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Mandates for Managing Water Resources in Mega Urban Region: Case Study for Selangor

Mandat untuk Pengurusan Sumber Air di Rantau Bandar Mega: Kajian Kes untuk Selangor

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ABSTRACT

The need to manage water resources that transverses traditional administrative boundaries and legislative jurisdiction require a rethink in determining mandates, particularly in mega urban region. Malaysia practices a federated system of government, whereby the Federal Constitution of Malaysia 1957 sets out the legislative and executive remit for both Federal and State Government. Water resources in this case falls within the legislative remit of the State Government. The state of Selangor is unique as it is a mega urban region in its own right and plays host to two federated territories, with rivers coursing through them. It is also unique because it forms the bulk of the area identified as the Greater Kuala Lumpur Region earmarked for economic and social development. Both the Federated Territories of Kuala Lumpur and Putrajaya sit in the middle of Selangor state with rivers coursing through them beginning and ending in Selangor. This study briefly looks at the mandates required to balance the prerequisites of managing water resources that transverses boundaries. It will look at how the state of Selangor can manage the resources through its Lembaga Urus Air Selangor Enactment 1999 to fulfil the proposed objectives of the National Water Resources Policy 2012.

Keywords: Mandates; managing water resources; legislative jurisdiction

ABSTRAK

Keperluan untuk menguruskan sumber air yang merentasi sempadan tradisi pentadbiran dan bidang kuasa perundangan memerlukan memikirkan semula dalam menentukan mandat, terutamanya di rantau bandar mega. Malaysia mengamalkan sistem persekutuan kerajaan, di mana Perlembagaan Persekutuan Malaysia 1957 menyatakan bidang kuasa perundangan dan eksekutif untuk kedua-dua Kerajaan Persekutuan dan Kerajaan Negeri. Sumber air dalam kes ini termasuk dalam bidang kuasa perundangan kerajaan negeri. Negeri Selangor adalah unik kerana ia merupakan kawasan bandar mega yang tersendiri dan menjadi tuan rumah kepada dua wilayah persekutuan, dengan sungai-sungai yang menyusurinya. Ia juga adalah unik kerana ia membentuk sebahagian besar daripada kawasan yang dikenal pasti sebagai Greater Wilayah Kuala Lumpur dikenal pasti untuk pembangunan ekonomi dan sosial. Kedua-dua Wilayah-Wilayah Persekutuan Kuala Lumpur dan Putrajaya duduk di tengah-tengah negeri Selangor dengan sungai yang menyusuri melalui mereka bermula dan berakhir di Selangor. Kajian ini secara ringkas melihat kepada mandat yang diperlukan untuk mengimbangi prasyarat untuk menguruskan sumber air yang merentasi sempadan. Kajian ini juga melihat bagaimana negeri Selangor boleh mengurus sumber-sumber melalui Enakmen Lembaga Urus Air Selangor 1999 untuk memenuhi objektif yang dicadangkan oleh Dasar Sumber Air Negara 2012.

Kata kunci: Mandat; menguruskan sumber air; bidang kuasa perundangan

INTRODUCTION

The rise and expansion of mega urban regions usually have been describe and been characterise by its size, high value industries and intensive activities, the densely populated and talented workers (Shahid Yusuf 2007). As these regions are depend heavily on its industry and economy, thus these regions need to be well managed, in terms of every aspect, its transportation, utilities and natural resources. This paper briefly looks at the mandates required to balance the prerequisites of managing water resources that transverses boundaries that will look at how Selangor can manage the resources through its Lembaga Urus Air Selangor Enactment 1999 to fulfil the proposed objectives of the National Water Resources Policy 2012.

Selangor is situated in the middle region of Peninsular Malaysia and is being the most developed state in Malaysia (Laporan Pemeriksaan Rancangan Struktur Negeri Selangor 2003). The agglomeration of its economic activities, trades and industries, as well as the development of mega projects, main and high accessibility of communication and well

developed transportation indicate that Selangor plays the main role in the context of Malaysia's development (RSN Selangor 2020). The uniqueness of Selangor as mega urban region which plays host to two federated territories, Kuala Lumpur and Putrajaya, with Kuala Lumpur as country's capital, financial and commercial centre and Putrajaya as the centre of federal government administration (Perbadanan Putrajaya 2013) and the area that have been identified as Greater Kuala Lumpur shows that Selangor need to be plan sustainably to accommodate its rapid development.

Along with Economic Transformation Plan (ETP), the Government of Malaysia has develop the National Key Economic Areas (NKEAs) which is the core of ETP known as a driver of economic activity that has the potential to directly and materially contribute a quantifiable amount of economic growth to the Malaysian economy (NKEA 2013). As NKEAs are said to be the focal point of the realisation of Malaysia's economic growth, Greater Kuala Lumpur is one of this NKEAs with its goal to transform this area into the top twenty most livable metropolis globally and top twenty in terms of economic growth (Ministry of Federal Territories 2011). Thus Selangor as mega urban region is undeniably one of central points for economic growth in Malaysia.

Biswas and Uitto (1999) have stated that water is one of the key resources for sustainable urban development that is needed for every aspect of human endeavour and for ecosystem function. This is further supported by Tortajada (2008) who explains that water provisions, sanitation services and the related impact of urban development on natural resources have becoming an important focus in megacities. The burgeoning of these megacities have resulted in the complexities, scarcity or deterioration in terms of water provisions and sanitation, do not have access to clean, potable water and sanitation (Tortajada 2008). Massive development without proper and sustainable management has lead to many environmental issues such as pollution, social and economic issues as well. Thus, the demand for equitable and efficient water resources is a challenge for these mega urban regions.

WATER RESOURCES MANAGEMENT

The water resources management concept has been recommended globally as a solution to tackle the water problems, scarcity and deterioration in water quality and quantity that arise for decades. The challenges of water resources management include, understanding the complexity of predicting demands, uncertainties and associated risks such as climate change and the adaptation related to water resources, extreme weather, flood, as well as demographic changes, population growth, consumption patterns and migration (WWAP 2012). According to Dalcanale et al. 2011 water management is very unique as it touches upon almost every aspect of human well-being with links to socio-economic development, safety, human health, environment, cultural and religious beliefs.

Water resources management defined in WWDR (2012) as the activity of planning, developing, distributing and managing the supply and use of water resources, which also include structural and non-structural measures to provide and control the natural and human-made water resources system. The concept of management in the context of water resources is also includes activities of managing water resources from its source, rivers, lakes, groundwater; water allocation, assessment and pollution control; protection of water-related ecosystems and water quality; distribution and storage of water resources and groundwater recharge (WWAP 2012). Water resources then further defined and characterised into four main components. First is the state of the water resources, whether the resources is in liquid, solid or gaseous state, and its varying conditions (fresh, brackish or saline). Secondly, from the different water bodies that contains it, both surface and underground and its catchment. Thirdly, from the scientific perspectives, the dynamic nature of water, state, condition and availability based on its ability to recharge or adapt to changing conditions or the risks and threats it poses. Finally, from the perspectives of its uses (LESTARI 2011). Figure 1 below shows the main components in determining the mandates for water resources.

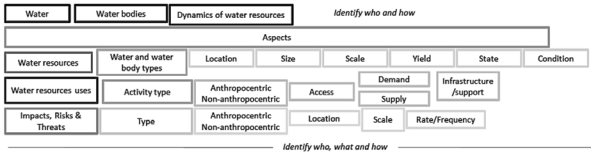

FIGURE 1. Components to determine mandates for water resources (LESTARI 2011)

FAO (2003) elaborates that the concept of water resources is multi-dimensional, not limited to physical aspect (hydrology and hydrological), stocks and flows, but also include ecosystem dimension

and socio-economic. In this context, water resources can be looked at as comprising six aspects, i.e. type, location, size, scale, state and its condition (LESTARI 2011).

WATER RESOURCES MANAGEMENT IN MALAYSIA: BRIEF CONTEXT

Along with Malaysia's Vision 2020, Malaysia has embarked on developing and formulating its programmes, plan and strategies to fulfil the need for socio-economic growth and development. Along with its development programmes such as ETP, GTP, NKEAs, NKRAs, Malaysian Plans, etc. to improve and enhance the economic growth of nations, the need to protect our water resources for integrity and multiple uses has been emphasized. The importance in managing our water resources has been emphasized in OPP3 2001, 8th Malaysia Plan (2001-2005), 9th Malaysia Plan (2006-2010) and 10th Malaysia Plan (2011-2015). In 10th Malaysia Plan, provisions for the adoption of a water resources policy which was formulated in 2012will outline measures to ensure efficient and effective management, in outlining the strategies and action plans to address the issues and challenges in managing water resources (NWRP 2012). Four guiding tenets underpin the efforts towards better water resources management and conservation include water for people, water for food and rural development, water economic development and water for environment (NWRP 2012).

Under Federal Constitution 1957, matters pertaining to natural resources, land, forest and water fall within the jurisdiction of State (Raja Dato' Zaharaton 2004). Matters related with water resources falls within Federal jurisdiction in the case of disputes over the transboundary of river basin (Raja Dato' Zaharaton 2004). However, water resources cannot be simply compartmentalised to suit the Ninth Schedule of the Federal Constitution as various aspects fall within the legislative purview of both federal and state governments, such as the discharging of polluted waters related to trade and industry (NWRP 2012). There are at least 20 federal laws can be directly linked to water resources management i.e. (LESTARI 2011).

1. National Land Code 1965
2. Waters Act 1920 (revised 1989)
3. Animals Act 1953 (revised 2006)
4. Drainage Works Act 1954
5. Environmental Quality Act 1974
6. Farmer's Organization Act 1973
7. Federal Territory (Planning) Act 1982
8. Geological Survey Act 1974
9. Insurance act 1996
10. Interpretation Acts 1948 and 1967
11. Irrigation Areas Act 1953 (revised 1989)
12. Land Conservation Act 1960 (revised 1989)
13. Local Government Act 1976
14. Pesticides Act 1974
15. Poisons Act 1952 (revised 1989)
16. Protected Areas and Protected Places Act 1959
17. Standards of Malaysia Act 1996
18. Street, Drainage and Building Act 1974
19. Tourism Industry Act 1992
20. Town and Country Planning Act 1976

WATER RESOURCES MANAGEMENT – SELANGOR

Lembaga Urus Air Selangor (LUAS) is a state agency set up by Selangor State Government in 1999 that is responsible in managing rivers and water sources in Selangor (LUAS 2013). Lembaga Urus Air Selangor Enactment 1999 (LUASE 1999) provides LUAS with legal provisions that apply to all rivers wholly within the State of Selangor and to all river basins, catchment areas, wetlands, ground water, coastal waters and water bodies within the State of Selangor except those wholly within the Federal Administrative Centre of Putrajaya.

The objectives of this agency include to ensure water resources, river basin, coastal water and their environment are in a preserved and sustainable state so as to support viable development of the state socio-economic; to function as planner, implementor, coordinator, facilitator, researcher and enforcer in an effective, systematic and efficient way for water resources development and management; to create an enabling environment for the participation of public and private sectors in water resources management by taking into account interest of the public and State Government as well as inculcating public awareness on the importance of preserving water resources; and to serve as a reference point and role model to the Malaysian states and foreign countries in integrated water resources management (LUAS 2013).

Section 6 of Lembaga Urus Air Selangor Enactment 1999 (LUASE 1999) touches upon the functions and power of LUAS, which include the adoption and implementation of policies, plan

and projects, regulating water resources through licensing and enforcement mechanisms; and care for the State's interest in water resources. The Lembaga Urus Air Selangor Enactment 1999 (LUASE 1999) provides LUAS with legal provisions and enforcement power to carry out its functions and responsibility related to matters regarding water resources including establishment of the agency and its fund, protection and development of water sources, declaration of designated river basin, catchment area, ground water, wetlands and water body, resource use efficiency and conservation, mitigative measures, protection of the environment, activities on the surface of water bodies, powers of enforcement and etc.

MANAGING WATER RESOURCES THAT TRANSVERSES ADMINISTRATIVE BOUNDARIES

The management of transboundary waters is one of the critical issue that need to be consider in managing water resources, particularly mega urban regions such as the Greater Kuala Lumpur Region. In the international context, transboundary waters often serve as the main driver in economic development, creating the hydrological, social and economic interdependencies between societies (UN-Water 2008). Different administrative jurisdiction, institutional arrangements, socio-economic development, infrastructure, capacity building and cultures contribute to the main challenges in managing water resources that is transverses across boundaries (UN-Water 2008). However, these challenges also create the opportunities for capacity development, social, legal and economic cooperation between those areas that shared the resources (UN-Water 2008). In Malaysia, the transboundary waters issues have been given serious consideration as several water bodies transverses across the boundaries between state or countries, as for example, Sungai Golok lies across Kelantan and Thailand or Sungai Bernam lies across Perak and Selangor (GWP Sea Toolbox 2008).

The National Water Resources Policy (NWRP) sets out its three principles focusing on water resources security, water resources sustainability and collaborative governance (NWRP 2012). The objectives of NWRP include (NWRP 2012):

1. to set out the direction and strategies for collective action.
2. to provide means and measures to complement existing policy directions related to water resources.
3. to provide a platform to strengthen water intelligence as well as uniform practices through the streamlining of standards, measures, methods and approaches.
4. to set out the means and measures for adoption of water resources conservation plans at multiple scales so as to complement and strengthen existing land, resources, physical and other related development plans.
5. to build the capacity of all stakeholders for effective participation and collaboration in water resources governance at multiple scales and levels focusing on development human resources, science, technology and practices as well as encouraging investment in research development and innovation.

Matters relating to impacts to transboundary waters is emphasized in Target 5, Strategy 8, PTS14 of the NWRP that, is to identify options and measures to reduce, mitigate and remove stress, threats, impacts and risks including transboundary risks, threats, impacts and hazard events; and also in Target 13, PTS45 which is to identify and develop measures to address threats from contamination and pollution by controlling pollution at source, non point sources as well as transboundary pollution.

Part V namely Section 40 of LUASE 1999, the protection and development of water sources, touch upon the responsibility of LUAS for water sources, for the regulation and control of all water sources, sustainable development, management, use and conservation of the water source. Section 41 addresses on the control of use and flow of water, while Section 42 makes provision relating to the diversion on water. Both of these provisions state that no person or public authority shall, except with the approval of the authority, disrupt the natural flow of water in any water source or take or use water from any water source, except in such quantities as may be approved by the authority from time to time or divert the water of any river from its natural course (LUASE 1999). The power of director to control river reserves and coastal waters, include any alteration activity within a flood zone, river reserve or any other buffer or protection zone declared under Section 48, or on, in or above a water source or an activity, works, structure or building, within a flood zone, river reserve or foreshore that

may cause reduction in the volume or flow of water or the degradation of the quality of water or has an adverse impact on the environment. The Director may direct or impose charges according to Section 43 of LUASE 1999. Section 44 of the LUASE 1999 sets out the power to impose charges on the use of water, abstraction, extraction, discharge, drainage, diversion and impoundment of water resources and the return of water or the discharging of waste, effluent or any polluting matter that pollute or reduce the quality of the resources. Section 45 makes exemption for charges for subsistence agricultural purposes and matters related.

Section 46 of LUASE 1999 also emphasize on the implementation of integrated water management plan for the purpose of management, conservation and development of its water resources, and may advise on works or development on any land or part of the land. Section 48 provides for the establishment of zones for protection, including buffer zones, river reserves and flood zones and shall include a description of its purposes, the geographic boundaries and the restrictions that are applicable within the zone. Section 49 provides about the control of wastage of water and matters pertaining to thus section, while Section 50 of the enactment states about the directions of the authority to carry out certain works related to the provision.

Part VI of LUASE 1999 provides for the specific provisions on the declaration of river basins, groundwater and water body. Section 56 states on the declaration of designated river basins, catchment area, groundwater, wetlands and water bodies, and Section 57 specifies on the powers and duties of the authority in these designated areas, to include actions to implement the integrated management plan, advise assist and coordinate with relevant public authorities pertaining to water management, conservation and development, to carry out the research or conduct investigations on the status of water sources and its related matters pertaining to this section. Under Section 58, the works or development in designated areas including the alienation, reservation, sub-division, partition, amalgamation, classification, reclassification or conversion of land and others are to be subject to authority's advise. No person or even public authority shall engage in the activities of extraction, abstraction or exploitation of resources from water sources, discharge of effluents or wastes or return water directly or indirectly, recreational activities, commercial exploitation of any natural or man made features, or any other resource alteration activity unless is licensed by the Authority. The power to issue the licence and matters related to this subject under the provision of Section 59 of the enactment. Section 63 touches upon the development of practices that take into consideration of resource availability, safe yield and current use strategies; management plan for the water source; drought, flood, categorization of the area; the position of the social, economic and health conditions of the people; available infrastructure; technological advances related to the conservation and utilization of the resource; institutions necessary to implement the efficiency and conservation measures; time, cost, personnel and financing to implement the measures; and other measures (LUASE 1999).

Mitigative measures include Section 67 through of structure and local plans and Section 73 that provides for the water table management in problem soil areas pertaining to the catchment management that follows the water body not jurisdiction. Provisions which are related to the protection of the environment include in Section 75, Section 76 and Section 77 of enactment. These provisions particularly emphasis on the need for environmental impact assessment, which in Section 75 the need for a complete EIA before any projects are taken in place, Section 76 touches upon the need for an assessment of the existing projects, and Section 77 states about the scope of this environmental assessment according to the terms under Section 34A of Environmental Quality Act 1974. Section 78 and Section 79 touches upon the restrictions and prohibition of pollution of a water source. Any person or public authority prohibit to enter or discharge any wastes or pollution into any water source, unless if LUAS with the consultation of Director of Department of Environment prescribe acceptable conditions for the emission, discharge or deposit of wastes into that designated area or the activity has been licensed by the Authority. Under Section 96 and Section 97, no person shall navigate a vessel on any lake, wetland or river without licence. Any activity or structure including for recreational purposes must be as prescribed under the provisions in Section 98 of LUASE 1999. The list of provisions above indicate that LUASE 1999 can provide the necessary legal ambit to ensure the river that transverse boundaries will be properly managed, and water resources protected to meet different demand needs. Water is limited to note, both the NWRP and LUASE 1999 calls for an adoption

of a water resources based plan, looking at both conservation and development of water resources. This is critical for the Greater Kuala Lumpur Region as all these Selangor, Kuala Lumpur and Putrajaya are dependent on the water resources that transverses all three territories.

The LUASE 1999 and the NWRP are both complementary in nature and the provisions in the LUASE can be invoked to help implement the strategies in the NWRP. Table 1 below shows the linkages between several selected provisions of LUASE1999 that can fulfil and complement the objectives of NWRP.

TABLE 1. LUASE 1999 provisions fulfil the objectives of NWRP

LUASE 1999 Provisions	NWRP Objectives
Part II Establishment of the Authority Section 6 Functions and powers of the Authority Section 7 Power to establish corporation Part III Director, Officers And Servants Of The Authority Section 26 Committees Part V Protection and development of water sources Section 40 Responsibility for water resources Section 41 Control of use and flow of water Section 43 Power of Director in river reserves and coastal waters Section 44 Power to impose charges Section 45 Right to water for subsidence agricultural purposes Section 46 Implementation of integrated of water management plan Section 47 Authority may advise on works or development Section 48 Establishment of zones for protection Section 49 Control of wastage of water Part VI Declaration of river basins, groundwater and water body Section 56 Declaration of designated river basins, catchment area, ground water, wetlands and water body Section 57 Powers and duties in designated areas Section 58 Works or development in designated areas to be subject to authority's advise Section 59 Power to issue licence Part VII Resource use efficiency and conservation Section 63 Development of efficient practices Part VIII Mitigative Measures Section 67 Participation of Director in the development of Structure and Local Plans Section 73 Water table management problem in soil areas Part IX Protection of the environment Section 75 EIA of proposed projects Section 76 EA of existing projects Section 77 Scope of EA Section 78 Restrictions on pollution Section 79 Prohibition of pollution of a water source Part XI Activities on the surface of water bodies Section 96 Control of navigation Section 97 Licensing of navigation on surface waters Section 98 Recreation	To set out the direction and strategies for collective action so as to ensure the security and sustainability of water resources through integrated and collaborative mechanisms involving all stakeholders at all levels;

LUASE 1999 Provisions	NWRP Objectives
Part V Protection and development of water sources Section 46 Implementation of integrated of water management plan Section 47 Authority may advise on works or development Section 48 Establishment of zones for protection Part VIII Mitigative Measures Section 67 Participation of Director in the development of Structure and Local Plans Section 73 Water table management problem in soil areas Part IX Protection of the environment Section 75 EIA of proposed projects Section 76 EA of existing projects Section 77 Scope of EA Section 78 Restrictions on pollution Section 79 Prohibition of pollution of a water source	To provide means and measures to complement existing policy directions related to water resources so as to ensure their sustainable and equitable use, as well as protect the integrity of the environment, ecosystems and natural heritage;
Part V Protection and development of water sources Section 40 Responsibility for water resources Section 41 Control of use and flow of water Section 43 Power of Director in river reserves and coastal waters Section 44 Power to impose charges Section 45 Right to water for subsidence agricultural purposes Section 46 Implementation of integrated of water management plan Section 47 Authority may advise on works or development Section 48 Establishment of zones for protection Section 49 Control of wastage of water Part VI Declaration of river basins, groundwater and water body Section 56 Declaration of designated river basins, catchment area, ground water, wetlands and water body Section 57 Powers and duties in designated areas Section 58 Works or development in designated areas to be subject to authority's advise Section 59 Power to issue licence Part VII Resource use efficiency and conservation Section 63 Development of efficient practices Part VIII Mitigative Measures Section 67 Participation of Director in the development of Structure and Local Plans Section 73 Water table management problem in soil areas Part IX Protection of the environment Section 75 EIA of proposed projects Section 76 EA of existing projects Section 77 Scope of EA Section 78 Restrictions on pollution Section 79 Prohibition of pollution of a water source Part XI Activities on the surface of water bodies Section 96 Control of navigation Section 97 Licensing of navigation on surface waters Section 98 Recreation	To provide a platform to strengthen water resources intelligence as well as uniform practices through the streamlining of standards, measures, methods and approaches;

LUASE 1999 Provisions	NWRP Objectives
Part V Protection and development of water sources Section 46 Implementation of integrated of water management plan Section 47 Authority may advise on works or development Section 48 Establishment of zones for protection Part VIII Mitigative Measures Section 67 Participation of Director in the development of Structure and Local Plans Section 73 Water table management problem in soil areas Part IX Protection of the environment Section 75 EIA of proposed projects Section 76 EA of existing projects Section 77 Scope of EA Section 78 Restrictions on pollution Section 79 Prohibition of pollution of a water source	To set out the means and measures for the adoption of water resources conservation plans at multiple scales so as to complement and strengthen existing land, resources, physical and other related development plans;
Part V Protection and development of water sources Section 40 Responsibility for water resources Section 41 Control of use and flow of water Section 43 Power of Director in river reserves and coastal waters Section 44 Power to impose charges Section 45 Right to water for subsidence agricultural purposes Section 46 Implementation of integrated of water management plan Section 47 Authority may advise on works or development Section 48 Establishment of zones for protection Section 49 Control of wastage of water Part VI Declaration of river basins, groundwater and water body Section 56 Declaration of designated river basins, catchment area, ground water, wetlands and water body Section 57 Powers and duties in designated areas Section 58 Works or development in designated areas to be subject to authority's advise Section 59 Power to issue licence Part VII Resource use efficiency and conservation Section 63 Development of efficient practices Part VIII Mitigative Measures Section 67 Participation of Director in the development of Structure and Local Plans Section 73 Water table management problem in soil areas Part IX Protection of the environment Section 75 EIA of proposed projects Section 76 EA of existing projects Section 77 Scope of EA Section 78 Restrictions on pollution Section 79 Prohibition of pollution of a water source Part XI Activities on the surface of water bodies Section 96 Control of navigation Section 97 Licensing of navigation on surface waters Section 98 Recreation	To build the capacity of all stakeholders for effective participation and collaboration in water resources governance at multiple scales and levels focusing on developing human resources, science, technology and practices as well as encouraging investment in research, development and innovation.

CONCLUSION

The management of water resources that transverses across boundaries particularly in mega urban region pose great challenges as different bodies and agencies need to cooperate and coordinate together to tackle the issues arising from transboundary waters. LUAS through LUASE 1999 has the necessary mandates required to address the requirements for managing transboundary waters and can fulfil the objectives of NWRP towards the security, sustainability and collaborative governance of water resources particularly for the Greater Kuala Lumpur Region. The need for close cooperation and strong networking between different agencies will serve on the key basis for coordinated action. The adoption of a water resources conservation and development is the way forward to ensure that the water resource that flows through three jurisdictions will remain sustainable and secure.

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