malaysia's legal framework, the study draws lessons from Singapore's water management system, particularly regarding its public-private partnerships (PPPs) and governance

structures. This is not a direct comparison but serves to provide insights that could inform potential improvements in Malaysia. Data were sourced from primary materials including relevant statutes and policy documents, and secondary materials, such as academic articles and legal commentaries. This approach offers a comprehensive understanding of the legal implications of corporatisation in Malaysia's water services industry and highlights areas for potential reform based on lessons learned from Singapore.

CORPORATISATION OF WATER SERVICES IN MALAYSIA

The corporatisation of water services in Malaysia was driven by the need to address financial constraints and improve service efficiency (Abd Rani, 2024). Prior to the water sector reform, different states in Malaysia implemented different approaches to the ownership structure in water supply services. Each state adopted an ownership structure that presented unique challenges and resulted in varying levels of efficiency. Some states like Penang, Johor, and Selangor chose to involve the private sector in various capacities. For example, the Selangor government dis-aggregated the supply structure, and contracted out their water treatment and supply to two different private operators, namely Syarikat Pengeluar Air Selangor Holdings Bhd. (SPLASH) for water treatment and Syarikat Bekalan Air Selangor Sdn. Bhd. (SYABAS) for treated water distribution. Meanwhile, the Johor government entered into a concession agreement with Ranhill Holding Sdn. Bhd. to form a joint public-private water operator called Ranhill SAJ Sdn. Bhd. (SAJ). On the other hand, other states, like Kedah, Perlis, and certain regions in Sarawak retained government ownership and responsibility for water supply services through the State Water Supply Department. Some states initiated the corporatisation process, while others like Malacca, Perak, Kuching, and Sibu, delegated their water supply agencies to state statutory bodies known as the State Water Boards, which are responsible for supplying treated water to consumers in their respective service areas.

Table 1 below provides details of the water operators responsible for water supply delivery prior to the water sector reform in each state in Malaysia. The table also illustrates the diverse ownership structures for water supply, which included state government-owned water operators and concessionaire companies that provide clean water supply, each with different scopes and services.

Table 1

Water Operators in Each State in Malaysia Prior to Corporatisation (Ujang et al., 2020)

State	Water Operator	Concession/Licence	Scope and Service
Perlis	Bahagian Bekalan Air, JKR Perlis (main operator)	Government	Treatment and Distribution
Kedah	Jabatan Kerja Raya Kedah (main operator)	Government	Treatment and Distribution
	Air Utara Indah		
	Taliworks Corporation Berhad	Concession Concession	Treatment Treatment and Distribution
Penang	Perbadanan Bekalan Air (main operator)	Licence	Treatment and Distribution

State	Water Operator	Concession/Licence	Scope and Service
Perak	Lembaga Air Perak (main operator)	Government	Treatment and Distribution
	Metropolitan Utilities	Concession	Treatment
	GSL Water	Concession	Treatment
Selangor	SYABAS (main operator)	Concession/Licence	Treatment and Distribution
	Puncak Niaga		
	SPASH	Concession	Treatment
	ABASS	Concession	Treatment
		Concession	Treatment
N. Sembilan	Jabatan Bekalan Air Negeri Sembilan (main operator)	Government	Treatment and Distribution
	Salcon Engineering		
	Lee Engineering	Facility Management	Treatment
		Facility Management	Treatment
Malacca	Perbadanan Air Melaka (main operator)	Government	Treatment and Distribution
Pahang	Jabatan Bekalan Air Pahang (main operator)	Government	Treatment and Distribution
Kelantan	Syarikat Air Kelantan (main operator)	Concession	Treatment and Distribution
Terengganu	Syarikat Air Terengganu (main operator)	Concession	Treatment and Distribution
Johor	SAL Holding (main operator)	Concession/Licence	Treatment and Distribution
	Southern Water Corporation		
	Equiventures	Concession	Treatment
		Concession	Treatment

Financial constraints hampered the ability of the state governments to effectively manage their water supply responsibilities. By 2004, state governments had accumulated a significant debt of RM 2.61 billion (US$ 547.5 million) which had increased from RM 2.54 billion (US$ 532.8 million) in 2003 (Jabatan Audit Negara, 2004). This debt burden has hindered the maintenance and development of water infrastructure, leading to high rates of Non-Revenue Water (NRW) due to physical wear and tear of facilities and commercial losses. For instance, in 2005, NRW rates in six states (Kedah 43.8%, Kelantan 40%, Negeri Sembilan 53%, Pahang 49.7%, Selangor 38.4% and Sabah 57.2%) were higher than the national NRW rate (37.7%) (Akademi Sains Malaysia, 2014).

Private Sector Participation (PSP) was initially seen as a way to boost efficiency in the water sector, but it did not solve all the underlying issues. Even after PSP, some state water operators continued to struggle with the same problems they had before. The core of the issue lay in the conflicting visions of state governments and private companies in which the private sector focused on profitability, while the state governments viewed water supply as a crucial social service. This clash of priorities led to some state governments reversing their privatisation decisions. For instance, in Kelantan, the state government bought back the majority shares from Thames Water to regain control (Kim, 2012).

Despite these obstacles, PSP did show some positive results, particularly in reducing NRW rates in certain states. However, financial challenges persisted, driven by loan repayments and the inability to significantly increase tariff rates. Notably, successful management of water supply, evidenced by a

significant decrease in NRW rates, was achieved by some privatised operators like those in Penang. This indicates that PSP can offer benefits in water supply services, but it is not a one-size-fits-all solution, especially given the political complexities involved in the water sector.

As the global economy rapidly advanced, water supply services struggled to keep pace. This lag was not solely due to limited government financial resources or low water tariffs. This is because building and maintaining water supply infrastructure requires substantial capital investment with slow returns, which also a significant hurdle for many countries, particularly less developed ones, in providing adequate water supplies.

To tackle this challenge, the Malaysian government significantly increased its budget for water services in the 8th Malaysia Plan (2001-2005), allocating RM 4 billion (US$ 859 million), nearly double the amount from the previous plan (EPU, 2001). This funding aimed to replace old asbestos cement pipes to reduce water leakage and associated NRW, which accounted for 38% of total water production. By 2010, Malaysia had spent more than RM 22 billion (US$ 4.7 billion) on developing water infrastructure (Chin, 2008). This investment covered the construction of new water treatment plants, reservoirs, distribution networks, and NRW mitigation programmes.

RESTRUCTURING OF WATER SERVICES INDUSTRY

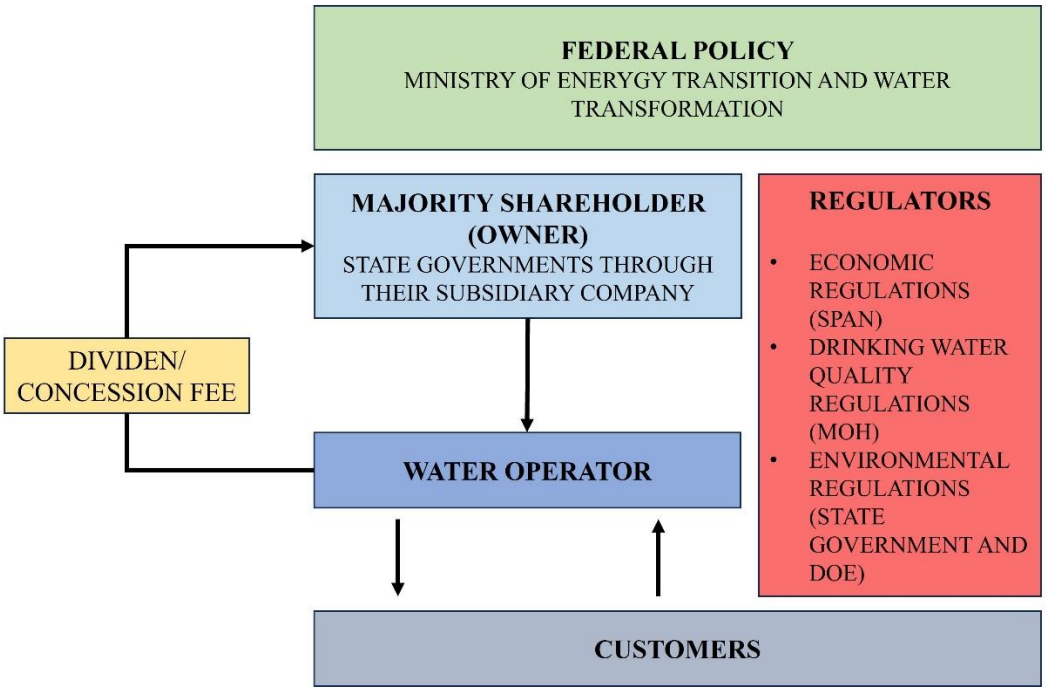
As a result of the financial and governance challenges faced by the water services industry, the federal government initiated a reform known as the restructuring of the water services sector. This reform mandated that water operators, previously under public sector ownership with some PSP, to be corporatised. The goal was to transform these operators into corporate water entities (Teo, 2014). Corporatisation was a key requirement of the new licensing regime introduced alongside the creation of SPAN, the national regulatory body for the water services industry. As a result, existing concession agreements had to be terminated or were not eligible for renewal after their expiration (Khalid, 2018). Following corporatisation, the water operators' equity was wholly owned by state government holding companies. Despite this, the presence of state government officials on the boards of directors signified continued state ownership.

This corporatisation model in Malaysia closely mirrors the general structure recommended by the World Bank. [1] The state governments retained ownership of water operators through corporatisation agreements. Some state water operators, such as those in Kedah, Perlis, and Selangor, were corporatised under the Companies Act 2016. Meanwhile, Perak's water operator was established under the Perak Water Board (Successor Company) Enactment 2008. However, Lembaga Air Perak (LAP) is now required, under a special condition of its individual licence, to be fully corporatised under the Companies Act (Special Condition LAP, 2021).

[1] The World Bank suggests that the corporatisation of public water utilities possesses characteristics such as a separate legal entity, managerial autonomy, transparency and reporting requirements, a board of directors, and greater financial independence.

Figure 1

Structure for Corporatisation of Water Services Industry



Additionally, the corporatisation of water services in Malaysia grants autonomy to water operators, allowing them to manage their accounts independently for operation and maintenance. This separation from government finances also enables SPAN to monitor and audit their financial activities as part of its regulatory responsibilities.

Table 2

Water Operators in Malaysia After Restructuring of Water Services Industry Initiative (Ujang et al., 2020)

State	Previous Main Water Operator in Different States	New Water Operator
Perlis	BBA, JKR Perlis	Syarikat Air Perlis
Kedah	JKR Kedah	Syarikat Air Darul Aman
Penang	Perbadanan Bekalan Air	Perbadanan Bekalan Air Pulau Pinang
Perak	Lembangan Air Perak	Lembaga Air Perak
Selangor	SYABAS	Air Selangor Sdn. Bhd.
N. Sembilan	JBA N. Sembilan	Syarikat Air Negeri Sembilan
Malacca	Perbadanan Air Melaka	Syarikat Air Melaka Berhad
Pahang	JBA Pahang	Pengurusan Air Pahang Berhad
Kelantan	Syarikat Air Kelantan	Air Kelantan Sdn. Bhd.
Terengganu	Syarikat Air Terengganu	Syarikat Air Terengganu Sdn. Bhd.
Johor	SAJ Holding Southern Water Corporation Equiventures	Syarikat Ranhill Syarikat Air Johor Sdn. Bhd.

Until 2024, most states, except Labuan and Perak, have corporatised their water operators to meet the required standards. In Selangor, the state government ended concession agreements with Syarikat Bekalan Air Selangor Sdn Bhd (SYABAS), PNSB Water Sdn Bhd (PNSB Water), Konsortium ABASS Sdn Bhd (ABASS), and Syarikat Pengeluar Air Sungai Selangor Sdn Bhd (SPLASH) to establish Air Selangor Berhad (Air Selangor) as a new single water operator. This corporate entity is now owned by the Selangor government through its state holding company, Kumpulan Darul Ehsan Sdn. Bhd. Similarly, the Perlis government corporatised its water operator, transitioning from the state-run Bahagian Bekalan Air to Syarikat Air Perlis (SAP).

Transitioning from public ownership to a state-owned corporate entity is relatively straightforward compared to reverting from PSP to a state-owned water operator. In Selangor, the process of terminating concession agreements with private entities took nearly five years (Air Selangor, 2020). Interestingly, the Selangor government did not incur penalties for terminating these agreements, thanks to the 'asset-light model' of ownership in water services (Berita Harian, 2015). Under this model, the federal government, through its water asset management company, Pengurusan Aset Air Berhad (PAAB), took on liabilities from terminated concession agreements.

The federal government played a crucial role during the corporatisation process. Through KeTTHA (now known as PETRA) and SPAN, it provided guidance and support to state governments. The federal government allocated RM 17.7 billion (US$ 3.8 billion) to state governments participating in the restructuring initiative (MWA, 2024). This funding was aimed at developing water infrastructure. Another key aspect of the restructuring was the implementation of the 'asset-light model'.

A new model was needed to address challenges such as operating deficits, lack of investment in water infrastructure, and inability to perform maintenance and repairs due to financial constraints. Considering these factors, the federal government adopted the 'asset-light model' under the restructuring initiative (Goh & See, 2021). This model allows water operators to focus on service delivery, while PAAB handles capital expenditure for new infrastructure, as per section 31 (1) of the WSIA.

To assist water operators in achieving full-cost recovery, the Malaysia Ministry of Finance (MOF) established PAAB under the Minister of Finance Incorporated, a subsidiary of the Ministry of Finance (SPAN, 2016). As part of the restructuring agreement, water assets were transferred from state governments or water operators to PAAB. These assets included water treatment plants and distribution systems. In return, PAAB assumed the liabilities related to the investment in water infrastructure, including any penalties for terminated concession agreements.

Under the 'asset-light model', water operators do not own the water assets but lease them from PAAB for a specified period (Teo, 2014; Goh & See, 2021). The water operators act as service licensees (section 4 (b)), while PAAB holds the facilities licence (section 4(a)) as per WSIA. For instance, the government of Penang transferred water-related assets worth RM 655.2 million (US$ 140 million) to PAAB (PAAB, 2016). In return, PAAB assumed an equivalent amount of the state's water liability. PAAB then leases these assets back to the Penang water operator at an agreed rate. This arrangement is regulated under section 32 of WSIA, where the service licensee (water operators) and the facility licensee (PAAB) enter into an agreement for using the water supply system.

The 'asset-light model' shares some similarities with the full divestiture of assets used in England. However, a significant difference is that in this model, water assets remain government-owned through the asset management company. The asset-light model involves a temporary transfer of assets to PAAB

for 45 years, unlike the full divestiture model, where assets are permanently transferred to a private entity unless renationalised by the government.

From a legal perspective, this water infrastructure financing through the asset-light model is implemented in accordance with Article 82 of the Federal Constitution (FC) which states:

> "Where any law or executive action relating to any of the matters enumerated in the Concurrent List involves expenditure, such action shall be taken under this Constitution as will ensure that, unless otherwise agreed, the burden of that expenditure is borne -
>
> (a) by the Federation, if the expenditure results either from federal commitments or from State commitments undertaken in accordance with federal policy and with the specific approval of the Federal Government;
>
> (b) by the State or States concerned, if the expenditure results from State commitments undertaken by the State or States on its or their own authority."

This provision states that if the expenses are due to federal commitments or state commitments that follow federal government policies and have the federal government's approval, the federal government will cover the costs, or if the expenses are due to state commitments made independently, the state will cover the costs. This financing provision under FC appears to align well with the asset-light model, as the federal government, through PAAB, would finance and own the water assets, which falls under the federal commitment. It would also align with state commitments undertaken in accordance with federal policy and approved by the federal government.

The asset-light model used in the water sector in Malaysia is different from the model in other countries that adopt the corporatisation approach for water supply such as Canada and Australia, where the government or water operators typically own the water assets. As mentioned earlier, this asset-light-model was adopted primarily due to financial constraints faced by water operators in Malaysia, while in Canada and Australia, the financial stability of the government and water operators allowed them to finance water infrastructure development on their own. However, there are some states in Malaysia that decided not to transfer all water assets to PAAB due to their ability to repay the loan and finance future water development. For instance, the state government of Terengganu decided not to join the migration scheme with PAAB because the state government believed it can finance the water infrastructure development without assistance from the federal government (Ujang et al., 2020).

However, despite over a decade of restructuring in Malaysia's water services industry, many water operators are still reliant on assistance from the federal and state governments. This is due to low water tariffs, which do not reflect the actual production cost, and poor bill collection. The financial arrangement under the asset-light model is yet to be fully enforced, due to the complexity of the financial arrangement and the limited financial ability of water operators. For example, PAAB delayed new water infrastructure development in the state of Negeri Sembilan due to weak financial flow from low water bill collections (Ujang et al., 2020).

LEGAL FRAMEWORK FOR CORPORATISATION

The Water Services Industry Act 2006 (WSIA) and the National Water Services Commission Act 2006 (SPAN Act) provide the legal foundation for the corporatisation of water services. These acts aim to create a coherent regulatory environment promoting efficiency, transparency, and accountability.

Water Services Industry Act 2006 (WSIA)

The Water Services Industry Act 2006 (WSIA) mandates a clear separation between regulatory functions and service delivery, with service providers operating under licences issued by the National Water Services Commission (SPAN). WSIA introduces stringent performance standards and reporting requirements to ensure enhanced service quality and accountability. One key requirement under the Water Services Industry (Licensing) Regulations 2007 (P.U.(A) 432) is that water operators must be corporatised and incorporated in Malaysia, as stipulated by regulation 1. Operators are also required to provide relevant information to SPAN and comply with water quality standards as per regulation 12 of P.U.(A) 432. Failure to meet these obligations can result in licence revocation, prohibiting further operations (Section 13, WSIA).

The introduction of a comprehensive licensing regime under WSIA represents a significant shift in regulating water operators. Previously, water supply services were self-regulated by state governments or private entities, with minimal oversight from the federal government. Under the new corporatisation framework, operators must obtain individual or class licences depending on their role, and adhere to key performance indicators such as service quality, water delivery, and financial sustainability. The legal obligations, including submission of business plans and compliance with service standards, ensure a more transparent and accountable water services sector. Non-compliance with licensing requirements leads to strict penalties, including fines or imprisonment, underscoring the legal system's emphasis on service quality.

Water quality regulation is another crucial aspect of corporatisation. Ensuring safe drinking water is vital for public health, as water-borne diseases like diarrhoea and cholera pose significant risks. The Malaysian water services industry follows the World Health Organisation (WHO) guidelines, incorporated into the National Drinking Water Quality Standards (NDWQS) (Segaran et al., 2022). These guidelines set acceptable levels for contaminants such as chlorine, E. coli, turbidity, and aluminium. However, these guidelines are not legally binding, as Malaysia does not have a Drinking Water Quality Act. Water operators are still required under section 41 of the WSIA to monitor water quality and report to both the Ministry of Health (MOH) and SPAN. If water quality is found to be substandard, the Ministry immediately sends a report to the operator to take corrective action. Despite these mechanisms, legal enforcement related to water quality remains limited, as penalties are rarely imposed due to the financial struggles of many operators.

The absence of a Drinking Water Quality Act leaves a gap in the legal framework, as there is no enforceable law to mandate minimum water quality standards. The current guidelines lack sufficient legal force, and although penalties exist for failing to meet quality standards, enforcement has been weak. This highlights the need for future reforms through the enforcement of new acts such as the Drinking Water Quality Act to provide a more robust legal basis for enforcing water quality regulations.

National Water Services Commission Act 2006 (SPAN Act)

The SPAN Act establishes SPAN as an independent regulatory body with the authority to enforce the provisions of the WSIA. SPAN's responsibilities include monitoring compliance, setting tariffs, and ensuring that service providers adhere to performance standards. The SPAN Act aims to depoliticise water service management and promote professional oversight. This act also gives power to SPAN to regulate the water operators.

GOVERNANCE CHALLENGES IN MALAYSIA'S CORPORATISED WATER SERVICES INDUSTRY

Corporatisation in the Malaysian water services sector introduces several governance challenges, particularly in balancing commercial and public interest objectives, ensuring regulatory compliance, and managing stakeholder expectations. These challenges are crucial for the sustainability and effectiveness of water supply services in the country.

Balancing Commercial and Public Interests

Corporatised water entities in Malaysia face the significant challenge of balancing their dual objectives: operating as commercially viable entities while fulfilling their mandate to provide public services. This tension is especially evident in tariff setting, where maintaining affordable water rates must be weighed against the need to cover operational costs and invest in infrastructure. For example, the historical reluctance to adjust tariffs due to political sensitivities has often led to financial deficits for water operators. In Perlis, the water tariffs have not changed since 1994, reflecting the political challenges associated with adjusting water prices under government oversight.

The Minister ultimately decides the tariffs, with recommendations from SPAN, taking into account the necessity to achieve full cost recovery. However, this process is complicated by the need to justify any increases in the context of public affordability and accessibility. For instance, in 2019, a new tariff setting mechanism was proposed to promote tariff uniformity and transparency, in addition to seeking to address both operational and capital expenditure needs. Despite this, some states resisted tariff adjustments due to their differing perceptions of water supply as a social responsibility, further complicating financial sustainability efforts. At present, there is no clear legal framework for the tariff setting mechanism in Malaysia; unlike in other countries such as Victoria, Australia whereby the tariff setting process is provided under the Victoria Water Industry Regulatory Order 2014 (WIRO) (section 4D (1) of the Water Industry Act 1994).

Additionally, corporatised entities like Syarikat Air Perlis (SAP) must navigate limited autonomy in financial decisions. While SAP can participate in regulatory discussions, they must ensure that any proposed tariff increases are economically justified and consider the needs of marginalised groups. This delicate balance underscores the complexities of political policy making intertwined with tariff regulation, necessitating transparent and rigorous evaluation methods to foster public trust and confidence in the tariff-setting process.

Regulatory Compliance

Regulatory compliance is a cornerstone of maintaining service quality and public trust in corporatised water services. SPAN, as the central regulator, plays a crucial role in monitoring and enforcing compliance across the sector. For instance, the corporatisation process has imposed stricter transparency obligations under the Companies Act 2016, requiring water operators to disclose financial information in annual reports. This regulatory framework aims to enhance accountability and governance within the water sector.

However, the effectiveness of regulatory compliance is often challenged by practical realities. For example, in Perlis, SAP has struggled with compliance issues, particularly regarding water quality standards set by the Ministry of Health (MOH) (Abd Rani, 2024). SAP's failure to meet critical quality parameters such as combined E. coli and free residual chlorine levels highlights the challenges in maintaining regulatory standards amidst ageing infrastructure and limited financial resources.

Moreover, the asset-light model adopted in Malaysia separates asset ownership and operations, with PAAB owning the infrastructure while water operators manage the service delivery. While this model aims to alleviate financial burdens on state governments, it also introduces potential communication and coordination challenges that can impact regulatory compliance and service delivery.

Stakeholder Engagement

Effective stakeholder engagement is important for the success and sustainability of corporatised water services. This includes actively involving consumers, employees, and other stakeholders in decision-making processes to ensure their interests are adequately considered. In the case of SAP, efforts to engage stakeholders have been limited due to a lack of legal framework that requires the involvement of the public in any decision-making process. For example, while SAP provides platforms for lodging complaints and reporting disruptions, the transparency of the resolution process remains a concern. Clear guidelines for addressing and resolving issues are crucial to building consumer trust and satisfaction.

Public participation in tariff reviews and other significant decisions is also critical. Despite holding a consultation session in 2019 for a new tariff setting mechanism, the process was more informative than participatory, reflecting a top-down approach that limited direct consumer input. To enhance public participation, SAP and similar entities need to adopt more inclusive strategies that prioritise consumer viewpoints in their operational and strategic decisions.

Furthermore, the composition of SAP's board of directors, which includes high-level state government officials, poses a challenge to true accountability. This arrangement can potentially reduce the pressure of public accountability, as these officials might focus on internal rectifications of non-performance issues. Restructuring the board to include more members with relevant expertise and reducing state government presence could help in making more independent and public-focused decisions.

SINGAPORE EXPERIENCE

The legal framework for water services in Singapore is a complex and multifaceted system that has evolved significantly since the country's independence in 1965. This framework is characterised by a

combination of robust regulatory mechanisms, public-private partnerships (PPPs), and an integrated approach to water resource management. The Public Utilities Board (PUB) plays a central role in this framework, overseeing the entire water supply and sanitation system, which includes the management of water quality, supply, and demand.

One of the key components of Singapore's water services legal framework is the emphasis on institutional effectiveness and inter-agency coordination. The evolution of water quality management laws and regulations has been instrumental in controlling water pollution and ensuring sustainable water management practices (Tortajada & Joshi, 2014; Ng & Teo, 2021). The PUB operates as a statutory board under the Ministry of Sustainability and the Environment, which allows it to implement policies effectively while maintaining a degree of autonomy (Leong & Li, 2017). This structure has enabled Singapore to prioritise water management in its national agenda, thus supporting urban, industrial, and commercial growth (Tortajada & Joshi, 2014; Rose, 2021).

Public-private partnerships have been pivotal in enhancing Singapore's water infrastructure. The first PPP project in the water sector, the Tuas Desalination Plant, exemplifies how collaboration between the public and private sectors can lead to innovative solutions for water security (Kim & Kwa, 2020). Also noted that such partnerships have been essential in constructing and operating facilities that ensure a regular supply of high-quality water, thereby addressing the challenges posed by Singapore's limited natural water resources (Kim & Kwa, 2020). The success of these partnerships is attributed to a supportive legal and regulatory environment that encourages investment and innovation in water services (Kim & Choi, 2023).

Integrated water resource management (IWRM) is another critical aspect of Singapore's legal framework. An integrated regulatory framework, coupled with sound policies and stakeholder participation, is necessary for the successful implementation of IWRM (Chen et al., 2011; Jensen & Nair, 2019). This approach not only addresses the supply side of water management but also emphasises aspects of demand management and sustainable use of water resources. The promotion of rooftop rainwater harvesting as a decentralised water supply system for non-potable uses further illustrates Singapore's commitment to innovative water management practices (Chen et al., 2011; Heijnen, 2020).

The legal framework also encompasses stringent water quality management regulations, emphasising the importance of technological innovations in ensuring reliable water supplies, which are supported by comprehensive planning and regulatory frameworks (Tortajada & Nambiar, 2019). The implementation of laws governing water quality has been crucial in maintaining high standards for drinking water and minimising pollution from industrial activities (Tortajada & Joshi, 2014). This regulatory rigor is complemented by public engagement initiatives aimed at fostering a culture of water conservation among residents (Tortajada & Joshi, 2013).

Moreover, the legal framework for water services in Singapore is underpinned by a strong political will that prioritises water sustainability. The government's commitment to addressing water scarcity through innovative solutions, such as potable water reuse, has positioned Singapore as a global leader in water management (Tortajada & Rensburg, 2019). The integration of advanced technologies in water treatment and recycling processes is a testament to the effectiveness of the legal and regulatory frameworks in promoting sustainable practices (Tortajada & Nambiar, 2019).

The evolution of Singapore's water services legal framework reflects a broader trend towards sustainability and resilience in urban water management. As highlighted, the Singapore Water Story

serves as a model for other cities facing similar challenges related to water scarcity and quality (Tortajada et al., 2013). The lessons learned from Singapore's experience underscore the importance of a comprehensive legal framework that encompasses regulatory, institutional, and technological dimensions to achieve sustainable water management.

CONCLUSION

The corporatisation of water services in Malaysia presents both opportunities and challenges. Establishing a robust legal and regulatory framework, fostering good governance, and effectively engaging stakeholders are crucial for achieving sustainable and equitable water service delivery. Singapore's experience demonstrates the value of strong regulatory frameworks and stakeholder engagement in ensuring the sustainability of corporatised water services. Continuous monitoring, evaluation, and adaptation of the corporatisation process are essential to ensure its long-term success. While corporatisation can enhance efficiency and accountability, it is vital to manage it carefully in order to avoid prioritising profit over service quality and accessibility and to mitigate political interference. By addressing these challenges, Malaysia can achieve a greater sustainable and effective water services sector in the near future.

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