

**THE ADVOCACY COALITION FRAMEWORK:
A STUDY ON MALAYSIAN NATIONAL WATER
RESOURCES POLICY**

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**THE ADVOCACY COALITION FRAMEWORK:
STUDY ON MALAYSIAN NATIONAL WATER
RESOURCES POLICY**

by

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LIST OF ABBREVIATIONS

ACF	Advocacy Coalition Framework
DID	Department of irrigation and Drainage
DOE	Department of Environment
DSAN	Dasar Sumber Air Negara
EPU	Economic Planning Unit
IAPG	Inter Agency Planning Group
IWRM	Integrated Water Resources Management
JICA	Japanese International Cooperation Agency
JPS	Jabatan Pengairan dan Saliran
KeTTHA	Kementerian Tenaga, Teknologi Hijau Dan Air Malaysia
LAP	Lembaga Air Perak
MoNRE	Ministry of National Resources Environment Malaysia
MyWP	Malaysia Water Partnership
NDC	National Development Council
NEC	National Economic Council
NDP	National Development Policy
NDPC	National Development Planning Committee
NECC	National Economic Consultative Council
NEP	National Economic Policy
NGO	Non-government organisations
NSC	National Security Council
NUP	National Urban Policy
NWRC	National Water Resources Commission
NWRP	National Water Resources Policy

NWRL	National Water Resources Law
NWRS	National Water Resources Study
OOP	Outline Perspective Plan
OOP1	1 st Outline Perspective Plan
OOP2	2 nd Outline Perspective Plan
OPP3	3 rd Outline Perspective Plan
RMK10	Rancangan Malaysia ke -10
SPAN	Suruhanjaya Perkhidmatan Air Negara
TWG	Technical Working Group
WSIA	Water Services Industry Act 2006
WTP	Water Treatment Plan

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ADVOCACY COALITION FRAMEWORK (ACF): KAJIAN TERHADAP DASAR SUMBER AIR NEGARA

ABSTRAK

Dasar awam merujuk kepada set pilihan (alternative) tindakan yang dirancang, digubal dan dilaksanakan oleh sesebuah kerajaan untuk menyelesaikan permasalahan yang dihadapi oleh masyarakat setempat. Charles L. Cochran & Eloise F. Malone (2005) mentakrifkan dasar awam sebagai hasil keputusan yang digubal oleh sekelompok ahli politik yang mana implementasi dasar bermatlamatkan kepada pembangunan sosial dan ekonomi. Terdapat empat (4) peringkat utama dalam proses pembentukan dasar awam. Proses pembentukan dasar merupakan salah satu proses yang penting (ianya melibatkan pembentukan tindakan dan cadangan penambahbaikan). Masalah utama kajian ini ialah untuk “memahami pembentukan hubungan kerjasama di antara aktor” semasa proses pembuatan dasar sumber air negara diwujudkan. Objektif utama kajian (i) mengenalpasti corak pengalaman lepas seseorang aktor dalam menjalankan hubungan kerjasama; (ii) mengenalpasti kekerapan seseorang aktor mengubah hubungan kerjasama yang dijalinkan, (iii) mengenalpasti apakah “pegangan polisi” seseorang aktor dalam menjalinkan hubungan kerjasama; (iv) mengenalpasti “faktor utama” asbab terjalannya hubungan di kalangan aktor dan (v) menilai pengaruh ‘menggunakan sepenuhnya pengurusan sumber’ sebagai alat mencapai objektif dasar semasa proses kerjasama. Teori Sabatier & Jenkins-Smiths (1999) digunakan sebagai rujukan utama untuk memahami pembentukan hubungan kerjasama di kalangan aktor. Kajian ini mengaplikasikan kaedah pendekatan ‘triangulation’. Seramai 62 respondent terlibat dalam kajian soal

selidik dan lima (5) orang pegawai terlibat dengan sesi temubual yang mana terdiri daripada pegawai di EPU dan Lembaga Air mewakili setiap negeri di Malaysia. Pemilihan segmentasi respondent berdasarkan kepada keterlibatan mereka dalam membuat sebarang keputusan berkaitan pengurusan sumber air di setiap negeri masing-masing. Kajian ini menggunakan perisian SPSS sebagai alat utama dalam proses menganalisa data. Terdapat lima (5) orang pegawai yang telah ditemubual secara berasingan. Hasil analisa mendapati kelima-lima pegawai yang telah ditemubual bersetuju sebulat suara bahawa 'kepentingan pengalaman' seseorang aktor dan 'pegangan polisi' aktor merupakan faktor utama hubungan diwujudkan sesama mereka semasa proses pembuatan Dasar Sumber Air Negara (DSAN). Diharapkan kajian ini mampu memberikan impak yang positif khasnya kepada penyelidik yang berminat mengkaji 'hubungan kerjasama antara aktor' menggunakan dan mengadaptasi teori ACF di dalam penyelidikan, khasnya kajian berkaitan dasar awam di Malaysia.

THE ADVOCACY COALITION FRAMEWORK: A STUDY ON MALAYSIAN NATIONAL WATER RESOURCES POLICY

ABSTRACT

Public policy is an alternative course of action taken by the government to address problem or matter of the public that is important to the nation. Charles L. Cochran and Eloise F. Malone (2005) defined public policy as political decisions of the implementation of programs to achieve societal goals. There are four sequences of phase that are involved in a public policy process. The most important stage is formulation where it involves the formulation of the course of actions and recommendations for selected policy agenda. The problem statement of this study is to understand the development of coalition among the actors, during the process of the National Water Resources Policy (NWRP) formulation. The research objectives are (i) to determine the pattern of previous experiences in relation to coalition among actors; (ii) to identify the frequencies of changing their coalition during the collaboration among the other actors; (iii) to identify the general ‘policy belief’ that drove the actors to form the coalition; (iv) to determine the main factors that determine the selection of actor for coalition and (v) to assess the influence of the capacity to mobilise resources on the policy objectives during coalition. The researcher mainly refers and adapts to the theory ACF Framework by Sabatier & Jenkins-Smiths (1999) to understand the coalition among the actors in this study. This study applies the methodological triangulation where the researcher aims to check and establish the validity in the studies. The triangulation is undertaken by analysing the research question from multiple perspectives and checking the consistency of the results through multiple

methods used for the purpose of understanding the problem statement. In this study, there were 62 from the State EPU Unit and Water State Agency in Malaysia involved. A set of questionnaires were given and five (5) actors were involved in the interview session. These actors have been chosen based on their similar characteristics which represent each state in Malaysia. They are involved directly in the policy making especially during the process of formulating the NWRP in Malaysia. The researcher fully utilises the SPSS to analyse the data collection. Findings show that, five (5) representatives from each state ‘totally agreed’ that the ‘past experiences’ and ‘policy belief’ were the main factors that influenced the coalition during the process of formulating the NWRP in Malaysia. This study is undertaken to make a positive impact on other researchers and policy makers in applying the ACF (Advocacy Coalition Framework) to any policy development in Malaysia.

CHAPTER I

INTRODUCTION

1.1 INTRODUCTION

As stipulated in the Tenth Malaysian Plan, the Malaysian government needs to have its own policies for water resources in order to secure the governance of water resources and to balance the existing and future water policies under the jurisdiction of various government bodies and agencies. With that, the water legal provisions and institutional mandates can be standardised, which consequently results in an effective and efficient water resource management in Malaysia.

To date, there have been two proceedings on water resources within the Malaysian context, namely the National Resources Study Malaysia in 1982 through the collaboration between International Cooperation Agency (JICA) and Consortium of Consultants (COC) and the National Water Resources Study (2000–2050). Firstly, the National Resources Study Malaysia served to identify water demand and management as well as to protect water resources for the society. Besides that, the study also offered recommendations to reform the water sector in Malaysia to increase efficient and equal supply of water resources (Ministry of Natural Resource and Environment Malaysia (a), 2011). The Federal government and State governments are responsible to manage these limited water resources that are essential parts of the economic and social development in Malaysia. Meanwhile, the introduction of National Water Resources Study has introduced several changes to the water sector in terms of water services, especially in Peninsular Malaysia. However, the management of water resources is not

part of the study. It has become a challenge because there is no clear structure on how to govern water resources in Malaysia.

Notably, government bodies and agencies are responsible in establishing public policies (Anderson, 2015). Referring to Daniel Nohrstedt (2009), these government bodies and agencies serve in different capacities as an executive, judiciary, legislature, administrator, and politician. They are recognised based on their job description or daily duties, as they perform based on their portfolio and authority. Besides that, they possess the capacity to make decisions on certain issues raised by the society. However, the implementation of some of these decisions depends on their job description. Hence, the actions taken can be rather limited.

At this point, the authority of water resources in Malaysia is located under the State government, while the process of making relevant policies is under the jurisdiction of the Federal government (Ministry of Natural Resources and Environment Malaysia (a), 2011). According to the Federal Constitution of Malaysia, the State governments are responsible to manage issues that are connected to land, mines, forest, and water supply (Lembaga Penyelidikan Undang-undang, 2012). Besides that, there are also several government bodies and agencies that are involved in the management of water resources in Malaysia. In short, there is no single body in Malaysia that is fully authorised to plan or manage water resources.

Malaysia in the 21st century must make effort to control and manage water resources given its significance as one of the most valuable natural elements. It is essential to critically consider the establishment and management of water conditions, especially

through the coalition between the Federal government and State governments. Addressing that, National Water Resources Policy (NWRP) was established based on the coalition of different government bodies and agencies. The arrangement setting of such coalition focuses on water-related issues. The main objective of this coalition is to ensure that the development of water policy (in terms of quality and quantity) is secure in the long term and benefits the society.

NWRP serves as the main reference in ensuring the sustainability and accessibility of water resources for the society. It also ensures that all government bodies and agencies that govern water resources in Malaysia are effectively merged and integrated under the jurisdiction of each State government. However, in some cases, the influence of the Federal government remains necessary. For instance, matters pertaining to water pollution and actions taken for cases of industrial discharge remain under the jurisdiction of Federal Legislative List. Therefore, it is impossible to include policies for water resources in the Ninth Schedule of Federal Constitution, which reaffirms the significant need to form such coalition between the Federal government and State governments in order to ensure the harmonies and provide an endures encouragements related to water resource management issues.

Accordingly, the establishment of NWRP is considered on the right track to secure and sustain water resources. This policy addresses water supply, water for industry and services, and the continuous demands and needs of the society and its environment. This policy is part of the government's efforts to conserve and manage safe water resources for Malaysians.

Furthermore, the National Water Resources Council (NWRC) is also part of the influence and driving force of NWRP. The Federal government and State governments make use of the role of NWRC as a channel that puts forward effective strategies to address water-related issues in Malaysia. The Ministry of National Resources and Environment (MNRE) captured the importance of water resources based on four main guidelines (Ministry of Natural Resources and Environment Malaysia, 2012):

- 1) Water for people (to access in safe, adequate, and affordable amount of water supply, hygiene, and sanitation);
- 2) Water for food and rural development (the provision of sufficient water supply that ensures national food security and promotes rural development);
- 3) Water for economic development (the provision of sufficient water supply to spur and sustain economic growth within the context of a high-income economy);
- 4) Water for the environment (protection of the water environment to preserve water resources [both surface water and underground water], the natural flow regimes, biodiversity, and the cultural heritage as well as the mitigation of water-related hazards).

1.2 BACKGROUND OF STUDY

With land area of 330,800 km², Malaysia is a democratic country that consists of 14 states. The South China Sea separates the country into two regions, namely Peninsular Malaysia (west region) and Sabah and Sarawak (east region). Malaysia is located in a humid, tropical region with ample supply of water resources, namely surface water (e.g. rivers, lakes, and coastal) and groundwater (or also known as underground water). The importance of water resources is broadly classified into three core uses of water,

which are internal uses, industrial and services uses, and agricultural uses (e.g. irrigation). Correspondingly to the importance and the usage of water is detected in social activities, aquaculture, eco-tourism, and indirectly in hydroelectric production (Abdul Rashid & Hasnah Ali, 2003).

Typically, a government imposes specific rules of conduct for the society to comply in order to live in harmony (Kapur, 2006). As for Malaysia, the structure of the government is divided into Federal government (highest level), State government, and local government (lowest level). Under the Federal government, the Prime Minister serves as the leader who is assisted by the members of the Cabinet. Meanwhile, under the State government, the Chief Minister serves as the leader who is supported by the elected Executive Councillors (EXCO).

The need for a strong coalition among actors from the Federal government to the local government is crucial, especially when it comes to water-related issues. The biggest transformation in the Federal Constitution for water resources was initiated back in 2005, where the decision-making process for water-related issues is placed under the Concurrent List in order to increase the coalition within the government. During the water governance reform, the government bodies and agencies at the State level were constantly consulted by the Federal government on matters pertaining to the interests of the state, including the process of public hearings from 2005 to 2006, informal bilateral briefings, and lobbying. The Rulers of the states were formally briefed in two separate meetings (Lee Koon Yew, n.d.).

The Ministry of Natural Resources and Environment (MNRE) was established to review the National Water Resources Study (2000–2050), specifically to clarify the jurisdiction of Federal government and State government in terms of water resources governance and to identify the main authority of Federal government and State government in terms of water resource management and water resources development issues. Considering the growing economy and population of Malaysia, MNRE is responsible in identifying the best approach to integrate NWRP and National Water Resources Law (NWRL) in terms of the security and sustainability of water resources.

Accordingly, the State governments play the main role of water resource management, while the Federal government is mostly responsible for the planning and development of policies on water resources in Malaysia. Apart from these main actors that are responsible in managing water resources, there are numerous government bodies and agencies that are collectively responsible for the components or functions related to water resources. For instance, the Department of Irrigation and Drainage (DID) Malaysia is one of the water-related agencies that are responsible for new challenges in developing and managing water resources.

Prior to the establishment of NWRP, the regulations for water supply and water services in Malaysia depended on two main legislative frameworks, namely National Water Services Industry (NWS) Act 2006 (Act 655) and National Water Services Commission (SPAN) (<http://www.span.gov.my>). However, both frameworks only focused on activities or matters of water supply and water services in Malaysia. These legislative frameworks serve to benefit the consumers, investors, and operators of the water industry in Malaysia and to ensure continuous distribution of water supply to

residents user (24 hours) in good condition and safe for consumption as well as the readiness of water treatment for the nations usage it is relatively adequate. Consequently, the limitations of these frameworks establish the underlying basis of the development of NWRP.

Apart from the legislative frameworks, there are other enacted Acts and guidelines to protect water resources in Malaysia. Table 1.1 lists some of the existing Acts and guidelines for water resource management in Malaysia. It is evident that certain State governments possess more regulations. Unlike NWRP, these listed Acts and guidelines are enacted on a case-by-case basis and may overlap with one another on several occasions.

Table 1.1: Relevant Acts and guidelines for water resource management in Malaysia

Law	Description
Water Act 1920	Water Act 1920 is only applicable to certain states, specifically Negeri Sembilan, Pahang, Perak, Selangor, Melaka, Penang, and the Federal Territories. It serves to protect properties of rivers, renewal, prohibition of diversion and contamination, licensing, penalties, and payment. It also controls the rivers and watercourses.
Water Supply Enactment 1955	Through Water Supply Enactment 1955, the authorities under the State government are authorised to supply water to domestic and commercial users. It only serves as a monitoring body to oversee the operation of water supply companies and ensures their compliance with the drinking water standards. However, there is no legal power to enforce compliance or to initiate corrective actions.

Law	Description
Environmental Quality Act 1974	Environmental Quality Act 1974 prevents, abates, and regulates pollution as well as improves the environment.
Water Supply (Federal Territory of Kuala Lumpur) (Act 581)	According to Act 581, the supply and distribution of water in Selangor are under the Federal of Kuala Lumpur with modification.
National Water Service Commission (SPAN) (Act 2006)	According to Act 2006, the water supply services are shifted from the State List to the Concurrent List with the vision of providing sustainable and affordable water services. It also enforces water supply and sewerage services laws and other related matters. In other words, it legalises and supervises water supply and sewerage services.
Water Services Industry Act (Act 655)	Act 655 provides and controls water supply services and sewerage and incidental matters.

(Source: Intan Sazrina & Nor Ashikin Mohamed, 2013)

Nevertheless, the formulation of NWRP is a strategic move towards ensuring that the demands of water for all sectors in Malaysia, particularly the society and environment, are met in terms of quantity and quality. NWRP provides a clear direction and various strategies in water resource management to ensure the security and sustainability of water resources. The policy also serves as a platform in streamlining the practices and approaches of preparing water resources conservation plans that involve all states of Malaysia. At the same time, efforts to build the capacity of all stakeholders in water

resources governance are critically considered (Ministry of Natural Resources and Environment Malaysia (b), 2012).

Anderson (2015) highlighted that public policies reflect the behaviours of actors towards the concerns of the society. Actors are broadly classified as official policy makers and non-official policy makers who play important role in highlighting public concerns. Official policy makers refer to actors who has a legal authority to engage in the formation of public policy. Official policy makers include legislator, executive, administration and judges. Meanwhile Non-official actors refer to the interest group, political parties, research organizations, communications media and individual citizen. Non-official actors important in various situations, provide information, exert pressure, seek to persuade but this group they do not decide.

The government bodies would first identify public concerns. Following that, the government bodies or actors would prepare alternative course of actions to present their proposal at the Cabinet level. Major policies in Malaysia are required to go through the procedure of getting the approval from the Cabinet. Prior to that, the proposal should be circulated to the related Federal government bodies and agencies for their comments. In this case, the proposal would be circulated to the leading Federal government agencies, namely the Economic Planning Unit (EPU) and Department of Environment (DOE). Proposals are circulated to the related Federal government bodies and agencies because these actors possess most of the vital resources, such as financial resources and lawful information. Besides that, they are also able to determine and impose the main substantive discourse that leads the policy.

Conclusively, this proves that the integration of these formal institutions is important to ensure smooth administration of this country.

1.3 PROBLEM STATEMENT

As part of the basic human needs, water is the most valuable asset for the society and nation. It is a global challenge to properly manage water resources—and Malaysia is of no exception. The efficiency in administrating water resources and water supply is one of the perpetual problems. The Malaysian government is aware of the significance of water resources management for the sustainability of the society (Tan Sri Dato' Hj. Muhyiddin Mohd Yassin, 2012). Given the significance of water resources, it is fundamental to ensure that the right actions are taken to manage water resources.

However, the legislations for water resource management in Malaysia are critically outdated. Furthermore, the job scope and responsibilities of government bodies and agencies in water resource management appear to be overlapping. This critically affects the effectiveness and efficiency the government bodies and agencies in executing their authority, which reaffirms the need for coalition to ensure the effectiveness and efficiency of the government's services in addressing water-related matters.

Improved policies of water resources are regarded as the key to address various problems of water resources management (Gopalakrishnan et al., 2004; Asian Development Bank, 2004; Rijsberman, 2008). The existing policies of water resources management serve to guarantee the process of planning and developing

water resource management at each level within the government structure. Back in 2005, the Malaysian government promoted the coalition among various government bodies and agencies in the Federal government and State governments, which was part of the government's concerted efforts to address the ongoing problems of the water sector. The Ministry of Energy, Green Technology and Water has also taken several approaches, such as restructuring the national water services industry. With that, NWS and SPAN were established. However, both frameworks only focused on the water supply and water services (<http://www.kettha.gov.my/en/content/re-structuring-national-water>). National Water Resources Policy (NWRP) was subsequently introduced in April 2010 as a new institutional arrangement to manage and sustain water resources management in Malaysia (<http://borneopostonline>, April 2010). The urgency of developing NWRP to manage water resources through good coalition among actors also was highlighted in the Tenth Malaysian Plan (2011-2015).

Adding to that, the review of prior studies based in Malaysia also revealed major gaps in water research, where most studies focused on specific water issues, namely water pollution, water security, water tariff, and water conservation. The discussion on the coalition and interaction among actors in water resource management and formulation of the policies of water resources policy have been critically overlooked.

How specific groups of actor's form and interact with one another as well as how these groups interact with the government explain the overall political system (Baumgatner & Leech, 1998); in this case, the coalition among the actors from the government in the policy-making process. In particular, the triangulation technique was employed for this present study to explore the state of coalition among the relevant actors from

the Federal government and State governments in Malaysia, (specifically for those who involved in the process of the formulation of NWRP) in terms of the need and urgency of the coalition (in relation to the policies formulation of water resources). The underlying basis of this study was based on the study by Paul Sabatier and Hank Jenkins-Smith (1999). With that, the advocacy coalition framework (ACF) (Sabatier & Smith, 1999) was adopted in this study to prove the existence of coalition among actors that involved in the formulation of NWRP. NWRP was postulated to reflect coalition among actors in water resource management, while the mobilisation of resources and prior coalition experiences were postulated to reflect the relationships among actors.

1.4 RESEARCH OBJECTIVES

This study generally aimed to explore the occurrence of coalition among actors during the formulation of NWRP. In particular, this study aimed to achieve the following specific objectives:

1. To determine the patterns of previous experiences in relation to coalition among the actors.
2. To identify the frequency of changing their coalition during the collaboration among the other actors.
3. To identify the general policy beliefs that drove the actors to form the coalition
4. To determine the main factors that determine the selection of actors for coalition
5. To assess the influence of the capacity to mobilise resources on the policy objectives during coalition

1.5 RESEARCH QUESTIONS

With respect to the specific objectives, the present study addressed the following research questions:

1. What are the patterns of previous experiences in relation to coalition among the actors?
2. What are the frequencies of actors in changing their coalition during the collaboration among the other actors?
3. What is the main general policy belief that drove the actors during the coalition in the process of formulation NWRP?
4. What is the main factors that determine the selection of actors for coalition?
5. How does the capacity to mobilise resources able to influence the policy objectives during coalition?

1.6 SCOPE OF STUDY

This study focused on all actors that were involved in the formulation of NWRP, especially 14 state EPU representatives. Further description on the demographic profile of these representatives is presented in Chapter IV.

1.7 SIGNIFICANCE OF STUDY

Overall, the obtained results of this study were deemed significant in terms of theoretical and practical contributions. Besides that, this study provided essential insights that improved the overall understanding of ACF. The study was also expected to benefit relevant actors who are directly or indirectly involved in water resource

management. The following subsections discuss the significance of study in terms of theoretical and practical contributions.

1.7.1 Theoretical contributions

Most of the prior studies on water policies focused on water pollution, water security, water tariff, and water conservation. The present study considered another angle by focusing on the coalition among relevant actors with respect to the ACF. Besides that, the outcomes of this study, especially on the ACF in formulating public policies, were expected to benefit researchers and academicians. This study also provided guidelines for researchers and academicians to formulate new measurement for water resource management. Overall, the obtained results provided a new outlook on water resource management.

1.7.2 Practical contributions

Policymakers play an important role in ensuring the formulated policies are meaningful and contribute positive contributions to the society. Policymakers were the main units of this study. Their roles and responsibilities in the policy subsystem are deemed significant to achieve the objectives of public policies. Hence, the outcomes of the present study provided an enhanced understanding on the capacity and functions of policymakers in formulating good policies that consider various insights of relevant actors in a similar field. Through this study, policymakers were expected to grasp how they should interact with one another to form an effective coalition in the policy subsystem. Considering the exploratory nature of this study, the obtained findings were also expected to serve as basic guidelines to form coalition among the actors, especially in the policy-making process.

1.8 OPERATIONAL DEFINITION OF KEY TERMS

1.8.1 Advocacy coalition framework (ACF)

Sabatier and Smith introduced ACF back in 1988. Actors in the policy system are said to demonstrate achievements when they are able to promote and transform their core beliefs into actual policies. The chances of success increase when they collaborate and coordinate with others who share similar core beliefs. ACF was applied in this study in order to determine whether there are similar core beliefs among the actors in formulating NWRP and whether these actors engage with one another during the process.

1.8.2 National Water Resources Policy (NWRP)

NWRP can be regarded as one of the outcomes of the National Water Resources Study (2000–2050) by DID Malaysia under the Ninth Malaysian Plan. The process of formulating NWRP involved local actors who specialise in water resource management.

1.8.3 Actor

With respect to ACF, actors in this study referred to the authorities in the political system who were directly or indirectly involved in the coalition during the formulation of NWRP in Malaysia. According to ACF, actors are generally grouped into one or more “coalitions”, specifically groups of actors with shared policy goals in collaboration to pursue their policy preferences. It is not surprising that conflicts occur among the actors in coalition. For example, certain water users may wish to allocate water for economic development (i.e. for houses, farms, and businesses), while others

may wish to conserve water for environmental reasons. Eventually, the coalition results in conflict over the best policy option for water resource management. This present study would like to explore only the official actors that involved in the process of formulation the NWRP.

1.8.4 Policy subsystem

Policy subsystem is defined by its local borderline, characteristics of policy participations from each official actors and non-official actors come from various backgrounds such as government, interest group, the media also the research agency. In order to influence policy, actors should actively participate in a policy subsystem. The participation of actor also allows them to effectively achieve their self-interest and objectives, also able to remain actor existing in public policy subsystem (Sabatier & Jenkins-Smith, 1993).

1.8.5 Resources

Resources enable actors to influence the world, including other actors, relationships, and rules in a network. Resources also have embedded meanings where resources are only relevant within the knowledge scope of specific topics (Klijn & Teisman, 1997). Besides that, resources also reflect power, which refers to “the ability to mobilise resources” (Klijn & Teisman, 1997). The control over resources reflects the power of actors (Stockman & Zeggelink, 1996). Additionally, resources refer to practical means or instruments for actors to realise their objectives. Resources are elements that are within their control and interest (Coleman, 1990). There are material resources (e.g. monetary resources or budgets) and non-material resources (e.g. position in a network), which associate actors to an authorised set of actions in a process (Ostrom

et al., 1994). According to ACF, actors intentionally engage to influence government bodies or agencies that possess resources. Various resources are required to achieve the established interests or objectives. Examples of resources include (1) formal legal authority to make decisions, (2) public opinion, (3) information, (4) mobilisation troops, (5) financial resources, and (6) skilful leadership (Weible, & Sabatier, 2005).

1.9 THESIS ORGANISATION

Overall, this study consists of five chapters, which are organised in the following:

Chapter I introduced the focus of this study, specifically the background of study and problem statement. The recent water-related issues that prompted this study were reviewed and justified. In addition, the chapter also presented the objectives of study and the corresponding research questions, followed by the scope and significance of study and operational definition of key terms used in this study. Thesis organisation was presented at the end of the chapter.

Chapter II introduces the overall water resource management and the development of NWRP in Malaysia. The chapter also reviews related literature that supports the objectives and framework of the study. This chapter particularly discusses the findings of prior studies on ACF.

Chapter III describes and justifies the methodology used in this study to collect and analyse data. The chapter also discusses the selection of respondents and pilot study, followed by the explanation of how the model fits the method considered. Besides

that, sampling techniques, measurement variables, and ethical consideration are also included in the chapter.

Chapter IV describes data analysis in this study. The chapter describes the obtained results of the study. The demographic profile of the participants and the results of different analyses with respect to the research questions are also discussed.

Chapter V serves as the concluding chapter that discusses the major findings of study with respect to the objectives of study and the corresponding research questions. The obtained results of this study are also compared to the results of prior studies. Prior to the conclusion, the chapter also presents the limitations of study and recommendations for future research.

1.10 CHAPTER SUMMARY

This chapter presented the background of study, which focused on issues of water resources. This chapter also described the main problems that established the current study. Apart from the objectives of study and the corresponding research questions, this chapter also described the scope and significance of study in the forms of theoretical and practical contributions. Besides that, this chapter also presented the operational definition of key terms used in this study as well as the thesis organisation.

CHAPTER II

LITERATURE REVIEW

INTRODUCTION

Overall, the chapter reviews the water resource management and policies in Malaysia as well as the main theories on public policy related to policy formulation. The chapter also includes a historical review on water resource management, the existing water policies in Malaysia, and the initiatives of formulating NWRP. Overall, this chapter provides essential insights on the policies for water resources in Malaysia.

2.1 WATER HISTORY IN MALAYSIA

Back in 1804, during the British imperialism, the first pipe water was set up in Malaya (in the state of Penang) or presently known as Malaysia. This first formal arrangement of water supply system, which transported clear stream of water from the hills to towns, used bricks and earthen pipes that were laid under the streets. Water was distributed through tin pipes to every household. Unfortunately, the bricks in the canal were often dislodged. This led to the use of cast iron main in 1877.

Following that, there were water mains in Kuching, Sarawak in 1887, followed by Kuala Lumpur and Melaka in 1889. By the early 1900s, as required by an international movement in the developed nations to prevent the outbreak of water-borne diseases (e.g. cholera, dysentery, and typhoid), treated water was delivered directly from the sources to households. Slower, inexpensive, and easy-to-build sand filters were

initially used before these filters were replaced with faster and modern gravity filtration plants. In 1915, disinfection technology used hypochlorite and later, gaseous chlorine. By 1939, households in major towns of Malaya were well-served with pipe water. However, many water installation systems were neglected and slowly deteriorated during the years of the Japanese Occupation from 1941 to 1945.

By 1950, there were 100 water treatment plants in Malaya, which produced 195 million litres of water per day to supply a population of 1.15 million. Even then, water shortages were common due to the rapid population growth. The demand for water increased sharply after Independence in 1957, especially in Kuala Lumpur. In order to cope with the rising demand for water, Klang Gates Dam and Bukit Nanas Treatment Plant were constructed in 1959. By the mid-1980s, the global industrialisation trend was on a rise, including in Malaysia. The demand for water in the domestic and industrial sectors rose from 0.8 billion cubic metres in 1980 to 3.5 billion cubic metres in 2000 (an increase of 437%). Meanwhile, water for irrigation remained consistent at 7.4 billion cubic metres per year for 20 years.

At the end of 1999, 69 dams were already in operation in Malaysia, where 35 dams were developed to specifically supply water. There were 16 multi-purpose dams, while the remaining dams were for irrigation and hydropower generation. Temenggor Dam in Perak, Kenyir Dam in Terengganu, and Pedu Dam in Kedah are the larger dams. There are also the Kinta Dam in Perak and Jus Dam in Melaka, regulating dam at Sungai Selangor, and treatment plants in Rasa and Bukit Badong in Selangor. Pahang-Selangor raw water transfer scheme was also initiated in earlier 2000 and is expected to be completed in 2013.

Under the Eighth Malaysian Plan (2001–2005), projects that addressed water demand increased by 5.4% per year, where the Federal government allocated RM 4 billion for water supply projects. Following that, the allocation for water supply projects increased to RM 8.1 billion under the Ninth Malaysian Plan (2006–2010), specifically under the Ministry of Energy, Water and Communications, where a total of RM 2.7 billion was allocated to develop new water supply projects.

During the monsoon season, the water supply exceeds the demand for water. As the rivers are not able to accommodate the total surface water, flood occurs. The flood control and prevention functions fall under the jurisdiction of the Department of Irrigation and Drainage, Ministry of Natural Resources and Environment, Malaysia. The department plans and implements flood mitigation projects, such as flood control dams, detention storages, river improvements, diversion channels, and drainage pumps, throughout the country. The Federal government funds these projects, while State governments are responsible for the operation and maintenance of these projects.

However, uneven rainfall distribution, which occurs from season to season annually, leads to varying quantity and flow speed of surface water (especially rivers), resulting in the lack of water supply in certain areas, especially developing areas with high water demand. It becomes more critical to meet the demand for water during the drought season.

Meanwhile, the decrease in river water quality is another phenomenon that affects water resources in Malaysia. The rivers are initially unpolluted. However, as the river water flows through the populated areas, its quality deteriorates. The deterioration in

the water quality occurs in tandem with the increase of development activities in the area.

2.2 WATER RESOURCE MANAGEMENT IN MALAYSIA

Malaysia is a country that implements the separation of power—there are three levels of government, namely the Federal government, State government, and local government with different power under the Federal Constitution. Under the Federal Constitution, List I describe the power of the Federal government, while List II describes the power of the State government. Meanwhile, Concurrent List refers to the combination of power between the Federal government and State government. Under the Concurrent List of the Federal Constitution, the Federal government comes up with the policy and each State government executes the policy. Taking the case of NWRP, the Federal government is responsible in formulating the policy, while State governments are responsible to execute the policy.

Water is considered as the catalyst for social well-being and economic development in Malaysia. The Malaysian government is highly aware of the significance of water resources management for the sustainability of the society. The Tenth Malaysian Plan (Economic Planning Unit, 2010) highlighted the urgency of establishing NWRP that comprehensively supports the governance of water resources management nationwide. This policy ensures that the current policy direction complements the future policy direction of water resource management across multiple sectors. The awareness of the policy of water resources in Malaysia guarantees the consistency of current legal provisions, institutional commands, and policy direction based on effective and efficient measures and instruments.

The formation of the policy and its structure to adjust the standards and practices of water resource management in Malaysia has been emphasised. Several approaches and action plans are developed to address the problems and solutions for managing availability of water resources and the quantity also quality needed in the country. This also includes the focus on identifying the existing gaps and constraints in order to strengthen the governance of water resources. Hence, NWRP has been articulated as an important determination in outlining the approaches and action plans to address the issues and challenges in managing water resources.

NWRP recognises the role of the Federal Constitution of Malaysia in managing water resources within the jurisdiction of the State government. Back then, managing water resources was constitutionally a state matter, which restricted the role of the Federal government. However, the circumstance has changed since January 2005 when the Federal Constitution was amended, where the Federal government and State governments in Peninsular Malaysia share joint responsibility in water resource management (Dato' Ir Syed Muhammad Shahabudin, 2006)

According to the Ministry of Natural Resources and Environment Malaysia (2012), the formulation of NWRP was deemed necessary as strategic planning for this country to sustain and retain the availability of water resources. NWRP provides clear guidelines and approaches on water sustainability. The policy also serves as a platform to develop an integrated conservation plan of water resources that realises relevant practices and approaches for all states in Malaysia. At the same time, the promotions

to increase the number of member of actors in water resources governance become a serious consideration.

After all, managing water resources requires standardised, synchronised, and coalition among all actors in water resource management across all states in Malaysia. The sharing of essential information facilitates the execution of coalition in water resource management, particularly in the efforts of protecting the ethics of water resource management and the ecosystem itself.

2.3 GOVERNANCE OF WATER RESOURCES

According to the National Water Resources Study, the governance of water resources considers four categories of water resources: (1) surface water; (2) groundwater; (3) costal water (up to three nautical miles from the Malaysian coastline); (4) water in the atmosphere (MNRE, 2011: 2-1). Despite the abundance of water resources, the uneven distribution of rainfall causes certain areas to be flood-prone or in the state of water stress, which has highlighted the significant need to carefully manage water resources to ensure that sufficient water of the desired quality meets the rising demand of an increasing population and economic growth of this country.

The Second World Water Forum at Hague in 2000 highlighted water resources as part of a crisis in the governance of water resources (Ministry of Natural Resources and Environment Malaysia, 2011), which highlighted the significance to establish more effective governance of water resources globally. It was widely recommended back then to establish appropriate water sector reform and applicable arrangement for the governance of water resources at all levels in every country (Bonn, 2001). Hence, the

Malaysian government commits to these international strategies on water conservation and sustainability efforts, which establish the basis of the study on the governance of water resources.

The governance of water resources was initially managed by different departments in Malaysia, resulting in the case of overlapping functions with ambiguous areas of responsibilities. This led to the adoption of Integrated Water Resources Management (IWRM) to manage water resources in an integrated and prudent manner. Referring to the document GWP TAC No. 4, IWRM is defined as a course that encourages synchronised development and management of water, land, and related resources to maximise the ensuing economic and social welfare in a reasonable manner without affecting the sustainability of the environment. IWRM proposed five key measures:

- i) The construction of a National Water Vision to focus on the importance of water and the need for water security and sustainability
- ii) The establishment of a dedicated ministry for the natural resources and environment to oversee the management of natural resources, which includes water resources
- iii) The development of the National Water Resources Council (NWRC) as the primary advisory body for all matters relating to water resources
- iv) The integration of IWRM into the Five-Year National Development Plans and all other official planning documents
- v) The initiation of capacity-building programmes for water reform through the implementation of formal and informal training on all aspects of water resources and the use of various platforms (e.g. seminars, forums, and dedicated projects) to disseminate the rationale and approach in the management of water resources.