

## Navigating the Hidden Politics of Water Resource Bureaucracies in Indonesia: Mapping Issue-Elements and Alliances

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**Abstract:** Water resource politics are often overlooked for jurisdictional perspectives, or difficult to comprehend for the politics unfolding behind the scenes. Using Indonesia as a case study, we synthesized all water-related bureaucracies to generate a list of "Water resource Issue-Elements," which served as a framework for translating actor-centered power dynamics. The data is based on policies reviewed from 2014 to 2017, coinciding with the beginning of a new presidential administration with heightened interests in water resource management. The study found that while the central coordinating and planning bureaucracies wield the strongest network power, two sectoral bureaucracies hold tremendous influence in guiding water resource management, which unfold under conditions of highly fragmented politics. On the one hand, the Ministry of Environment and Forestry influences water resources through its land management mandate and seeks to enlarge its bureaucratic power beyond state forest boundaries through the concept of watersheds. On the other hand, The Ministry of Public Works and Housing maintains its traditional mandate for managing river basins, wielding large budgets and networks to control information and determine project-related disbursements. As these two bureaucracies shape alliances administering water resources, their delegating responsibilities also refract to regional bureaucracies, shaping a new set of subnational contestations.

**Keywords:** Bureaucratic; Legal Policy; Water Resource; Watershed

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### 1. Introduction

Water resources, due to its importance in numerous aspects of society, and its mobility crossing jurisdictional boundaries<sup>1</sup>, makes it a complex resource to manage or study. Water resources thus involve intense yet often overlooked political dimensions of cooperation and contestation. Nevertheless, studies on the environment and natural resources often undermines this fluid resource for more static ones –such as the

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<sup>1</sup> Schlager, Edella, William Blomquist, and Shui Yan Tang. "Mobile Flows, Storage, and Self-Organized Institutions for Governing Common-Pool Resources." *Land Economics* 70 no. 3 (1994): 294–317. <https://doi.org/10.2307/3146531>

numerous studies focused on land<sup>2</sup>, landscapes<sup>3</sup>, and forests<sup>4</sup>, or those specific to sectoral elements including water supply and drinking water, groundwater<sup>5</sup>, wastewater and sanitation, pollution, flood and drought, ecosystem, energy and electricity, and irrigation and agriculture.

The studies that do integrate these water-related sectors also tend to focus on policy-oriented dimensions of management rather than the political contestations that shape them<sup>6</sup>, or on project scale evaluations.<sup>7</sup> On the other hand, explicitly political studies focused on water tend to limit attention to the social justice dimensions of access to safe drinking water and the urban poor.<sup>8</sup> There are also a cluster of studies that examine the global discursive politics of water resources relative to institutions and power elements, and focus on the ‘upstream’ policies and politics of international regimes.<sup>9</sup> There is less research however, that examines water resources as an area of political contestation through the lens of the state bureaucracies tasked with explicit management roles and responsibilities.

We view the bureaucratic contestations – both the formal and informal that shape them – as a key area for further exploration into deepening our understanding of water resource management politics. Our study therefore examines the policies, mandates, interpretations, and alliances across all the state bureaucracies involved in water

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<sup>2</sup> Joerin, Florent, and André Musy. "Land management with GIS and multicriteria analysis." *International transactions in operational research* 7, no. 1 (2000): 67-78. <https://doi.org/10.1111/j.1475-3995.2000.tb00185.x>

<sup>3</sup> Hay, G. J., D. J. Marceau, P. Dubé, and A. Bouchard. "A Multiscale Framework for Landscape Analysis: Object-Specific Analysis and Upscaling." *Landscape Ecology* 16 no. 6 (2001): 471–90. <https://doi.org/10.1023/A:1013101931793>

<sup>4</sup> Hallé, F., R. A. Oldeman, and P. B. Tomlinson. *Tropical Trees and Forests: An Architectural Analysis*. Heidelberg: Springer Science & Business Media, 1978.

<sup>5</sup> Molle, François, Elena López-Gunn, and Frank van Steenberg. "The local and national politics of groundwater overexploitation." *Water Alternatives* 11, no. 3 (2018): 445–57.

<sup>6</sup> Mitchell, Bruce. "Integrated Water Resource Management, Institutional Arrangements, and Land-Use Planning." *Environment and Planning A: Economy and Space* 37 no. 8 (2005): 1335–52. <https://doi.org/10.1068/a37224>; Fulazzaky, Mohamad Ali. "Challenges of Integrated Water Resources Management in Indonesia." *WATER* 6 no. 7 (2014): 2000–2020. <https://doi.org/10.3390/w6072000>; Grigg, Neil S. 2016. *Integrated Water Resource Management*. London: Palgrave Macmillan. <https://doi.org/10.1057/978-1-137-57615-6>; World Bank. 2017. "Water Resources Management." World Bank; Clement, Floriane, Diana Suhardiman, and Luna Bharati. 2017. "IWRM Discourses, Institutional Holy Grail and Water Justice in Nepal." *Water Alternatives* 10 (3): 870–87. <https://cgspace.cgiar.org/handle/10568/91319>

<sup>7</sup> Salimi, Jalil, Reza Maknoon, and Sander Meijerink. "Designing institutions for watershed management: A case study of the Urmia Lake Restoration National Committee." *Water Alternatives* 12 no. 2 (2019): 609–35.

<sup>8</sup> On natural resources more broadly, there is also an interesting debate between the polycentric dimensions and the social justice ones, centered on the formal institutions that have access to decision making channels, and those kept outside of them (see Thiel and Swyngedouw (2019) for a discussion on polycentric versus justice framings).

<sup>9</sup> Allan, John Anthony. "Integrated Water Resources Management Is More a Political than a Technical Challenge." In *Developments in Water Science*, edited by Abdulrahman S. Alsharhan and Warren W. Wood, 50:9–23. Elsevier. [https://doi.org/10.1016/S0167-5648\(03\)80004-7](https://doi.org/10.1016/S0167-5648(03)80004-7); Coskun, Bezen Balamir. 2005. "Power Structures in Water Regime Formation: A Comparison of the Jordan and Euphrates Tigris River Basins." *The Interdisciplinary Journal of International Studies* 3: 1–21. <https://doi.org/10.5278/ojs.ijis.v3i0.184>; Lindemann, Stefan. 2008. "Understanding Water Regime Formation—A Research Framework with Lessons from Europe." *Global Environmental Politics* 8 (4): 117–40. <https://doi.org/10.1162/glep.2008.8.4.117>; Huntjens, Patrick, Claudia Pahl-Wostl, Benoit Rihoux, Maja Schlüter, Zsuzsanna Flachner, Susana Neto, Romana Koskova, Chris Dickens, and Isah Nabide Kiti. 2011. "Adaptive Water Management and Policy Learning in a Changing Climate: A Formal Comparative Analysis of Eight Water Management Regimes in Europe, Africa and Asia." *Environmental Policy and Governance* 21 (3): 145–63. <https://doi.org/10.1002/eet.571>; Reis, N. "Political Culture in Water Governance—A Theoretical Framework." *Water Alternatives* 12 no. 3 (2019): 802–13.

resource management in Indonesia, highlighting the way actors cooperate and contest claims. While this study provides an incomplete picture of the overall polycentric governance dimensions, i.e., conditions shaped by political economic drivers and discursive politics, nevertheless, this study provides an institutional basis to more closely examine state bureaucracy and power in Indonesia, with high relevance for application elsewhere.

We ground the discussion by defining water resource management<sup>10</sup> around the day-to-day politics that connect different actor interests relative to access, utilization, [and due to flood and drought risk, we add] and protection from the resource.<sup>11</sup> Water resource management in Indonesia is unique because management is highly fragmented, not only across national agencies, but also between evolving centralized and decentralized governance authority. Water resources have taken on increasing interest by national coordinating bureaucracies due to concerns over water and food security (e.g., rice self-sufficiency), and climate change, particularly in the national capital region of Jakarta.<sup>12</sup> In sectoral terms, the upstream areas usually overlap with state forests and are defined under the watershed [*Daerah Aliran Sungai*] management authority of the Ministry of Environment and Forestry (MEFor). Water resources within state forests are further splintered into various responsibilities across MEFo's many sectoral bureaucracies.<sup>13</sup> The Ministry of Public Works and Housing (MPWH) on the other hand, takes on a much larger role for water resource management beyond state forests. MPWH's mandate is to administer programming on river basins (*Wilayah Sungai*), including various roles that involve planning, implementing, and administering programs related to dams, irrigation, water supply, and flood management. The transboundary character of water resources--e.g., its utilization for drinking water, agriculture, and the risks associated with flooding--usually cross sectoral mandates and jurisdictional boundaries.<sup>14</sup> Even with a new water resources law<sup>15</sup> passed in 2019

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<sup>10</sup> This paper defines water resources according to the way that the various institutions define their management responsibility. The broader definition of "water resources" relates to the sum of all management systems. For forestry-related programs we will highlight their terminologies of Watersheds, while for public works, we will use the more common terminology of River Basin.

<sup>11</sup> Bruns, B., and Don Jayatissa Bandaragoda. 2003. "Integrated Water-Resources Governance in a River Basin Context: A Synthesis Paper." In *Governance for Integrated Water Resources Management in a River-Basin Context: Proceedings of a Regional Seminar, Bangkok, May, 2002*, edited by B. Bruns and Don Jayatissa Bandaragoda, 247–54. Bangkok: International Water Management Institute (IWMI). <https://cgspace.cgiar.org/handle/10568/36955>; Pasandaran, E., N. Sutrisno, and Suherman. 2010. "Politik Pengelolaan DAS." In *Membalik Kecenderungan Degradasi Sumber Daya Lahan Dan Air*, edited by K. S. M. Suradisastra, B. Pasaribu, A. Sayaka, I. Dariah, L. Haryono, and E. Pasandaran, 243–60. Bogor: IPB Press.

<sup>12</sup> Salimi, Jalil, Reza Maknoon, and Sander Meijerink. "Designing institutions for watershed management: A case study of the Urmia Lake Restoration National Committee." *Water Alternatives* 12 no. 2 (2019): 609–35.

<sup>13</sup> Pasandaran, E., N. Sutrisno, and Suherman. 2010. "Politik Pengelolaan DAS." In *Membalik Kecenderungan Degradasi Sumber Daya Lahan Dan Air*, edited by K. S. M. Suradisastra, B. Pasaribu, A. Sayaka, I. Dariah, L. Haryono, and E. Pasandaran, 243–60. Bogor: IPB Press; Bruns, B., and Don Jayatissa Bandaragoda. 2003. "Integrated Water-Resources Governance in a River Basin Context: A Synthesis Paper." In *Governance for Integrated Water Resources Management in a River-Basin Context: Proceedings of a Regional Seminar, Bangkok, May, 2002*, edited by B. Bruns and Don Jayatissa Bandaragoda, 247–54. Bangkok: International Water Management Institute.

<sup>14</sup> Two special regions in Indonesia are unique in this light. The metropolitan areas of greater Jakarta (Jabodetabek) and the Greater Yogyakarta region (Kartamantul) instituted a regional authority to address connectivity issues that include water management. The latter is also considered much more effective in its ability to coordinate cross-jurisdictional management on water resources (Presentations by Sumadi SH, MH (Chairman of Kartamantul Joint Secretariat) and the Sekretariat BKSP Jabodetabekjur delivered on October 31, 2019.)

(number 17 of 2019), bureaucratic politics over mandates present an ongoing question over authority.<sup>16</sup>

Meanwhile, national policy reflected in the last two Medium Term Development Plans (RPJMN-2015-2016 and 2020-2024) highlight the increasing awareness among national policymakers about the increasing insecurity of water resources. The RPJMNs point to sustainable water resource management as an emerging national priority area in Indonesia. As reported by the National Disaster Management Agency (*Badan Nasional Penanggulangan Bencana/ BNPB*), 118 out of 450 river basins are at risk.<sup>17</sup> Villages are experiencing water shortages<sup>18</sup>, droughts and fires are increasing in the dry season<sup>19</sup>, and floods are increasing in magnitude during the rainy season.<sup>20</sup> All facets of water resource management mandates are increasingly being sounded in formal and non-formal policy discussions among state bureaucracies, highlighting intense contestations and shifting alliance.

Our research thus examines one aspect of this complexity, namely how water resource management bureaucracies implement their shared tasks of managing and administering water resources. Given the formal conventions and fragmented power struggles between, within, and across related bureaucracies, we seek to better understand the different interests bestowed upon, and claimed by various government agencies, and the ways decisions are contested and resolved among them. We hypothesize that the bureaucracies managing water resources are fragmented by their overlapping mandates, which are driven by the simplified spatial and jurisdictional priorities driven by a fundamentally centralized governing framework determined by bureaucratic clients and patrons focused on land and commodity-based development planning mandates. Given the existing research on bureaucratic politics in Indonesia, we also anticipate bureaucratic power in water resources to mirror the coercion power in spatial and jurisdictional terms, whereby upstream-downstream bureaucratic mandates are negotiated through politics that are shaped by large budgets and convening mandates on water resource infrastructure projects.

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<sup>15</sup> The suspension of the water resources law number 7 of 2004 resulted from a challenge of the Constitutional Court creating a regulatory void between 2015-2019, heightening political contestation over governing mandates.

<sup>16</sup> Suradisastra, K., and E. Pasandaran. 2010. "Tata Pengelolaan Yang Baik Dalam Pengelolaan DAS." In *Membalik Kecenderungan Degradasi Sumber Daya Lahan Dan Air*, edited by K. S. M. Suradisastra, B. Pasaribu, A. Sayaka, I. Dariah, L. Haryono, and E. Pasandaran, 356–74. Bogor: IPB Press.

<sup>17</sup> MEFor. 2015. "Rencana Strategis Direktorat Jenderal Pengendalian Daerah Aliran Sungai Dan Hutan Lindung Tahun 2015-2019." MEFor.

<sup>18</sup> Kartodihardjo, Hariadi, and Hira Jhamtani, eds. *Politik Lingkungan Dan Kekuasaan Di Indonesia*. Jakarta: Equinox Publishing Indonesia, 2006.

<sup>19</sup> Salafsky, Nick. 1994. "Drought in the Rain Forest: Effects of the 1991 El Niño-Southern Oscillation Event on a Rural Economy in West Kalimantan, Indonesia." *Climatic Change* 27 (4): 373–96. <https://doi.org/10.1007/BF01096268>

<sup>20</sup> Nugroho, Sutopo Ghani, Jamal Lumbaraja, Hermanus Suprpto, Sunyoto, Wayan Sabe Ardjasa, Hiroki Haraguchi, and Makoto Kimura. 1994. "Effect of Intermittent Irrigation on Methane Emission from an Indonesian Paddy Field." *Soil Science and Plant Nutrition* 40 (4): 609–15. <https://doi.org/10.1080/00380768.1994.10414300>; Handayani, Wiwandari, Micah R. Fisher, Iwan Rudiarto, Jawoto Sih Setyono, and Dolores Foley. 2019. "Operationalizing Resilience: A Content Analysis of Flood Disaster Planning in Two Coastal Cities in Central Java, Indonesia." *International Journal of Disaster Risk Reduction* 35 (April): 101073. <https://doi.org/10.1016/j.ijdrr.2019.101073>.

This paper specifically aims at identifying mandates and responsibilities of various actors (bureaucracies) and analyzing their formal tasks across the sum of the different sectors that makes up water resource management; and investigating the power dynamics among key bureaucratic actors. The paper proceeds as follows. In the subsequent section we present our theoretical underpinning, followed by a methods section on how we approached the research and collected data. Our methods employed an actor-centered power and bureaucratic politics framing to investigate the complexities and fragmentation in Indonesia's water resource management. We derived data from what we defined as the various power sources among actors—such as budget allocations, strategic responsibilities, staff numbers, and access to exclusive information, which are further elaborated in our methods section. The results then classify the various institutional mandates through categories and alliances, customizing them in what we introduce as “issue-elements” set across geographically explicit scales. Alongside a discourse network analysis, we present a clear discovery about emergent power dynamics. We conclude that in examining the bureaucratic actors involved in water resource management in this way we are able to provide a supporting framework for navigating the often overlooked and hidden politics of the institutions on water resources, while pointing to further research opportunities and theorizing issues in state and transboundary contexts elsewhere.

## 2. Theoretical Underpinning and Contextualization of Water Resource Management in Indonesia

It is important to note at the outset that we limit our research to fragmented bureaucracies among formally sanctioned governing institutions or co-management bodies<sup>21</sup>; as opposed to the more political dimensions of those excluded from accessing power.<sup>22</sup> Although we examine the formal and non-formal politics of bureaucratic power, it does not mean we are unaware of power contestations unfolding beyond our frame of bureaucratic contestations. Nevertheless, this paper limits the scope on the bureaucratic power of state-sanctioned institutions without considering other non-state institutions involved in various dimensions of water access and water management. In this research, we identified the lack of research on the complex institutions engaged in water resource management and set out to establish a research approach and establish empirical evidence for Indonesia. It is also our hope that this institutionalist approach for examining bureaucratic power through our proposed framing of Water Issue-

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<sup>21</sup> Thiel, Andreas, and Erik Swyngedouw. 2019. “Whose Problems Are Being Solved? Polycentric Governance and The Political.” In *Ostrom's Tensions Reexamining the Political Economy and Public Policy of Elinor C. Ostrom*, edited by Bobbi Herzberg, Peter J. Boettke, and Paul Dragos Aligica. Tensions in Political Economy. Virginia: Mercatus Center; Clement, Floriane. 2013. “For Critical Social-Ecological System Studies: Integrating Power and Discourses to Move beyond the Right Institutional Fit.” *Environmental Conservation* 40 (1): 1–4. <https://doi.org/10.1017/S0376892912000276>; Armitage, Derek. 2007. “Governance and the Commons in a Multi-Level World.” *International Journal of the Commons* 2 (1): 7. <https://doi.org/10.18352/ijc.28>; Mitchell, Bruce. 2005. “Integrated Water Resource Management, Institutional Arrangements, and Land-Use Planning.” *Environment and Planning A: Economy and Space* 37 (8): 1335–52. <https://doi.org/10.1068/a37224>

<sup>22</sup> Sultana, Farhana. 2018. “Water Justice: Why It Matters and How to Achieve It.” *Water International* 43 (4): 483–93. <https://doi.org/10.1080/02508060.2018.1458272>; Swyngedouw, Erik. 2011. “Interrogating Post-Democratization: Reclaiming Egalitarian Political Spaces.” *Political Geography* 30 (7): 370–80. <https://doi.org/10.1016/j.polgeo.2011.08.001>.

Elements provides pathways for social and environmental justice research to enter, challenge, and dialectically engage with. We thus do not wish to overlook those excluded from the power dimensions discussed herein, but our aims are limited to articulating the power dynamics among the bureaucracies.

Our research borrows from established theories of examining bureaucratic power in forest policy analysis.<sup>23</sup> These studies approach methodological engagement by examining actors, interests, and power (ACP). Maryudi and Sahide (2017) have also extended the ACP framework by specifically identifying and categorizing actors, and have encouraged future research to pay closer attention to examining power relations between the more powerful and less powerful actors.<sup>24</sup> We follow in this tradition and broaden the framing beyond forests to apply the approach to water resource management, focusing on the actors, their relations, and how they influence power.

### **2.1. Customizing water resource management into “Issue-Elements” on spatially explicit bureaucratic politics**

Water resource management issues are extremely fragmented across numerous mandates, sectors, and governing scales, and require a way for studying them under a common framework. For example, the numerous policies translate into a large number of bureaucracies that are tasked with or claim some form of formal mandate. Making sense of the policy jargon, mandates, roles, and responsibilities not only presents a challenge of complexity at the national level, but also refracts to the different governing scales and geographic regions of Indonesia’s decentralized institutional framework. Terms like watersheds, river basins, catchment areas, water districts, and others take on various meanings and interpretations among bureaucracies that claim their corresponding mandates, and are further reshaped by the provincial and district contestations that are assigned or claim some form of authority.

A case in point of these definitional and scalar challenges is evident even within the terminology of watersheds, in which watershed (or Daerah Aliran Sungai) can mean an administrative region or consist of large scale multi-jurisdictional areas (e.g., the Kapuas Hulu watershed includes 3,080,000 hectares) or to the smallest of watersheds confined to a single village.<sup>25</sup> The larger (and “priority”) watersheds are also splintered into smaller definitions and divisions of authority in terms of sub-watersheds.<sup>26</sup> Meanwhile, water resources can also be engineered into or out of hydrological or jurisdictional boundaries, realized through mandates of channelling, irrigation, water supply, through

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<sup>23</sup> Krott, Max. 2005. *Forest Policy Analysis*. Springer Science & Business Media; Krott, Max, Axel Bader, Carsten Schusser, Rosan Devkota, Ahmad Maryudi, Lukas Giessen, and Helene Aurenhammer. 2014. “Actor-Centred Power: The Driving Force in Decentralised Community Based Forest Governance.” *Forest Policy and Economics* 49 (December): 34–42. <https://doi.org/10.1016/j.forpol.2013.04.012>

<sup>24</sup> Maryudi, Ahmad, and Muhammad Alif K. Sahide. 2017. “Research Trend: Power Analyses in Polycentric and Multi-Level Forest Governance.” *Forest Policy and Economics* 81 (August): 65–68. <https://doi.org/10.1016/j.forpol.2017.05.003>

<sup>25</sup> Lusiana, Betha, Rudy Widodo, Elok Mulyoutami, D. A. Nugroho, and M. Van Noordwijk. “*Kajian Kondisi Hidrologis DAS Kapuas Hulu, Kabupaten Kapuas Hulu, Kalimantan Barat.*” World Agroforestry Center Working Paper,(60) (2008).

<sup>26</sup> Central Government policy in recent years has sought to prioritize the fifteen “priority” national watersheds, that include new mandates of responsibility.

dams and for energy, used for recreation, pumped hydro-geologically, or re-engineered for other purposes. One example of this is the large Jatiluhur reservoir in West Java, which though situated in the neighboring Citarum river basin, directs water to the Ciliwung-Cisadane river basin for Greater Jakarta's water supply. To make sense of this overall complexity, we thus required a tool to help us cluster policies and how they interact on the ground.

We maintain the spatial idea of the ecological unit of the watershed as a conceptual framework, which is commonly described to include an upstream and downstream area.<sup>27</sup> However, we also introduce a third spatial dimension based on management-area mandates to accommodate a large portion of water resource management responsibilities, namely an element that follows the main conveyance of water. We call this the riverine dimensions. The sum of all the mandates and policy concerns revolving around water resources, we customize in what we term "Issue-Elements." Issue-Elements are derived from all the formal roles of the bureaucracy to manage water resources at the national and subnational levels, as well as taking into consideration the many issues related to water resources management that might not necessarily be reflected in the bureaucracy.<sup>28</sup> The Issue-Elements are thereafter mapped onto the spatial divisions of the upstream, riverine, and downstream.

#### 2.1.1. Formal and Nonformal Issue-Elements

The formal elements, though complex and multiple (see Table 2) are relatively straightforward to identify. The Indonesian water resource management bureaucracies begin at the top of the government hierarchy through the constitutional level mandate manifested in the water resources law. These mandates are further benchmarked through the national long-term and medium-term development plans (RPJPN and RPJMN), and influenced by priorities of the highest level of elected officials and lawmaking institutions (i.e., the president and parliament). The broader policy roles, which we call the "Central Interstate Bureaucracies" are overseen by the national development and planning ministry (BAPPENAS) and various coordinating ministries, e.g., the Coordinating Ministry of Economic Affairs (MCE) for their cross-sectoral roles. We describe the major policy actors with direct management responsibilities at the national level as the "Central Sectoral Bureaucracies," which include MEF and MPWH. There are other ancillary management roles among the Ministry of Agriculture (MA) on tertiary irrigation and others that we categorize as central sectoral bureaucracies (see more on this in our findings result section). There is also an additional formal coordinating role, which we describe as "Central Public Bureaucracies," consisting of multistakeholder institutions established for enhancing state-civil society cooperation. As an extension of the national level bureaucracies, there are also "Central-regional

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<sup>27</sup> There are variations on the usage of upstream and downstream as a metaphor. For example, upstream can refer to a geographic unit or a policy idea.

<sup>28</sup> This element is important particularly in the Indonesian context because although the administrative functions are comprehensive, the actual performance of those roles are not taking place. Nevertheless, the analysis of form and function are beyond the scope of this paper, but would present a potentially interesting future complement to this research.

Bureaucracies,” that coordinate national programming in the regions to oversee implementation.

**Table 1.** Hierarchy of Water Resources Institutions

<b>Mandate</b>	<b>Bureaucratic category</b>
Central/National Mandate	Central Interstate Bureaucracies
	Central Sectoral Bureaucracies
	Central Public Bureaucracy
	Central-regional Bureaucracies
Regional/Decentralized Mandate	Regional (provincial-district) bureaucracies

We have further categorized the subnational actors separately as “Regional (provincial-district) Bureaucracies,” which also carry out important structural and functional bureaucratic roles. Regional governments take on many responsibilities that extend beyond the mandates of central bureaucracies, and in particular the districts and municipalities, claim a large management role over water supply. There are two additional actors that did not emerge in our analysis, which are more difficult to identify in their formalized bureaucratic roles. This is a common weakness in the study of bureaucratic politics.<sup>29</sup> The first is the private sector, which can play a large role in water management considerations. Indeed, one of the reasons parliaments revoked the 2004 water law in 2015 was due to their interpretation of the growing impingement of companies seeking to privatize water supply. The private sector is thus extremely contingent upon the regulating bureaucracies that emerge from our data, which showed a lack of consolidated power of the private sector beyond the formal state institutions. The second are the cultural institutions, which are oftentimes formalized through formal mandates. For example, the water management system (subak) in Bali is a cultural institution that receives a formal mandate.<sup>30</sup> For the purposes of this broader bureaucratic power analysis, we have excluded this level of regional detail, but are well aware of its role and encourage complementary future research on the political economy dimensions influencing bureaucratic contestation and cooperation.

The non-formal elements of the bureaucracies are also crucial in this respect for identifying power dynamics. For example, overlapping responsibilities result in fragmented power sharing that are often worked out in non-formal bureaucratic mechanisms. All ministries report directly to the President, even though Indonesia has coordinating ministries designed to function as a bridge between them. As a result, ministries may attempt to increase and reposition their power relative to others. In addition, the fragmentation of water resource management bureaucracies contains overlapping authorities and roles<sup>31</sup>, which are also manifested in the lack of vertical

<sup>29</sup> Krott, Max. *Forest Policy Analysis*. (Berlin: Springer Science & Business Media, 2005).

<sup>30</sup> Royo, Antoinette, Wiwik Dharmiasih, and Yunus Arbi. "Forum Pekaseh in the Management of Subak Landscape of Catur Angga Batukaru, UNESCO World Heritage Sites in Bali." In *Asian Sacred Natural Sites*, (Routledge, 2016) 140–52.

<sup>31</sup> Setiawan, Eko N., Ahmad Maryudi, Ris H. Purwanto, and Gabriel Lele. 2016. "Opposing Interests in the Legalization of Non-Procedural Forest Conversion to Oil Palm in Central Kalimantan, Indonesia." *Land Use Policy* 58 (December): 472–81. <https://doi.org/10.1016/j.landusepol.2016.08.003>



coordination between central and local governments, as well as horizontal coordination between regions. This often creates emergent power relations between central and local government bureaucracies on shared responsibilities.<sup>32</sup>

Although we address the formal and non-formal aspects within bureaucratic politics, we are aware that other research traditions like environmental justice and political ecology view state institutions from perspectives of water exclusions and resistance. To ensure that we do not undermine the importance of the political ecologies of water we briefly touch on the studies that highlight its importance in the Indonesian context, as well as the added value that it has in mapping the Issue-Elements onto our spatialized framing of the upstream, riverine, and downstream. This would be an important area of complementary future research. In the upstream areas, MEFo confirms that there are 25,863 villages located within state forests amounting to 9.2 million households.<sup>33</sup> By virtue of the state delineating these people within state forests, they also lose their formal rights to access land and natural resources, though some forms of joint management rights are being introduced and expanded<sup>34</sup>, and done so specific to considerations on water resources.<sup>35</sup> The factors relating to these justice dimensions and rights in state forests are also part of social movements in defense of the economic, security, and livelihood dimensions of environmental change like land degradation, illegal logging, poverty, indigeneity, and others.<sup>36</sup> Along the riverine, similar issues of poverty also persist, but slightly differ in their issues related to pollution/solid waste and erosion, as for example, a result of mining and other forms of land degradation. Finally, in the downstream dimension – such as the delta, brackish, or coastal areas, and especially in urbanized areas – common issues include concerns over environmental quality, rights among informal communities, the mobility of populations<sup>37</sup>, and concerns over the recognition of informal populations and access to services, as well as public health issues resulting from poor sanitation services.

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<sup>32</sup> Sahide, Muhammad A. K., and Lucas Giessen. 2015. "The Fragmented Land Use Administration in Indonesia—Analysing Bureaucratic Responsibilities Influencing Tropical Rainforest Transformation Systems." *Land Use Policy* 43: 96–110. <https://www.sciencedirect.com/science/article/pii/S0264837714002464>; Sahide, Muhammad A. K., Ahmad Maryudi, Supratman Supratman, and Lukas Giessen. 2016. "Is Indonesia Utilising Its International Partners? The Driving Forces behind Forest Management Units." *Forest Policy and Economics* 69 (August): 11–20. <https://doi.org/10.1016/j.forpol.2016.04.002>; Sahide, Muhammad A. K., M. Muliati, R. S. Samad, E. I. Mas'ud, A. Sabar, Y. Yusran, S. Supratman, and M. R. Fisher. 2019. "Fragmented Dual Patrons: Analyzing Regional Bureaucracies' Task and the Coalition on Governing Jeneberang Watershed Landscape." *IOP Conference Series: Earth and Environmental Science* 270 (1): 012043. <https://doi.org/10.1088/1755-1315/270/1/012043>.

<sup>33</sup> Winata, D. K. 2019. "KLHK Identifikasi Ribuan Desa Di Kawasan Hutan." *Media Indonesia*. 2019. <https://mediaindonesia.com/read/detail/221945-klhk-identifikasi-ribuan-desa-di-kawasan-hutan>.

<sup>34</sup> Fisher, Micah R., Ahmad Dhialhaq, and Muhammad A. K. Sahide. 2019. "The Politics, Economies, and Ecologies of Indonesia's Third Generation of Social Forestry: An Introduction to the Special Section." *Forest and Society* 3 (1): 152–70. <https://doi.org/10.24259/fs.v3i1.6348>.

<sup>35</sup> Wibowo, Andreas, and Sherif Mohamed. 2010. "Risk Criticality and Allocation in Privatised Water Supply Projects in Indonesia." *International Journal of Project Management* 28 (5): 504–13. <https://doi.org/10.1016/j.ijproman.2009.08.003>

<sup>36</sup> Riggs, Rebecca A., James D. Langston, Chris Margules, Agni Klintuni Boedhihartono, Han She Lim, Dwi Amalia Sari, Yazid Sururi, and Jeffrey Sayer. 2018. "Governance Challenges in an Eastern Indonesian Forest Landscape." *Sustainability: Science Practice and Policy* 10 (1): 169. <https://doi.org/10.3390/su10010169>

<sup>37</sup> Rudiarto, Iwan, Rizqa Hidayani, and Micah Fisher. 2020. "The Bilocal Migrant: Economic Drivers of Mobility across the Rural-Urban Interface in Central Java, Indonesia." *Journal of Rural Studies* 74 (February): 96–110. <https://doi.org/10.1016/j.jrurstud.2019.12.009>

### 2.1.2. Actor-Centred Power (ACP): Measuring the dynamics of powerful actors in polycentric governance

Studying bureaucratic politics rests on the ability to document formal and informal goals, which allows us to explain the complexity of water resource management arrangements by articulating the essential role of power. To study power, we follow the actor-centered power (ACP) approach.<sup>38</sup> ACP postulates three elements of power, which include: coercion (altering behavior using force); [dis]incentives (altering behavior by providing advantages/imposing disadvantages); and dominant information (altering behavior using unverified information).

ACP serves as a useful tool for assessing power dynamics in polycentric governance systems.<sup>39</sup> It allows examination of power dynamics beyond, within, and across bureaucratic politics, and is well suited for making sense of the complex governance arrangements of Indonesian water resources management. Actors are engaged in sustained power contestations and they experience power gains and losses.<sup>40</sup> To evaluate the power gains and losses of different bureaucracies, we analyzed changes in their respective strategic tasks and mandates following guidance from ACP power elements.

## 3. Method

We first organized data on formal tasks and responsibilities of the different bureaucracies, covering budget allocations, strategic tasks, staff numbers, and exclusive information, from 2014 to 2017. The interviews were conducted in Jakarta and Makassar from February to August 2017, involving 13 interviews from 11 water resource-related bureaucracies. We purposefully selected staff in representative bureaucracies that had the experience and involvement in the core formal mandates within their respective bureaucracies, and we were able to gain access to senior level staff managing large budgets and selected for high level advisory or committee work. This was complemented by a complete review of the regulatory context across all

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<sup>38</sup> Krott, Max, Axel Bader, Carsten Schusser, Rosan Devkota, Ahmad Maryudi, Lukas Giessen, and Helene Aurenhammer. 2014. "Actor-Centred Power: The Driving Force in Decentralised Community Based Forest Governance." *Forest Policy and Economics* 49 (December): 34–42. <https://doi.org/10.1016/j.forpol.2013.04.012>; Burns, Sarah L., Max Krott, Hovik Sayadyan, and Lukas Giessen. 2017. "The World Bank Improving Environmental and Natural Resource Policies: Power, Deregulation, and Privatization in (Post-Soviet) Armenia." *World Development* 92 (April): 215–24. <https://doi.org/10.1016/j.worlddev.2016.12.030>; Sahide, Muhammad A. K., Micah R. Fisher, Ahmad Maryudi, Ahmad Dhiaulhaq, Christine Wulandari, Yeon-Su Kim, and Lukas Giessen. 2018. "Deadlock Opportunism in Contesting Conservation Areas in Indonesia." *Land Use Policy* 77 (September): 412–24. <https://doi.org/10.1016/j.landusepol.2018.05.020>; Prabowo, Doni, Ahmad Maryudi, Senawi, and Muhammad A. Imron. 2017. "Conversion of Forests into Oil Palm Plantations in West Kalimantan, Indonesia: Insights from Actors' Power and Its Dynamics." *Forest Policy and Economics* 78 (May): 32–39. <https://doi.org/10.1016/j.forpol.2017.01.004>

<sup>39</sup> Maryudi, Ahmad, and Muhammad A. K. Sahide. 2017. "Research Trend: Power Analyses in Polycentric and Multi-Level Forest Governance." *Forest Policy and Economics* 81 (August): 65–68. <https://doi.org/10.1016/j.forpol.2017.05.003>

<sup>40</sup> Prabowo, Doni, Ahmad Maryudi, Senawi, and Muhammad A. Imron. 2017. "Conversion of Forests into Oil Palm Plantations in West Kalimantan, Indonesia: Insights from Actors' Power and Its Dynamics." *Forest Policy and Economics* 78 (May): 32–39. <https://doi.org/10.1016/j.forpol.2017.01.004>; Wibowo, Agung, and Lukas Giessen. 2015. "Absolute and Relative Power Gains among State Agencies in Forest-Related Land Use Politics: The Ministry of Forestry and Its Competitors in the REDD+ Programme and the One Map Policy in Indonesia." *Land Use Policy* 49 (December): 131–41. <https://doi.org/10.1016/j.landusepol.2015.07.018>.

institutions. We collected the policy data from the official websites of public bureaucracies and triangulated the data through additional personal communications to clarify the policy context with subject-matter experts and ministerial administrative staff involved in water resource management in Indonesia. All government gazettelements, water resource management related bills and acts, administrative orders, and formal and informal documents—such as reports, master plans, and circulars on the water resource management sector—were considered as policy documents (we followed.<sup>41</sup>

Content analysis was applied as a method for data analysis and was particularly useful in exposing the discrepancies across institutions, highlighting the obvious and hidden formal and nonformal power relations.<sup>42</sup> Authors also reflected on their own experiences as forest and water resource policy consultants observing upstream watershed programs in the forest sector since 2008 and accessing field sites to incorporate observations, and in the urbanized downstream issues since 2007 (specifically on flood management, water supply, and wastewater/sanitation). In this light, the authors had deep experience engaging with field sites, providing important context not just across the central government actors, but also the multi-scalar dimensions that connect regulatory issues to field-based project implementation in Indonesia's water resources.

This research also applied a Discourse Network Analysis (DNA), which consists of a mixed-methods approach that extends quantitative analysis into qualitative descriptive notations.<sup>43</sup> The DNA analyzes actor-based contestations and policy relations. The results offer the opportunity to visualize relations between actors by analyzing actor-based debates as part of their network of policy discussions. The DNA is derived from Figure 1 and inputs the WIEs into a software that maps out the Actors columns with the WIEs as well as the types of bureaucracies (see Figure 2 and 3). The result of the DNA provides a broad visualization of the power relations between actors by identifying their access to resources and the connections across their networks. In this study DNA is applied as a complementary tool for interpreting data from the in-depth interviews and the document content analysis.

A simple quantitative approach was used to estimate additional power elements assigned to individual bureaucracies related to specific tasks, imposed through special agendas, or shared with other actors to complete special joint missions. The cumulative

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<sup>41</sup> Sadath, Md Nazmus, and Max Krott. 2012. "Identifying Policy Change — Analytical Program Analysis: An Example of Two Decades of Forest Policy in Bangladesh." *Forest Policy and Economics* 25 (December): 93–99. <https://doi.org/10.1016/j.forpol.2012.07.013>; Rahayu, Sari, Dwi Laraswati, Andita A. Pratama, Dwiko B. Permadi, Muhammad A. K. Sahide, and Ahmad Maryudi. 2019. "Research Trend: Hidden Diamonds – The Values and Risks of Online Repository Documents for Forest Policy and Governance Analysis." *Forest Policy and Economics* 100 (March): 254–57. <https://doi.org/10.1016/j.forpol.2019.01.009>

<sup>42</sup> Neuman, W. L. 2005. *Social Research Methods: Quantitative and Qualitative Approaches*. London: Allyn and Bacon; Sadath, Md Nazmus, and Max Krott. 2012. "Identifying Policy Change — Analytical Program Analysis: An Example of Two Decades of Forest Policy in Bangladesh." *Forest Policy and Economics* 25 (December): 93–99. <https://doi.org/10.1016/j.forpol.2012.07.013>

<sup>43</sup> Leifeld, Philip. 2016. "Discourse Network Analysis: Policy Debates as Dynamic Networks." In *The Oxford Handbook of Political Networks*, edited by J. N. Victor, M. N. Lubell, and A. H. Montgomery, 301–26. Oxford Handbooks. New York: Oxford University Press. <https://doi.org/10.1093/oxfordhb/9780190228217.013.25>

power gains of individual bureaucracies were quantified to document symbolic and substantive policy changes. Our research follows ACP procedures similar to an approach applied Prabowo et al. using a two-point ordinal scale “with a score of ‘1’ indicating that the actors had power, and ‘0’ indicating that the actors did not have power”.<sup>44</sup> Although the 0-1 quantification notation is simplistic, the cumulative amounts correspond to the in-depth data collection processes and emerges from clear articulations of power.

Further quantitative analysis followed Schusser et al<sup>45</sup> methodology, which helped to lay the foundation for the analysis of power accumulation and dominant power degrees. We began our field investigation at a sub-national scale (South Sulawesi province) by identifying actors, how they were connected, and their roles in managing water resources similar to the sequence of design analysis proposed by the Schusser et al. model. We selected water resource management areas associated with a fairly large case study area encompassing the Jeneberang watershed management region (~78,000 hectares). During the first phase, we interacted with actors who were vertically connected to the central level ministries.

In the second phase of the investigation, we followed up with more targeted engagement among actors at the central government level to triangulate findings, extending the line of questioning, and deepening potential results to emerge. This dialectic multi-scale investigation on bureaucratic actors enabled us the opportunity to confirm the data in a reflective process, while also identifying the power relations between and across governing scales. Thereafter, we conducted semi-structured interviews (following methods from Bryman<sup>46</sup> with key informants of select staff representatives from state bureaucracies responsible for water resource management).<sup>47</sup> We employed this approach because ACP assumes that power of a bureaucratic actor also influences power relations between actors. The interviews were conducted in-person, using a snowball method whereby similar questions were asked of respondents until no new actors were mentioned.

## 4. Results

### 4.1. Water resource Issue-Elements (WIEs) and fragmentation

To quickly re-summarize, WIE’s are elements of issues raised by certain bureaucracies in dealing with problems related to water resource management. They can be used to investigate whether there is fragmentation of formal water resource management actors/bureaucracies. They also help us to understand the historical and traditional formation of a certain bureaucracy, whether as a completely new organ, or as separate

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<sup>44</sup> Prabowo, Doni, Ahmad Maryudi, Senawi, and Muhammad A. Imron. 2017. “Conversion of Forests into Oil Palm Plantations in West Kalimantan, Indonesia: Insights from Actors’ Power and Its Dynamics.” *Forest Policy and Economics* 78 (May): 32–39. <https://doi.org/10.1016/j.forpol.2017.01.004>

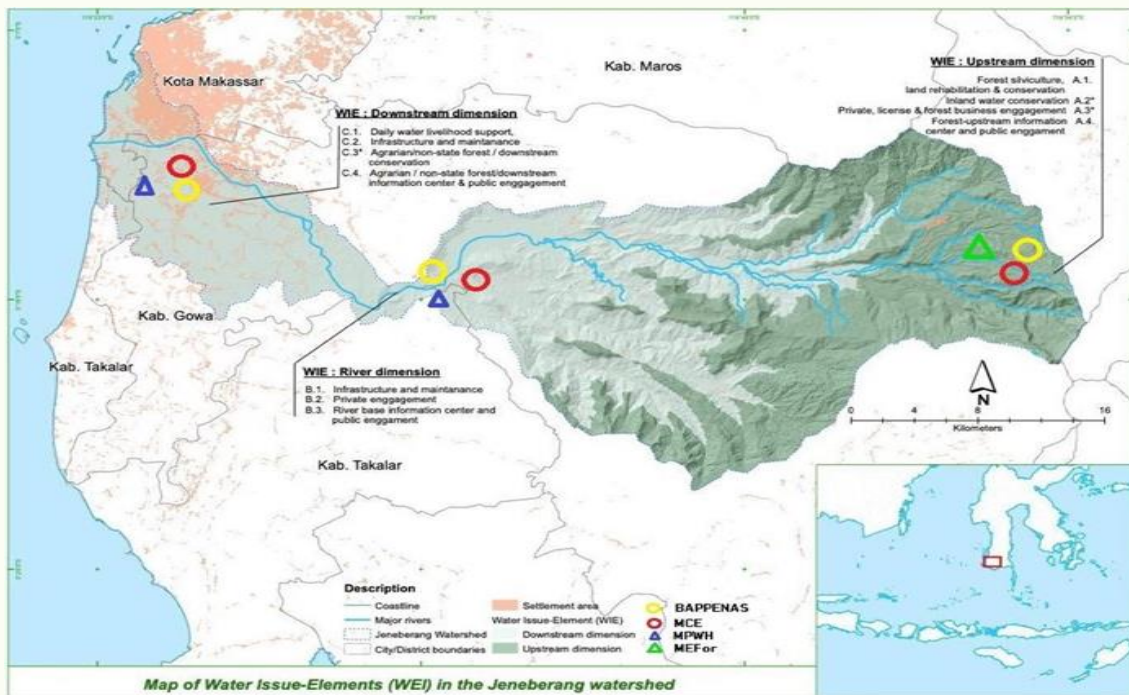
<sup>45</sup> Schusser, Carsten, Max Krott, Rosan Devkota, Ahmad Maryudi, Manjola Salla, and M. C. Yufanyi Movuh. “Sequence design of quantitative and qualitative surveys for increasing efficiency in forest policy research.” *Allgemeine Forest und Jagdzeitung* 183, no. 3/4 (2012): 75-83.


<sup>46</sup> Bryman, Alan. 2016. *Social Research Methods*. Oxford: Oxford University Press.

<sup>47</sup> Maryudi, Ahmad, and Micah R. Fisher. 2020. “The Power in the Interview: A Practical Guide for Identifying the Critical Role of Actor Interests in Environment Research.” *Forest and Society* 4 (1): 142–50. <https://doi.org/10.24259/fs.v4i1.9132>.

from other (already established) bureaucracies. From the formal mandates of each bureaucracy, we identified the geographical dimensions of WIEs, i.e., upstream, riverine, and downstream. Figure 1 shows each bureaucracy by type and provides a picture of a very complex and fragmented water resource management arrangement composed of at least nine major bureaucracies.

MEFor has the main responsibility of maintaining land conservation to preserve water for upstream watersheds. The Directorate General of Watershed and Protection Forest (DG Watershed and Protection) is the operator for WIEs in MEFo.<sup>48</sup> Forest Management Unit-Protection<sup>49</sup> is a specialized institution at the site level under DG Watershed and Protection of MEFo's administrative support. The Regional River Agency (RWA) is another strong institution employed by MEFo to strengthen upstream watersheds and support public forests in downstream areas. MEFo has extensive influence in the upstream areas (A1, A2, A3 and A4),<sup>50</sup> which is consistent with Sahide et al,<sup>51</sup> finding that there has been a clear centralization of power in MEFo for managing the forestry sector. With re-centralization, the bureaucratic power of the districts is correspondingly diminished.



Remark:  : Watershed illustration. BAPPENAS and MCE are the strongest actors in three dimensions (Upstream, Riverine, and Downstream) who see their access to WIEs, besides that, strong actors also appear in ACP scoring analysis MEFo who controls the upstream dimension and MPWH in the river dimension.

<sup>48</sup> MEFo. 2017. "Renstra Ditjen PDASHL Tahun 2015-2019 Perubahan." MEFo

<sup>49</sup> Forest Management Unit (FMU) is the national mainstreaming priority institution that works at the site level, which has three forms such as FMU Protection, FMU Production and FMU Conservation.

<sup>50</sup> However, though much of the perceived area of formal mandate are in upstream areas, MEFo also has extensive authority in downstream areas as it also maintains authority in coastal and lowland state forests and even in designated marine national parks.

<sup>51</sup> Sahide, Muhammad A. K., Ahmad Maryudi, Supratman Supratman, and Lukas Giessen. 2016. "Is Indonesia Utilising Its International Partners? The Driving Forces behind Forest Management Units." *Forest Policy and Economics* 69 (August): 11–20. <https://doi.org/10.1016/j.forpol.2016.04.002>

**Tabel 1.** WIEs and their bureaucracies.

Water Issue-Elements		
Upstream dimension	Riverine dimension	Downstream dimension
A.1. Forest Silviculture, Land rehabilitation & conservation A.2*. Inland water conservation A.3*. Forest management, private, license, & Forest business engagement A.4. Forest-Upstream information Centre and public engagement	B.1. Infrastructure, conservation, and maintenance B.2. Private engagement B.3. River based information Centre & Public engagement	C.1: Daily water livelihood support C.2: Infrastructure and maintenance C.3*: Agrarian/non-state forest/downstream Conservation C4: Agrarian/non-state forest/downstream Information Centre & Public engagement
A2*, A3* and C3* exist in both upstream and downstream areas		
Bureaucracies type	Actors	WIE - formal task
Regional (provincial-district) bureaucracies	Provincial Water Agency (PWA) Provincial Forestry Agency (PFA)	C1, C2, C3, C4 A1, A2, A3, A4
Central-regional bureaucracies	Regional river agency (RRA) Regional watershed Agency (RWA)	B1, B2, B3 A1, A2, A3, A4, C1 Minor: C3, C4
National public bureaucracies	National Council on Water Resources (NCWR)	C4, B3, Minor: A3
Central sectoral bureaucracies	Ministry of Public Work and Housing (MPWH) Ministry of Environment and Forestry (MEFor) Ministry of Agriculture (MA) Ministry of Villages, Disadvantaged Regions and Transmigration (MVDT) Ministry of Agrarian and Spatial Planning (MASP)	B1, B2, B3, C1, C2, C4 A1, A2, A3, A4, C1 Minor: C3, C4 C2, C.3, C4, C3, C4 A3, A4, C3, C4
Central interstate bureaucracies	Ministry of National Planning (BAPPENAS) Ministry of Coordinating Economic Affairs (MCE)	All WIEs All WIEs

Sources: Analysed from many documents<sup>52</sup>

Following the river, MPWH is the bureaucracy primarily responsible for maintaining flow and providing infrastructure support that includes primary and secondary irrigation for agricultural purposes.<sup>53</sup> The BI-B2 and B3 tasks include providing water supply for daily livelihoods, flood management, maintaining efficient and effective water allocation systems, ensuring maintenance of water resource management infrastructure,

<sup>52</sup> BAPPENAS. 2017. "Peran Dan Fungsi." BAPPENAS; BAPPENAS. 2015. "Rencana Pembangunan Jangka Menengah Nasional (RPJMN) 2015-2019." BAPPENAS; BAPPENAS. 2020. "Rencana Pembangunan Jangka Menengah Nasional (RPJMN) 2020-2024." BAPPENAS; MEFor. 2015. "Rencana Strategis Direktorat Jenderal Pengendalian Daerah Aliran Sungai Dan Hutan Lindung Tahun 2015-2019." MEFor; MEFor. 2017. "One River-One Plan-One Management." MEFor; MEFor. 2017b. "Renstra Ditjen PDASHL Tahun 2015-2019 Perubahan." MEFor.

<sup>53</sup> Suhardiman, Diana. "The Power to Resist: Irrigation Management Transfer in Indonesia." *Water Alternatives* 6, no. 1 (2013): 25-41

facilitating public and private participation, upgrading infrastructure, and updating the water resources information system.

Multiple bureaucracies are involved in downstream areas. The Ministry of Agriculture (MA) and its recently established ally, the Ministry of Villages, Disadvantaged Regions and Transmigration (MVDT) help farmer groups develop embungs (communal water storage reservoirs) and tertiary irrigation. In downstream areas, regional actors have broader responsibilities on water utilization. Decision-making authority, however, remains at the central level, and each regional actor receives direct patronage from the central level.

The Ministry of Agrarian Affairs and Spatial Planning (MASP) is responsible for coordinating sectoral bureaucracies and regional governments to integrate their activities according to a formal national spatial plan for both upstream and downstream areas, and require regional governments to follow a process in documenting their regional spatial plan. MASP and MEFoR are responsible for providing land for national priorities and agrarian land reforms. MASP is also tasked with supporting MPWH and MA build infrastructure for agricultural purposes, especially for large commitments to a food security program.

The results show how access among actors the WIEs corresponds to heightened political power. The figure thus shows that most of the power is aggregated to BAPPENAS and MCE, followed by MEFoR and RWA. Meanwhile, Figure 2 also shows there are differences of the level of attention to a particular WIE among each of the actors. The more actors who pay attention to a particular WEI, the WEI is considered to have a greater resource potential than other WIEs. The data therefore shows the WEIs with the highest level of attention, are C4 (Agrarian/non-state forest/downstream Information Centre & Public engagement), C3 (Agrarian/non-state forest/downstream Conservation), and A3 (Private, license, & Forest business engagement). The data can also be further aggregated per its corresponding spatial notation, i.e., upstream (A) received attention from 27 actors, followed by downstream (C) at 23 actors, and riverine (B) gaining attention from 13 actors.

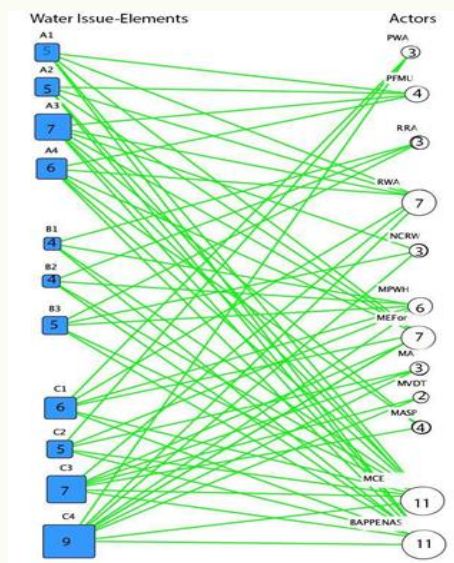


Figure 2. Formalistic network power relation between actors based on access to WIEs

Figure 3 also presents the DNA by corresponding level of bureaucracies to show bureaucratic access to WIEs. The more the level of bureaucracy handles WIEs, the more strategic and bureaucratic function to controls. The DNA shows that three levels of bureaucracies have the same levels of power, which are the Central Sectoral Bureaucracies, Central Interstate Bureaucracies, and Centra-Regional Bureaucracies. This finding is unsurprising given that although Indonesia is under a decentralized governance framework, many of the central government functions continue to maintain various forms of power to influence outcomes related to mandates, budgets, and jurisdictional authority.<sup>54</sup>

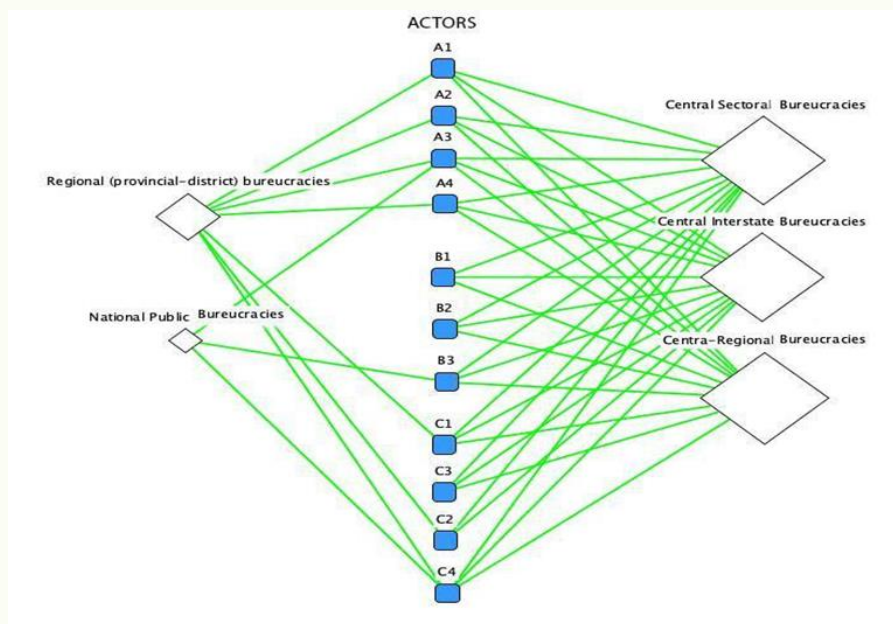


Figure 3. Bureaucratic formal network power in charge of WIEs

#### 4.2. Explaining WIEs by bureaucratic alliances: Fragmented power across fragmented alliances

In a centralized government system like in Indonesia, the President has absolute discretion to mandate alliances on specific missions, allocate budgets for special agendas, and create institutions to implement a particular agenda.<sup>55</sup> Therefore, we do not analyse the president as an institution or the Presidential Task Force Office per se. We do, however, analyse who in the President's inner circle has acquired relative power in Indonesia's water resource sectors, and particularly in terms of how the bureaucracies have formed alliances to achieve their dual missions, set a formal agenda,

<sup>54</sup> Sahide, Muhammad A. K., Ahmad Maryudi, Supratman Supratman, and Lukas Giessen. 2016. "Is Indonesia Utilising Its International Partners? The Driving Forces behind Forest Management Units." *Forest Policy and Economics* 69 (August): 11–20. <https://doi.org/10.1016/j.forpol.2016.04.002>

<sup>55</sup> Hadiz, Vedi R. *Localising Power in Post-Authoritarian Indonesia: A Southeast Asia Perspective*. (Redwood: Stanford University Press, 2010).



and drive informal mission objectives.<sup>56</sup> Having identified WIEs in previous section, we now turn our focus to how these bureaucracies formed alliances (as a result of the formal tasks mandated to them) or voluntarily made alliances to achieve specific agenda objectives. The three formal platforms used to steer multiple actors in water resource management directions and mainstreaming are listed in Table 2.

**Table 2.** Alliance platforms for steering multiple actors in water resource management

Platform and bureaucracy in charge	Status	Formal agenda
<b>A. Traditional inter-bureaucracy coordination</b>	<b>Traditional Indonesian bureaucratic arrangements</b>	
<ul style="list-style-type: none"> <li>• BAPPENAS</li> </ul>	A traditional bureaucracy for structuring planning and evaluating the program	National Planning of national priorities
<ul style="list-style-type: none"> <li>• Coordinating Ministries responsible for specific tasks</li> </ul>	It is a traditional bureaucracy, but tasks assigned depend on the President	Implementing special national priorities
<b>B. Temporary National Jargon</b>	<b>Depends on the presidential priority</b>	
<ul style="list-style-type: none"> <li>• <i>Revitalisasi Gerakan Nasional Kemitraan Penyelamatan Air (GN-KPA) National Partnership Movement for Water Security</i></li> </ul>	Not permanent: Reactivated to support National Jargon Nawacita 2015 – 2019	Involves 16 state and national bureaucracies to coordinate and synchronize sectoral policies for related activities on national water security targets
<b>C. Public bureaucracies formed by sectoral bureaucracies</b>	<b>Institution supported by legal stand and formally involving multiple actors including private and broader public engagement</b>	
<ul style="list-style-type: none"> <li>• National Council on Water Resources (NCWR)</li> </ul>	Institution support by Presidential degree (and previously by UU/law, the member of board is on the legal process Secretariat is supported by MPWH	<ul style="list-style-type: none"> <li>○ Engages multiple actors</li> <li>○ Identifies new issues,</li> <li>○ Develops policy recommendations</li> <li>○ Drafts policy (if required)</li> </ul>
<ul style="list-style-type: none"> <li>• National Watershed Forum (NWF)</li> </ul>	Inactive; low legal status Secretariat is supported by MEFor	
<b>D. Regional bureaucracies</b>	Work as the implementing agent of the Governor and central sectoral ministry	Implementing units for forest management (in upstream areas), river management (riverine dimension), and multisector management (downstream).

Sources: Analysed from many documents<sup>57</sup>

<sup>56</sup> Krott, Max. *Forest Policy Analysis*. (Berlin: Springer Science & Business Media, 2005).

<sup>57</sup> BAPPENAS. 2017. "Peran Dan Fungsi." BAPPENAS; BAPPENAS. 2015. "Rencana Pembangunan Jangka Menengah Nasional (RPJMN) 2015-2019." BAPPENAS; BAPPENAS. 2020. "Rencana Pembangunan Jangka Menengah Nasional (RPJMN) 2020-2024." BAPPENAS; MEFor. 2015. "Rencana Strategis Direktorat Jenderal Pengendalian Daerah Aliran

#### 4.2.1. Traditional alliances: National planning and coordinating bureaucracies

The National Planning Board (BAPPENAS) partners with the Ministry of Finance to evaluate budget priorities. BAPPENAS is close to or allied with the Coordinating Ministries and Presidential offices. Therefore, BAPPENAS always has access to a formal mechanism for coordinating all state bureaucracies in determining planning priorities. BAPPENAS can operate as a ‘think-tank desk’ and has formal access to the Ministry of Finance to discuss the national budget plan for all sectoral ministries (RAPBN).<sup>58</sup> BAPPENAS also creates a joint arrangement with the Coordinating Ministry of Economic Affairs (MCE) on engaging national bureaucracies in determining priority issues. BAPPENAS leads mainstream planning and MCE ensures implementation is consistent with national priorities.

BAPPENAS and MCE work in close cooperation with one another, and always have close ties to the President’s office. Evidence of this is that the three bureaucracies (BAPPENAS, MCE, and President staff) regularly interchange their staff members. For example, former BAPPENAS staff members work at MCE or in the President’s office (Interview 9, 2017; Interview 7, 2017). Because of these close staff relations, they share in their information power element. This is also evident in Figure 2, which shows that BAPPENAS has the highest cumulative informational power among the bureaucracies.

The commonly stated moniker by President Joko Widodo that ‘money follows programs’ is evident in the directives given by his administration to the ministries. The President has told them they are to focus only on programs that have direct links to the *nawacita*<sup>59</sup>. Programs that have no strong link to the *nawacita* will be allocated minimum budgets.<sup>60</sup> MCE and BAPPENAS coordinate activities of all ministries and ensure the *nawacita* is reflected in all ministerial programs. Here, MCE and BAPPENAS have similar powers at the central level, but they do not hold corresponding powers at the regional/provincial levels, which are managed by different sectoral bureaucracies (e.g., MEFo and MPWH), that provide strong patronage for regional actors. MCE also demonstrates its superiority by initiating reforms through other alliances, namely MPWH’s National Council on Water Resources (NCWR), an organization that will be discussed in more detail later.

#### 4.2.2. Sectoral alliances and patronage networks: The powerful mandates of MEFo and MPWH

In Indonesia, almost all public bureaucracies have mechanisms to convene alliances and networks in the form of supporting secretariats and meetings. In issues relating to water resources management these are particularly pronounced in the division between the upstream watershed mandate of MEFo (through RWA), and the

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Sungai Dan Hutan Lindung Tahun 2015-2019.” MEFo; MEFo. 2017. “One River-One Plan-One Management.” MEFo; MEFo. 2017b. “Renstra Ditjen PDASHL Tahun 2015-2019 Perubahan.” MEFo.

<sup>58</sup> BAPPENAS. 2017. “Peran Dan Fungsi.” BAPPENAS; BAPPENAS. 2017b. “Tema, Arah Kebijakan, Dan Prioritas Pembangunan RKP 2017.” BAPPENAS

<sup>59</sup> The Presidential administration of Jokowi-Kalla created an overall guiding document of delivering on campaign process called the *Nawacita*, which originates from a *Sanskrit* term meaning the “nine” “ambitions” (synonymous with agenda setting) and lays the overall visions and targets for 2014–2019.

<sup>60</sup> KSP. 2016. “Bappenas-KSP Pastikan Nawacita Jadi Acuan RPJMN Dan RKP.”

riverine/downstream mandate of MPWH. The superiority of MEFo and MPWH as sectoral bureaucracies will be discussed in more detail in the next section.

MEFo's approach to convening their alliances are facilitated through the establishment of a national forum on watersheds, or the National Watershed Forum (NWF). MEFo selected Emil Salim<sup>61</sup>, a former minister known for his progressive political stance on the environment, as the first Chairman. At the national level, this alliance seeks to promote the symbolic terminology of 'one river, one management'.<sup>62</sup> However, this is only a symbolic gesture, since the alliance does not have any responsibilities. At the time of research, the institution remains inactive. However, the influence of the NWF is much more pronounced among regional governments. Similar to the NWF, the regions are facilitated through the extension of MEFo's regional bureaucracy in the form of the RWA, who support limited budgets to establish and convene watershed forums. The provincial-district/municipality levels, particularly from our regional case study site in South Sulawesi have successfully established a regional watershed forum, and are active in shaping policy. The provincial forum in South Sulawesi initiated the drafting of a Watershed Regulation and successfully influenced parliament to approve regulations. Nevertheless, although there is initial momentum, the legal standing for the regional watershed forums remains limited, and their continued role remains contingent on support from MEFo's bureaucratic arms and buy-in from regional governments to keep them funded and active.

On the other hand, MPWH's mandate on riverine/downstream dimensions, which often revolve around coordinating significant infrastructure budgets, is much stronger in terms of financing. They support numerous actors and facilitate a broader public alliance embodied by the NCWR. The NCWR provides support for daily staff and operations, and has clear budgets to support continued management.<sup>63</sup> NCWR is formally tasked with providing guidance to the President on establishing national water resources management policies and coordinating stakeholder involvement.

#### 4.2.3. Temporary alliances: National cooperation initiatives

A temporary national alliance from the traditional coordinating bureaucracies was established as a way to bring the sectoral, overlapping, and siloed initiatives together, insisting on MEFo and MPWH's involvement. The program, entitled the "Renewal of National Partnership Movements for Safeguarding Water" (GN-KPA),<sup>64</sup> is a continuation of a previous program reactivated by the president on 28 April 2015 (MPWH, 2016). The President facilitated a Memorandum of Understanding between eight ministries including the Ministry of Home Affairs, BAPPENAS, MCE, MEFo, MPWH, MA, MEDT, and MASP (BAPPENAS 2015). The GN-KPA was premised on the mandate to address the most critical water resource management priorities, and tasked the alliance to revitalize 108 watersheds, 15 lakes, and 29 priority dams. However, based on a reading of the

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<sup>61</sup> Emil Salim is the senior environmentalist in Indonesia and was previously as the Minister of Environment.

<sup>62</sup> MEFo. 2017. "One River-One Plan-One Management." MEFo.

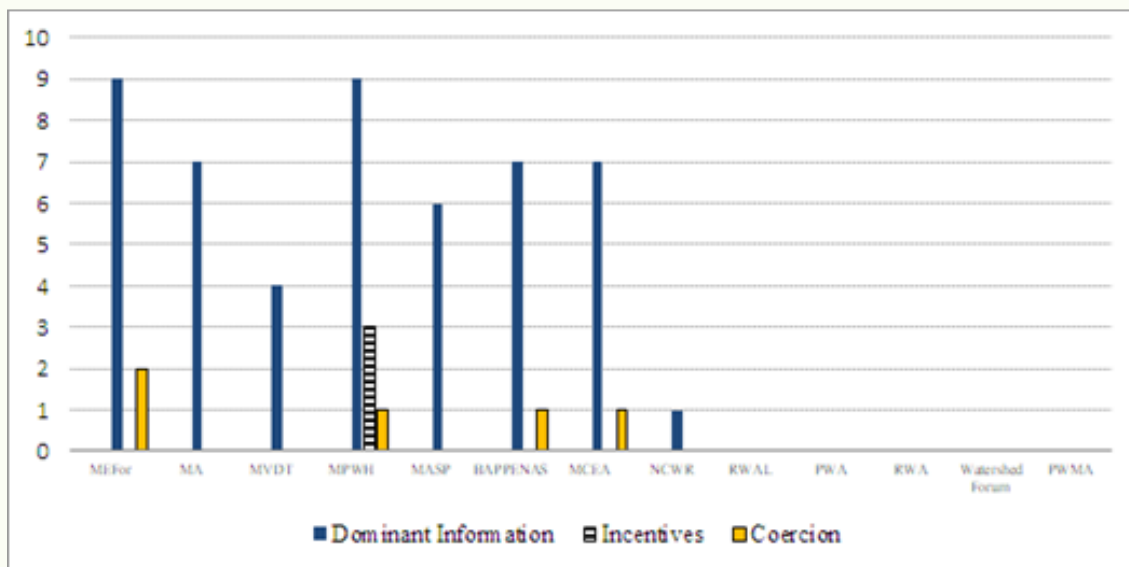
<sup>63</sup> NCWR is under the legal umbrella of *Integrated Water Resource Management*, which involves many state bureaucracies and non-state actors in advocating special policies for ensuring that water security is a national priority (Fulazzaky 2014)

<sup>64</sup> Translation: *Revitalisasi Gerakan Nasional Kemitraan Penyelamatan Air*

MoU, this is a temporary alliance because actors have the right to terminate their involvement, and not one of them has been designated to lead the process. However, our observations indicate that MPWH has strong interests in leading the alliance. MEFor on the other hand, has not shown as much interest in participating as there are various conflicting interests, particularly in the fundamental definitional difference of what consists of a priority watershed, thus affecting the scope of works that might ensue.

### 4.3. Superiority of MEFor and MPWH: Contesting roles and mandates

MEFor and MPWH are the lead institutions that define the water resources concept, but they also have competing definitions. MEFor uses Government Regulation 37/2012 on management criteria for watershed classification and carrying capacity. Meanwhile, MPWH categorizes its formal mandate in terms of preserving and distributing water, particularly through infrastructure provision. Therefore, MEFor’s watershed concept articulates an entire basin concept, and views their role partnering with MPWH to support ways that infrastructure can make use of water. MPWH, meanwhile, defines MEFor’s role for its upstream management responsibility in the deliberative design of watersheds, which then support MPWH to focus on an interconnected upstream-downstream approach based on their mandated role of prioritizing infrastructure development. As illustrated in Figure 4, both actors have gained more power relative to other actors.



**Figure 4.** Powerful actors for the period 2014 to 2017, based on the ACP scoring analysis described in the methods section

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#### 4.3.1. MEFo: Land as power and attempts to extend downstream through the watershed mandate

MEFo has always had an advantage in upstream areas in that it has legal support through the strong Forestry Law, which states that each region/province should allocate a minimum of 30% of its watersheds as a proportional distribution to state forest areas (Forestry Law, 1999 article 18).<sup>65</sup> Even though allocations this allocation percentage is not fully supported by scientific evidence given its extension to numerous ecological regions of Indonesia, the spatial allocation guideline does direct each sector to ensure that activities do not 'cross the line,' or that they do not conduct activities in state forest areas without permits or following legal MEFo procedures (Interview 10, 2017). MEFo uses this discursive legal mandate to their advantage in numerous programmatic and project-level initiatives.

MEFo is also increasingly using the watershed mandate to extend beyond state forest boundaries and further into downstream areas through two key strategies. The first is through the traditional bureaucratic formal mandate that corresponds to land management authority over 64% of Indonesia's total land area. Therefore, if any other bureaucracy plans to conduct activities within this land area, they are required to formally coordinate and work through MEFo. This mandate also corresponds to any initiatives that are inter-connected with upstream dimensions, which in turn allows MEFo to extend beyond its zones. Especially in our regional case study of South Sulawesi province, MEFo projects are increasingly extending project-level support to private lands through initiatives bound through topical interest in supporting watersheds. The second strategy for expanding authority is evident through the increasing prioritization of watersheds at a national level. MEFo has in turn used its watershed mandate (as well as their prominent role in climate change and involvement in food security) to also include themselves in activities beyond state forest boundaries. The sub-sections below provide examples on how MEFo uses their traditional role and are also being counter-challenged in the way they make claims to emerging roles through water resource management and other corresponding initiatives.

#### 4.3.2. Ebb and flow: Challenging, and Challenges to, the traditional formal mandate

Analysis shown in Figure 4 above highlights the ways MEFo accumulated more power than other traditional sectoral bureaucracies. This is a consequence of the Forestry Law's legal mandate that gives MEFo dominance in terms of access to information (e.g., data on state forest allocations) and coercive power on state forests/upstream

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<sup>65</sup> The Forestry Law which was first issued in 1967, and revised in 1999, is historically significant due to the role that MEFo played in national economic development policy on natural resources and land management authority.

areas (e.g., allowing infrastructure to be constructed in forest areas). Under MEFo’s traditional mandate, forest management outside the state forest is not under their formal regulatory authority at least in a spatial sense. Therefore, administering non-state land framed through the watersheds mandate or through forest management authority beyond state forests are MEFo’s best avenues for expanding power on access to, and control of information.

For all land administration authority beyond state forests however, the MASP bureaucracy claims mandated authority, and alongside other national initiatives, have come to increasingly challenge MEFo’s traditional bureaucratic claims. More recently, MASP has begun to enforce its power by adding spatial elements to the new government and land administration system, in which non-state forest areas are being rearranged for utilization purposes that correspond to new national initiatives. This poses an increasingly potent challenge to MEFo’s mandate over land and natural resources. For example, this was discussed above in challenges to MEFo’s bureaucratic authority in the GN-KPA, or through other prominent national initiatives such as the One Map Policy on spatial and data management authority. The expanded authority to include watershed areas for purposes of water security is thus continually being contested, and the results will create the conditions around who gets to decide bureaucratic authority on the inter-related dimensions of land, water, and natural resources.

Conversely, a national imperative on food security led MA taking a leadership role in setting the agenda and programming (observation in South Sulawesi Province, 2017 Interview 2, 2017). They initially also sought to apply food security programs through the implementation of small dam-building (*embung*) projects in upstream areas to support irrigation to meet food security objectives. A new ministerial bureaucracy (MVDT) established in 2014 received the mandate for empowering village development to implement a program to facilitate the construction of 33,000 *embungs*. When villages manage their own budgets, they are instructed to allocate one *embung* for each village. Although it initially seemed that MVDT had carved out a mandate for this major role in water resources, over time MEFo took issue with any plans for such infrastructure in state forest areas. The program was also undermined by MA and MPWH for other jurisdictional reasons.

**Table 3.** Watershed bureaucracy of MEFo’s formal mandates and its utility in maximizing power

Specific formal mandate	Application of formal mandate to extend jurisdiction relative to other ministries
<ul style="list-style-type: none"> <li>• Watershed management</li> <li>• Recovering terrestrial water ecosystems</li> <li>• Land and water conservation</li> <li>• Forest and land rehabilitation</li> <li>• Forest seed development and seedling distribution</li> <li>• Planting and the silviculture of forest plants</li> </ul>	<ul style="list-style-type: none"> <li>• Coordinating with other related bureaucracies</li> <li>• Forming national and regional multi-actor watershed forums</li> <li>• Influencing (non-state) donors to propose activities</li> <li>• Extending activities outside state forests</li> <li>• Involvement on food security programming</li> <li>• Involvement on global climate change program</li> </ul>

Overall, MEFor presented their own interpretation of the food security mandate, as well as other initiatives that sought to challenge water resource management authority within their jurisdictions. MEFor highlighted their own regulations for community empowerment to meet food security, particularly through major institutional changes unfolding on community empowerment programs through the expansion of social forestry area designation. These examples, and the result of the concomitant interpretation of mandate, served to reinforce MEFor's role within its jurisdictional boundaries, sending a strong message about their bureaucratic position to any program conducted within their areas as only allowable on their terms. Table 4 provides a summary example of how MEFor maintains its formal mandate and how it is used to contest its role within jurisdictional boundaries, while expanding into other programmatic activities by using its broader mandate on emerging initiatives and national programming.

#### 4.3.3. MPWH: Reinforcing finance and programmatic power

As with many dimensions of infrastructure development in Indonesia, MPWH subordinates various actors in terms of their ability to define and allocate infrastructure funding. This is especially true in the many aspects of water resources, further reinforced under the mainstreaming policy of the president for infrastructure and food security support (document RAPBN 2018). This additional national development mandate, on top of their extremely powerful traditional mandate, has made MPWH the dominant information source among sectoral bureaucracies. Each sectoral bureaucracy has its own budget, but only MPWH has indirect incentives it can mobilize relative to other actors, especially in terms of supporting other institutions. For example, water resources operated under an overarching vacuum of a legal umbrella from the suspension of the water law (7/2004) between 2015 - 2019. During this time, MPWH utilized the 21 Government Regulations from the overall structure of the law and utilized their ministerial regulations interpreting law to reinforce their institutional mandate. This allowed them the *de facto* authority on the interpretation and operationalization of the broader water resource management sector in all aspects related to infrastructure (Interview 3, 2017). In addition, another way that MPWH exerted its influence in water resources in recent years relates to the national food security mandate conferred largely to MA, of which activities must still obtain the approval of MPWH for construction on irrigation-related infrastructure.

More broadly, MPWH has various alternatives and mechanisms for creating or broadening stakeholder alliances. As detailed in the previous section, MPWH supports the day-to-day secretariat of the NCWR, which also presents an additional mechanism for engaging other state bureaucracies at both the central and provincial levels. NCWR are able to do this by forming national and provincial water management committees.<sup>66</sup> NCWR and these committees are directly influenced by and supported by MPWH.

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<sup>66</sup> PTPA stands for *Panitia Tata Pengaturan Air*, which was then transferred to TKPSDA *Tim Koordinasi Pengelolaan Sumber Daya Air* under the Presidential Act 83 of 2002)

#### 4.3.4. Cross-checking Bureaucratic Power in Actor Budgets

To cross check our findings with the material power of the various bureaucracies we also undertook a descriptive data analysis of budgets among each institution in 2017. Figure 5 further reinforces the superiority of MPWH and MEFor in terms of raw budget figures over their jurisdictional authority in River Basins and Watersheds, respectively. This reflects the large disbursement budgets and prioritization of infrastructure by MPWH, which far outpaces the less budget intensive rehabilitation works that dominate activities in MEFor. Although without a spatial mandate, MA also indicates high levels of budgetary influence through its irrigation initiatives. In contrast to the network analysis indicating powerful discursive and convening power of MCE and Bappenas, the budgets point to the lower levels of influence by the central coordinating and planning bureaucracies.

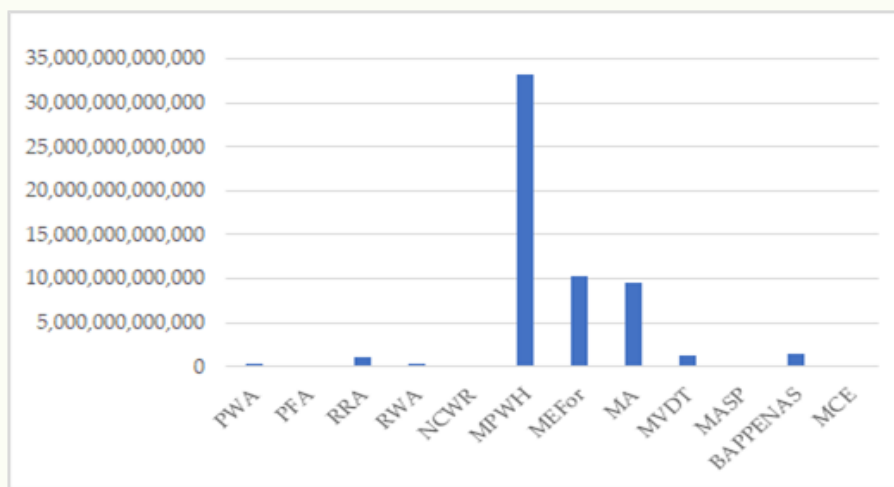


Figure 5. The amount of budget on managing water resources of each identified bureaucracies.

## 5. Discussion

In establishing our Water resource Issue-Elements (WIEs) we were able to customize the numerous water resource management issues and identify the overall layout of the bureaucracies and their positions related to water resources. We spatialized their roles into the broader metaphor of the watershed, in which certain bureaucracies mapped to the upstream, riverine, or downstream areas. This conceptual framing is not only helpful for navigating the sectoral issues and bureaucracies in terms of their mandates, but allowed us to better situate them among one another. Nevertheless, any effort of simplification must tread carefully so as not to overlook the particularities of political-economic dynamics within and across sectors.

After listing out the mandates as WIEs across spatial dimensions of the watershed, our results described the way alliances reinforce and influence each other amid the emerging bureaucratic political dynamics on water resources. We divided them into three different alliances. The first consisted of the traditional bureaucracies, such as the coordinating ministries with strong relationships to the president, which maintain a powerful mandate to shape and benchmark national policies. The Discourse Network



Analysis highlighted the power inherent in BAPPENAS and MCE in their involvement across the highest number of WIEs, but the Actor-Centered Power method showed the instrumental power of MEFor and MPWH in its role limiting the central coordinating bureaucracies. Importantly, we also show how these centralized sectoral alliances (MEFor and MPWH) each compete with one another for discursive power by building their coalitions through the establishment of networks to involve other actors. Another set of emergent coalitions involved the temporary ones (emerging through national priority campaigns), which are influenced and reshaped by the traditional alliances among the sectoral bureaucracies that seek to increase their power by articulating the ways that these campaigns should be interpreted and implemented. Explaining these alliances and their coalition building interests help to navigate the perplexing power dimensions of water resource management.

Finally, our results showed the extent of power in MEFor and MPWH, and in particular showcases the way these ministries wield their power as bureaucratic actors. MEFor continues to rely upon its longstanding historical mandate for land management. MEFor closely protects against any challenges to bureaucratic interests encroaching upon its vast jurisdictional control over land, especially when it comes to water. In addition, they also push the boundaries of extending their authority through their watershed mandate, citing responsibilities for overseeing initiatives related to water quality, ecosystems, climate change, food security, and social forestry.

MPWH on the other hand, has the largest budget of all other sectors. They have reserve budgets that they can mobilize on issues related to ad-hoc issues and commonly mobilize this powerful role on issues under their mandate of water resource management. They are responsible for building the dams, large scale water supply infrastructure, bridges, and flood management systems, which places them firmly at the center of any decisions related to water resources. To strengthen their discursive roles, MPWH continues to finance the operationalization of the NCWR, which coordinates a powerful set of bureaucratic alliances. MPWH has for years claimed their role as the interpreters of the water resources law (moot between 2015-2019) through the instrument of ministerial regulations. In addition, MPWH has also sought to lead the emerging national development initiatives by pointing to their financing capacity, programmatic implementation mandate, and procurement capabilities.

## **6. Conclusion**

Water resources are fluid and consist of numerous sectoral dimensions that make up the sum of its parts. Through this research we have sought to push the boundaries of water resource management research beyond mere policy-oriented management studies while keeping our analysis trained on the institutions. We thus explicitly trained our methodological approach on the political aspects. While we do not explicitly include a political economic dimension to our analysis, we set up a framework that more easily allows others to do so across our analytical foundations of the institutional bureaucratic mandates and how they unfold in water resource spatial units. Indeed, our approach provides a way for navigating the obscure dimensions of institutions governing a fluid resource, which are aspects that are often overlooked in studies of water resource

management. Furthermore, in spatializing the bureaucratic power dimensions by distinguishing and connecting upstream, riverine, and downstream areas to institutions, a clearer picture emerges about the mandates, issues, roles, alliances, and ever-shifting political contestations on water resource management. The approach also provides a way for moving beyond the formal dimensions of bureaucratic politics to the nonformal processes that shape bureaucratic engagement.

In this paper, the interplay of these politics is clearly on display in the Indonesian context. For example, although there is a strong national interest and numerous regulatory interventions to address water resources, the traditional management bureaucracies also have difficulty in developing the policies to meaningfully influence outcomes. In this light, the Indonesian president and powerful national coordinating bureaucracies have a broad and powerful network, increasingly establishing national campaigns to extend their role. However, the sectoral bureaucracies – between MEF holding a firm influence on upstream state forests by relying on its vast land and area management mandate, and MPWH with its significant budget allocations and strong alliances – shape the more meaningful decision-making powers of the various sub sectors and continue to powerfully influence implementation actions. These contestations remain in flux and inchoate, and unfolding policy contestations will have significant implications on reshaping the politics of water resources.

Nevertheless, there are some key blind spots in our research which merit future research. The first is that we have not undertaken a comprehensive examination of political economy and regional politics. Integrating processes that divert water resources for private and state-backed economic interests, such as for electricity, plantations, irrigation, and other initiatives, overlooks a fundamental dimension in the way decisions on water resource management are decided. Additionally, by keeping our attention on national bureaucracies and their influence in regions, we also miss the regional power actors that shape polycentric governance mechanism of those particular regions. We sought to address this dynamic in part by venturing into the dialectic of national-regional political relations, which was a fundamental element that influenced our methodological approach. The numerous cultural, ecological, and regional contexts in Indonesia also make future analysis well-suited to comparative analysis, within and across regions, as well as across country contexts.

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