

Articulation of Evaluation Perspectives and Evaluation Judgments Based on the Five DAC Criteria

Summary of the Study

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The study aimed to draw out lessons and recommendations for the improvement and articulation of current evaluation perspectives and evaluation judgments based on the criteria for evaluating development assistance laid out by the OECD-DAC (Organisation for Economic Co-operation and Development/Development Assistance Committee).

Background of the Study

Taking advantage of the merger between JICA and the Overseas Economic Cooperation Operations of the former Japan Bank for International Cooperation (JBIC) in 2008, JICA has strengthened evaluation systems in the form of the "New JICA Guidelines for Project Evaluation: First Edition" (hereinafter "Guidelines") since FY2009, which should be applied to all the assistance schemes: ODA Loans, Grant Aid, and Technical Cooperation. One of the major changes was the introduction of ex-post evaluations conducted by external evaluators for all those schemes.

In terms of evaluation perspectives based on the criteria, however, there is great variability among evaluators depending on their characteristics. In terms of evaluation judgments, there is less consistency among the schemes based on the evaluation timing. As a result, it has been pointed out that these factors may lead to

discrepancies in evaluation results.

In order to ensure high quality and consistent project evaluations, whether JICA's interpretations of the five criteria fit with the international evaluation standards needs to be examined by reviewing other donors' guidelines and evaluation reports. Furthermore, current evaluation perspectives and evaluation judgments need to be articulated and improved by examining JICA's previous project evaluations, taking into consideration the characteristics of the assistance schemes and timing of the evaluations.

Study Framework and Policy

The study analyzed a total of 70 evaluation reports of JICA's projects, ten each from the following respective reports: Ex-ante and ex-post evaluations (ODA Loans and Grant Aid); and Ex-ante, terminal, and ex-post evaluations (Technical Cooperation). In accordance with the Five DAC Criteria, information was arranged by: 1) The evaluation perspectives used; 2) The evaluation judgments; and 3) The evaluation methodology. Information on the project evaluations of other aid agencies adopting the Five DAC Criteria in their evaluation criteria was also arranged and analyzed by evaluation perspectives and evaluation judgments for each of the DAC criteria. Based on the analysis results, a study committee, comprised of an external expert and personnel from relevant JICA departments, discussed the ways to improve future project evaluations.

Study Results

An analysis of other aid agencies' project evaluations found that JICA has been systematically carrying out a series of project evaluations from ex-ante to ex-post, based on the Five DAC Criteria, and it was shown that there were no discrepancies with international standards.

On the other hand, the analysis of JICA's project evaluations as well as the discussions of the committee revealed that the evaluation perspectives applied to each criterion are wide-ranging. As a result, it was found that some perspectives were not adopted by many evaluators and some of the perspectives were presented in evaluation tables in a stylized phrase. In order to improve this situation, the study proposed to reorganize and integrate the evaluation perspectives set forth in the current Guidelines. The main proposals are as follows:

(1) Relevance

In addition to the following main evaluation perspectives: 1) Development needs; 2) Alignment with the policy of the recipient country; and 3) Alignment with Japan's ODA policy, the project's alignment with international targets and other projects of JICA as well as other donors should be added as evaluation perspectives. This

will promote more strategic project implementations by creating synergy between schemes as the fruit of the aforementioned merger, and by harmonizing aid coordination.

(2) Effectiveness

Effectiveness mainly confirms the level of achievement of the project purpose and anticipated outcomes in accordance with indicators. However, the method of targeting appropriate outcomes and impacts should be elaborated to establish more appropriate targets and indicators to enhance the quality of the project (→see Box on p.43).

(3) Efficiency

While most evaluations compare inputs and outputs, focusing on the difference between planned and actual project period or cost, inputs and outcomes should also be compared. Accordingly, the internal rate of return, an evaluation perspective for effectiveness, should be considered as an evaluation perspective for efficiency as well.

(4) Impact

The level of the overall goal achievement and the level of other

indirect effects that may vary by project tend to be confused with each other. For clarifying these two, perspectives should be broadly categorized into “intended impacts for the overall goal” and “indirect impacts resulting in other effects.” Additionally, indirect impacts resulting in other effects should be further categorized into: 1) Effects on policy and institutions; 2) Economic and social effects in the project area; and 3) Other effects.

(5) Sustainability

The evaluation of this criterion predicts the future continuity of the project’s outcomes; therefore, sustainability evaluations may highly be influenced by the subjective judgment of evaluators. Thus, sustainability should be evaluated based on the evidences analyzed from “the actual situation” and “future prospects.”

The committee also actively discussed the “appropriateness of management,” including process evaluations, as a perspective which is not covered by the Five DAC Criteria. The Five DAC Criteria judge values based on the achievement of objectives at the time of evaluation (=management results). Therefore, the quality of management is not evaluated by the criteria. Appropriateness of management, however, largely influences the project’s outcomes. From this perspective, the committee noted that major management decisions made during the project period should be appropriately recorded to use as lessons learned in other projects.

Moving forward, these recommendations will be shared with the relevant JICA departments. The Guidelines will be elaborated in the future after a trial period of these in practice.

BOX Output/Outcome/Impact and Project/Program Objectives

For the creation of development effects by the implementation of a project, it is considered that there should be the following steps: Inputs; Activities; Outputs; Outcomes; and Impacts. Outputs indicate how inputs have evolved through activities. Outcomes indicate changes that are brought about directly to beneficiaries through the project intervention, while impacts refer to changes that are brought about indirectly to beneficiaries after a certain length of time through the project intervention.

When designing a project, the main agenda should be the identification of the project purpose, i.e., what kind of

changes (outcomes) a project aims to deliver. Furthermore, as the programmatic approach advances, the establishment of linkages between the program purpose (the larger changes [outcomes] brought about to beneficiaries) and the impacts of the projects that make up the program should be a more important agenda in designing a program.

The committee noted that while the level of the target outcomes of the projects and the program would inevitably vary according to their purpose and scale, the ways to understand the outcomes and impacts according to the project and program objectives should be set out.

Economic Impact Assessment of ODA Loans and Grant Aid: Evaluating their Contributions from a Macro-Economic Viewpoint

Research Consultant: Mitsubishi Research Institute, Inc.

Summary of the Study

Summary of the Study

The aim of the study is to numerically assess the impacts that JICA’s past ODA Loan and Grant Aid projects for economic infrastructure development have had on the macro-economies of recipient countries (e.g., boost in GDP).

Study Framework and Policy

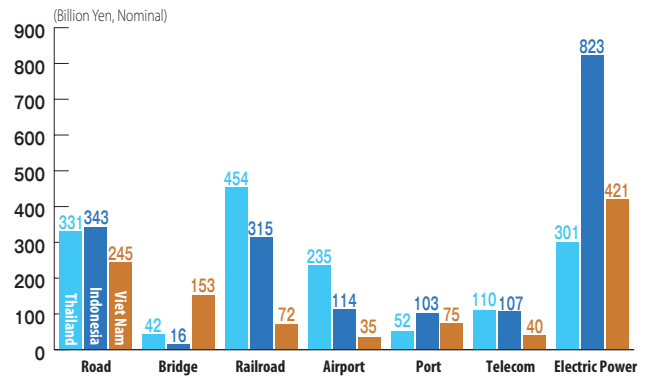
1. The study examines all previous ODA Loan and Grant Aid projects for the following countries and sectors. Total disbursement amounts by country and sector are shown in Figure 1 on p.44. Countries: Thailand, Indonesia, Viet Nam

Sectors: Transport (road, bridge, railroad, airport, port)
Telecom
Electric power (thermal, hydraulic, alternative, transmission line)

2. JICA provides the data that forms the basis of the study. The data will numerically show the outputs of all ODA Loan and Grant Aid projects which were extended to the above countries and sectors as well as the extent of their contribution to the sectors in each country (e.g., road length, amount of cargo handled, passenger number, number of telephone lines, amount of electric power generated, length of transmission lines).

3. An existing economic theoretical model (GTAP)*¹ is identified for the calculation of economic impacts that the above outputs are expected to generate. The model requires preparation of simulation parameters, which enable the calculation of economic impacts by comparing between macroeconomic values calculated for both “with” and “without” Japanese financial assistance.

Figure 1 Cumulative Disbursements of Financial Assistance of Seven Sectors (As of 2009)



Study Results

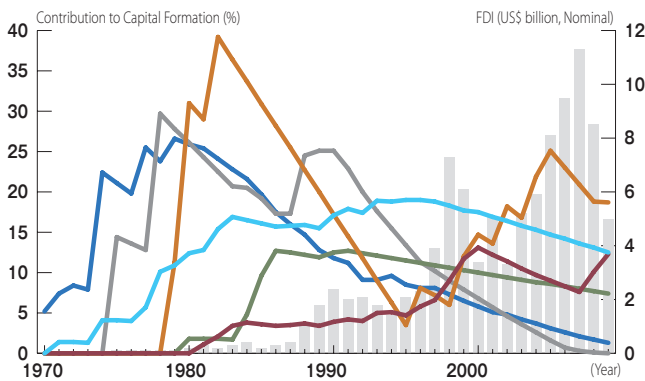
1. Changes in JICA’s Contribution Ratio to Countries’ Capital Formations Across Time (Figure 2)

Figure 2 shows JICA’s contribution ratio of capital formations by country, year, and sector in monetary terms (depreciation is also taken into account). According to the figure, infrastructures were developed in a majority of the sectors in the 1980s in Thailand and Indonesia. In Viet Nam, on the other hand, infrastructure development has been underway since the mid-1990s when

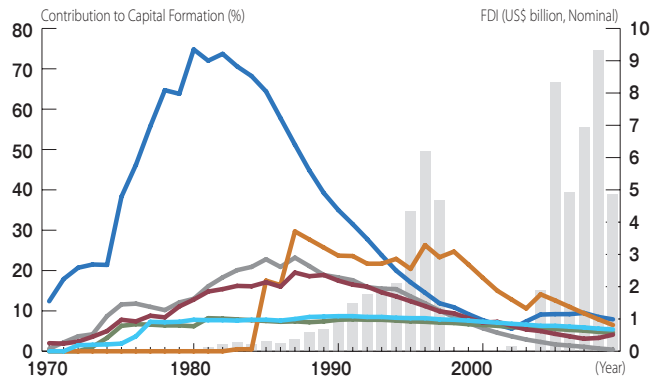
Japan’s ODA to the country formally started, and what happened in Thailand and Indonesia in the 1980s is taking place precisely now. In Viet Nam, the contribution to the electric power sector and airport sector has also been pronounced compared with other sectors. The figure indicates that the infrastructure development of JICA was implemented ahead of the boost in foreign direct investment (FDI) in all three countries.

Figure 2 Changes in JICA’s Contribution Ratio to Capital Formations Across Time and FDI Inflows

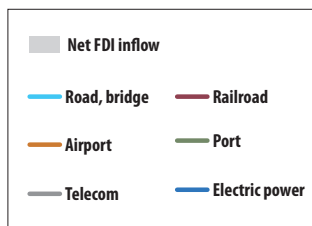
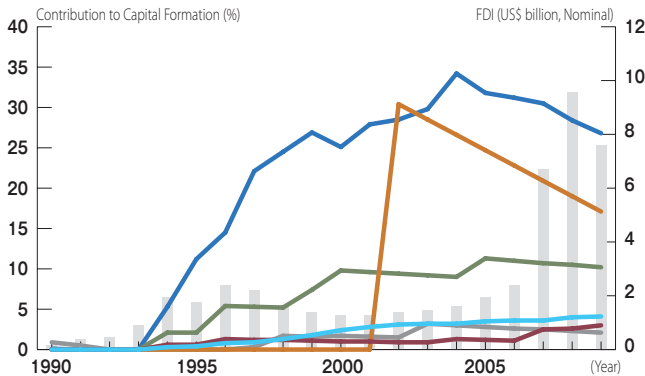
Thailand



Indonesia



Viet Nam



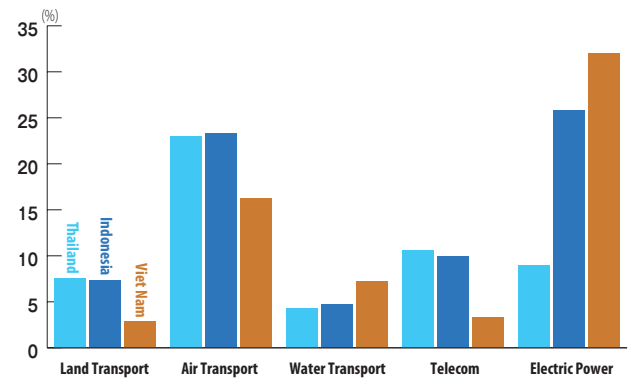
(Source) FDI: APO (Asian Productivity Organization) Productivity Database 2010

*1 Global Trade Analysis Project model. A Computable General Equilibrium (CGE) model that was developed for the analysis of trade liberalization across the world. It has many features, including enhanced production functions, multiple output variables, international reliability, and comprehensive data on all regions of the world.

2. Productivity Increases by Infrastructure Development (Figure 3)

Figure 3 shows to what extent JICA's contribution ratio to capital formations in Figure 2 boosted productivity in each sector. According to the figure, infrastructure development boosted productivity in each sector in all countries by 3 to 30%. The productivity gains in the airport and electric power sectors were high in all three countries.

Figure 3 Productivity Increase by Infrastructure Development (%) (by 2009)

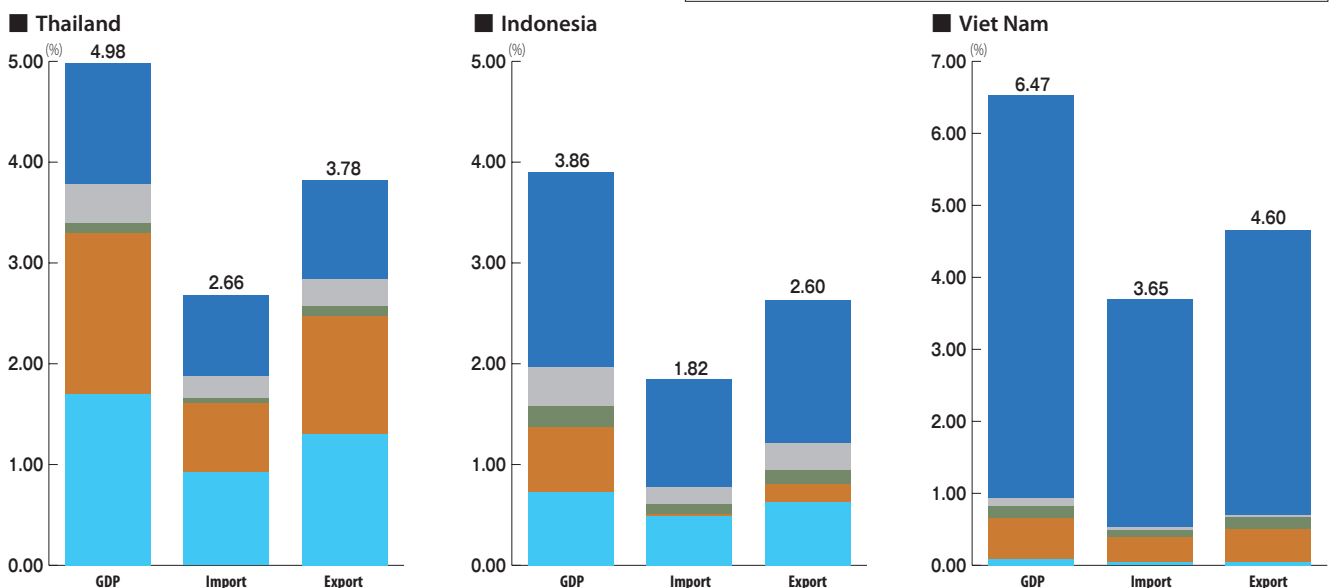


3. GDP Growth Rate by JICA Project (Figure 4)

Figure 4 illustrates, by country, the GDP growth rate by sector, boosted as a result of JICA's project implementation. In Thailand and Indonesia, each sector made comparatively well-balanced

contributions. On the other hand, in Viet Nam, the electric power sector made most of the contributions. This is because as is shown in Figure 2, Viet Nam receives a significant proportion of its financial cooperation in the electric power sector.

Figure 4 GDP Growth Rate by JICA Project (%)



Note: Study Process

- 1) Asset values (capital stock amounts) for the outputs that are deemed to have been generated through economic infrastructure development from past ODA Loans and Grant Aids (e.g., road length, number of telephone lines, amount of electric power generated, length of transmission lines) are calculated using data obtained from Japanese and Thai capital stock statistics.
- 2) The values of JICA's projects and capital stocks are compared by country, year, and sector, and JICA's contribution ratio is estimated in monetary terms (Figure 2).
- 3) Productivity gains of each sector are then calculated by multiplying the production gain elasticity*2 from economic infrastructure development (which is found in existing research*3) to 2) (Figure 3).
- 4) A GTAP model is computed by giving the values in 3) as simulation parameters for final good productivities by industry in each country (current situation: "With Scenario"). Simultaneously, calculations are made assuming hypothetically that no JICA projects were implemented (give minus values as the simulation parameters: "Without Scenario"). From their difference, the economic impact of JICA's projects on the countries is estimated as of 2009 (Figure 4).

*2 +0.2-0.5 depending on the country and sector.
 *3 Zhai (2010) "The Benefits of Regional Infrastructure Investment in Asia: A Quantitative Exploration" ADBI DP223.

Impact Evaluation of the Pasak Irrigation Project

Asia

Thailand

Evaluators: Seiro Ito and Kazunari Tsukada, Institute of Developing Economies, Japan External Trade Organization (IDE-JETRO); Satoshi Ohira, Keio University

Summary of the Evaluation

Background and Summary of the Evaluation

JICA's ex-post evaluations of irrigation projects have tended to focus on indicators such as the increase in the irrigated land area, beneficiary population, or crop yields. On the other hand, rigorous investigations have not necessarily been conducted on how the development or improvement of irrigation facilities ultimately contributed to the improvement of the lives of the beneficiaries. In this light, the impact evaluation was conducted to measure the changes that the construction of tertiary canals, which supply water to each plot, brought about to farmers' incomes and production patterns.

Evaluation Framework and Policy

Rigorous impact evaluations require comparisons between treatment and control groups which share similar characteristics. However, since project areas are selected according to certain criteria in infrastructure projects, the socio-economic conditions of the project area (treatment group) usually differ significantly from those of the non-project area (control group), making rigorous comparisons difficult. Although this is one of the technical difficulties of conducting impact evaluations of infrastructure projects, this evaluation succeeded in making comparisons between groups with similar characteristics by taking advantage of the time lag that was created in the construction of the canals in the project area. Furthermore, by employing a statistical method called the difference in difference method*, this impact evaluation was able to eliminate the effects of other factors and possible biases, and thus, precisely measure the impact of the project.

Analysis Results

The results show that the construction of tertiary canals increased farmers' incomes by approximately 60,000 to 70,000 Bahts (approximately 150,000 to 180,000 yen) during the dry season. On the other hand, the project's impacts on incomes were not confirmed during the wet season. Tertiary canals also increased the probability of cultivation by 20 to 30% in the dry season. These results suggest that the construction of tertiary canals contributed to the increase in farmers' incomes by promoting cultivation in the dry season.

On the other hand, the analysis did not confirm the increase in productivity per land area as is conventionally recognized among the stakeholders. The results show that in the case of this project, the

impact of the construction of tertiary canals on farmers' incomes was not due to improved productivities but increased cultivation in the dry season. It is important to accurately understand the mechanism through which the project generates the final impact (increase in income) for the formulation and implementation of similar projects in the future.

* Difference in Difference (DID): Method of estimating impact by taking two differences, i.e., difference between pre- and post-project and difference between with and without project.

BOX External Validity of the Evaluation Results

Since project impacts can be affected by various factors, the evaluation results measured under a certain condition do not necessarily apply under other conditions (issue of external validity). For example, it cannot be concluded simply from the evaluation results that the construction of tertiary canals will in general have no impact on productivity. While the impact of tertiary canals on productivity was not observed in the Pasak region where water is abundant during the wet season and its proximity to the capital city offers opportunities of non-agricultural activities, a different evaluation result might be obtained under different conditions, such as farming areas with

little rainfall.

It is important to understand not only whether or not the project generated impacts but also various factors surrounding the project and the impact-generation mechanism in order to accurately understand the evaluation results and promote project improvements. Furthermore, it is essential to accumulate evaluation results for similar projects and develop evidence that will allow for further generalization (high external validity).

Impact Evaluation of the Third Elementary Education Project

Asia

Philippines

Evaluator: Futoshi Yamauchi, International Food Policy Research Institute (IFPRI)

Summary of the Evaluation

Background and Summary of the Evaluation

The Third Elementary Education Project (TEEP) was implemented in all elementary schools in 23 provinces in the poverty areas of the Philippines, and the objective of the project is to improve the quality of and access to elementary education by providing comprehensive supports, including the construction of school buildings, distribution of textbooks, procurement of equipment and development of instructional materials, instructor training, and improvement of school-based management. The impact evaluation rigorously assessed both the project's short-term impacts (improvement in students' learning achievements) and long-term impacts (students' advancement to higher education after graduating from elementary schools, labor market earnings, etc.).

Evaluation Framework and Policy

Pre- and post-project comparisons and simple with and without project comparisons cannot eliminate the influences of external factors, such as the differences in initial conditions and changes in socio-economic situations, which result in a biased estimate of the project impact. Thus, this evaluation carefully designed a data collection strategy (data was obtained from target provinces and non-target provinces, which share similar socio-economic conditions as target provinces) and an analysis method (difference in difference and propensity score matching* methods). This approach ensured appropriate comparisons by avoiding potential bias, and therefore, allowed for a rigorous estimation of the project impact.

Analysis Results

TEEP contributed to improving the students' learning achievements in the short-term, raising test scores by 8% in math and 6% in all subjects. Furthermore, an impact analysis on TEEP's components found that in particular the construction of classrooms contributed significantly to the increase in test scores. The analysis also confirmed that the distribution of textbooks, instructor training, and the renovation of classrooms generated positive impacts.

The analysis confirmed that TEEP brought about positive impacts to especially women in the long-term. Specifically, the project on average increased the years of schooling completed by 0.34 years, reduced the number of repetitions in high school by 0.14 times, and increased the percentage of college entries by 9%. TEEP also contributed to increasing women's earnings. The internal rate of return (IRR) which was calculated based on the above results exceeds 15%, confirming that the project generated significant benefits.

The results showed that support for elementary education improved learning achievements in the short-term as well as improved women's advancement to higher education and labor market performance in the long-term, which confirmed the importance of investing in the early stage of the education system.

* Propensity Score Matching (PSM): Method of estimating impact by selecting units from a control group with similar characteristics as each unit in the treatment group, and comparing the two groups.



A renovated elementary school building

BOX Making Use of the Evaluation Results

Rigorous impact evaluation is able to not only contribute to an accurate understanding of the project's impacts, but also to provide evidence for designing similar projects. Project plans based on detailed evaluation results enable development impacts to be maximized within a limited budget and personnel.

The results of this evaluation were shared with many education stakeholders at seminars held at the Philippine Department of Education. A senior official from the Department has also indicated that the evaluation results will be drawn upon for future education reform. Indeed, one of the roles of impact evaluation is to feed back the evaluation results into project implementation and, more broadly, into policies.