

# ADOPTING BEST PRACTICES: A COMPARATIVE ANALYSIS OF UK AND JAPAN WATER POLICIES FOR ENHANCED GOVERNANCE IN KLANG VALLEY, MALAYSIA

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## Abstract

*This study explores the complicated domain of water governance in the Klang Valley of Malaysia. It aims to improve governance structures by conducting a comparative examination of water policy in two globally recognised contexts: the United Kingdom (UK) and Japan. The research examines the fundamental concepts and successful examples of water policies in the UK, which is known for its effective and sustainable water management systems. These findings can potentially be used as a standard for the Klang Valley. Moreover, an examination of Japan's water policy provides significant knowledge, highlighting the potential applicability of specific strategies in the Malaysian setting. The study methodology involves analysing the available literature, papers, and records about water policies in the UK and Japan. Furthermore, in-depth interviews with key stakeholders involved in water governance in the Klang Valley are also conducted to provide firsthand perspectives, hence guaranteeing a detailed comprehension of the distinctive difficulties and prospects in the area. The findings highlight practices that can be applied in many contexts and provide clear recommendations for implementing and modifying effective policies. The objective of this study is to promote improved cooperation among Federal, State, and Local agencies by aligning the water governance of the Klang Valley with worldwide norms. In addition to its local context, the research makes a valuable contribution to the wider discussion on how to effectively govern at multiple levels when faced with complex water management difficulties. It offers valuable insights that may be used to improve policy and practice, not only in Malaysia but also in similar contexts around the world.*

**Keywords:** *Water Governance, Water Policy, Sustainable Water Management, Stakeholder Perspectives, Multi-Level Governance*

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## Introduction

Water governance is the decision-making interactions between stakeholders and institutions to manage water resources (Gumeta-Gomez et al., 2021). It is also described as the “range of political, social, economic and administrative systems that are in place to develop and manage water resources and the delivery of water services, at different levels of society” (Rogers & Hall, 2003). Hence, water governance encompasses a complex political, social, economic, and administrative system that manages and provides water services across different societal levels (Studart et al., 2021).

The governance of the water sector is very challenging due to its intrinsic characteristics. Water governance is complex due to various policy areas and stakeholders, sectoral fragmentation of water-related tasks across ministries and public agencies, a diversity of actors involved in water policy-making, and policymakers facing conflicting objectives. Water is also a local issue and involves a plethora of stakeholders at basin, municipal, regional, national, and international levels (OECD, 2011).

Water security is about good governance. Effective governance is crucial in ensuring continuous access to clean water for everyone (Bakker & Morinville, 2013). It requires strong stakeholder engagement to aid in designing water allocation policies and improving management practices. In contrast, loose stakeholder ties can result in weak and inefficient governance (Kapetas et al., 2019). Effective water governance involves ensuring reliable access to clean water for every person to live a healthy and productive life. Hence, improving water governance is critical considering the current urbanisation trend (Mishra et al., 2021).

Industrialization, urbanisation and growing population posed a great challenge to water quality in Malaysia. Water supply issues in Malaysia include the non-uniform rainfall distribution throughout the year, insufficient water supply compared to demand in city areas, and polluted water. Water pollution emerged due to urbanisation, expansion of economic developments, increased in the human population, and ineffective governance (Garba et al., 2021).

Water disruptions due to pollution, pipe bursts, and maintenance have plagued Malaysian for years (The Edge, 2023). The latest Water and Sewerage Fact Book 2022, published by Suruhanjaya Perkhidmatan Air Negara (SPAN), stated that there were 43,956 cases of "Unscheduled" water supply interruption in Peninsular Malaysia and Federal Territory (F.T) Labuan for the year 2022. This number exceeds the "Scheduled" water interruption, projected at 1,935 cases (Table 1). From the statistics, Selangor, which includes Kuala Lumpur and Putrajaya in the Klang Valley, recorded 1030 cases of "Scheduled" and 10,518 cases of "Unscheduled" water interruptions.

Table 1: Water Statistics 2022 (All States in Peninsular Malaysia and F.T Labuan)

Item	All states in Peninsular Malaysia and F.T Labuan	State of Selangor only
Population	26,789,700	9,103,700
Water consumption		
▪ Domestic	63.0%	62.3%
▪ Non-Domestic	37.0%	37.7%
Water Interruption		
▪ Scheduled	1,935	1,030
▪ Unscheduled	43,956	10,518

Complaints		
▪ Pipe breakage	38.5%	27.5%
▪ Billing & Meter	24.5%	42.2%
▪ Water interruption	17.1%	16.3%
▪ Others	13.0%	7.5%
▪ Water pressure	6.3%	6.0%
▪ Water quality	0.6%	0.4%

(Source: SPAN, 2022)

Water supply disruption causes huge economic impacts in Malaysia. The main causes of water supply disruptions are technical problems, climatic hazards, and pollution. Frequent water supply disruptions put commercial, residential, and industrial property at risk. In 2020, the total economic impact of water supply disruption combining both property value at risk and business loss amounted to RM461,094 million which is equivalent to 34% of Malaysia's GDP (Raihan et al., 2023).

The objectives of this study are to explore United Kingdom (UK) and Japan water policies as potential models for adoption. It will explore the effective water governance in these countries to identify transferable practices for application in the Klang Valley. This study is significant as it addresses the pressing need for improved water governance in the Klang Valley as well as its potential impact on sustainable water management practices.

## Literature Review

### *Overview of Water Policies in the UK*

Water governance is complex and requires coordination across a range of institutions and stakeholder interests. For the UK, this complexity extends to the European Union (EU) and its governing European Commission (EC), the UK Government (both central and devolved governments and administrations), water companies (public and private), local councils, Non-Governmental Organisations, farmers, businesses and local communities (Robins et al., 2017).

The UK aims to tackle water insecurity and poor water management through its well-developed water 'offer' that includes water leadership, ownership and regulation, competition and markets, and innovation. It has different models of ownership for water, including government departments, GoCo, Mutual, and private companies, all regulated to deliver the right outcomes for society. The UK has also set up the world's first water retail markets for business customers, leading to savings and environmental benefits. In addition, it has a thriving water tech start-up ecosystem and water companies support these fledgling companies through labs and pilot schemes. The English regulator, Ofwat, has established a significant innovation fund, making the UK a global leader in water innovation and technology (Ozano et al., 2022).

### *Overview of Water Policies in Japan*

Japan's annual total precipitation is about 1700 mm which is about twice the global average of 970 mm. Despite the country's appearance as a water-abundant region with substantial rainfall, its small land

area and high population density complicate the assessment of water availability per person. The country faces challenges in utilizing water resources as the rainfall centers on the rainy, typhoon, and snowfall seasons, making it heavily weather-dependent. Moreover, Japan's steep terrain contributes to the rapid runoff of most rainfall into the sea (Su et al., 2019).

Groundwater is less vulnerable to pollution than surface water and constitutes about 12% of the total water consumption in Japan. Groundwater is used for industry (30%), domestic (29%), and agriculture (24%). Given this, the policymakers in Japan give a higher priority to industry and agriculture. Groundwater also becomes crucial for survival when a natural disaster occurs (Hori, 2016).

The Ministry of Land, Infrastructure, Transport, and Tourism (MLIT) is responsible for formulating and implementing a water policy at a national level. The ministry prepares a comprehensive plan for the development and conservation of water resources such as making a plan for dam construction, building irrigation drainage, and river management. On the other hand, the local government is in charge of the operation within the framework of the national policy. The local governments manage the domestic, industrial, agricultural, and sewerage water utilities and their related facilities. The local environmental division in each region continuously monitors the quality of public water and supervises local private companies to ensure that the standards for wastewater effluents are being met to prevent any environmental pollution caused by the effluent from factories. There is an exception in the local groundwater policy in which the local government conserves its groundwater resources independently by using local ordinances (Hori, 2016).

Table 2: Groundwater Governance in Japan

Subject	Description
Legal Framework	Divided into two parts: (a) the national level (b) the local level (local groundwater ordinances, regulations, rules, and old traditions)
Water Laws	Divided into four parts: (a) laws related to hydrology; (b) laws related to water uses; (c) laws related to groundwater quality preservation; and (d) laws related to groundwater research and development.
Related Agencies	Ministries / duties / related laws: (1) Min. of Health, Labor and Welfare / Water supply / Water Supply Law (2) Min. of Agriculture, Forest and Fisheries / land, water and other resources related to agriculture / Land Improvement Act (3) Min. of the Economy, Trade and Industry / Promote industrial water supply projects / Industrial Water Law, Industrial Water Supply Business Law (4) Min. of the Environment / Impose legal controls of antipollution / Basic Environmental Law, Industrial Water Law, Building Law (5) Min. of Land, Infrastructure, Transport and Tourism (River Bureau) / Maintenance, uses and preservation on water management / River Law (6) Min. of Land, Infrastructure, Transport and Tourism (Water Resource Bureau) / Manage basic plan for water resource development / Guideline on Measures for Prevention of Ground subsidence

(Source: Hori, 2016)

*Malaysia's Water Agenda*

Malaysia has devoted itself to implementing the Integrated Water Resource Management (IWRM) policy since 2001 and it has become the nation's core paradigm and strategy for sustainable water resource management. Achieving the Sustainable Development Goal (SDG) especially SDG#6 (Clean water and sanitation for all) target requires all 13 State Governments to share responsibility with the Federal Government in implementing the IWRM agenda (Abdullah et al., 2016).

In 2021, Malaysia announced its Water Sector Transformation 2040 (WST2040) during the launch of the 12<sup>th</sup> Malaysia Plan (MP). It aspires to transform the water sector from an economic enabler into a dynamic economic sector as the future direction of national growth by 2040. The WST2040 will be implemented over 20 years through four MPs. Phase 1 runs for the year 2021 to 2025 and focuses on accelerating the implementation of IWRM (EPU, 2022).

*Existing Water Governance in Malaysia*

Water issues in Malaysia are more of governance than scarcity (Chan, 2009). Water issues in Malaysia include poor enforcement (Chan, 2004), river pollution, the safety of drinking water, and water disruption (Rahman, 2021). The existing framework shows an overlap in water management between the Federal and State governments. Water governance became fragmented due to the diverse implementation of policies and laws. State water policies are not standardised resulting in many water Acts and rules with multiple agencies overseeing them. Moreover, most water laws are obsolete, broad, and unspecific (Saimy & Yusof, 2013). Too many agencies have jurisdiction over different aspects of water resources management (Lee et al., 2018). The multi-agency approach of the water service delivery system has created confusion and led to unclear responsibilities. Due to this lack of clarity, the responsible agencies cannot put them into action (Saimy & Yusof, 2013).

Water laws in Malaysia focus on limited aspects of water resources and are difficult to enforce effectively (Garba et al., 2021). Several acts have been developed to control river water pollution with the earliest one being the Water Act 1920 which was initiated in the 1920s.

Table 3: Water-Related Acts and Guidelines in Malaysia

No.	Acts	Description
1	Water Act 1920	Only applies to Negeri Sembilan, Pahang, Perak, Selangor, Melaka, Penang and the Federal Territory. The provisions cover property of rivers, restoration, prohibition of diversions and pollution, licensing, penalties, and compensation. An Act to provide the control of rivers and streams
2	Water Supply Enactment (1955)	Empowers state water authorities in supplying water to domestic and commercial users. Only serves as a regulatory body to oversee operations of supply company and ensure compliance with drinking water standards. No legal power to enforce compliance from the companies or for them to initiate corrective actions.
3	Environmental Quality Act 1974	Prevent, abate, control of pollution and enhancement of the environment.
4	Water Supply (Federal Territory of Kuala Lumpur), (Act 581)	Water supply and distribution of water in Selangor be applied to Kuala Lumpur with modifications.

5	National Water Services Commission Act (Act 654)	To transfer water supply services from the State List to the Concurrent List. Its vision is towards sustainable, reliable and affordable water services for all. To regulate and supervise water supply and sewerage services, enforce water supply and sewerage services laws and related matters.
6	Water Services Industry Act (Act 655)	To provide and regulate water supply services and sewerage services and incidental matters thereto.

(Source: Saimy & Yusof, 2013)

Malaysia's water services are shared between the Federal and State Governments. Both bodies are attaining different roles in dealing with water-related matters with federal agencies being responsible for the planning, research and development of water resources while state bodies focus on the infrastructure development of water supply that includes financing, operation, and maintenance. Besides, each state has different guidelines on its water processes and management (Garba et al., 2021).

Table 4: Water-related agencies at the Federal level in Malaysia

No.	Agency	Responsibility
1	Ministry of Natural Resources, Environment and Climate Change	water policy matters
2	Suruhanjaya Perkhidmatan Air Negara (SPAN)	regulatory matters
3	Ministry of Finance – PAAB (national water asset holding company)	assets ownership
4	state water companies	service provision
5	Department of Irrigation and Drainage (DID)	hydrology, river management, flood mitigation, coastal and stormwater management
6	Public Works Department (PWD)	domestic and industrial water supply
7	Department of Environment (DOE)	quality of rivers, reservoirs or any water catchment areas
8	Ministry of Health (MOH)	quality of raw water supply especially for drinking water purposes

(Source: Saimy & Yusof, 2013, Lee et al., 2018)

### *Klang Valley Water Challenges*

Klang Valley in Selangor is a national and regional growth center in Malaysia. It consists of 5 districts namely Kuala Lumpur, Hulu Langat, Gombak, Petaling, and Klang with a total area of 2832 km<sup>2</sup>. As of 2021, Klang Valley's population exceeds 8.2 mil which is equivalent to 25% of the Malaysian population. Its population is projected to exceed 10.4 million by 2035. In addition, it is Malaysia's most urbanized region, industrial and commercial hub which contributes to approximately one-third of the nation's gross domestic product (Mundher et al., 2023). Being a vital economic and population center in Malaysia, Klang Valley relies on a robust and dependable water service delivery system.

Various agencies are involved in managing river and water resources in the Klang Valley resulting in the initiation of an Integrated Water Resource Management (IWRM) approach. However, the challenge of integrated management lies in developing sound cooperation and collaboration among multi-level agencies (Alatas, 2011).

Table 5: Water-related agencies managing river and water resources in the Klang Valley

Federal	State
1. Ministry of Housing and Local Government (Town and Country Planning Department and the Department of Local Government)	1. Town and Country Planning Department; established both at the federal and state levels
2. Ministry of Energy, Green Technology and Water	2. State Economic Planning Unit
3. Prime Minister's Department (Economic Planning Unit)	3. Land Administration/Land Office
4. Ministry of Natural Resources, Environment and Climate Change (Department of Mineral and Geosciences, National Hydraulic Research Institute, Department of Environment, Department of Irrigation and Drainage)	4. Department of the Environment
5. Ministry of Agriculture (Irrigation Division)	5. Department of Irrigation and Drainage (DID); established both at the federal and state levels
6. Department of Environment (DOE)	6. State government agencies include the Water Supply Department (Jabatan Bekalan Air)
7. Malaysian Meteorological Service (MMS),	7. Forestry Department
8. Public Works Department (PWD)	8. Selangor Water Management Authority (LUAS)
9. Health Department	9. Fisheries Department; established both at the federal and state levels
10. Department of Agriculture (DOA)	10. Wildlife Department; established both at the federal and state levels
11. National Hydraulic Research Institute Malaysia (NAHRIM).	11. Veterinary Department; established both at the federal and state levels

(Source: Alatas, 2011)

Two decades ago, Chan (2004) raised his concern about the water governance issues plaguing Malaysia. He debated that while water governance regulations in Malaysia are solid, there needs to be more implementation and enforcement. In addition, Malaysia's water sector reforms needed to be stronger and better implemented (Tan, 2012). This situation has been further compounded by the incident of water source contamination which caused disruptions to supply and affected millions of people in the region.

Water legislation is contained within the laws enforced by the various water-related government agencies and is focused on specific aspects of water resources under the respective agencies' jurisdiction. Gaps and overlaps exist. Conflicts in water resources management, such as allocation of water rights, flood management, pollution control, and environmental protection, are resolved through inter-agency coordination and consultation (Abdullah et al., 2016). Amendments to the Federal Constitution and the overlapping management among the departments need clarification on which department is in charge of some issues or who has the final say on water (Saimy & Yusof, 2013).

## Methodology

This study uses desk analysis to review the relevant literature, reports, and documents concerning UK and Japan water policies. In the context of Klang Valley, qualitative research methodology namely in-depth interview is used to engage with key stakeholders involved in water governance. This involved government agency staff at the Federal, State, and Local levels, representatives from enforcement agencies responsible for regulation, and water operators involved in actual service delivery. This multi-stakeholder approach provides a holistic understanding of the collaboration and coordination between

all agencies involved in water service delivery in the Klang Valley.

Interview is the most widely used method for qualitative data collection (Islam & Aldaihani, 2022) as it provides very rich information and offers the opportunity to ask follow-up questions, probe additional information, justify previous answers, and establish a connection between several topics (Queiros et al., 2017). There are three types of interviews used in qualitative research namely structured, semi-structured, and unstructured. This study uses in-depth semi-structured interviews as the data collection method. For this study, semi-structured interviews with open-ended inquiries are used to extract participants' experiences, perceptions, thoughts, and feelings (Moser & Korstjens, 2018). It guides the informants to provide answers on specific matters while at the same time being flexible enough to give them opportunities to highlight items that, in their opinion, are important to the study.

This study involves a case study of Klang Valley. For case study research, Creswell (2014) recommends 4 to 5 samples per study while Marshall et al. (2013) recommending 15 to 30 samples. Dworkin (2012) suggests between 5 and 50 samples. All of them agreed that the target is to reach data saturation. Saturation occurs when data collection yields no fresh ideas or knowledge (Bazen et al., 2021). The sample for this study is planned to comprise 20 to 25 informants consisting of policymakers from selected agencies at the three levels of government namely the Federal, the State, and the Local. Some informants will come from experts in academia as well as related non-governmental organizations (NGOs) and politicians. The tentative List of Informants is stated in Table 6.

Table 6: Tentative List and Number of Informants

Category of Informants	Tentative Number	Identification/Coding
Government - Federal	6	Informant GF1, GF2, ...
Government - State	6	Informant GS1, GS2, ...
Government - Local	5	Informant GL1, GL2, ...
Water Operator	2	Informant W1, W2, ...
NGOs	2	Informant N1, N2, ...
Politician	2	Informant P1, P2, ...
Academic Experts	2	Informant A1, A2, ...
<b>TOTAL</b>	<b>25</b>	

When interview appointments are made, the nature of the research is briefly explained. At the start of the interview, the interviewee is assured of confidentiality, and their consent is sought for the interview to be recorded. These informants will be assigned unique identification codes to ensure confidentiality (Table 6). The interviews are currently on-going and expected to be completed in February 2024. The data collection process and data analysis are done concurrently.

Interview recordings are transcribed and analyzed manually, as well as using Atlas.ti software. Thematic inductive analysis is utilised in analysing the interview data. Information from archival records and documents was combined with information from the interviews. The anticipated outcome is a rich and detailed dataset that captures the nuances of multi-level governance structures and collaborative practices in the water governance of Klang Valley.



## Findings

The examination of UK water policies reveals key strategies that showcase adaptability to the specific challenges faced by the Klang Valley. Noteworthy is the UK's emphasis on sustainable water resource management, technological advancement, and the setting up of the water retail markets for business customers which led to savings and environmental benefits. The applicability of these strategies in the Klang Valley context is necessary particularly in the face of rapid urbanization and water management complexities. It is also relevant since Malaysia is ambitious in converting water sector from an economic enabler into a dynamic economic sector for national growth by 2040.

Other key elements within the UK water policies, such as IWRM and stakeholder involvement present essential considerations for policymakers in the Klang Valley. These elements provide a foundation for constructing effective and context-specific governance structures tailored to the needs of the region. Malaysia has devoted to implementing the IWRM policy since 2001. However, the lack of understanding of IWRM concept among water-related authorities and constitutional conflict in water jurisdiction led to the unsuccessful implementation of IWRM in Selangor (Khalid et al., 2012).

The analysis of Japan's water policies underscores their relevance to the broader Malaysian scenario. Japan's successful implementation of groundwater policies and the important role of the local agencies highlight potential solutions applicable to the Malaysian context, taking into account factors such as climate, geography, and socio-economic dynamics. Valuable lessons emerge from Japan's experiences in water management, emphasizing the effectiveness of community-based approaches and technological innovations. These lessons offer pragmatic insights that can be adapted and applied in the Klang Valley, aiding in the resolution of water governance challenges.

Governance is regarded as the most critical issue associated with water management (Chan, 2009), as poor governance causes more harm to natural resources (Hefny, 2009). Water governance in the UK is a complex and multi-tiered system that faces various challenges. There is a need to strengthen water governance in the UK by implementing a system-wide water policy, embracing community-led river basin planning and management, fully funding river basin planning and management, and re-focusing policy framing (Fritsch, 2019). Additionally, it is important to use the best-available data and information, create conversational spaces, mobilize people, support core community networks, and address institutional amnesia (Robins et al., 2017). Collaborative governance approaches, such as catchment partnerships, have been found to contribute to water governance in the UK by enabling joint identification of improvements and recognizing the benefits of working together (Foster, 2021).

Japan's existing legal structure is adequate to ensure the protection of groundwater as the laws oblige local administrations to protect and preserve the groundwater environment against social and climate changes. Groundwater law in Japan is a set of laws that work together despite overlapping. These laws complement each other and provide a comprehensive legal framework. While general environmental laws alone may not be sufficient for managing groundwater, they address broader environmental concerns. In cases where these environmental laws don't specifically safeguard local groundwater, there are local groundwater ordinances that step in to set legal limits for protecting this resource. The overlapping groundwater legal structures are unique aspects of the Japanese conservation policy and have proven effective in conserving groundwater (Hori, 2016).

The primary weakness of Malaysia's water sector lies in the disconnect of governance, where the federal government is responsible for water supply and services while the state governments oversee water resources (Tan et al., 2020). Moreover, the water regulatory acts cover only the water supply and services, not water resources such as rivers, seas, or lakes, which may lead to poor water quality at the source. The various agencies responsible for water governance have also led to conflicting priorities. Preservation of water resources and water quality is often relegated to a lower priority status within certain agencies. This phenomenon is particularly concerning in instances where polluting activities do not directly impact the operations of regulatory bodies. The divergence of priorities also extends to infrastructural maintenance, where critical monitoring assets are neglected. Furthermore, conflicting priorities extend to larger development agendas, such as energy infrastructure and transportation. This results in the degradation of water resources due to the need for integration and consideration of the water-energy-food (WEF) nexus. The prioritization of food production and industrial sectors over water resource preservation contradicts the essence of this interconnected approach.

Water supply services and water resource management in Malaysia are placed under different levels of government. Water supply is under the Federal jurisdiction, while water resources management is under the State government. Various agencies, acts, and regulations in these two levels of government have created confusion and fragmentation in water governance. In the context of Klang Valley, loopholes appear in the enforcement due to unclear ownership and jurisdiction among the multiple agencies. The problem is further complicated by the fact that water governance is shared among multiple federal and state agencies and the local authorities and environmental agencies. This situation makes it challenging to pinpoint accountability, especially when curbing water pollution. Through the Local Government Act 1976 (Act 171), the local authority is empowered to take action against anyone who commits a nuisance or deposits any filth on or upon the bank of any stream, channel, public drain, or other water course. However, unclear jurisdiction and the absence of a single body to coordinate all the agencies for water supply services and water resources management have exacerbated the issues of ambiguous responsibility.

Conflicting priorities affect water service delivery in the Klang Valley. Due to multiple agencies in water governance, low priority was given to water resource preservation and quality maintenance. For instance, the agency that has the power to act against polluters gives low priority to enforcement as the impact of pollution does not affect its operations. Certain agencies also did not prioritise water resource preservation as it brings no direct benefit to them. Conflicting priorities also emerged in the maintenance of monitoring infrastructure. For example, a damaged bridge to the water monitoring area has been left unrepaired for several years, hindering access to the area for monitoring and enforcement purposes.

Water resource preservation is given the least attention compared to other sectors, defying the water-energy-food (WEF) nexus concept. For instance, it was mentioned that a water reserve area with a rich ecosystem could be lost to make way for an energy infrastructure development. Other prioritised developments, such as highway constructions, also contribute to pollution when water run-off and sediments enter the water resource. In addition, the food manufacturing industry and agriculture are usually preferred over water resource preservation for their importance in supplying food for the people. Once again, this act neglects the WEF nexus approach, which is to manage the interlinked between water, energy, and food.

## **Discussion**

Malaysia faces challenges due to the presence of numerous sectoral water laws at both the Federal and state levels. However, a comprehensive water law is lacking to ensure the protection of both water quantity and quality. The existing water legislations, governed by various agencies, are often outdated, redundant, or unclear. These scattered laws focus on specific aspects of water resources, making effective enforcement difficult. It is essential to establish a comprehensive water law to address both quantity and quality issues more effectively (Al-Mamun & Zainuddin, 2013).

Multiple institutes with varying and overlapping responsibilities in water governance pose challenges to effective policy implementation. Hence, the establishment and reinforcement of a dedicated agency to play a pivotal role in directing coordination and facilitating the formulation and execution of water policies are crucial. The implementation of a conceptual law and a corresponding basic plan, encompassing a central coordinating function, emerges as an effective strategy. To overcome those conflicts among institutions and establishment of good governance, it is necessary to establish an agency in the government as one coordinated function reinforcing the direct coordination and facilitation of groundwater policy-making and management. This approach allows for the harmonization of policies and countermeasures among different institutions, fostering improved governance of groundwater resources (Tanaka, 2014).

Deriving from the UK water governance, the successful implementation of EU Directives requires all relevant governance levels to be connected. Furthermore, to connect the top level (national bodies) and the bottom level (local actors) in a governance system, the middle level (regional bodies) needs to be responsible for the implementation of measures (Foster, 2021).

## **Conclusion**

In conclusion, this study aims to contribute significantly to the enhancement of water governance in the Klang Valley. By drawing insights from the experiences of the United Kingdom and Japan, the study seeks to provide a nuanced understanding of multi-level governance structures. The proposed methodology and expected outcomes will offer valuable insights into the challenges and opportunities of water management in the Klang Valley, contributing to the development of sustainable water governance practices. The aspects discussed concerning the institutional framework, governance, and service delivery in the water sector directly impact SDG 6, which emphasizes the importance of clean water and sanitation for sustainable development. Effective governance, proper resource management, and efficient service delivery are crucial for meeting the targets set under this goal and contributing to broader sustainable development efforts. By forging a comprehensive strategy, governments can establish a coherent regulatory framework that ensures sustainable water management, equitable service delivery, and the preservation of water resources for future generations. Further research should examine the effect of governance structure and stakeholder collaboration in a broader context and different dimensions.

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