

## ECONOMIC AND FINANCIAL ANALYSIS

### A. Background

1. Inadequate infrastructure has hampered inclusive growth and poverty reduction in Indonesia, and it constitutes a significant obstacle to investment in all sectors of the Indonesian economy. Inadequate infrastructure increases the fixed costs of doing business, and lowers the marginal productivity of labor and capital. The enormous infrastructure deficit is one of the key factors behind the low productivity of capital investment in Indonesia. Indonesia's incremental capital-output ratio was 4.7 in 2015,<sup>1</sup> while the incremental capital-output ratios in neighboring countries ranged from 3.0 to 4.0 (a lower incremental capital-output ratio suggests higher productivity of capital investment). The large gap in infrastructure provision is the result of (i) low government infrastructure investment (an average of 3% of gross domestic product [GDP] during 2005–2014), and (ii) underutilization of the capital budget (about 85% in 2005–2014).

### B. Project Overview

2. Within the public sector, the Ministry of Public Works and Housing (MPWH) is one of the main providers of public infrastructure. Delivery of the MPWH's infrastructure programs has been constrained by complex land acquisition processes, weak procurement capacity, inadequate preparation of infrastructure projects, and poor infrastructure planning and delivery systems. With the full implementation of a new land acquisition law in January 2015 and continuous efforts to strengthen procurement capacity, it is now two factors (inadequate preparation of infrastructure projects, and poor infrastructure planning and delivery systems) that critically constrain the MPWH's ability to deliver infrastructure in a timely and quality manner.

3. Inadequate project preparation is largely due to (i) lack of resources to complete the required assessments, surveys, designs, and environmental and land acquisition clearances;<sup>2</sup> and (ii) the low quality of feasibility studies and detailed engineering designs, many of which often need to be redone during implementation. Feasibility studies of infrastructure projects do not always adhere to established guidance or standards, the economic analysis is often weak, and they are not subject to appraisal by an independent government agency prior to project approval for budgeting purposes.<sup>3</sup> Poor infrastructure planning and delivery are mainly due to a focus on infrastructure preservation rather than longer-term planning, inappropriate design standards, project fragmentation as reflected in the prevalence of small and short contracts, poor construction quality, and ineffective maintenance.<sup>4</sup>

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<sup>1</sup> *Livemint*. 2015. Low productivity hampering growth. 16 June.

<http://www.livemint.com/Money/950bbnXP02x6iDTEalxLsO/Low-productivity-hampering-growth.html>

<sup>2</sup> In foreign loan-financed projects, the cost of preparing detailed engineering designs, environmental impact assessments, and land acquisition and resettlement plans in accordance with government requirements is budgeted as part of the projects. This may result in a maximum 1.5-year delay in project start-up after loan effectiveness. In projects financed by the Asian Development Bank, this is a key factor behind the loan extensions that average 2.4 years.

<sup>3</sup> Project appraisal and selection are largely devolved to spending ministries, and there are limited central guidelines and oversight on feasibility studies for infrastructure projects. International Monetary Fund. 2016. *Indonesia: Selected Issues—IMF Country Report No. 16/82*. Washington, DC.

<sup>4</sup> D. Ray and L.Y. Ing. 2016. Survey of Recent Developments: Addressing Indonesia's Infrastructure Deficit. *Bulletin of Indonesian Economic Studies*. 52 (1). pp. 1-25. In 2015, 93% of the contracts signed by the MPWH were single-year contracts, under which construction is often rushed, resulting in substandard quality and weak supervision. The use of multiyear contracts will help address this by better capturing economies of scale, allowing adequate time for effective implementation, and reducing the transaction cost to the government.

4. They also do not have a sufficient level of detail including showing how the project should actually be delivered. This often results in alterations after project approval and delays during project implementation.<sup>5</sup> Part of the reason that feasibility studies are of low quality is that on average, 1% of the project cost in Indonesia is spent on assessing project feasibility and developing detailed engineering designs, compared to international norms of 3% of the project cost.

5. The Accelerating Infrastructure Delivery through Better Engineering Services Project (ESP) will help the MPWH address critical constraints through two outputs: (i) improved quality and timely start-up of infrastructure projects, and (ii) strengthened capacity in public investment management. The ESP is expected to support preparation of 37 infrastructure projects of MPWH; total amount of public investment associated with these projects is estimated at \$6 billion.

6. The ESP is expected to cost \$167.6 million, of which the Asian Development Bank will finance \$148.2 million through a technical assistance loan. The cost of the first output is estimated at \$155.7 million, and the second output is expected to cost \$11.9 million. Hence, the average cost of the infrastructure projects supported under the ESP is approximately \$176 million (\$6 billion divided by 37 projects), and the average cost of project preparation will be 2.6% (\$155.7 divided by \$6 billion). This project preparation cost is higher than the conventional level of the cost of project preparation in Indonesia mentioned in para. 4 above.

### C. Proxy Cost–Benefit Analysis<sup>6</sup>

7. The medium-term government spending fiscal multiplier in Indonesia is low at 0.19 compared to 3.83 in the People’s Republic of China and 1.36 in the Philippines.<sup>7</sup> Indonesia’s short-term government spending fiscal multiplier, which mainly reflects the low-hanging fruit in terms of immediate demand side-effects due to increased government spending, is estimated at 0.76, putting it in line with regional comparators such as the Philippines (0.74) and Bangladesh (0.79). One of the main reasons for Indonesia’s low medium-term government spending fiscal multiplier is the low level of public spending on infrastructure.

8. The ESP’s direct benefits include the \$6 billion in public infrastructure investment the ESP will help deliver.<sup>8</sup> This \$6 billion public investment is expected to add \$3.2 billion to GDP during 2019–2020<sup>9</sup> and \$0.8 billion during 2021–2023,<sup>10</sup> and assuming the same level of

<sup>5</sup> World Bank. Improving the Quality of Infrastructure Spending in Indonesia. Unpublished.

<sup>6</sup> Given its (non-investment) TA nature, the standard cost-benefit analysis is not applicable to the ESP. Also, for simplicity purposes, the prices are assumed constant.

<sup>7</sup> The medium-term government spending fiscal multiplier measures the impact on GDP of an increase in government expenditure by 1% of GDP in year 1. “Medium-term” encompasses the 4-year period that includes the year in which the government capital spending increase happens. G. Ducanes et al. 2006. Macroeconomic Effects of Fiscal Policies: Empirical Evidence from Bangladesh, People’s Republic of China, Indonesia, and Philippines. *Economics and Research Department Working Paper Series*. No. 85. Asian Development Bank: Manila.

<sup>8</sup> The ESP will finance preparation of public investment projects. For the ESP’s expected public investment benefits to be realized, the ESP-prepared projects would have to be financed and implemented in a timely manner.

<sup>9</sup> The \$6 billion investment represents a 0.7% of GDP in 2015 in United States dollar terms. Hence, the ESP’s short-term impact on GDP is the product of (i) 0.7% of the GDP increase in public investment facilitated through the ESP, (ii) 0.76 short-term government spending fiscal multiplier (estimated for 1% of GDP increase in public investments), and (iii) \$6 billion of public investment required for implementation of ESP-supported projects.

<sup>10</sup> The medium-term impact of the ESP on GDP is the product of (i) 0.7% of the GDP increase in public investment facilitated through the ESP, (ii) 0.19 medium-term government spending fiscal multiplier (estimated for 1% of GDP increase in public investments), and (iii) \$6 billion of public investment required for implementation of ESP-supported projects.

efficiency and delivery of all infrastructure investments by 2019. Hence, the total addition to GDP resulting from the public investment designed by ESP and subsequently delivered can be estimated at \$4 billion during 2019–2023.

9. Overall, the ESP can be considered a beneficial operation in economic terms, especially in terms of significantly improving the impact of the public investment on economic growth. The ESP-related benefit–cost ratio (based on facilitated public investment) is high and is estimated at approximately 36.

#### Estimated Benefit–Cost Ratios

Cost (\$ million)	Benefit (\$ million)	Benefit– Cost Ratio
167.6	6,000 (facilitated public investment)	35.8
	4,000 (facilitated addition to GDP)	23.8

GDP = gross domestic product.

Source: ADB estimates.