



# Project Information Document (PID)

Appraisal Stage | Date Prepared/Updated: 27-Jun-2022 | Report No: PIDA30704



**BASIC INFORMATION**

**A. Basic Project Data**

Country Indonesia	Project ID P173671	Project Name Indonesia: National Urban Flood Resilience Project (NUFReP)	Parent Project ID (if any)
Region EAST ASIA AND PACIFIC	Estimated Appraisal Date 04-Jul-2022	Estimated Board Date 07-Sep-2022	Practice Area (Lead) Urban, Resilience and Land
Financing Instrument Investment Project Financing	Borrower(s) Republic of Indonesia	Implementing Agency Ministry of Home Affairs, Ministry of National Development Planning / Bappenas, Ministry of Public Works and Housing	

Proposed Development Objective(s)

The Project Development Objective is to reduce flood risk in select Indonesian cities through increased national and city-level capacities and investments for integrated urban flood risk management

Components

- Flood risk analytics and planning
- Urban flood resilience measures
- Program management and implementation support

**PROJECT FINANCING DATA (US\$, Millions)**

**SUMMARY**

<b>Total Project Cost</b>	400.00
<b>Total Financing</b>	400.00
<b>of which IBRD/IDA</b>	400.00
<b>Financing Gap</b>	0.00

**DETAILS**

**World Bank Group Financing**



International Bank for Reconstruction and Development (IBRD)	400.00
Environmental and Social Risk Classification	
High	
Decision	
The review did authorize the team to appraise and negotiate	

## B. Introduction and Context

### Country Context

1. **Indonesia has made remarkable progress on economic growth and poverty reduction over the past decade, but the ongoing COVID-19 pandemic continues to have a profound impact on development outcomes and livelihoods across the country.** Per-capita gross domestic product (GDP) growth is projected to slow from 3.8 percent per year in 2015–2019 to 3.4 percent per year in 2021–2022. The considerable uncertainty about slower-than-expected COVID-19 vaccine rollouts combined with weaker global growth could reduce Indonesia’s growth rate to as low as 3.3 percent in 2022.<sup>1</sup> Another exacerbating factor is uncertain global conditions, including the Russian invasion of Ukraine in February 2022, which has seen commodity prices soar and increased volatility in the global financial markets. Indonesia’s growth outlook assumes that global financing conditions will tighten in 2022 given these impacts. Dampened as it is by the sluggish global economy, Indonesia’s limited growth will slow the country’s economic recovery from the effects of COVID-19.<sup>2</sup> The national budget for FY2022 anticipates uncertainty due to both COVID-19 and global political factors,<sup>3</sup> and a significant portion of subnational budgets has been reallocated to support short-term responses to COVID-19.<sup>4</sup> Consequently, continued short-term budget reallocation and declines in transfer revenue could lead to reduced budget support for capital investments, including at the city level. This is cause for concern – especially because, during Indonesia’s long-term recovery from the pandemic, the development of priority urban infrastructure projects remains crucial for the country to stimulate economic recovery, generate employment opportunities, and continue building urban resilience to future disasters.

2. **Indonesia remains one of the most vulnerable countries in the world, exposed frequently to a range of natural hazards that cause significant human and economic losses.** Located in the Pacific Ring of Fire and impacted by climate change, Indonesia experiences frequent earthquakes and tsunamis, as well as hydro-meteorological hazards including floods, cyclones, and landslides. Over the past ten years until 2021, a total of 29,111 disasters were recorded in the Indonesia Disaster Data Information database (DiBi).

<sup>1</sup> World Bank, *Indonesia Economic Prospects (IEP), December 2021: A Green Horizon – Toward a High Growth and Low Carbon Economy* (Washington, DC: World Bank, 2021).

<sup>2</sup> Indonesia Fiscal Reform Development Policy Loan (P177726).

<sup>3</sup> Law of the Republic of Indonesia Number 6 of 2021 concerning State Revenue and Expenditure Budget for Fiscal Year 2022 (<https://www.kemenkeu.go.id/media/18775/uu-apbn-ta-2022.pdf>).

<sup>4</sup> Ministry of Home Affairs Regulation concerning Guidelines for Preparation of Regional Revenue and Expenditure Budgets for Fiscal Year 2022 (<https://peraturan.bpk.go.id/Home/Details/175749/permendagri-no-27-tahun-2021>).



Hydrometeorological events are particularly common, making up 65 percent of recorded disasters over the past 20 years;<sup>5</sup> more than 60 percent of Indonesia's districts are exposed to a high risk of flooding events. In the urban context, such events can cause fatalities and serious physical injuries; result in significant damage to infrastructure and the housing stock; inflict severe economic losses when city networks and livelihoods are disrupted; and limit access to basic and essential services. For example, the annual expected damages in Manado from pluvial flooding (related to rainfall) alone was estimated at approximately US\$13.6 million in 2016 and could increase to US\$19.9 million by 2055.<sup>6</sup>

3. **Indonesia's rapid urbanization offers city dwellers vast opportunities – but it is also increasing the risk from natural hazards to people, assets, and infrastructure.** Indonesian cities are growing faster than those in other Asian countries, expanding at a rate of 4.1 percent per year. Sixty-eight percent of the country's population is expected to be living in cities by 2055 – an additional 83 million urban dwellers.<sup>7</sup> The country is undergoing a historic transformation from a rural to an urban economy, creating cities with diverse economic drivers and vibrant public spaces. Such urban areas offer their residents increased prosperity through economic specialization, and they support a more inclusive society through efficient public services. The government is also in the process of developing the New Capital City in Kalimantan Island to encourage equal distribution of development towards areas outside of Java Island. Yet there remain large gaps in urban infrastructure investments, particularly for people and places that may be left behind by the urbanization process and therefore do not reap its prosperity benefits.<sup>8</sup> Furthermore, rapid urban development, if not planned and managed adequately, can create additional risks through the concentration of people and assets and their growing exposure to natural hazards. Some 110 million people (approximately 42 percent of the population) are currently exposed to natural hazards.<sup>9</sup> This number is expected to increase due to urban population growth and the associated transformation of the built and natural environment, the expansion of urban settlements in unsafe areas, the projected effects of climate change, and more widespread land subsidence due to rapid urban development.

#### Sectoral and Institutional Context

4. **Over the past 20 years, floods have impacted more people in Indonesia than any other disaster, causing significant damage and disrupting local and regional economies.** In 2019, floods in South Sulawesi, Papua, and Bengkulu caused over 220 deaths, with damage and losses estimated at US\$128 million. Flooding in urban areas of the Greater Jakarta Area and West Java during January 2020 displaced more than 25,000 people and damaged more than 37,000 housing units, as well as hundreds of schools, places of worship, and other public facilities. Flood losses are exacerbated by poor-quality infrastructure, which is often constructed in flood-prone areas with inadequate consideration of risk-informed planning and building codes. The poor and vulnerable often

<sup>5</sup> Based on analysis of statistics from the EmDAT Database.

<sup>6</sup> World Bank, *Baseline Analysis of Urban Flood Risk in Indonesian Cities: Case Study Reviews and High-Priority Investment Gaps in Ambon, Bima, Manado, Padang, and Pontianak* (Washington, DC: World Bank, 2018).

<sup>7</sup> World Bank, *Indonesia's Urban Story* (Washington, DC: World Bank, 2016).

<sup>8</sup> Mark Roberts, Frederico Gil Sander, and Sailesh Tiwari, *Time to ACT: Realizing Indonesia's Urban Potential* (Washington, DC: World Bank, 2019). The needs for basic infrastructure and services in Indonesia's urban areas are enormous. A 2015 market assessment of 14 large Indonesian cities estimated an overall subnational infrastructure financing gap of US\$11.1 billion.

<sup>9</sup> World Bank, *Strengthening the Disaster Resilience of Indonesian Cities: A Policy Note*, background paper for *Time to ACT* (Washington, DC: World Bank, 2019).



bear the brunt of flood-related disasters, as they tend to live in hazardous areas (e.g., densely populated settlements situated below flood levels, coastal areas that experience frequent inundation, and along riverbanks that often overflow), lack access to basic services and fiscal support, and have limited access to financial resources and assets to cope with the aftermath of losses. In Indonesia, 76 million people (or one in four Indonesians) live in high-risk flood zones, of which 40 million live in poverty and 2.6 million in extreme poverty.<sup>10</sup>

**5. Flood events in Indonesia are becoming more frequent due to a combination of climate change, deforestation, urbanization and sprawl, land subsidence, watershed degradation, and poor waste-disposal practices that affect drains and rivers.** Most cities have seen rapid growth but only ad hoc planning, leading to low-density sprawl. Investments in flood and drainage infrastructure are similarly limited, reducing the ability of municipalities to manage the increased run-off from impermeable surfaces. Metropolitan areas accounted for about half of all recorded disaster-related fatalities between 2003 and 2017, despite being impacted by only one-quarter of all events in the country.<sup>11</sup> Climate change effects, such as projected sea level rise, changing precipitation patterns, and more intense storm events, are also expected to exacerbate flood risk in Indonesia's cities. Between 2015 and 2055, the number of Indonesians exposed to river flooding is expected to increase by 74 percent.<sup>12</sup> Along Indonesia's coastline, which extends over some 8,000 inhabited islands, projected sea level rise will expose cities even further to coastal flooding. The proportion of Indonesians living in coastal flood hazard zones could increase 73 percent by 2055, with 36 percent of the increase stemming from population growth and 26 percent from the effects of climate change.

**6. The World Bank is supporting the Government of Indonesia through technical assistance on urban flood resilience, engaging with several Indonesian cities that represent different flood-risk, socio-economic, geographic, and urbanization profiles.**<sup>13</sup> City selection, which was guided by the Government, targeted cities outside of Java Island, and particularly smaller cities that are urbanizing rapidly. These cities have made significant strides in improving flood resilience, such as developing baseline spatial data and maps, engaging in periodic dredging for drainage maintenance, and fostering community involvement in maintenance activities. However, common issues persist, even across the cities' different flood drivers and localized characteristics. First, there is an over-reliance on "grey" flood control infrastructure (e.g., pumping stations, traditional drainage channels) and a need for more investments in "blue-green" multifunctional flood resilience investments. Second, there is a need for stronger building codes and for better climate risk-informed spatial planning that identifies permissible and prohibited land uses in flood-prone areas based on detailed flood hazard mapping. Cities also need improved land-use change policy – and stricter compliance – to control land conversion, reduce degradation, and regulate new urban development. Third, many Indonesian cities are seeing continued drainage issues due to sedimentation, waste blockage, and design capacities that are inadequate to meet growing needs. There is a need for innovative solid waste management practices that empower community participation, and

<sup>10</sup> Rentschler, Jun; Salhab, Melda. "People in Harm's Way: Flood Exposure and Poverty in 189 Countries." Policy Research working Paper; No. 9447 (Washington, DC: World Bank, 2020). Poverty is defined as those living on less than US\$5.50 per day while people living in extreme poverty live on less than US\$1.90 per day.

<sup>11</sup> World Bank, *Strengthening the Disaster Resilience of Indonesian Cities* (Washington, DC: World Bank, 2019).

<sup>12</sup> World Bank, *Baseline Analysis of Urban Flood Risk in Indonesian Cities: Exposure of Indonesian Cities to Disaster Risk* (Washington, DC: World Bank, 2019). For river (fluvial) flooding, the at-risk population is projected to increase from 19.2 million to 33.5 million people.

<sup>13</sup> The technical assistance program included consultations with Ambon, Bima, Jakarta, Manado, Mataram, Medan, Jayapura, Padang, Pekanbaru, and Pontianak.



for urban planning and drainage master planning that provides adequate drainage space and considers climate change impacts, future integration of green infrastructure, transit, and stormwater conveyance corridors. Fourth, many Indonesian cities have limited budgets for investments, maintenance, and operations. Fifth, urban areas are vulnerable to frequent urban flooding and inundation as a result of the above factors.

**7. Many urban flood risk investments in Indonesia have been implemented through a central government-led project approach in a limited number of river basins.** A city-driven programmatic approach would reduce urban flood risk systematically and address the common challenges above. The government is therefore in the process of establishing a national program with a “menu” of structural and non-structural investments to help cities with different flood risk profiles address urban flood risk and climate change holistically, providing the technical, institutional, and financial aspects of risk-reduction projects. Like other national programs managed by the Government of Indonesia,<sup>14</sup> the national urban flood resilience program will fill a critical sectoral gap and be coordinated at the central level and implemented in subnational locations. It will leverage existing flood risk reduction initiatives and draw on local resources and investments from various government programs, development partners, non-governmental organizations, communities, and the private sector. This program will therefore act as a national “umbrella” program, using a single integrated approach to coordinate ongoing and future urban flood investments managed by various partners.<sup>15</sup> In the longer term, the program will encourage the creation of innovative financing mechanisms to incentivize investors and task developers to take more responsibility for reducing flood risk and minimizing vulnerabilities to climate change effects such as sea level rise and increased precipitation. Such financing mechanisms could include, for instance, land value capture instruments that encourage safe development of flood-prone areas and earmarked revenue streams, such as developer levies. Incentivized in this way, developers might take action to reduce flood risk through, for example, better onsite stormwater management (e.g., improved development control policies and robust site-specific stormwater management analysis).

**8. Significant efforts have been made at the central and subnational levels to increase investments in traditional flood protection measures,<sup>16</sup> reduce the vulnerability of urban developments, and strengthen disaster preparedness.<sup>17</sup>** Some cities have already achieved notable successes in preparedness for and response to urban flooding disasters. For instance, in December 2016, flash floods in Bima displaced over two thirds of the population but did not cause any human casualties, because the city had implemented an effective community-based early warning system and rapid community support on emergency management. In Manado, following the 2014 flooding events that affected more than 40,000 people, the city responded with flood mitigation efforts. Its ongoing activities now include normalization of the Tondano River; construction of the

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<sup>14</sup> For example, the National Slum Upgrading Program (KOTAKU), the National Urban Water Supply Program, or the National Affordable Housing Program. Other countries have also established successful national flood resilience programs including Australia, Canada, China, and Singapore.

<sup>15</sup> Flood investments by partners include the Flood Management in Selected River Basins Project (Asian Development Bank), Urban Flood Control System Improvement in Selected Cities (Japan International Cooperation Agency), and other urban flood resilience initiatives, such as the proposed Enhanced Water Security Investment Program, Integrated Urban Flood Management in JABODETABEK (greater Jakarta area), and Flood Management and Coastal Protection in North Java.

<sup>16</sup> Such as the construction of flood pumping stations, river normalization activities, and drainage improvements.

<sup>17</sup> In late 2017, the National Disaster Management Authority (BNPB) launched a “river school” program in selected cities on Java Island in Papua province to build the capacity of community stakeholders to manage river resources sustainably. BNPB also launched a family-based community resilience program (Keluarga Tangguh Bencana, or KATANA) in late 2019.



Kuwil dam, which includes flood control measures; revitalization of the Tondano Lake (including construction of a 9-kilometer dike); and feasibility studies on retention, hydropower, and sediment management. There are opportunities to share these good practices and lessons learned across Indonesian cities to build cross-city and city-level knowledge, capacity, and coordination on urban flood risk management.

**9. Despite these efforts, the Government recognizes the need for better innovative technical and evidence-based solutions, financing mechanisms (as well as increased investments), and local-level flood risk management governance models.** New spatial planning approaches, such as water-sensitive urban design (WSUD), and investments in integrated urban flood risk management (including green-grey infrastructure) not only save lives and reduce human losses but also have various co-benefits. They create healthy and vibrant public spaces for communities (thereby bolstering overall public health), decrease damage to infrastructure and reduce economic losses, and stimulate economic growth.<sup>18</sup> To implement this kind of comprehensive approach to managing flood risk, cities must enact cross-sectoral structural and non-structural measures that are designed to cope with climate change. However, budgetary commitment to flood risk reductions has remained low. Structural budgetary transfers from central to subnational governments are focused on financing administrative costs and the (limited) operation and maintenance of drainage infrastructure, and on project-allocated funds<sup>19</sup> to develop specific (and usually small-scale) flood risk management infrastructure. With this somewhat ad hoc financing approach, cities have limited opportunities to develop a holistic and integrated approach to urban flood risk management that focuses on mitigation and building long-term resilience, as well as on infrastructure retrofitting and upgrading solutions. Further, at the subnational level, enhanced coordination is often needed to clarify the specific responsibilities of different local agencies when it comes to flood risk reduction (i.e., agencies responsible for development planning, disaster management, public works, hydrometeorological services, environmental management, and river basin management). Currently, attention is generally more focused on emergency-response responsibilities.

**10. The institutional and regulatory landscape for urban flood risk management is complex due to the multisectoral nature of flood resilience.**<sup>20</sup> In general, structural flood risk reduction measures are executed by the Ministry of Public Works and Housing through the Directorate-General of Water Resources Management and administered by the River Basin Organizations that are responsible for respective catchment areas across Indonesia. Current policies focus on an engineering-based basin planning approach, particularly to address fluvial and coastal flood hazards, with very limited policies for integrated urban flood resilience and green infrastructure. Pluvial flooding is inherently a local issue and consequently the subnational public works agencies (*Dinas* office) are usually responsible for the construction and maintenance of drainage systems. Responsibilities for non-structural measures are split between various agencies at the national and subnational levels, including the following ministries and their respective city-level offices: Ministry of Agrarian and Spatial Planning for risk-informed spatial planning and flood-prone land; the National Disaster Management Authority for community preparedness, flood response, and awareness-raising; the Indonesia Meteorological, Climatological and

<sup>18</sup> A. K. Jha, R. Bloch, and J. Lamond, *Cities and Flooding: A Guide to Integrated Urban Flood Risk Management for the 21st Century* (Washington, DC: World Bank, 2012).

<sup>19</sup> Through the regular APBN/APBD budget, a special allocation fund, or *Dana Alokasi Khusus* (DAK) or Village Fund (*Dana Desa*).

<sup>20</sup> World Bank, *Baseline Analysis of Urban Flood Risk in Indonesian Cities: Institutional, Legal Setting, and Flow of Resources for Flood Risk Reduction* (Washington, DC: World Bank, 2018).



Geophysics Agency for extreme weather monitoring and warnings; the Ministry of Public Works and Housing for compliance with flood-resilience building standards and river flood warnings; and the Ministry of Environment and Forestry for solid waste management and environmental permitting. Investment coordination across these agencies remain fragmented and city-level policies for integrated solutions are needed.

### C. Proposed Development Objective(s)

Development Objective(s) (From PAD)

11. The Project Development Objective (PDO) is to reduce flood risk in select Indonesian cities through increased national and city-level capacities and investments for integrated urban flood risk management.<sup>21</sup>

Key Results

12. Achievement of the PDO will be measured by:
- a. Target population protected through integrated urban flood resilience measures under the project (number).
  - b. Regulations and/or policies on integrated urban flood resilience adopted by city governments (number).
  - c. City-level interagency urban flood resilience task forces established and functioning (number).
  - d. National urban flood resilience program established with procedures adopted for investment financing, institutional strengthening, and knowledge exchange (yes/no).
13. The results indicators will be disaggregated by gender where relevant, and sub-indicators will be quantified where possible to ensure effectiveness of project monitoring and evaluation.

### D. Project Description

14. **National program design.** This project will support the government in establishing and operationalizing a national urban flood resilience program. The national program will be a dedicated investment mechanism to reduce flood risk systematically; it will also help to strengthen interagency coordination between various programs and stakeholders to address the multi-sectoral nature of flood risk management and drive city-level engagement. To deliver maximum co-benefits, flood resilience measures will address climate change impacts and be integrated with city-level priorities on urban regeneration and ecological conservation. Participating cities will adopt a “bottom-up,” participatory planning approach so that local stakeholders and diverse population groups have the opportunity to contribute meaningfully during the planning, design, and implementation of project activities. A national-level knowledge and support mechanism will be established to help build capacity and enhance the requisite technical studies, as well as boost public awareness of flood risk. The project’s interventions are organized under three components: (i) flood risk analytics and planning; (ii) urban flood resilience measures; and (iii) program management and implementation support.

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<sup>21</sup> “Integrated” urban flood risk management refers to cities that have implemented structural (grey and green measures to keep water away from people) and non-structural (measures to keep people away from water) interventions that bring multiple co-benefits, including social and environmental benefits.



15. **City selection.** The project will support cities that meet the selection criteria as agreed between the Government and the World Bank, as outlined in the Project Operations Manual (POM). Initially, the project will support seven cities: Banjarmasin, Bima, Gorontalo, Manado, Medan, New Capital City and Semarang. These medium-sized cities were selected by the Government based on the program’s agreed eligibility framework, and they represent a mixture of urbanization and flood risk profiles in lagging regions, with varying geographies and landscapes, city scales, flood risk drivers, and urban development challenges (see Annex 2). Activities under Component 1 will support all seven cities. These are cities that are strategically significant to the government of Indonesia and will inform the implementation of urban flood resilience measures under either Component 2 or other financing sources (i.e., Gorontalo and the New Capital City). IKN is important as a strategic opportunity for GOI to demonstrate a sponge city approach as “good practice” for other Indonesian cities. Component 2 will finance the implementation of integrated urban flood resilience measures in five cities: Banjarmasin, Bima, Manado, Medan, and Semarang. Component 3 activities will deliver institutional strengthening and capacity-building support to enhance the quality of, and returns on, investments in the target cities; it will also provide support on the establishment and operationalization of the national program, and project implementation.

#### **Component 1: Flood risk analytics and planning**

16. Component 1 will support flood risk analytics and planning, which are needed to align urban flood resilience measures with ongoing and future urban development and spatial planning, and to mitigate the effects of climate change on urban flood risk. This component will provide technical assistance for five cities (Banjarmasin, Bima, Manado, Medan, and Semarang) to develop technical analysis and probabilistic flood risk maps that consider various flood risk drivers, such as changes in land use, urbanization patterns, land subsidence, and climate change effects (including sea level rise and increased precipitation). The analytics will inform the development of multi-year and multi-sectoral integrated urban flood resilience action plans that prioritize structural and nonstructural measures. This component will also finance technical assistance for two additional cities – Gorontalo and the New Capital City (Ibu Kota Negara, or IKN). This assistance will include design reviews, flood risk assessments, and technical studies to implement sponge city concepts.

#### **Component 2: Urban flood resilience measures**

17. Component 2 will support the implementation of priority structural and non-structural measures (sub-components 2.1 and 2.2, respectively) included in the multi-year and multi-sectoral urban flood resilience action plans for five cities (Banjarmasin, Bima, Manado, Medan, and Semarang). It will also support no-regret subprojects that demonstrate immediate impact on flood risk reduction and climate adaptation, while the city-level flood risk analytics and action plans are developed in parallel under Component 1. This component will prioritize the implementation of structural measures that enhance overall urban resilience outcomes, such as those related to public health and wellbeing, environmental protection, climate adaptation (e.g., green urban “corridors” and restoration of coastal mangroves and wetlands for flood protection), and climate mitigation (e.g., restoration of mangroves and floodplains for carbon sequestration). All subprojects shall meet the government’s standards on energy efficiency, e.g., public space improvements will incorporate climate-resilient landscaping, low-energy street lighting, and pedestrian footpaths and cycleways to promote low-carbon transport. This component will also support non-structural measures that will help cities and urban communities to mitigate and better prepare for future flood events more systematically through activities including risk-



informed spatial planning and development control policies, public awareness raising, modernization of local hydrometeorological systems and instrumentation, and emergency preparedness activities.

**Component 3: Program management and implementation support**

18. This component will help the Government establish and operationalize the umbrella National Urban Flood Resilience Program and support project implementation. The national program will be a multi-city platform that will include communication mechanisms for different stakeholders to exchange knowledge and solutions on integrated urban flood resilience, building an integrated and collaborative approach. This component will also help build the capacity of project stakeholders on urban flood risk management and improve coordination, data sharing, and knowledge across agencies and between cities. Technical guidelines and training will be provided to support the implementation of activities under Components 1 and 2, including for immediate policy and knowledge gaps such as: risk-informed planning and urban design control policies; climate risk planning, including mitigation measures for urban heat islands and water-sensitive urban design; innovative financing mechanisms at the local level; flood risk modeling; and inclusive design for vulnerable population groups.

Legal Operational Policies	
	Triggered?
Projects on International Waterways OP 7.50	No
Projects in Disputed Areas OP 7.60	No

Summary of Assessment of Environmental and Social Risks and Impacts

19. **Environmental and social (ES) risk.** The World Bank’s due diligence assessment of the project’s potential environmental and social risks and impacts is included in the project’s Appraisal Environmental and Social Review Summary (ESRS). Combined environmental and social risk for the project has been assessed and rated as ‘High’, with environmental risks assessed as ‘Substantial’ and social ‘High’. The social risk level was guided mainly by sub-components and activities pertaining but not limited to: structural and non-structural measures and civil works activities in the selected cities; anticipated land acquisition (voluntary and nonvoluntary), which could potentially include human resettlement; and flood awareness-raising activities involving local communities, primarily under Component 2. The environmental risks will mostly arise from activities under Component 2 and relate to impacts of civil works and management of materials in urban areas; disposal of dredged material of presently unknown quality; general construction waste management; preservation and improvement of existing, already limited/degraded biodiversity and mangroves areas in urban areas; and positive impacts of improved water regime through application of the ‘sponge city’ approach. The project activities, if adequately designed, implemented and monitored, are unlikely to result in significant impact on the environment. The environmental risks will be of site specific, low to medium magnitude, mostly confined to civil works executing stage, with respective impacts predictable, manageable by application of standard construction techniques, reversible, and with only temporary potential negative impact. The ES approaches detailed in the



project's ES instruments include measures to mitigate ES risks proactively, as well as measures to maximize social inclusion and biodiversity effects of integrated urban flood resilience in the selected cities.

20. **Relevant Environmental and Social Standards (ESSs).** An assessment of the project scope and components confirmed that all but one ESS under the World Bank's Environmental and Social Framework (ESF) are relevant for this project. The relevant ESSs are: ESS 1 Assessment and Management of Environmental and Social Risks and Impacts; ESS 2 Labor and Working Conditions; ESS 3 Resource Efficiency and Pollution Prevention and Management; ESS 4 Community Health and Safety; ESS 5 Land Acquisition, Restrictions on Land Use and Involuntary Resettlement; ESS 6 Biodiversity Conservation and Sustainable Management of Living Natural Resources; ESS 7 Indigenous People/Sub-Saharan African Historically Underserved Traditional Local Communities; ESS 8 Cultural Heritage; and ESS 10 Stakeholder Engagement and Information Disclosure.

## E. Implementation

### Institutional and Implementation Arrangements

21. **Project coordination.** A National Urban Flood Resilience Task Force will be established to enhance cross-sectoral and interagency coordination. The national task force will be responsible for providing strategic oversight of the project, coordinating urban flood resilience investments across sectors and agencies, and reviewing and approving the multi-year and multi-sectoral urban flood resilience action plan for each city. The task force will be chaired by Bappenas and comprise officials from ministries and agencies with responsibility for urban flood risk management, including: MPWH; MOHA; the National Disaster Management Authority (BNPB); Ministry of Finance (MOF); Coordinating Ministry of Economic Affairs; National Land Agency/Ministry of Agrarian Affairs and Spatial Planning; Indonesian Agency for Meteorology, Climatology and Geophysics; Ministry of Environment and Forestry; and Ministry of Agriculture. The task force will report to the existing Steering Committee for Water Resources Management, which is led by Bappenas and has a membership similar to the National Urban Flood Resilience Task Force. At the subnational level, cities supported under the project will need to establish a City-level Urban Flood Resilience Task Force, which will include local government representatives from relevant agencies and non-government representatives as appropriate (e.g., private sector stakeholders, civil society representatives, university/academia, etc.). While the city governments are not responsible for implementation under this project, task forces at the city levels will coordinate with the respective implementation teams and the national task force, and will provide strategic and technical guidance on integrated urban flood resilience planning, subproject prioritization, and subproject implementation (including reviews of technical documents, and environmental and social instruments).

22. **Project implementation.** The project will be implemented by three central-level ministries – MPWH, MOHA, and Bappenas – with the Directorate-General of Water Resources (DGWR) under MPWH acting as the Executing Agency (EA). The project will support establishment and operationalization of the national urban flood resilience program through the Directorate of Water Resources and Irrigation (Bappenas) for sub-component 3.1 and the Directorate of Government Synchronization II under the Directorate-General (DG) of Regional Development (MOHA) for sub-component 3.2; both implementing agencies are CPIUs. As the Central Project Management Unit (CPMU), the Directorate of Water Resources Management System and Strategy (DGWR, MPWH), under sub-component 3.3, will be responsible for overall project management, including consolidating



the annual work plans from the CPIUs and Project Implementation Units (PIUs). The Directorate of Rivers and Coasts (DGWR, MPWH) will also be a CPIU and responsible under sub-component 3.4 for day-to-day project implementation support. Its assigned activities include: reviewing project proposals, feasibility studies, detailed engineering designs, environmental and social management assessments, and other technical preparatory studies prepared by provincial or city implementation teams; disseminating ministry-wide technical guidance on program implementation to the subnational implementation teams; and monitoring and reporting progress on various subprojects. The Directorate Rivers and Coasts (DGWR, MPWH) will coordinate with Directorate of Operation and Maintenance, and Directorate of Water Resources Engineering Development during project implementation. The relevant River Basin Organizations (Balai Wilayah Sungai/Balai Besar Wilayah Sungai, or BWS/BBWS) in MPWH will be the Project Implementation Units (PIUs) implementing activities under Components 1 and 2 in the selected cities.

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