



Project Information Document (PID)

Concept Stage | Date Prepared/Updated: 12-Oct-2020 | Report No: PIDC28874

**BASIC INFORMATION****A. Basic Project Data**

Country Indonesia	Project ID P173671	Parent Project ID (if any)	Project Name Indonesia: National Urban Flood Resilience Project (NUFReP) (P173671)
Region EAST ASIA AND PACIFIC	Estimated Appraisal Date Jun 28, 2021	Estimated Board Date Sep 29, 2021	Practice Area (Lead) Urban, Resilience and Land
Financing Instrument Investment Project Financing	Borrower(s) Ministry of Finance	Implementing Agency Ministry of Public Works and Housing, Ministry of Home Affairs	

Proposed Development Objective(s)

To strengthen the resilience of participating cities to flooding through integrated flood risk management solutions and improved governance arrangements.

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

Total Project Cost	550.00
Total Financing	550.00
of which IBRD/IDA	400.00
Financing Gap	0.00

DETAILS**World Bank Group Financing**

International Bank for Reconstruction and Development (IBRD)	400.00
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Non-World Bank Group Financing

Counterpart Funding	150.00
Borrower/Recipient	100.00



Local Govts. (Prov., District, City) of Borrowing Country		50.00
Environmental and Social Risk Classification	Concept Review Decision	
High	Track II-The review did authorize the preparation to continue	

Other Decision (as needed)

B. Introduction and Context

Country Context

- Indonesia has made remarkable progress on economic growth and poverty reduction over the past decade, although the ongoing COVID-19 pandemic continues to have a profound impact on development outcomes and livelihoods across the country.** Whilst average Gross Domestic Product (GDP) per capita in Indonesia has increased almost nine-fold in real terms since 1950,¹ growth in Indonesia is projected to decline in 2020 to 2.1 percent in the baseline and negative 3.5 percent in the lower-case scenario, down from an estimated 5.0 percent in 2019.² Shrinking external demand for manufacturing exports and disruption to global supply chains is reducing domestic demand.
- The national budget (*Anggaran Pendapatan dan Belanja Negara – APBN*) has been reprioritized in response to the health emergency and is focused on immediate needs,** such as strengthening health systems, economic recovery, and social assistance to vulnerable populations. A significant portion of subnational budgets (*Anggaran Pendapatan dan Belanja Negara – APBD*) has been reallocated to support short-term responses to COVID-19.³ In addition, subnational governments are seeing sharp reductions in transfer revenues due to reallocations in the Revised APBN.⁴ Budgetary commitments for municipal services, such as flood risk reduction, remain low. An analysis of five Indonesian cities—conducted before the COVID-19 pandemic—indicated that existing flood risk management investments account for less than 1 percent of the total budget allocation, and more commitments are needed to meet financing gaps.⁵ Consequently, continued budget reallocation and declines in transfer revenue could lead to further reduced budget support for urban flood resilience investments. Given these factors, 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 to build urban resilience to future disasters.

¹ Mark Roberts, Frederico Gil Sander, and Sailesh Tiwari, eds., *Time to Act: Realizing Indonesia’s Urban Potential* (Washington, DC: World Bank, 2019).

² World Bank, *World Bank East Asia and Pacific Economic Update, April 2020: East Asia and Pacific in the Time of COVID-19* (Washington, DC: World Bank, 2020).

³ As of May 2020, a cumulative amount of US\$3.5 billion from subnational budgets (ABPD) in 508 districts has been reallocated as a short-term response to COVID-19 (Ministry of Home Affairs data, 2020).

⁴ Budget statement APBN; Presidential Regulation 54/2020 for APBN 2020.

⁵ 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* (World Bank, 2018).



3. **Indonesia remains one of the most vulnerable countries in the world, exposed frequently to a range of natural hazards that also cause significant human and economic losses.** Located in the Pacific Ring of Fire, with 129 active volcanoes across its archipelago, Indonesia experiences frequent earthquakes and tsunamis, as well as floods. Over the past 10 years, a total of 19,868 disasters were recorded in the Indonesia Disaster Data Information database (DiBi). During this period, recorded disaster events resulted in the loss of 9,817 lives and affected more than 28 million people. More than 60 percent of Indonesia's districts are exposed to a high risk of flooding events. Over the past 20 years, hydrometeorological events have made up 65 percent of recorded disasters.⁶ 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 Pontianak from the combination of coastal and fluvial (river) flooding was estimated at approximately US\$30 million in 2015, and could increase to US\$83.6 million by 2055.⁷

4. **Indonesia's rapid urbanization offers vast opportunities and benefits for city dwellers by increasing prosperity through economic specialization, yet 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 2055.⁸ The country is undergoing a historic transformation from a rural to an urban economy, creating cities with diverse economic drivers and vibrant public spaces, and supporting a more inclusive society through efficient public services. But 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.⁹ 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. It is estimated that some 110 million people (approximately 42 percent of the population) are currently exposed to natural hazards.¹⁰ 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.

5. **Households in highly vulnerable cities are exposed not only to natural hazards but also to health-related shocks.**¹¹ Due to the ongoing COVID-19 situation in Indonesia, vulnerable households are facing immediate impacts from the unprecedented reduction in economic and social activity and from even further reduced access to, and availability of, healthcare and social services. In low-income neighborhoods, many of which are informal settlements, residents live in overcrowded, substandard housing, where individual household connections to clean water and sanitation might not be available, and drainage infrastructure is often of poor quality due to inadequate design capacities and infrequent maintenance.¹² Such conditions can cause these neighborhoods to be more vulnerable to community transmission of

⁶ Based on analysis of statistics from the EmDAT Database.

⁷ Baseline Analysis of Urban Flood Risk in Indonesian Cities: Case Study Reviews and High-Priority Investment Gaps in Ambon, Bima, Manado, Padang, and Pontianak, 2018

⁸ World Bank, *Indonesia's Urban Story* (Washington, DC: World Bank, 2016).

⁹ World Bank, *Time to Act*. 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.

¹⁰ World Bank, *Strengthening the Disaster Resilience of Indonesian Cities – A policy note*, Background Paper for Time to ACT (Washington, DC: World Bank, 2019).

¹¹ World Bank, *Indonesia – Avoiding the Trap: Development Policy Review 2014* (Washington, DC: World Bank, 2014). Available at <https://www.worldbank.org/content/dam/Worldbank/document/EAP/Indonesia/Indonesia-development-policy-review-2014-english.pdf>

¹² An estimated 50 percent of the drainage networks in slum areas are considered to be of poor quality based on a slum profiling survey undertaken by the National Community Empowerment Program (NCEP) – Urban in 2015.



COVID-19 (and other health-related outbreaks) by limiting residents' ability to maintain physical distancing and proper hygiene practices. Moreover, floods can increase the risk of transmission of several communicable diseases. The main cause of water-borne diseases during and following a flood is the contamination of drinking water. Floods transport bacteria, parasites, and viruses into water systems, leading to the outbreak of diseases and causing "secondary" disasters. The medium- to long-term impacts of the pandemic are uncertain. Nonetheless, immediate economic recovery activities would likely need to prioritize projects that are growth-conducive and sustainable; invest in urban infrastructure projects that minimize risk (including health risk); maximize co-benefits (such as bolstering disaster resilience, while enhancing safety and physical and mental well-being); and strengthen overall community resilience and public health in densely populated cities.

Sectoral and Institutional Context

6. **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 alone, floods in South Sulawesi, Papua, and Bengkulu caused over 220 deaths, with damage and losses estimated at \$128 million. More recently, flooding in urban areas of the Greater Jakarta Area and West Java 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.

7. **The poor and vulnerable often 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 river banks 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. Flood events can also create secondary health-related disasters or exacerbate ongoing disease outbreaks, further compounding disaster impacts on the health and livelihoods of affected people. 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.

8. **Flood events in Indonesia are becoming more frequent due to a combination of climate change, deforestation, urbanization, land subsidence, watershed degradation, and poor waste-disposal practices affecting drains and rivers.** Most cities have seen rapid growth, but investments in flood and drainage infrastructure are limited, reducing the ability of municipalities to manage the increased run-off from impermeable surfaces. Between 2015 and 2055, the number of Indonesians exposed to river flooding is expected to increase by 74 percent.¹³ 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 by 73 percent by 2055, with 36 percent of the increase stemming from population growth and 26 percent from the effects of climate change.

9. **The World Bank is supporting the Government through technical assistance on urban flood resilience. The activities include engagement with five cities that represent different flood-risk, socio-economic, geographic, and urbanization profiles: Ambon, Bima, Manado, Padang, and Pontianak.** The city selection was guided by the Government and sought to support cities outside of Java island, and particularly in smaller cities that are urbanizing rapidly. These

¹³ World Bank, "Exposure of Indonesian Cities to Disaster Risk," 2018. For river (alluvial) flooding, the at-risk population is projected to increase from 19.2 million to 33.5 million people.



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: (i) an over-reliance on “grey” flood control infrastructure (e.g., pumping stations, traditional drainage channels) and the need for more investments in “blue-green” multifunctional flood resilience investments; (ii) the need for better risk-informed spatial planning and building codes, as well as stricter compliance with land-use change policies to regulate new urban development and land conversion; (iii) continued drainage issues due to sedimentation, waste blockage, and design capacities that are inadequate to meet growing needs, and the need for innovative solid waste management practices that empower community participation; (iv) limited budgets for investments and operations; and (v) frequent urban flooding and inundation as a result of the above factors.

10. **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 above common challenges.** A robust national program that offers a “menu” of structural and non-structural investments will help cities with different capacities and needs to address urban flood risk holistically, supporting cities with the technical, institutional, and financial aspects of risk-reduction projects. Like other national programs managed by the government of Indonesia,¹⁴ the national urban flood resilience program would be designed as a platform coordinated at the central level and implemented at the subnational level, leveraging existing flood risk reduction initiatives and drawing on local resources and investments from various government programs, development partners, non-government organizations, communities, and the private sector.

11. This program would therefore act as a national “umbrella” program and coordinate ongoing and future urban flood investments by various partners through a more integrated approach.¹⁵ In addition, in the longer term, the project will encourage innovative financing mechanisms to incentivize investors (e.g., through land value capture instruments that incentivize safe development of flood-prone areas and earmarked revenue streams, such as developer levies) and task developers to take more responsibility in reducing flood risk through better onsite stormwater management (e.g., through improved development control policies and robust site-specific- stormwater management analysis).

12. **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) can save lives and reduce human losses, 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.¹⁶ To implement a comprehensive approach to managing flood risk, cities must enact cross-sectoral structural and non-structural measures that are designed to cope with a changing and uncertain future.

¹⁴ For example, the National Slum Upgrading Program (KOTAKU), the National Urban Water Supply Program, or the National Affordable Housing Program.

¹⁵ 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.

¹⁶ 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).



13. **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 (limited) operation and maintenance of drainage infrastructure, and on project-allocated funds¹⁷ 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 flood risk reduction responsibilities of different agencies (i.e., local 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.

Relationship to CPF

14. **The proposed project aligns with the 2016–2020 World Bank Group Indonesia Country Partnership Framework (CPF),¹⁸ specifically Engagement Area 4 on Delivery of Local Services and Infrastructure, by supporting sustainable urbanization for increased climate and disaster resilience.** The project will address key priorities for this engagement by: (i) identifying prioritized urban flood investments over the short, medium, and long term; (ii) supporting urban flood resilience investments with a balance of structural and non-structural measures; (iii) improving flood risk management capacity at national and subnational levels; and (iv) facilitating knowledge management and transfer within and across different levels of government.

15. The CPF FY21–25 for Indonesia currently being prepared will include a proposed Objective 4.3 on *Strengthening multi-hazard disaster resilience*, recognizing Indonesia’s high exposure to natural hazards, increasing vulnerabilities in rapidly growing cities, and susceptibility to climate change effects. Under this objective, three key pillars of Bank support are proposed for a comprehensive approach to disaster resilience: (i) disaster risk reduction investments (including this project and other Bank-financed infrastructure sector investments);¹⁹ (ii) financial resilience (including support to establish a catastrophe pooling fund);²⁰ and (iii) policy reform and institutional strengthening (through the Bank’s respective ASA engagements).

16. The project complements the Bank’s other investments in the water sector, including the proposed River Basin Improvement Project, which would support strengthening of the national water resources information system and capacities at the river-basin level. There are also opportunities for convergence with other Bank-financed projects, including the National Urban Development Project (NUDP – P163896) on the use of city planning tools to identify potential target areas for green infrastructure investments and capital investment planning needs; and the Regional Infrastructure Development Fund (RIDF – P154947) for on-lending to support investments in city-level flood control and drainage infrastructure.

¹⁷ Through the regular APBN/APBD budget, a special allocation fund, or *Dana Alokasi Khusus* (DAK) or Village Fund (*Dana Desa*).

¹⁸ World Bank, *Report 99172: Country Partnership Framework for the Republic of Indonesia for the Period FY16 – FY20*, November 3, 2015.

¹⁹ The mainstreaming of disaster risk management principles and strategies is being addressed in other national programs, including the National Urban Water Supply Project (P156125) and the proposed Indonesian Mass Transit Program Support (P169548).

²⁰ Proposed Disaster Risk Finance and Insurance Project (P173249).



C. Proposed Development Objective(s)

17. The Project Development Objective is to strengthen the resilience of participating cities to flooding through integrated flood risk management solutions and improved governance arrangements.

Key Results (From PCN)

18. Achievement of the PDO will be measured by:

- a. lesser exposure of people to urban flood risk (percentage reduction);
- b. lower expected annual damage due to flooding (percentage); and
- c. systematic national investment program for urban flood resilience established (yes/no).

19. Potential intermediate results indicators for participating cities are as follows:

- a. Cities that have developed flood risk master plans that address climate risk considerations, and have prepared flood management investment programs that are included in relevant policies and regulations (number)
- b. Structural flood resilience measures that incorporate green infrastructure (percentage)
- c. Women, out of total participants, who are trained to make decisions on flood risk analysis and planning (percentage)
- d. Women's representation in decision-making committees on flood risk management discussions (percentage)
- e. Knowledge management hub operational and providing advice to cities (yes/no)
- f. Feedback and grievances related to delivery of project benefits addressed (percentage)
- g. Beneficiaries (disaggregated by gender) satisfied with improved flood risk management measures (percentage).

20. 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. Concept Description

21. **This project directly supports the Government's commitment to establish a national urban flood resilience program, the foundations of which are laid out in the National Medium-Term Development Plan 2020–24 (RPJMN).**²¹

The newly adopted RPJMN acknowledges the high exposure of Indonesian cities to flood risk and calls for integrated urban flood risk management that includes green infrastructure, flood early warning systems, restoration and conservation of watershed areas (e.g., normalization and improvement of river capacities), mangrove conservation, coastal protection infrastructure, and pollution control in lakes and dams.

22. The key objectives of the proposed national program are to strengthen the resilience of Indonesian cities to flooding through an integrated approach and to improve flood risk mitigation, investments, and governance in participating cities. This will be achieved through four key principles: (i) utilize a national programmatic approach to establish dedicated resilience-building funding, leverage good practices, and facilitate knowledge management among

²¹ Technical recommendations for the national urban flood resilience program were supported through a technical assistance program under the Urban Floods, Disaster Risk Management, and Drainage Program (P156711). A baseline analysis of 30 Indonesian cities was conducted, and a conceptual framework design for the national program developed, with financial support from the Indonesia Sustainable Urbanization Multi-Donor Trust Fund (financed by the Swiss State Secretariat for Economic Affairs); meanwhile, urban flood resilience diagnostics laying out potential investment options in Bima, Manado, and Pontianak are being developed with financial support from the Japan-World Bank Program on Mainstreaming Disaster Risk Management in Developing Countries through the Global Facility for Disaster Reduction and Recovery (GFDRR).



Indonesian cities; (ii) promote technological and technical innovation to enhance implementation of localized flood resilience investments; (iii) strike a balance between structural and non-structural measures, including synergized investments in green infrastructure, urban public space improvements, and water-sensitive urban design; and (iv) enhance local-level partnerships and community participation for longer-term sustainability and ownership.

23. **Eligibility for support under the national program is determined through a two-part process.** The **pre-selection criteria for participating cities** is based on factors including: (i) the city’s urban flood risk profile (urban population, percentage of people in the flood hazard zone, potential physical damage due to flooding, flood risk zone classification, climate change impacts, and multi-threat disaster risk index); (ii) whether it is a nationally-significant priority city, including consideration of cities in lagging regions (related to the Ministry of National Development Planning, Ministry of Public Works and Housing, and the National Disaster Management Authority); (iii) whether it is part of a national economic growth area; and (iv) the timing of the next revision of the city’s spatial plan (RTRW and development plan—RPJMD).²² The project screening criteria for eligible projects proposed by participating cities is based on the project’s relevance to program outcomes, alignment with the city’s flood resilience investment plan, impact, and readiness, and the city’s disaster preparedness.²³ Bima, Manado, and Pontianak were selected as pilot cities based on meeting the above pre-selection criteria. This project will support up to seven additional cities under Component 1 and up to two additional cities under Component 2. The project components and proposed activities are outlined below.

Component 1: Flood risk analytics and investment planning

24. Before cities make significant investments in urban flood resilience, flood risk analytics and investment planning are needed to align proposed investments with ongoing and future urban development planning, spatial planning, and flood risk projections. Many cities need detailed flood hazard mapping to show inundation depths and return periods (probability) using high-resolution digital terrain models (DTMs, based on LiDAR technology or similar) and hydro-dynamic models,²⁴ including probabilistic flood risk maps highlighting changes in land use, land subsidence, and the impacts of climate change (e.g., sea level rise).

25. This will help cities develop more risk-informed spatial planning and identify flood protection infrastructure measures in updated drainage master plans. Mapping must also include environmental considerations—such as parks, protected areas, recreation areas, water sources, and cultural heritage site—and locations of critical infrastructure such as transport nodes, ports, airports, roads, water resources networks, and key buildings. Planners must develop multi-year integrated urban flood resilience investment plans that phase prioritized actions, including structural and nonstructural measures, and align them with the city’s development and spatial planning.

26. The project will support a participatory planning approach through citizen engagement activities including design workshops or “charrettes” that provide opportunities for communities to contribute meaningfully to the planning and design process. Investment plans will need to consider how to mitigate (e.g., integrate nature-based solutions) and adapt

²² A preliminary list of potential cities is being considered by the Government and includes cities across all island groups in Indonesia.

²³ Questions include: Will the project help to achieve overall program outcomes and is it well aligned with the principles? Is the project aligned with the city’s overall plan, and have structural and non-structural measures been included? How will the project reduce exposure of people to flood risk and what are its potential economic benefits? Have technical preparatory studies been completed, including environmental and social risk assessments? Have institutional arrangements been established? Is there an operations and maintenance plan? Is there an existing local regulation on disaster risk management? Are there community-based disaster risk management initiatives and investments from sources other than the national budget (APBN)?

²⁴ Hydro-dynamic models are digital elevation models that route water affected by upstream boundary conditions of water levels, and help to simulate flood inundation due to sea level rise, storm surge, tides, and rainfall; they can indicate multiple flood scenarios.



(e.g., rainwater harvesting) to identified future climate risks. This component will finance technical assistance for up to ten participating cities²⁵ to develop a flood resilience investment plan, the approval of which is a pre-condition before cities can access financing for activities financed under Component 2.

Component 2: Support for flood resilience investments

27. Urban flood resilience requires a multi-sectoral and integrated approach. Conventional structural measures are often project-based and rigid, with an over-emphasis on structural measures that reduce floodwaters. They have limited capacity to respond to future challenges and flood risk scenarios, particularly those arising from the impacts of climate change (e.g., sea level rise, hotter climates, and more frequent and intense flood events). This project will support a fresh approach includes “green” infrastructure and water-sensitive urban design²⁶ measures alongside traditional “grey” infrastructure.

28. Flood resilience programs need to integrate increased, systematic investments to reduce urban flood risk with urban development and upgrading projects. They must include measures to enhance overall urban resilience outcomes, such as those related to public health, environmental protection, climate change adaptation (e.g., green urban “corridors” and restoration of coastal mangroves and wetlands for flood protection), and climate change mitigation (e.g., restoration of mangroves and floodplains for carbon sequestration²⁷). All investments under this component shall meet the government’s standards on energy efficiency—e.g., public space improvements will incorporate pedestrian footpaths and cycleways to promote low-carbon transport, climate-resilient landscaping, and low-energy street lighting. Non-structural measures, which are equally critical to reduce flood risk, will help cities and urban communities to mitigate and better prepare for future flood events more systematically through, for example, updating and synchronizing river-basin plans,²⁸ spatial plans, and building codes with agreed flood resilience measures; enhancing flood early warning services; and instituting public awareness and preparedness initiatives.

29. Also critical for long-term sustainability is the institutionalization of a maintenance and improvements regime for urban drainage and flood infrastructure; this component will help cities to better manage stormwater flow and drainage systems. Under this component, up to five participating cities²⁹ will receive technical assistance and financing to implement agreed activities (structural and non-structural) per the city’s flood resilience investment plan (developed under Component 1 or already established by the city), starting with critical activities that would achieve immediate targets in reducing flood risk impacts (i.e., “no-regrets” measures).

Component 3: Institutional strengthening and knowledge management

30. An integral aspect of the national program is the establishment of a national knowledge support system that allows Indonesian cities to learn from one another and share good global practices. An integrated knowledge-sharing platform will improve collaboration amongst government agencies, and particularly between local government authorities. There is a need for improved coordination, data sharing, and knowledge management across subnational government agencies, and for the development of a central database for existing data (such as disaster risk mapping and

²⁵ Including Bima, Manado, and Pontianak. During preparation, the government will identify up to seven additional cities to receive support from this component, with five total cities receiving support from Component 2.

²⁶ World Bank, *Strengthening the Disaster Resilience of Indonesian Cities*.

²⁷ Carbon sequestration is the process of removing carbon dioxide from the atmosphere and storing it in solid or liquid form.

²⁸ River-basin organizations in Indonesia are responsible for developing river-basin plans and for implementing river improvement works within their basin area.

²⁹ Including Bima, Manado, and Pontianak. During preparation, up two other cities will be identified by the government for support under this proposed project.



flood risk models) that is managed by a reliable pool of technical experts who support cities with gaps in staffing and technical capacity.

31. Immediate policy gaps to be addressed include: risk-informed development control policies for new developments; innovative financing mechanisms, such as developer levies and incentivization schemes; inclusive design for vulnerable population groups; green infrastructure design, energy efficiency, and climate risk planning (including mitigation measures for urban heat islands and water-sensitive urban design); environmental screening and codes of good environmental practices; and interlinkage of flood hazards and health-related impacts. This component will support: (i) the establishment and operationalization of a knowledge resource center for knowledge transfer and private sector engagement; (ii) technical training on innovative technical, governance, financing, and climate risk planning solutions; (iii) emergency management and business continuity planning for multi-hazard risks, including risks from non-natural hazards; and (iv) interagency coordination and institutional strengthening.

Component 4: Program management and implementation support

32. This component will help the Government establish and operationalize the umbrella National Urban Flood Resilience Program and strengthen the capacity of implementation agencies of this Bank-financed operation. It intends to support the initial day-to-day coordination, management, and implementation of the national program and this Project, while building institutional capacity to sustain investments beyond the project's closure. This component will support: (i) the recruitment of consultants to support the implementation of all project activities; (ii) procurement management, contract supervision, and financial management, including financial and technical audits (which encompass agreed procedures for emergency situations); (iii) environmental and social risk management, including citizen engagement and grievance mechanisms; (iv) monitoring, review, and evaluation of the project, including the establishment and operation of a National Urban Flood Resilience Task Force; (v) coordination activities, knowledge sharing, and project outreach and dissemination activities; and (vi) incremental operating costs, including sub-project offices in participating cities equipped with videoconferencing and meeting facilities.

33. **Project coordination.** A National Technical Working Group (TWG) on urban flood resilience was established at the central level in 2018 and is led by the Ministry of National Development Planning. The TWG has been responsible for providing overall policy and technical guidance, monitoring technical deliverables, and coordinating urban flood resilience investments. To ensure intersectoral and interagency coordination, the committee comprises officials from other ministries and agencies, including MPWH, MoHA, the National Disaster Management Authority, Ministry of Finance, 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.

34. Under the proposed national program, this TWG would report to an existing Steering Committee for Water Resources Management, led by Bappenas with a similar membership to the TWG. At the subnational level, each participating city under the national program will need to establish an Urban Flood Resilience Taskforce to oversee project implementation at the local level, which will include local government representatives from relevant agencies. Task forces at the provincial and city levels will coordinate with the respective implementation teams, provide guidance on flood resilience investment planning and project prioritization, and coordinate with the TWG and Steering Committee.



35. **Project implementation.** The Directorate-General (DG) of Water Resources under MPWH will perform day-to-day monitoring and project coordination as the Central Project Management Unit (CPMU) in coordination with the TWG and subnational implementation teams. In addition, the DG of Regional Development under MoHA and the DG of Water Resources under MPWH would be the Project Management Units (PMUs) at the central level. The Directorate of Water Resources Management Systems and Strategies under the DG of Water Resources is proposed to be responsible (under Sub-Component 1.1, Component 2, and Component 3) for disseminating ministry-wide technical guidance on program implementation to the subnational implementation teams; 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; and monitoring and reporting progress on various subprojects.

36. Since MOHA also plays a key role in administration and coordination of local government development, the DG of Regional Development is proposed to be responsible under Sub-Component 1.2 for supporting and facilitating subnational governments in the finalization of annual and five-year plans and budgets of city governments (including for prioritized urban flood resilience investments), and for supporting associated stakeholder engagement for all project activities. In addition, MOHA will play a significant role in supporting the implementation of flood risk management policies and regulations at the city level.

37. The central-level implementation team will be supported by a Central Program Management Secretariat, which will provide technical and project monitoring support, including capacity building activities. Subnational Program Management Secretariats may be deployed to support project implementation at the provincial and city level.

Legal Operational Policies	Triggered?
Projects on International Waterways OP 7.50	No
Projects in Disputed Areas OP 7.60	No
Summary of Screening of Environmental and Social Risks and Impacts	

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Approved By

Country Director:	Bolormaa Amgaabazar	13-Oct-2020
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