Japanese ODA Loan

Ex-Ante Evaluation

Southeast Asia 1 Division
Southeast Asia and Pacific Department, JICA

1. Name of the Project

Country: The Republic of Indonesia (Indonesia)
Project: Infrastructure Reconstruction Sector Loan (IRSL) in Central Sulawesi
Loan Agreement: January 9, 2020

2. Background and Necessity of the Project

(1) Current State and Issues in the Disaster Risk Reduction Sector in Indonesia

On September 28, 2018, an earthquake registering a magnitude of 7.5 on the Richter scale occurred with a point 80 km north of Palu City, the capital of Central Sulawesi Province, as its epicenter. Mainly due to the effects of landslides in inland areas, which were caused by liquefaction, and tsunami in coastal areas, this earthquake caused tremendous damage, 2,657 people have died, 172,635 affected, 667 missing, and some 100,000 houses destroyed (according to an announcement by the Governor of Central Sulawesi on January 8). The National Development Planning Agency (BAPPENAS) took leadership in investigating the damage caused and working out recovery and reconstruction plans, and such plans were completed on December 31, 2018. After the formulation of these plans, related ministries and agencies, local governments, and other organizations, including the Ministry of Public Works and Housing (MPWH), worked to develop a specific reconstruction action plan in line with such plans and implement projects. The Government of the Republic of Indonesia, meanwhile, reckons that some 22 trillion rupiah (approximately 176 billion yen) of funding for post-earthquake infrastructure recovery and reconstruction will be needed (as of November 22, 2018). In addition to this, considerable expenses are incurred for reconstruction from natural disasters such as the Lombok Island earthquake and Sunda Strait tsunami that occurred before and after the recent earthquake. The policy of the government is thus to utilize donors' funds for the recent earthquake as it seems insufficient to address this situation with domestic funds alone.

In October 2018, at the request of the Government of the Republic of Indonesia for cooperation, the Government of Japan dispatched a survey team of JICA for the emergency assistance and collection of information on the damage. Subsequently, by revising the contract for the Information Gathering and Confirmation Survey in the Disaster Risk Reduction Sector (October 2017 to February 2019), an ongoing project to gather and confirm basic information, it helped BAPPENAS to draw up a basic reconstruction plan. Furthermore, the government is carrying out the Project to Help Formulate and Implement a Reconstruction Plan in Central Sulawesi (December 2018 to November 2021) ("Reconstruction Planning

Support Project"), a project for development planning survey-type technical cooperation to support related ministries and agencies, local governments, and other organizations, including MPWH, in mapping out and carrying out specific action plans for reconstruction. These measures have been taken in an uninterrupted way. During this process, the Government of Japan introduced to the Indonesian counterpart a concept of "Build Back Better" (namely the BBB concept, which represents the development of disaster-resistant and more resilient communities to prepare for the next disaster in the post-disaster reconstruction phase) based on the Sendai Framework for Disaster Risk Reduction 2015-2030, adopted at the Third U.N. World Conference on Disaster Risk Reduction (in Sendai City in March 2015) as well as the Sendai Cooperation Initiative for Disaster Risk Reduction, announced by the Government of Japan. The Indonesian side is adopting the concept in its policy.

Under these circumstances, plans call for a basic infrastructure reconstruction concept to be worked out in accordance with the Reconstruction Planning Support Project in the future, and in order to realize the BBB concept, it is expected that it will be necessary to build new infrastructure to enhance disaster risk reduction capabilities as well as reconstruct the damaged infrastructure. In addition, restoring and reconstructing the infrastructure to develop disaster-resistant, resilient communities through united efforts from planning to implementation are sought.

(2) Japan's and JICA's Policy and Operations in the Disaster Risk Reduction Sector

The Government of the Republic of Indonesia's Medium-Term National Development Plan (2015-2019) states that in the disaster risk reduction sector, in order to achieve economic independence by mobilizing strategic sectors in the national economy, the government should ensure the permanence of natural resources and the living environment as well as proper disaster management. Following the global trends in disaster risk reduction as exemplified by the U.N. World Conference on Disaster Risk Reduction, Indonesia sees the focus of disaster risk reduction shift from response to disasters when they occur to prevention, and there is a growing need to establish a comprehensive disaster risk reduction system.

This Project is consistent with the development policy of the Government of the Republic of Indonesia and the cooperation policy of Japan, and by reconstructing the damaged infrastructure in affected areas, it aims to contribute to early recovery and reconstruction of such areas' economy and society. The necessity of JICA supporting this Project is high because it is anticipated to contribute to SDG 9 (Build resilient infrastructure) and SDG 11 (Make cities and communities inclusive, safe, resilient, and sustainable).

(3) Other Donors' Activity

In response to the earthquake, the World Bank (WB) and the Asian Development Bank (ADB) each announced an aid fund of one billion dollars in October 2018. ADB's Board of Directors approved emergency financial assistance worth 500 million dollars on November 20, 2018 and approved 300-million-dollar infrastructure recovery support funding for MPWH and the Ministry of Transportation on June 26, 2019 in parallel with this Project. In addition, it provided three million dollars' worth of technical cooperation in infrastructure design. WB's

Board of Directors approved 150 million dollars' worth of reconstruction support for MPWH in the sectors of public facilities, roads, and water distribution on June 19, 2019. This Project will be carried out in coordination and cooperation with what the above donors offered to support.

3. Project Description

(1) Project Objective

The objective of this Project is to reconstruct the infrastructure damaged by the earthquake and construct new infrastructure in Central Sulawesi based on the BBB concept in an effort to develop disaster-resistant, resilient communities, thus contributing to restoring and developing the region's economy and foundations of people's livelihood.

(2) Project Site/Target Area

Palu City, Donggala Regency, and Sigi Regency in the Central Sulawesi Province

(3) Project Components

a) Overview of the Entire Project Plan

This Project will be implemented under the sector loan. Based on the BBB concept, it is necessary to devise countermeasures that take the results of analyses of disaster risks (earthquakes, tsunami, and liquefaction) into consideration; more urgently needed infrastructures are chosen as sub-projects, and higher priority is given to their implementation. Specifically, the Project is divided into three components so that they respectively correspond to projects supervised by the three directorates general of MPWH, its executing agency: (1) roads, bridges, and coastal dykes, (2) irrigation, river improvement, and countermeasures against liquefaction, and (3) public facilities, etc. In order to ensure early completion, the Project consists of two parts: Package 1, which utilizes designs created by the Reconstruction Planning Support Project, and Package 2, in which designs are created through consulting services provided in the Project. Each Package includes sub-projects related to Components (1), (2), and (3).

Based on the list of candidates for sub-projects created by the Reconstruction Planning Support Project and agreed to by the Indonesian side, sub-projects will be selected in accordance with the implementation plans worked out by the executing agency for the respective sub-projects after the loan agreement is signed.

b) Civil Engineering Work

The components listed below are expected.

Component (1): reconstruction and improvement of existing roads and bridges, construction of new roads and bridges, construction of new coastal dykes, etc.

Component (2): reconstruction and improvement of existing irrigation facilities, river improvement, boring for countermeasures against underground water, countermeasures against earth and sand, etc.

Component (3): Reconstruction of existing public facilities, etc.

c) Consulting services

Basic and detailed designs, bidding assistance, supervision of construction work, support for environmental and social consideration, etc.

(4) Estimated Project Cost

32,173 million yen (including the Japanese ODA loan: 27,970 million yen)

(5) Schedule

Package 1: January 2020 to March 2022 (27 months)

Package 2: April 2021 to September 2023 (30 months)

The completion of all sub-projects covered by the Project is considered as the completion of the Project.

(6) Project Implementation Structure

1) Borrower: The Government of the Republic of Indonesia
2) Guarantor: none
3) Executing Agency: The executing agency is the Directorate General of Highway (DGH) at the Ministry of Public Works and Housing, and DGH will supervise the overall management of the Project and Component 1. The Ministry's Directorate General of Water Resources (DGWR) and Directorate General of Human Settlement (DGHS) will be responsible for Component 2 and Component 3, respectively.
4) Operation and Maintenance System: Project Management Units (PMU) established under the directorates general and Project Implementation Units (PIU) set up at regional offices under PMUs

(7) Collaboration with Other Donors

1) Japanese Donors' Activity

Three types of experts: Comprehensive Disaster Risk Reduction Policy Advisors (September 2017 to March 2020), Comprehensive Water Resource Management Policy Advisors (September 2016 to June 2021), and Road Policy Advisors (July 2017 to September 2021), who are currently providing technical support mainly in post-earthquake reconstruction planning, plan to provide assistance in the implementation phase, too, based on examples and experiences in Japan. Based on the results of disaster risk assessments conducted in, and hazard maps and spacing plans worked out in, the above-mentioned Information Gathering and Confirmation Survey in the Disaster Risk Reduction Sector (October 2017 to February 2019) and the Project to Help Formulate and Implement a Reconstruction Plan in Central Sulawesi (December 2018 to November 2021), undertakings that fit the basic infrastructure reconstruction concept will be organized and chosen as sub-projects under the Project. In the Central Sulawesi Palu Bridge No. 4 Reconstruction Plan (grant agreement: June 2019; grant amount: 2.5 billion yen), a grant aid project, the Palu Bridge No. 4, roads, banks, and other structures--Central Sulawesi's key infrastructure facilities--will be reconstructed and improved. This Project will help reconstruct the infrastructure other than the grant aid project and build new infrastructure to enhance the province's disaster risk reduction capabilities, thus spreading the BBB concept.

2) Other Donors' Activity

Based on the Government of the Republic of Indonesia's intentions, roles will be divided between this Project and the recovery and reconstruction support projects carried out by WB and ADB taking factors such as the nature of infrastructure built by, and the sectors covered by, the projects into consideration.

(8) Environmental and Social Consideration, Cross-Sectional Matters, and Gender Category

1) Environmental and Social Consideration

① Category: B

② Reason for Categorization: Under the JICA Guidelines for Environmental and Social Considerations (promulgated in April 2010), in view of the characteristics of the Project and its sector as well as those of the region involved, it is judged that the adverse effects of the Project on the environment are not serious.

③ Environmental Permit: Under Indonesian laws, reports on environmental impact assessments related to the Project need to be compiled according to the scale and characteristics of sub-projects for approval by the Environmental Management Bureau of Central Sulawesi. Plans call for steps for obtaining environmental permission and authorization to be taken according to the Environmental and Social Management Framework (ESMF) for the Project.

④ Anti-Pollution Measures: Each sub-project will consider anti-pollution measures in line with ESMF, and plans call for the effects of dust, muddy water, soil runoff, noise, and other nuisances generated during construction work to be reduced by taking measures such as putting up temporary fences, spraying water, and installing settling tanks. Waste management plans, including sorting out and recycling waste and controlling hazardous waste separately, will be worked out and implemented.

⑤ Natural Environment: The project's target area does not fall under national parks and other areas that are easily affected or their vicinities, and it is assumed that the undesirable effects of the Project on the natural environment can be minimized.

⑥ Social Environment: Land acquisition and resident relocation are expected when the sub-projects are carried out under the Project, but land acquisition and resident relocation plans will be formulated and implemented in accordance with the resident relocation policy based on the country's relevant laws and the JICA Guidelines for Environmental and Social Considerations. In the planning phase of each sub-project, consultations with residents are planned to be held.

⑦ Other/Monitoring: In the Project, plans call for the executing agency, constructors, and other parties concerned to monitor air and water quality, noise, and so forth according to the environmental impact assessment reports compiled in line with ESMF. The progress in land acquisition and resident relocation in each sub-project will be monitored by the executing agency. The sub-projects will not

include any matters of Category A.

2) Cross-Sectional Matters

① Measures to Mitigate Climate Change: Not applicable

② Measures for Infectious Diseases, Including AIDS/HIV

The Project requires that countermeasures against AIDS/HIV should be included in the general conditions of the standard bidding documents, and that constructors should take AIDS/HIV prevention measures for workers they employ for the Project and, if necessary, residents in the neighborhood.

③ Participatory Development: The sub-projects plan activities involving residents which contribute to creating a keener awareness of disaster risk reduction among them

④ Consideration for Persons with Disabilities: The sub-projects plan to give consideration to incorporating barrier-free design when designing and building infrastructure for recovery and reconstruction.

3) Gender Category: [Gender Project] GI (S) (gender activity integration project)

<Details of Activity/Reason for Categorization> As a result of consultations with the executing agency, participation by women will be encouraged, and their opinions collected, through focus-group discussions at residents' meetings, and these efforts will be reflected on the Project. Therefore, the Project is classified into gender activity integration projects.

(9) Other Important Issues: Nothing in particular

4. Targeted Outcomes

(1) Qualitative Effects

1) Performance Indicators (Operation and Effect Indicators)

Indicator	Baseline (2020)	Target (2024) 【2 years later project completion】
Component (1)		
- Roads and Bridges		
Annual average daily traffic (cars/day)	To be set when sub-projects are chosen	
Time saving (Time)	To be set when sub-projects are chosen	
- Integrated Road and Tsunami Mitigation Measure		
Incidence of activities affecting coastal area (km^2)	To be set when sub-projects are chosen	
Existence of early warning mechanisms (unit)	To be set when sub-projects are chosen	
Component (2)		
- Irrigation		
Yield of paddy (ton/ha/year)	To be set when sub-projects are chosen	
Irrigated area (ha)	To be set when sub-projects	

	are chosen	
Cropping intensity (%)	To be set when sub-projects are chosen	
- Liquefaction Prevention		
River Flow Capacity (m^3/s)	To be set when sub-projects are chosen	
Frequency of flood (times/year)	To be set when sub-projects are chosen	
Flood losses (Rp.)	To be set when sub-projects are chosen	
Inundation area (km^2)	To be set when sub-projects are chosen	
Number of sabo facilities (units)	To be set when sub-projects are chosen	
Volume of Sediment (million m^3)	To be set when sub-projects are chosen	
Component (3)		
Aseismatic strength	To be set when sub-projects are chosen	

2) Impacts

Reduction in the number of persons affected by earthquakes and tsunami in the target area

(2) Quantitative Effects

Recovery of economic activities and sustainable development of a resilient economy and society through enhanced disaster risk reduction capabilities

(3) Internal Rate of Return

Internal rates of return are not calculated because sub-projects have not been identified in advance.

5. External Factors and Risk Control

(1) Prior Conditions: Nothing in particular

(2) External Factors: The Government of the Republic of Indonesia's recovery and reconstruction policy shall not be changed.

6. Lessons Learned from Past Projects

The three lessons learned from the past projects to help recover from natural disasters are that when implementing such projects, it is necessary to (1) set up a progress management committee consisting of related organizations in the target area and hold its meetings periodically, (2) pay attention to sharp price rises as a result of demand for recovery and reconstruction, and (3) give consideration to reconstruction support taking new disaster risks into account.

Based on these lessons, the Project will (1) establish a system to ensure its smooth implementation and monitoring, (2) secure reserve funds and select sub-projects, taking

sharp price rises in materials and personnel expenses into consideration, and (3) consider reconstruction support with future disaster risks in mind based on the Build Back Better (BBB) concept.

7. Results of Evaluation

This Project is consistent with the development tasks and policy of Indonesia as well as the cooperation policy of Japan and JICA and the analyses conducted thereby. By reconstructing the infrastructure damaged by the earthquake in Central Sulawesi based on the BBB concept, it will contribute to building disaster-resistant, resilient communities as well as restoring and developing the region's economy and the foundations of people's livelihood. It is also expected to contribute to SDG 9 (Build resilient infrastructure) and SDG 11 (Make cities and communities inclusive, safe, resilient, and sustainable). For these reasons, the necessity of supporting the implementation of the Project is high.

8. Plan for Future Evaluation

(1) Indicators to Be Used

As mentioned in Section 4 (1) to (2)

(2) Future Evaluation Schedule

Ex-post evaluation is scheduled for three years after project completion.

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