

MECHANISMS AND INCENTIVES TO INCREASE GOOD WATER STEWARDSHIP PRACTICES IN INDONESIA

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A study to identify the prospect on incentive design for the uptake of water stewardship in Indonesia. The report looks at the existing government and financial sector landscape, as well as some best practices of financing mechanisms and incentives in the region and globally. A set of high-level recommendations are provided to support government and financial institutions in Indonesia to drive more incentive for good water stewardship uptake in Indonesia.

Part of a set of reports from the 'Boosting sustainability practice and performance at landscape level through good water stewardship 2020–2022' project. This project is supported by the ISEAL Innovations Fund and the Swiss State Secretariat for Economic Affairs SECO.

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INTRODUCTION

Water is essential for human health, nature and the environment, and for maintaining successful and healthy economies. Failure to manage water resources properly can threaten many aspects of development. Currently, economic losses related to water insecurity are estimated to include USD260 billion per year from inadequate water supply and sanitation, USD120 billion per year from urban property flood damages and USD94 billion per year of water insecurity to irrigators¹. For this reason, responsible and inclusive stewardship of this critical and finite resource is needed from various parties.

Good water stewardship, as defined by the AWS Standard, provides the opportunity to make a positive impact at catchment or landscape level, and support sustainable production and protection efforts by emphasising and strengthening good water management and governance practices. To bring the action to scale, many obstacles are present. Lack of insights into the financial mechanisms and incentives, fragmented water governance leading to confusion in mapping key stakeholders and limited access to reliable data on water, and a shortfall of enforcement and monitoring are among them. While the Alliance for Water Stewardship (AWS) is seeing a growing uptake of its Standard by business sites, catchment-scale multi-stakeholder collaborations to achieve the five water stewardship outcomes remain limited.

This report aims to identify the enabling environment and mechanisms and incentives for government, financial institutions, companies and smallholders to escalate the uptake of and joint investment in good water stewardship, particularly in Indonesia. The report defines the existing government and financial sector landscape as well as look at some best practices of financing mechanisms and incentives in the region and globally. Through consultation and collaboration with partner organisations and Standard implementers, recommendations are provided to support government and financial institutions in Indonesia to drive good water stewardship practices.

This report is part of a set of reports resulting from the “Boosting Sustainability Practice and Performance at Landscape Level through Good Water Stewardship” 2020 – 2022 project. It has been developed by the Institute for Economic and Social Research of the University of Indonesia (LPEM UI), on behalf of the Alliance for Water Stewardship (AWS). This report was made possible thanks to a grant from the ISEAL Innovations Fund, which is supported by the Swiss State Secretariat for Economic Affairs SECO.

¹ Organisation for Economic Co-operation and Development (2022). *Water, growth and finance*. Available at: <https://www.oecd.org/environment/resources/Water-Growth-and-Finance-policy-perspectives.pdf>

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GOOD WATER STEWARDSHIP AND THE AWS STANDARD

AWS is a global membership collaboration that includes businesses, civil society organisations (CSOs) and the public sector. AWS provides a globally endorsed definition of water stewardship that helps water users to understand and improve their water use while building trust and collaboration to address shared water challenges. The AWS Standard defines water stewardship as the use of water that is socially and culturally equitable, environmentally sustainable and economically beneficial, achieved through a stakeholder-inclusive process that includes both site and catchment-based actions. The Standard lays a pathway for water-using sites to achieve and make credible claims on five steps and outcomes

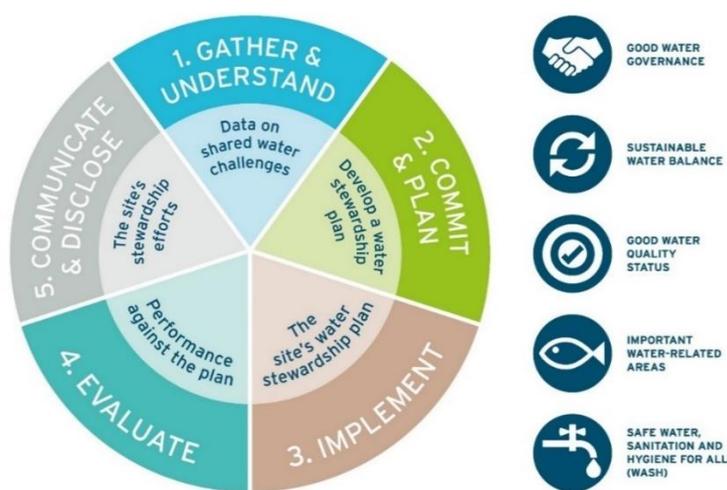


Figure 1: The AWS Standard's five steps and five outcomes

WHY WATER STEWARDSHIP NOT MANAGEMENT?

It is now widely recognised that water management alone is not enough to address the water crisis. What use is it to make a farm extremely water-efficient, if the next water user downstream uses up the water instead? How can one factory cleaning up its wastewater ensure that all factories in the catchment do the same? That is where water stewardship comes in. It involves taking all actions required at your own site and working with others in the catchment to address shared water risks and challenges.

AWS' mission is to ignite and nurture global and local leadership towards credible water stewardship practices that recognize and secure the social, cultural, environmental and economic value of freshwater. The AWS Standard offers a credible, globally-applicable framework for major water users to understand their own water use and impacts, and to work collaboratively and transparently with others for sustainable water management within the wider water-catchment context. Implementers follow the steps in the AWS Standard and supporting guidance to achieve good water stewardship practices that improve site water performance and contribute to wider sustainability goals.

THE WATER GOVERNANCE LANDSCAPE IN INDONESIA

The water governance landscape in Indonesia is divided into four levels: national, provincial, district and sub-district/local. Within each governance level, there are several departments which share responsibility to manage and govern water resources and environmental health, including catchment authorities. Particularly for the national priority catchment, the national ministries are added into the mix, resulting in a complex intertwined network of stakeholders. Although the formal responsibilities of these government authorities have been clearly defined under the National Water Law and other water-related regulations, major water users often experience confusion as to which government stakeholders need to be engaged for specific water management and governance topic^{2,3}.

OVERVIEW OF KEY STAKEHOLDERS RELATED TO WATER GOVERNANCE

The distribution of the roles and responsibilities between the national and sub-national governments in Indonesia is regulated under Law No. 23/2014, which heavily emphasises decentralisation to achieve equitable development. The Law provides more authority to the provincial governments in managing natural resources, including water. However, they still need to adhere to national policies such as the national development agendas and their implementation in national strategic areas. In this context, the sub-national government is responsible for overseeing (and often, directly implementing) water management and water allocation in their jurisdictions. Figure 2 outlines the water governance landscape in Indonesia.

² Bjornlund E, Liddle W and King B (2008). INDONESIA - DEMOCRACY AND GOVERNANCE ASSESSMENT. USAID.

³ Kerk A.v. and Havekes H (2013). Opportunities for Water Governance in Indonesia, A governance quick scan under the Indonesian-Dutch water management cooperation.

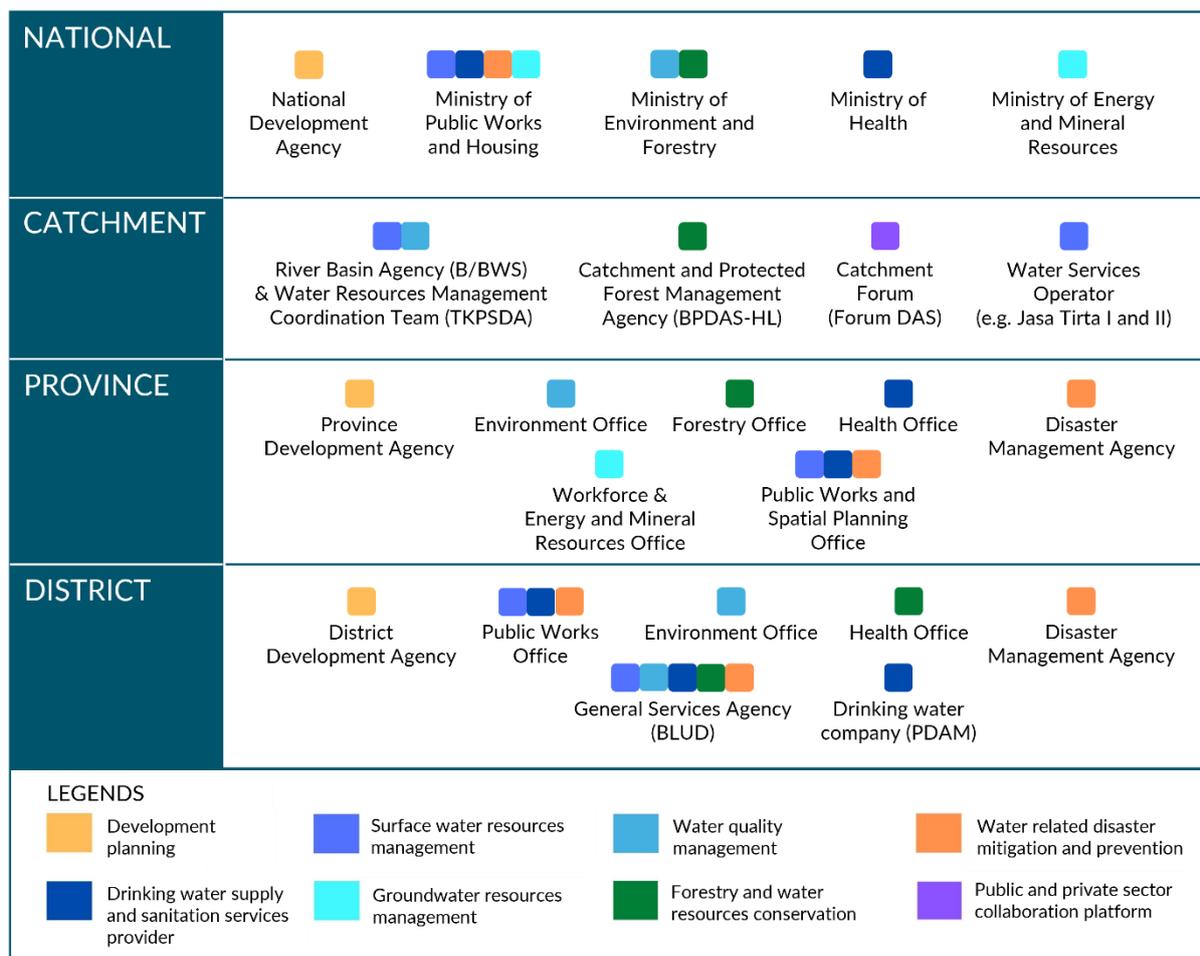


Figure 2: The water governance landscape in Indonesia

A brief explanation of selected national stakeholders listed in Figure 2 (above) are given below:

The National Development Agency (BAPPENAS)

Bappenas, through the Directorate of Water and Irrigation, has the task of coordinating, formulating and implementing policies as well as monitoring, evaluating and controlling national development planning in the field of water and irrigation. This function includes the development of regulatory, institutional and funding frameworks.

Ministry of Public Works and Housing (PUPR) and its water-resources agencies at catchment level, i.e., River Basin Agency (B/BWS) and Water Resources Management Coordination Team (TKPSDA)

PUPR is responsible for the development and construction of water facilities, starting from water supply and distribution (together with state-owned water companies, PDAMs), wastewater treatment plants and water storage infrastructure. PUPR applies a more technical approach in terms of water resources management by having non-structural decentralized agencies in all river basins in Indonesia, i.e. B/BWS and TKPSDA. B/BWS is in charge of managing water resources in river basins which includes planning, implementation of construction, operation and maintenance, as well as the management of urban main drainage. Meanwhile, TKPSDA is tasked with formulating strategic documents, programs and master plans for water resources management, discussing water allocation and institutional use, discussing

hydrological, hydro-meteorological, and hydrogeological information systems and providing recommendations to the ministries that are related to Integrated Water Resource Management (IWRM).

Ministry of Environment and Forestry (KLHK) and its catchment conservation agency and forum, i.e. Watershed Forum (Forum DAS) and Watershed Management Center and Protected Forest (BPDAS-HL)

KLHK is responsible for the monitoring and maintenance of water quality. It is also responsible for watershed management, including land use planning in watershed areas as well as its responsibilities for promoting and regulating the forestry sector. In addition, the ministry is also responsible for Environmental Impact Assessment (AMDAL) in which there are standards governing water management for projects in Indonesia. To fulfill its responsibilities on catchment governance, KLHK is assisted by more than 100 watershed forums throughout Indonesia whose task is to coordinate to harmonize interests between sectors, regions and stakeholders in integrated watershed management. KLHK also has 34 BPDAS-HL throughout Indonesia, tasked with carrying out planning, implementing forest and land rehabilitation as well as soil and water conservation, institutional development, controlling damage to inland waters and evaluating the management of watersheds and protected forests.

Ministry of Health (Kemenkes)

Kemenkes is responsible for the protection and improvement of public health. In relation to water, the ministry sets the standards, monitors drinking water quality and manages issues related to safe water, sanitation, and hygiene (WASH).

Ministry of Energy and Mineral Resources (Kemen ESDM)

Kemen ESDM is responsible for groundwater management, including management and monitoring of the resource, both with regard to quantity and quality, licensing of groundwater drilling and use and maintaining databases of groundwater use. The ministry is also responsible for hydropower development and may own and operate hydropower systems according to standard operating agreements.

PROVINCIAL AND CITY/DISTRICT GOVERNMENT

With the enactment of the decentralization law, local governments have more authority in managing water resources. In this case, the provincial and city/district governments, through the Development Planning Agency (Bappeda), the Environmental Office, the Forestry Office, the Public Works Office, as well as the Regional Disaster Management Agency play an important role in supervising and implementing water-related programs and regulations in their respective regions, with reference to regulations applied at the central government level.

WATER POLICY IN INDONESIA: A BRIEF ANALYSIS FROM AWS STANDARD LENS

Laws and regulations at national and sub-national levels organise the role of water-related stakeholders explained above. A rapid mapping of the Indonesian legal framework on water resources management, including funding for water-related programs and initiatives, shows that it includes the five outcomes of water stewardship. Two of the key national laws in the water sector are the Water Resources Law (Law No.17/2019) and the Environmental Protection and Management Law (Law No.32/2009). While the Water Resources Law regulates the allocation and conservation of water resources, the Environmental Protection and Management Law regulates the preservation of environmental functions and prevents pollution and/or environmental damage, including those that could originate from business operations. A set of regulations and guidelines have been produced by the Financial Services Authority in relations to

sustainable investment and finance in Indonesia, which include water as part of due diligence components. Table 1 provides a quick summary of these regulations.

NO	LAW AND POLICIES	SCOPE ON BUSINESS' RESPONSIBILITY ON WATER
1.	The Water Resources Law No. 17/2019	The law defines the objective of water resources management in Indonesia, the geographical unit of management, and the governance stakeholders' landscape and their roles and responsibilities. It regulates the use, management and conservation of water resources in Indonesia. This Law recognises the imbalance between water availability and demands that lead to the sharp increase of competition over water among different stakeholders and highlights the need to harmonize the socio-cultural, ecological and economic values of water to ensure participatory management and equitable access to water across Indonesia. It also regulates water users' (communities and private sector) rights and responsibilities, as well as penalties for non-compliance actions.
2.	The Environmental Protection Law No. 32/2009	The Law is mostly mandated to the Ministry of Environment and Forestry. The law regulates businesses' obligation to prevent and monitor potential pollution and/or environmental damage due to their operation. This includes complying to the water and waste water quality standards, permits for waste water disposal, conservation of water resources, and preventing water pollution. The fulfillment of these standards is an absolute requirement to obtain AMDAL. For Important Water-Related Areas (IWRAs), the law regulates the protection of rivers, lakes, peatland, mangrove areas, groundwater tables and forests
3.	Sustainable Finance Roadmap & POJK No. 51/POJK.03/2017	Regulate the Financial Services Institutions (LJK)'s obligation to develop sustainable financial products and/or services. This is including increasing the financing portfolio, investment, or inclusion in financial instruments or projects that are in line with the implementation of sustainable finance. Furthermore, in the attachment to the regulation, it is stated that financial services, issuers, and public companies are required to issue a Sustainability Report which covers their responsibility in managing water use and wastewater disposal.
4.	POJK No. 60/POJK.04/2017	Regulating the type of business activities that can be financed through green bonds. The activities include sustainable water and wastewater management efforts, "green" infrastructure, drinking water supply, urban drainage systems and various forms of flood mitigation.
5.	Indonesia Green Taxonomy	The newly published green taxonomy policy classifies business' performance in regards to a set of government-defined environmental impact criteria. These criteria are set for 919 sub-sectors of the Indonesian Standard Classification of Business Fields (KBLI) and water is applicable for all sub-sectors. The taxonomy recognize the implementation of international sustainability standards as best practices and classify them as "green rating". At this early stage, the implementation of the green taxonomy by financial institutions are still voluntary.

Table 1: Indonesian laws and regulations related to incentive for responsible water use and management

Other regulations also exist providing a framework for the government to create a disincentive mechanism for business operations which activities could negatively impact the health status of the country water resources. These are, among others:

Government Regulation No. 42/2008 on Water Resources Management is managed through the Ministry of Public Works and is applied by all levels of government. According to the law, water bodies should be managed effectively in terms of quantity to meet both the needs for water resources conservation as well as utilization of water resources. It also regulates water bodies quality through several actions at the national and local scale:

- Determination of water class and quality standards at water sources
- Monitoring water quality at water sources
- Water source damage management
- Water pollution handling at water sources
- Improving environmental function to control water quality

The regulation also includes a more specific definition of and requirements for important water-related areas. It includes for example water infiltration areas, maintenance of catchment areas, water resources protection, upstream management and forest rehabilitation. Based on the regulation, each stakeholder has a role in managing the quantity and quality of important water-related areas. Several administrative sanctions are listed in the regulation, especially for unlawful activities in important ecosystems, like rivers, lakes, estuaries and peatland.

Government Regulation no. 82/2001 on Water Quality Management and Water Pollution Control states that both economic and ecologic water needs should be considered, including traditional values of local communities. This reflects that communities and the environment are considered stakeholders and that their needs should be taken into consideration in any project, business or activity. The regulation also consists of water quality management and water pollution prevention and applies to aquifers, springs, rivers, lakes, dams and estuaries. The Government of Indonesia has the rights and obligations to set the pollution carrying capacity of each water body. Through the different bodies at the basin level (Dewan SDA Nasional, BBWS, TKPSDA, etc.), the Government of Indonesia must also identify any potential pollution source (housing residence, agriculture, industries, and other activities) that pollute the water body.

Government Regulation No.121/2015 on Water Resources Use set the order of priority for the use of water resources. It starts from the use for meeting daily needs, for agriculture, water supply system, non-business public services, national-owned companies, and private companies. Exploitation for non-public purposes is at the bottom 2 of the priorities. This means that private sector users are obliged to ensure that their water use does not negatively impact the water availability for other purposes. In this regard, the Government of Indonesia also has an obligation to monitor and act upon any violations.

THE WATER FINANCING LANDSCAPE IN INDONESIA

Water stewardship is a multi-stakeholder issue, in terms of the providers and the beneficiaries. While government plays a central role in creating and managing an environment that supports the development of water stewardship, the roles held by financial institutions are also substantial to uphold the agenda of water stewardship. Several vital aspects in which financial institutions could contribute in terms of water stewardship include program collaboration with the government related to financing and administering standards related to water stewardship for the financial service users or beneficiaries, reducing risks and shaping the behavior of private sectors.

Generally, the government needs the support of financial institutions to aid in financing part of its programs. Specifically for developing countries like Indonesia, the government is facing the fiscal space issue, in which the government usually cannot afford to run a large deficit. On the other hand, the spending required to fund long-term development is enormous. This situation puts the government in a position that could not afford all the agendas on its own. Hence, the government needs to tap the potential source of funds beyond the state budget. This need transpires into a potential strategic collaboration with the financial institutions, usually called a Public-Private Partnership (PPP). The shape of collaboration between government and financial institutions could manifest into various forms, such as Viability Gap Fund (VGF) and microfinancing programs.

Furthermore, financial institutions' main function serves as an intermediary of funds. By providing financing to the business and private sectors, financial institutions contribute rather substantially to the expansion and daily operations of business activities. Considering this role and a high degree of dependency on the private sector, financial institutions could contribute further to the water stewardship implementation agenda by putting requirements and standards to their beneficiaries such that they will conduct more water stewardship-friendly business practices.

Considering the significant role of financial institutions in regard to water stewardship, this section aims to dive deep into the financial institutions and their role in supporting water stewardship. This section will be classified into several sections dedicated to analyzing the mapping of actors, instruments and standards in the financial sectors.

FINANCIAL INSTITUTIONS AND WATER-RELATED FINANCING

While in broad definition financial institutions serve as fund intermediaries among economic agents, each type has different purposes and transpires into different conduct of fund channeling mechanisms. In relation to water stewardship context, we classify financial institutions into the following categories:

National Banks

National banks are generally commercial banks that originated in Indonesia. Usually, national banks disburse their financing through a corporate loan scheme. While in other contexts national banks are usually defined as national-scale banks, in the context of water stewardship regional banks are also included in this category due to their rather substantial role in channeling funds towards water stewardship projects. Due to its close relationship with the subnational government, regional banks are often serving as a creditor for subnational projects, such as PDAM.

As the adaptation and implementation of sustainability practices are growing rapidly, the trend is reflected in national banks' business practices through its risk mitigation framework and financing criteria. Bank Mandiri has a Sustainability Bond Framework which aligns with the Green Bond Principles 2018 (GBP), Social Bond Principles 2020 (SBP) and ASEAN Sustainability Bond Standards 2018 (ASEAN SUS). The bonds under the Bank Mandiri Sustainability Bond Framework are also following the SDGs, one of which is Sustainable Water and Wastewater Management (SDG 6) (Bank Mandiri, 2021). As of 2020, Bank Mandiri Sustainable Portfolio amounting to Rp167.3 trillion with Rp2 trillion is funding sustainable water and wastewater management (Bank Mandiri, 2021). Bank Mandiri, not only participates in the water sector, but also has high participation in the loan portfolio in the palm oil sectors (amounting to 11.2% share) and the forestry. Bank Mandiri finances the Renewable Energy sectors, which include wind, solar, small scale mini-hydro, biomass (forestry and agricultural residue) and geothermal (Bank Mandiri, 2021). The assessment of the projects is based on: (1) use of proceeds, (2) project evaluation or selection, (3) management of proceeds and (4) reporting. The framework also defines areas of projects which include sustainable water and wastewater management, renewable energy and other sustainable financing projects.

As their Sustainable Finance implementation effort, Bank Nasional Indonesia or BNI has committed to sustainability financing through their sustainable environment project participation. BNI ranked in the average (BBB) in the Realm of Economics, Social, and Environment by MCSI⁴ as one of their awards. BNI also has developed Environmental, Social, and Governance Risk Management as an assessment framework in enforcing their Sustainable Finance Policy. The framework sets various criteria on environmental, social and governance integration which include Environmental Impact Analysis (AMDAL) and sectors specific, such as oil palm plantations for their business permit and license (BNI, 2020). In its portfolio, BNI provide financing Rp9,976 billion to clean energy, including solar energy, water, biogas, and mini-hydro (BNI, 2020). BNI is also financing for the palm oil industry which already has RSPO (Roundtable Sustainable Palm Oil) and ISPO (Indonesian Sustainable Palm Oil) certificates. As of 2020, BNI has funded 84 certified palm oil debtors with a maximum loan of IDR46,414 billion. Bank BNI also provides social forestry KUR for 3,805 farmers working on forest lands to improve their welfare in the amount of IDR32.70 billion in 2019 and Rp66.97 billion in 2020.

International Banks

In general, international banks that are operating in Indonesia tend to be more progressive in terms of sustained effort and practice implementation. Thus, international banks usually have a more rigorous and comprehensive framework and standard related to the sustainability aspects. International banks are also generally operating on a bigger scale which enables them to mobilize bigger funds into their projects.

According to Forests and Finance (2021), Rabobank and HSBC are some of the top creditors for green projects, such as palm oil and rubber. Rabobank is recorded as the top creditor with the amount of loans of USD8.671 million in both sectors, while HSBC amounted to USD 6.795 million. According to HSBC Indonesia annual report in 2020, the bank also posted loan disbursement for Electricity, Natural Gas, and Water sector (HSBC, 2020), while Rabobank also participates in sustainable financing by providing loans to companies that seek financing for solutions that make a positive environmental impact including water-efficient irrigation and wastewater regeneration systems (Rabobank, 2020).

Development Banks

Financial institutions classified as development banks have a different structure compared to conventional commercial banks. From the source of funds perspective, commercial banks gather funds from the

⁴ ESG risks and opportunities can vary by industry and company. Our MSCI ESG Ratings model identifies the ESG risks, (what we call Key Issues), that are most material to a GICS® sub-industry or sector. With over 13 years of live track history we have been able to examine and refine our model to identify the E, S, and G Key Issues which are most material to an industry.

savings and deposits of households and private entities, while development banks pool other sources of financing, such as grants and sovereign funds. Furthermore, in terms of the use of funds, commercial banks have commercial motives in funds channeling. This is rather different with development banks, whom have dedicated purposes for credit allocation. For example, some development banks are dedicated to intermediating funds towards infrastructure development or social empowerment, such as poverty alleviation and climate-friendly transition, among others. In the context of the water stewardship landscape in Indonesia, development banks include several institutions such as World Bank, ADB, PT. SMI, Indonesia Infrastructure Finance (IIF), etc.

The World Bank has undertaken some activities in the water supply sector, such as providing loans to Indonesia Infrastructure Finance (IIF) who has syndicated loans of Rp750 billion for the water supply sector. The World Bank provides USD100 million loans to PT IIF for their projects. They also participated in monitoring and evaluating the implementation of subsidiary loans (SLA) lent to regional governments for investment in their PDAMs. Other than the direct water sector, The World Bank also provides Global Environment Facility (GEF) Grant to improve access to forest land use rights and to strengthen community management in selected priority areas allocated for social forestry. The World Bank is focusing on Jambi Province environment development, particularly for their palm oil, pulpwood, rubber, coffee and other forest-based commodities through USD15 million funds from The World Bank's BioCarbon Fund Initiative for Sustainable Forest Landscapes (ISFL) (World Bank, 2021) to reduce emissions for unsustainable land use and help take pressure off the province's primary forests. In the palm oil sector, the International Finance Corporation (IFC) World Bank Group makes a positive contribution by supporting small farmers and improving their productivity to help the poor. The World Bank helps them to meet certain certification requirements and invests in larger producers with affiliated smallholder suppliers. In addition to its financing, World Bank has the ESRM (Environmental and Social Risk Management) Program has a framework for sustainable finance. The ESRM also provides local capacity building and supports financial institutions in improving their environment and social risk management system.

Likewise, ADB also still has limited activity or participation in water supply projects in Indonesia. Its participation is seen in the Integrated Citarum Water Resources Management Investment Project where the ADB provides a Multi-Tranche Financing Facility that was first released in 2009. ADB also has a 20% shareholding in IIF with a USD100 million loan. ADB is also participating in Indonesia's forestry sectors through Community-Focused Investments. The project aims to address institutional, technical and capacity-related barriers for REDD+ implementation in West Kalimantan. ADB provided a grant amounting to USD17 million as a strategic climate fund for this project. The other forestry sector project in Indonesia is Forest Management in Borneo, Indonesia, where ADB provides the Regional Cooperation and Integration Fund (USD700,000), Climate Change Fund (USD1.25 million) and Global Environment Facility (USD2.53 million). The project will contribute to the impact of sustainable use of forest resources in Heart of Borneo (HoB) Indonesia through better management capacity of the Government of Indonesia on natural resource management. The project has been completed in February 2018 in the district of Kapuas Hulu in West Kalimantan Province and Malinau in North Kalimantan Province, with 4 project outputs: (1) strengthened capacity and institutions for sustainable forest and biodiversity management; (2) exercise the REDD+ implementation at local level; (3) pilot area for PES and sustainable financing schemes for forest and biodiversity management; and (4) effective project management delivered.

PT SMI has made a lot of contributions to financing infrastructure in Indonesia. The infrastructure sectors also cover water supply, irrigation, and waste management infrastructure. PT SMI has an international rating from Fitch of BBB- (stable) and a domestic rating of AA+ (USAID, 2014). According to the PT SMI portfolio report, since 2009, PT SMI has started financing irrigation for IDR105 billion and kept increasing their financing commitments in irrigation to Rp350 billion in 2015. Since 2010, PT SMI has also expanded its financial contribution to the irrigation and water supply sectors. One of the projects in water sectors is a loan provided to water supply sectors that started in 2011 to finance the capital expenditure for

developing water supply infrastructure including the addition, procurement, replacement, refinement and maintenance of intake installations, transmission networks, distribution and water supply plants. PT SMI also has the framework for Environmental and Social Management Framework for their Regional Infrastructure Development Fund (RIDF). RIDF aims to increase the infrastructure capacity and funding accessibility at the province level and municipal development level. Through this framework, PT SMI is applying the prudential norms and project assessment standards for their infrastructure projects, such as water and sanitation, environmental infrastructure, housing, transportation and logistics infrastructure, and social infrastructure in Indonesia.

Furthermore, International Financial Corporation (IFC) has also implemented standards to sectors related to water stewardship, such as forestry and agribusiness/food production. IFC, through Environmental, Health and Safety (EHS) guidelines, has included the specific guidelines for wastewater and ambient water quality, water conservation, water quality and availability.

Other Financial Institutions

As the financial sector has experienced a massive development during the last few decades, the type of financial institutions has also been expanding. This phenomenon has been marked by the emergence of new types of financial institutions, such as peer-to-peer lending, crowdfunding and other non-conventional financial institutions. The expansion of financial institution types also has the potential to expand contributions toward bringing more funds into water stewardship and management. In Indonesia, several non-conventional institutions identified as having the potential towards the improvement of water stewardship include crowdfunding platforms such as Kitabisa.com, charity institutions such as BAZNAS and peer-to-peer lending platforms such as Investree.

GOVERNMENT FINANCING ON WATER

Government financing on water is attached to the programs contained in the planning of the national government and regional governments. At national level, the budget is made in reference to the strategic plans of several ministries, such as the Ministry of Public Works and Housing (PUPR) and the Ministry of Environment and Forestry (KLHK). At the regional level, the budget is developed in referenced to the programs in the Regional Medium-Term Development Plan (RPJMD) at the Provincial and District/City levels. The regional governments finance their programs from local revenue and fiscal transfers from the central government. Table 2 provides the estimated government programs and budgeting for water at the national level.

Actor	MINISTRY OF PUBLIC WORKS AND HOUSING	MINISTRY OF ENVIRONMENT AND FORESTRY
Programme	<ul style="list-style-type: none"> • Access to piped drinkable water (10 million house connections) • Access to proper and safe sanitation • Construction of 18 multifunction reservoirs • Restoration of four critical watersheds • Securing coasts in 5 North Jawa cities 	<ul style="list-style-type: none"> • Water pollution management • Watershed management enforcement

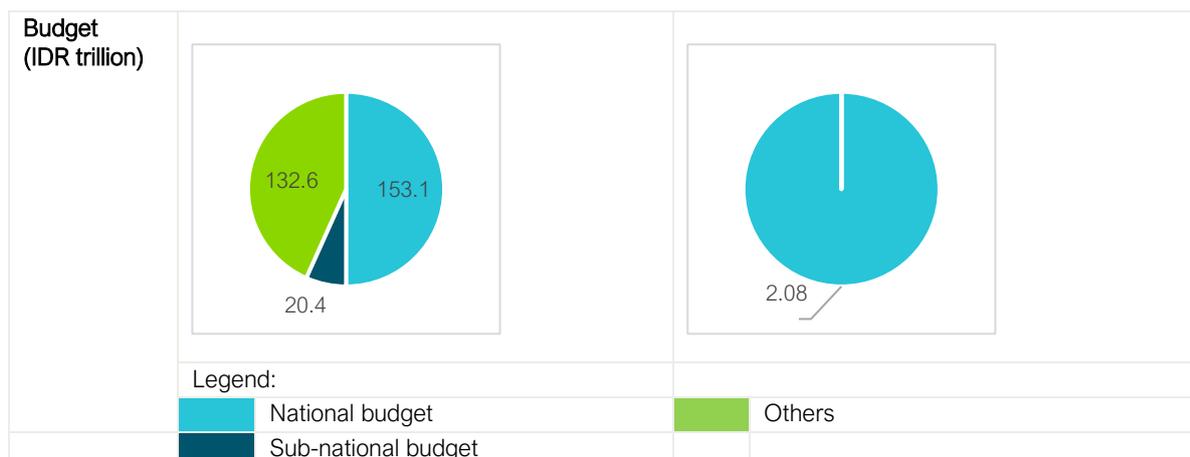


Table 2: Government budget plan on water programs in 2020 – 2024

On the national level, the estimated budget allocation dedicated towards water stewardship is Rp307.48 trillion. From that amount, Rp158.38 trillion, or approximately 52% of the total budget is funded by State Budget (APBN) and the projected budget contribution from the PPP scheme and private contributions is 43% (or about Rp132.6 trillion). However, the funding target for water-related programs may be understated. The table above does not include water-related programs that have a shared budget with other programs.

At the provincial level, we take the example of government budgeting in South Sumatra Province (Table 3). This sample was taken as South Sumatra is one of the largest rubber and palm oil producers in Indonesia, where businesses in this sector are the largest users of clean water, hence suitable to be the main target in increasing water stewardship uptake. The estimated budget allocation dedicated towards water stewardship-related programs in this province is around Rp1.3 trillion. From the total funding target, the share of water-related programs is approximately 5.82%. Moreover, each program is related to different AWS outcomes; the biggest fund is allocated for fulfilling the sustainable water balance outcome (about 38.7% of the total budget on water-related programs). For most programs, the responsible institution is the Water Resource Management Agency (DPSDA).

AWS Outcome	Mission/Goals/Targets/ Regional Development Programs	Performance Indicator (Goal/Impact/Outcome)	Responsible Institution	Total Target Funding (IDR Million)
IWRAs	Development and Management Program of Irrigation, Swamp, and Other Water Channel	Area of irrigated agricultural, swamp, and other water channel management system	DPSDA	83,946
Sustainable Water Balance	Raw Water Provision and Management Program	Number of the fulfilment of water reservoir and raw water provision needs	DPSDA	210,706
IWRAs	Development and Management Program of Surface Irrigation System	Area of irrigated surface	DPSDA	75,600

IWRAs	Development and Management Program of Swamp Irrigation System (DIR)	Area of irrigated swamp	DPSDA	174,000
IWRAs	Development and Management Program of Participatory Irrigation System	Area of participatory irrigation	DPSDA	79,834
Sustainable Water Balance	Flood Management Program	Number of flood-free Areas	DPSDA	321,500
IWRAs	Integrated Participatory Development and Management of Irrigation Program (IPDMIP)	Percentage of achieved participatory development of irrigation system	Bappeda	1,590
WASH	Healthy Residential Area Environment Program	Percentage of access to proper drinkable water coverage and the percentage of households with access to proper sanitation	Housing and Residential Area Agency	266,654
WASH	Development Program of Proper Drinkable Water for Poor Families	Percentage of poor households with access to proper drinkable water	Housing and Residential Area Agency	96,980
WASH	Development Program of Proper Sanitation for Poor Families	Percentage of poor households with access to proper sanitation	Housing and Residential Area Agency	63,942
Total Funding Target for Water-Related Programs*				1,374,752
Total Funding Target				23,608,087
Share of water-related programs (%)				5.82%

Table 3: South Sumatra's government program and budgeting on water (South Sumatra RPJMD 2019-2023)

* The funding target for water-related programs may be understated, this table does not include water-related programs that have a shared budget with other programs.

On the district level, the government program and budgeting on the water sector is based on the Musi Banyuasin district (Table 4). Musi Banyuasin is one of the main rubber and oil palm producers in the province of South Sumatra. Musi Banyuasin's estimated budget allocation dedicated towards water stewardship is around IDR46.6 billion, which equals 3.68% of the total funding target. It is relatively smaller compared to the South Sumatra budgeting. Unlike the provincial level, the biggest fund is allocated for the IWRAs outcome, which equals 66.1% of the total budget on water-related programs.

AWS Outcome	Mission / Goals / Targets / Regional Development Programs	Performance Indicator (Goal/Impact/Outcome)	Responsible Institution	Total Target Funding (IDR Million)
WASH	Drinkable Water and Waste Water Management Performance Development Program	Percentage of population with access to drinkable water	Housing and Residential Area Agency	3,645
WASH	Drainage/Water Tunnel Development Program	Steady road drainage ratio	PUPR Agency	10,400
IWRAs	Development and Management Program of Irrigation, Swamp, and Other Water Channel	Irrigation system ratio	PUPR Agency	19,937
IWRAs	Development and Management Program of Irrigation, Swamp, and Other Water Channel	Irrigation system ratio	Crops, Horticulture, and Plantation Agency	10,927
Good Water Quality	Environmental Pollution and Destruction Management Program	Water quality index	Plantation Agency	1,769
		Air quality index	Environmental Agency	
		Environmental quality index	Environmental Agency	
Total Funding Target for Water-Related Programs*				46,678
Total Funding Target				1,267,969
Share of water-related programs (%)				3.68%

Table 4: Musi Banyuasin's government program and budgeting on water (Musi Banyuasin RPJMD 2017-2022)

* The funding target for water-related programs may be understated, this table does not include water-related programs that have a shared budget with other programs.

To illustrate the extent of current activities conducted which are potentially contributing to the five outcomes of water stewardship conveyed, Table 5 shows the current and planned contributions by key stakeholders from the government and financial institutions. Details of activities and their related AWS outcome, along with the activity and financing mechanism, are also described.

AWS OUTCOME	ACTIVITY	CONTRIBUTING STAKEHOLDERS	DETAILS
 Good Water Governance	Increasing water stewardship monitoring systems and data management by water catchment area governance improvement	Government: <ul style="list-style-type: none"> • Ministry of Environment and Forestry 	A monitoring system and data management of water stewardship have been specified in the national medium-term planning of the Ministry of Environment and Forestry, to be financed by the state budget
 Sustainable Water Balance	Sustainable natural rubber plantation investment	Financial institution: <ul style="list-style-type: none"> • Commercial banks (BNP Paribas) 	The Tropical Landscapes Finance Facility (TLFF), a partnership between UN Environment, World Agroforestry Centre, ADM Capital and BNP Paribas, issued a US\$95 million Sustainability Bond to help finance a sustainable natural rubber plantation on heavily degraded land in Jambi and East Kalimantan
	Flood prevention and mitigation programme through the revitalisation of coastal areas	Government: <ul style="list-style-type: none"> • Water Resource Management Agency (Dinas Pengelolaan Sumber Daya Air) • Ministry of Public Housing and Work Financial institution: <ul style="list-style-type: none"> • PT. SMI 	Government programme for the revitalisation of five coastal areas along the northern sea of Java, which is to be financed by the state budget and partially through a PPP scheme
 Good Water Quality	Increasing the number of water quality control stations and waste management facilities	Government: <ul style="list-style-type: none"> • Ministry of Agriculture 	Government programme of water pollution management in the national medium-term development plan, to be financed by the government budget
 Important Water-Related Areas	Water-related risk assessment towards sectors	Financial institution: <ul style="list-style-type: none"> • Commercial banks (Mandiri, BNI, BRI, etc.) 	Conducting risk assessment specifically related to water resources as part of banks' loan approval mechanism towards sectors related to water resources, such as agriculture and hydro-generated energy plantation

 Safe Water, Sanitation and Hygiene (WASH) for All	Sanitation programme for poor households	Government: <ul style="list-style-type: none"> • Housing and Residential Area Agency, sub-national government 	Included in the Regional Long-Term Development Plan (RPJMD) and financed by government budget
	Drinking-water supply system provision (e.g. SPAM Umbulan, SPAM Lampung, SPAM Pekanbaru, etc.)	Government: <ul style="list-style-type: none"> • Ministry of Public Housing and Work Financial institution: <ul style="list-style-type: none"> • PT. SMI 	Government leads the development of basic infrastructure, financed by the government budget or by development banks through various instruments, such as PPP
	Quality improvement of state-owned water company (PDAM)	Government: <ul style="list-style-type: none"> • Sub-national government Financial institution: <ul style="list-style-type: none"> • PT. SMI • World Bank • Regional banks 	Regional government leads the development and planning to improve the quality of PDAMs, financed by several mechanisms, such as conventional financing from regional banks or PPP schemes in collaboration with PT. SMI Investment in PDAMs has also been financed by the World Bank by a loan scheme to regional governments

Table 5: Activities related to water stewardship outcomes and the relevant stakeholders

INCENTIVE DESIGN FOR WATER STEWARDSHIP IMPLEMENTATION IN INDONESIA

The increase in the uptake of the AWS Standard by business operations at global level indicates the growing awareness for the need to increase investment to build business' resiliency towards the changing climate and to address its impact on water security and quality. However, scaled adoption remains a challenge for many in the water stewardship community. For example, in Indonesia, this condition arises from the combination of the lack of awareness of long-term water security issue and the relatively low perceived value of water by business operations. Due to the relatively cheap price of water tariff, the level of return on investment in adopting best practices on water is still considered as challenging. Maintaining and increasing market competitiveness still often seen separately with improving performance on sustainability, including water. With the current incentive mechanisms in Indonesia, a sufficient scheme is not yet in place to encourage wide-spread adoption of good water stewardship and the AWS Standard.

This section elaborates the recommendations on the design of incentive to increase the uptake of AWS Standard in Indonesia. The recommendations focuses on a) strengthening the enabling environment for water stewardship uptake and b) increasing the adoption of AWS certification for businesses.

RECOMMENDATION 1: STRENGTHENING THE ENABLING ENVIRONMENT FOR WATER STEWARDSHIP UPTAKE

1. IMPROVING DATA MANAGEMENT AS PART OF GOOD WATER GOVERNANCE

Although data collection and management has improved progressively, at this stage reliable data to capture the most recent condition of water resources in Indonesia is still lacking. Water balance at catchment level can be an example. As a key indicator to measure the availability of water in a specific area and an indicator of potential water problems, reliable and long-term water balance data availability is very limited. A clear measurement of water balance can indicate potential water-related disasters, such as droughts or floods. However, the water balance data availability is very limited. For example, the data on river flow in Indonesia was last updated in 2005. Substantial improvement in data collection is thus needed to achieve the AWS outcome of sustainable water balance and good water governance. Besides data issues on water balance, it is also important to have proper measurements for water quality. Water quality data will enable related regulator stakeholders to identify potential risks and formulate the relevant policy to address the issue.

To improve the data availability of water quality and balance, it is necessary to increase the amount of data station points. Several potential financing alternatives could be explored besides the financing by government budget, although the government itself has put the development of water quality control station in their medium-term plan by the Ministry of Environment and Forestry. One potential path to building more water-related control stations is to attract more financing from multinational development banks (MDBs), climate funds, green bonds or municipal bonds. The government could also provide a financial incentive scheme to encourage the private sector, which business activities directly related to water availability, such as in the agriculture and forestry sector, as they directly benefit from data that tracks water flow.

On the international level, the initiative to increase the availability of data related to water resources has been done and one prominent example is the data provided by the United Nations on the level of water

stress. Through the UN-Water Integrated Monitoring Initiative for SDG 6 (IMI-SDG6), the United Nations seeks to support countries in monitoring water- and sanitation-related issues within the framework of the 2030 Agenda for Sustainable Development, and in compiling country data to report on global progress towards SDG 6. The level of water stress data is conducted on a global scale and measured at a country level. The global map of the level of water stress suggests that, at the global level, 18.4% of the total renewable freshwater resources available are being withdrawn by different economic activities (UN, 2021).

Enabling environment	AWS Outcome	Activities	Planning/Regulation	Potential financing mechanism & incentive needed
Long term, reliable, data on water	<ul style="list-style-type: none"> • Sustainable Water Balance • Good Water Quality • Good Water Governance 	Increasing the amount of data station points and analytic capacity.	Inclusion of development of water quality control station in Ministry of Environment and Forestry's and Ministry of Public Works and Housing's medium-term plan	<ul style="list-style-type: none"> • Financing from MDBs • Climate funds • Green bonds • Municipal bonds • Fiscal incentives

2. INCREASING CAPACITY OF WATER-RELATED INSTITUTIONS TO ENFORCE AND MONITOR WATER PROVISION

In Indonesia, the high variability of institutional capacity at local level often causes inconsistencies in terms of water provision enforcement and monitoring process. Moreover, there are outside forces that can affect monitoring and subsequent enforcement, one of them being additional cost attached to efforts to meet new requirements due to changing legislations. In the United States, for example, there has been a regulation introduced to monitor nitrate and phosphorus levels which many stakeholders are not accustomed to. Such a change could present challenges for the enforcement and monitoring process.

Such a problem may likely arise in Indonesia given the Indonesian Government's announcement on their intention to establish a stricter guideline for drinking water quality assessment. If the plan were to advance, stakeholders would need to be flexible to take on the new requirements, including investing on new technology to implement and monitor an array of indicators. Aside from government financing, there are potential alternatives for funding the solution; one of them is to attract more financing from Viability Gap Fund (VGF). Through the VGF, the private sector can participate in projects deemed economically feasible yet commercially unfeasible. This is an interesting opportunity for the private sector because putting proper monitoring instruments in place will ensure they use water of the paramount quality, which helps their business operation and subsequently improves their reputation.

Enabling environment	AWS Outcome	Activities	Planning/Regulation	Potential financing mechanism & incentive needed
Enforcement and monitoring of	<ul style="list-style-type: none"> • Sustainable Water Balance 	Tighten the monitoring of water providers, both	<ul style="list-style-type: none"> • Establishment of stricter guidelines on 	<ul style="list-style-type: none"> • Viability Gap Fund (VGF)

water provision	<ul style="list-style-type: none"> • Good Water Quality 	from government and consumer sides.	water assessment <ul style="list-style-type: none"> • Establishment of provisions for institutions to obtain technologies for enforcement and monitoring 	
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3. MAINSTREAMING AWARENESS OF BUSINESS-WATER INTERLINKAGES

Water availability is extremely crucial for businesses that aim to prosper and survive long term, because having the necessary amount of clean and accessible water appertains to a businesses' ability to remain competitive and maintain reputable standing. Correspondingly, the inability to ensure water availability will present existential threats for businesses. This rings true for heavily water-dependent businesses with the best-known brands and also other lesser-known businesses. However, businesses also need to go beyond their fence line because the fixation on efficiency may put their interests over those of the general public. A business' response to water scarcity by setting up underground pumps may not be received well by the surrounding populations because it potentially takes away the water from the general public for the sole purpose of achieving business efficiency.

Therefore, it is pivotal that future partnerships be established between the government and private sector to focus on long-term sustainability. This means allocating water fairly to everyone, especially those who are least likely to be considered in the event of scarcity; to be flexible in responding to hydrometeorological extremes; and to satisfy the need for broad stakeholder engagement through various forms, such as the issuance of green bonds and fiscal incentives to attract general public and private investments. This effort was started by the Ministry of Environment and Forestry through the issuance of the Regulation of Minister No. 1/2021, which regulates an annual rating mechanism for companies concerning environmental management.

Enabling environment	AWS Outcome	Activities	Planning/Regulation	Potential financing mechanism & incentive needed
Awareness and stewardship of business-water interlinkages	Good water governance	Establish government-private partnerships to focus on long-term sustainability	The issuance of the Regulation of the Minister of Environment and Forestry No. 1/2021	<ul style="list-style-type: none"> • Issuance of green bonds • Fiscal incentives to attract public and private investments

4. RESOURCE MOBILIZATION TO INCREASE ACCESS TO SAFE WASH

Currently, there are three major problems related to access to safe WASH: 1) uncoordinated WASH projects at the macro level; 2) data related to target beneficiaries; and 3) low awareness of WASH investment at the household level. At present, most WASH projects are scattered and do not provide impact beyond their confines. One of the reasons is that the sector is not commercially viable due to its nature of having many scattered consumers. This causes a high collection cost and risk for the bank.

WASH projects also tend to not have adequate collateral because it is impossible for banks to confiscate water pipes or sanitation facilities.

The government can consider two actions to remedy this problem. First, the government issues regulations that make the WASH sector a priority. Regulations in prioritised sectors can increase bank efficiency and reduce risk, thereby reducing costs to creditors. Second, the government invests in communal drinking water and sanitation infrastructure. This programme can be initiated by the rural drinking water supply system (SPAM) group. Meanwhile, in terms of alternative financing, this problem can be solved by using corporate social responsibility (CSR) funds which are usually used by financial institutions to finance commercially unviable projects. Households can also access microfinancing for this. However, support is needed in the form of education for households to access funding from microfinance institutions.

Another problem faced by the water supply and sanitation sector is the lack of data on targeted beneficiaries, making it difficult to channel financing for infrastructure development. In this case, the government can help in terms of data collection. To use a good example from the plantation sector, the General Directorate of Plantation of the Ministry of Agriculture, through its plantation revitalisation programme, established a database on prospective beneficiaries for use by the national government. Addressing the data collection issue may help crowdsourcing become a more viable financing alternative. Aside from being a financing option, crowdsourcing could also help investors scrutinise the project, especially those that will be initiated by AWS Standard implementers, thereby eliminating most of the risks of the project being fictitious.

Enabling environment	AWS Outcome	Activities	Planning/ Regulation	Potential financing mechanism & incentive needed
<ul style="list-style-type: none"> Reliable and complete data related to target beneficiaries. Awareness for WASH investment. Micro-level WASH projects. 	Safe Access to WASH for all	<ul style="list-style-type: none"> Investment in communal drinking water and sanitation infrastructure Improve data collection WASH education program 	Inclusion of WASH as a primary objective in government planning	<ul style="list-style-type: none"> Microfinancing for households Partial guarantee from government or third party Non-commercial funds

RECOMMENDATION 2: INCREASING ADOPTION OF AWS CERTIFICATION FOR BUSINESSES

1. SUPPORTING THE CREATION OF NEW REGULATIONS AND ENFORCEMENT BY THE GOVERNMENT

One of the most important roles of the government so that businesses can implement good water stewardship practices is to equalize the level of playing field for stakeholders. In Indonesia, public awareness regarding the inclusion of environmental aspects in business activities is growing but it still need to be incentivized. While strong drivers from the international market are felt, the same push from the domestic market, financial institutions or investors to adopt sustainability standards is still needed.

The national government and local governments' role in addressing this issue shall be through tightening the regulations related to water resources and their enforcement. This study finds overlaps between aspects of water stewardship and the Indonesian environmental permit and water allocation permit, which provide opportunities to drive the uptake of good water stewardship by businesses in Indonesia. As the first step, stricter enforcement and monitoring of these permits is required. One good example is the enforcement practice carried out by the West Kalimantan Regional Development Agency (Bappeda). It sends the Environmental Office to carry out supervision and guidance on industrial activities at risk of polluting due to the malfunctioning of the province's waste water treatment plant (WWTP). The Bappeda of West Kalimantan also provides financial support in which the monitoring budget is one of the indicators of the RPJMD.

As banks cannot immediately apply sustainability standards on water as part of their due diligence because businesses will look for other financiers with more lenient requirements, the government (via the Financial Services Authority), is recommended to develop regulations on sustainable financing framework on banks as financiers. The current Environmental, Social and Governance (ESG) framework applied in the banking sector still does not put much focus on water management, so it has not yet incentivised banks to provide loans specifically to adopt good water stewardship. In this regard, the Financial Services Authority can better integrate water stewardship aspects into its sustainable financing framework.

2. ADVOCATING FOR MORE GOVERNMENT INCENTIVES TO ENHANCE FINANCING TO WATER STEWARDSHIP

Apart from regulation, the government can also help push the implementation of water stewardship through various types of incentives. From a fiscal perspective, the government can apply the concept of Payment for Environmental Services (PES). This program is payment to farmers or landowners who have agreed to take certain actions to manage their land or watersheds to provide an ecological service. The government can also provide subsidies directed to companies that implement good water stewardship. These subsidies can be targeted at some companies with a huge impact on the region or at the bank that finances the water stewardship program. Lastly, the government can also provide non-financial incentives in the form of certification for companies that implement good water stewardship. One example is the Blue Certificate Initiative launched by the Peruvian government in which they encourage businesses to measure and reduce their water footprint.

3. ADVOCATING FOR MORE FINANCING MECHANISM TO INCREASE WATER STEWARDSHIP UPTAKE

In financing the implementation of good water stewardship, businesses have different financial capabilities. In some cases, large companies can use their own resources to implement the AWS Standard and improve performance on water. While smaller companies need alternative financing mechanisms to meet operating costs which 'are not their main needs in production'⁵.

There are various sources of soft loans, or loans with relatively lower or longer term interest, that can be accessed through MDBs, climate funds and impact investors. Large companies can also access funding through corporate bonds. However, for smaller-scale businesses further mechanisms need to be established. MDBs and impact investors usually only want to invest somewhere between 2 and 10 million US dollars, due to transaction costs. For that, an institution is needed that can act as an investment hub to map potential businesses to be funded, then aggregate the funding needs. In this case, the Indonesian Government could create a special institution or expand the authority of the Indonesian Environment Fund (*Badan Pengelola Dana Lingkungan Hidup* or BPD LH) and increase the focus of disbursing funds for

⁵ Source: Interviews and focus group discussions carried out by the research team.

business purposes, especially for the implementation of good water stewardship. Having a dedicated institution can make it easier for investors to place their funds. Placement of funds in one place could also help make the allocation fair and on target.

4. STRENGTHENING THE ROLE OF AWS AND ITS IN-COUNTRY PROMOTORS TO MAXIMIZE WATER STEWARDSHIP UPTAKE

With various potential regulations and incentives to increase the adoption of good water stewardship, the role of AWS and its in-country promoters is crucial in maximising the potential enabling environment. AWS and its promoters can cluster a group of interested parties, to not only to manage water correctly, but also to collaborate and access financing for implementing water stewardship (e.g., how to develop collaborative financing proposals, how to create good documentation and proposals so a business can be eligible for financing). AWS can identify clusters and places where there are many organisations it could influence. AWS can focus on identifying the main production hubs for the sectors and trying to get as many businesses as possible in those places to start the trajectory towards implementation of the AWS Standard. Lastly, AWS can leverage global brands and major national brands to demand better water management and regulation by the government. Encouragement from large companies would increase government and public awareness of the importance of implementing good water stewardship.