PROGRAM MONITORING AND EVALUATION SYSTEM ASSESSMENT

A. Description of the Monitoring and Evaluation System

1. The program will support the Government of Indonesia in implementing its irrigation improvement program (IIP), 2015–2025, which advances the overarching agenda of food security and rural poverty reduction through increased water delivery.[1] The focus of the Asian Development Bank (ADB) support will be on improving operation and maintenance (O&M), management of the irrigation systems, and water delivery to farmers. The program will also support the government's efforts to bring irrigation systems up to their rated standard. It will be delivered through three outputs: (i) systems and institutional capacity for sustainable irrigated agriculture strengthened, (ii) irrigation O&M and management improved, and (iii) irrigation infrastructure improved. The program monitoring and evaluation (M&E) system assessment was conducted in this context.

2. Each of the government's ministries of finance, public works and housing (MPWH), home affairs (MOHA), agriculture (MOA), and the National Development Planning Agency (BAPPENAS) have M&E systems related to irrigation, including e-monitoring (E-Mon) systems. Evidence regarding institutional and operational arrangements for the M&E of irrigation infrastructure and management is complicated and at times contradictory. M&E reporting is directly related to funding sources. There is redundancy in M&E reporting both horizontally and vertically. At the subnational level, M&E processes and cycles do not appear to be fully institutionalized. Current systems place more emphasis on monitoring than evaluation.

1. Ministry of Public Works and Housing

3. **E-monitoring system.** The MPWH E-Mon system is used for both procurement and contractual implementation, and captures the physical and financial progress of infrastructure projects. All directorates general in public works use this system.

4. **Directorate of Operations and Maintenance.** The Irrigation Sub-Directorate at the Directorate of Operations and Maintenance (DOM) collects irrigation-related data at the district, provincial, and national levels—including on infrastructure and civil works, cropping intensity, O&M, participation of water users associations (WUAs), and the activities of river basin organizations (RBOs) and water resources agencies (WRAs). The DOM monitoring system is comprehensive and detailed, with data on each scheme, but the quality of data is variable since this depends on inputs from each WRA at different levels. The DOM monitoring system is based on the submission of forms. There are several sets of forms, with each form requiring a range of indicators to be filled out. Each year, the process of updating the DOM monitoring system takes up to 4–5 months.

5. **Irrigation asset management information system.** The irrigation asset management information system (IAMIS)—introduced under the Participatory Irrigation Sector Project[2] —is used to inventory and manage the operation and management of assets that are part of the irrigation infrastructure. The current IAMIS is a tabular database and is difficult to use. The IAMIS also provides important information about the crop production and cropping patterns

[1] The Asian Development Bank provided project preparatory technical assistance for the Integrated Participatory Development and Management of Irrigation Project for Western and Eastern Indonesia Phase 1 (TA 8460-INO).

[2] ADB. 2014. *Completion Report: Participatory Irrigation Sector Project in Indonesia.* Manila. (Loans 2064/2065-INO).

commonly used in each irrigation scheme and the availability of water at the main intake. Through the program, the IAMIS software will be upgraded to web-based and geospatial information systems to digitalize the boundaries of each irrigation scheme and to map and inventory irrigation assets.

6. **Evaluation and Quality Management Sub-Directorate.** The Project Evaluation and Quality Management Sub-Directorate monitors problems and/or obstacles that may occur in special government strategic programs.

7. **Inspector general.** The inspector general's role is to supervise and monitor all directorates general in the area of compliance with strategic planning in general. The inspector general conducts regular audits and special audits of financial activity, administration, and performance of projects.

2. Ministry of Home Affairs

8. The MOHA e-monitoring regional development information system (SIPD) monitors regional development data, development achievement, and the contributions of regional governments to funding and institutions. The SIPD database maintains published data for public use, and provides opportunities for feedback on the progress and results of government programs to stakeholders. At the subnational level, informal arrangements include lateral agencies sharing information about irrigation schemes. Stakeholder consultation is also conducted informally. This occurs during the annual needs assessment, prior to cropping seasons, and at the completion of projects.

3. Ministry of Agriculture

9. Following Indonesia's decentralization, the National Statistical Office (BPS), the MOA, and district authorities entered into a cooperation agreement on collecting and managing agricultural data. Village officials and extension workers collect agricultural data on food crops at the sub-district level and sub-district agriculture officer compiles it. The data then flows up through the district and province agriculture offices to the Directorate General of Food Crops, and into the Ministry's Center for Agricultural Data and Information Systems.[3] BPS staff at district and sub-district level provide technical assistance as needed and are kept informed at every level.

10. The BPS has responsibility for conducting agricultural censuses and surveys, while local authorities and agricultural service agencies at district and provincial levels collect administrative data and assist with some surveys. Food crop data are collected monthly and yearly, with extra rounds during the harvest month. Validation and verification of data are conducted by agricultural service agencies and the BPS at district, provincial, and central levels. Overall, cooperation with the BPS and the regular implementation of surveys mean that (i) agricultural data are of generally high quality; (ii) administrative data are produced regularly, relating mainly to planted and harvested areas, agricultural inputs, livestock population and prices, and agricultural infrastructure; and (iii) surveys by the BPS include those on wage

[3] The Center for Agricultural Data and Information Systems is organized into three divisions: (i) Crop Statistics Division (food crops, livestock, horticulture, estate, and plantation crops); (ii) Non-Crop Statistics Division (agricultural infrastructure and facilities, agricultural social and economic data); and (iii) Information Systems Development Division.

structures, agricultural commodities cost structures, consumption, workforce, livestock, yield, and marine fisheries and aquaculture.[4]

4. Financial and Development Supervisory Board

11. The Financial and Development Supervisory Board (BPKP), an agency independent from the executing and implementing agencies, has a decentralized organization structure and its mandate is to verify government financial and development activities. The BPKP has significant experience working with externally funded programs, and is the independent verification agent for the World Bank's Local Government and Decentralization Project, which uses an output-based disbursement-financing approach. The BPKP is the most suitable agency to conduct independent verification of disbursement-linked indicators (DLIs) for the program. Capacity development will be conducted to strengthen the technical capacity of BPKP staff to verify the DLIs. Verification will be conducted on a sampling basis, and the methodology will be reflected in the verification guidelines.

5. Subnational Project Information Flow

12. At the subnational level, data required for performance monitoring of the program (program performance data) will be generated by the following entities: (i) provincial and district level development planning agencies (BAPPEDAs); (ii) river basin organizations; (iii) provincial and district WRAs, and provincial and district agriculture services agencies; (iv) water user associations and farmer groups, which often overlap; and (v) provincial and district level irrigation commissions.

13. BAPPEDA reports are available from MOHA, reports from the RBOs and WRAs flow to the MPWH, and the agriculture services agency reports go to MOA. Information on WUAs, and irrigation commissions is tracked by both BAPPEDA and WRAs, depending on the type of report. Therefore, in principle, all project performance data should be available at the central level at each of the three ministries: the MPWH, MOHA, and MOA. However, some challenges exist, as the next section shows.

B. Assessment of the Monitoring and Evaluation System

14. The M&E systems relevant to the program for carrying out transparent and reliable M&E functions are in varying stages of development. M&E systems and practices appear to be generally technical and used mainly in O&M rather than achievement of results, or a critical analysis of the findings. To manage nationwide integrated databases, the MPWH E-Mon, and MOHA SIPD, M&E staff will need capacity development in both technical and management areas. Provincial and district staff will need capacity building in data collection and validation, use of templates, and entering information into the system. Staff knowledgeable about M&E are needed at subnational levels to ensure that M&E is not seen as a technical exercise, but as an integral part of the management of water resources and irrigation development. Substantial capacity development will be needed to use M&E for medium- to long-term planning and meta-analysis.

[4] Ministry Of Agriculture. 2015. *Agricultural Statistics System In Indonesia*: Center For Agriculture Data and Information Systems. ASEAN Stakeholders Meeting on the Implementation of the Global Strategy to Improve Agricultural and Rural Statistics and the Eighth Meeting of Directors-General of Agricultural Statistics and Information in ASEAN Plus Three Countries. June 2015. http://www.fao.org/asiapacific/events/detail-events/en/c/1213/

15. Data risks for smaller scale infrastructure projects include (i) informal collection procedures, (ii) quality assurance measures at the primary level, (iii) using data for planning or in cyclical processes, and (iv) collection of basic (percentage) information rather than results-based assessments.

16. The central government mandates annual system performance auditing and quarterly reporting. Anecdotal evidence indicated a much wider variation, from weekly to monthly, quarterly, semiannually, and annually. BAPPENAS coordinates M&E between the responsible line ministries to discuss progress, problems, and solutions. A major challenge is determining the M&E information needs of the line ministries. RBOs are linked vertically between the district and central government levels. RBOs collect the most data that the program needs compared with other subnational agencies. They also collect data from the greatest variety of other subnational agencies.

17. The MPWH DOM system is the most suitable to monitor the program's implementation because of the information it captures through its reporting templates from a variety of stakeholders at all levels. The DOM system will be upgraded to a web-based platform and will need to link to the MPWH E-Mon. The MOHA e-monitoring system, the SIPD, is being updated. Regulations are being prepared that would require all local governments to adopt the SIPD. The focus will be on synchronization between planning and budgeting, particularly in relation to the Medium-Term National Development Plan. The use of the SIPD database indicators in the development of subnational government planning documents will ensure consistency nationwide. The SIPD will be aligned with DOM reporting templates for irrigated agriculture.

C. Managing Risks and Improving Capacity

18. Implementation of the program will require capacity-building initiatives and increased technical support. This assessment identifies four areas in government M&E systems that should be strengthened to enhance operational effectiveness and support the program's implementation:

(i) **Upgrade monitoring and evaluation information system.** The MPWH DOM system should be upgraded to a web-based platform. Strengthening the system for M&E includes (a) upgrading the forms to ensure that all indicators (including DLIs) presented in the result frameworks are captured; (b) improving the capacity of RBOs and WRAs to comply with reporting requirements, in accordance with the MPWH regulation n. 12/2015; (c) adopting the IAMIS as the M&E system in the long term, which will mean integrating the DOM system into the IAMIS; and (d) preparing statistical and annual sector performance reports.

(ii) **Increase capacity to strengthen monitoring and evaluation processes and applications.** Conducting capacity development through the program at all government levels in M&E processes, approaches, methodologies, and uses will strengthen understanding of M&E. Targeted M&E support to central, provincial, and district government agencies should be provided, as performance varies significantly across provinces and districts. This will include capacity development assistance in the execution of M&E activities, the analysis of data and findings, and the use of findings to inform project progress and future planning. In addition, the links among data collection, evaluation, planning, and budgeting can be strengthened.

(iii) **Monitoring framework.** The monitoring and evaluation guidelines and processes, roles and responsibilities, and a framework that includes reporting systems need to be updated. These measures will be iterative and take time throughout the program implementation, as the results-based lending modality informs perspectives and approaches, and seeks efficiencies in M&E processes. The MPWH, for example, has agreed to improve the capacity of M&E staff in RBOs and WRAs with regard to reporting requirements and preparing statistical and annual sector performance reports. Capacity development can be conducted through the results-based lending with WUAs, farmer group organizations, district staff, provincial staff, and staff at central government levels.

(iv) **Upgrade and implement the quality assurance system guidelines.** Independent verifiers can confirm accurate data collection and timely reporting. Capacity development should be conducted to strengthen the technical capacity of BPKP staff to verify DLIs. Technical support from sector inspectorates general and/or universities may be explored to ensure transfer of knowledge on technical matters related to the sector (e.g., infrastructure, WUAs). As the IAMIS system will be upgraded, the use of survey templates and photographs as a means to verify physical progress should be increased. The IAMIS can be utilized to track asset management, crop production and cropping patterns, and the availability of water.