

## Identification and Analysis of Lessons Learned

### Practical Lessons Learned for Special Economic Zone Development

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#### 1. Process flow and concept of special economic zone development

In response to the increasing need to support special economic zone (SEZ) development in developing countries, JICA is conducting the Project Research on Support for Special Economic Zone Development, which is planned to be completed in 2018. Based on the interim findings of this on-going study, this section summarizes the lessons learned for special economic zone development\*\*1.

##### (1) Definition of special economic zone development

A special economic zone is generally defined as an “area which is subject to special legal and administrative systems (preferential treatment) for economic development.” Among the many types of special economic zones, such as manufacturing, logistics, financing, and tourism, this analysis focuses on industrial park-type SEZs, which are the main target of JICA’s assistance.

##### (2) Background and process of special economic zone development

The objective of special economic zones is to build a special investment environment to attract enterprises and therefore attain goals that are difficult to achieve in a conventional environment such as the employment creation, the export promotion, and the new industrial agglomerations (industrial diversification and advancement).

Because no standard method has been established for special economic zone development, this Project Research reviews related examples in the past and proposes a development process as shown in the figure below. It should be noted that institutional and organizational development is required before implementing development projects (Process 5: construction).

Special economic zones are generally evaluated 7 to 10 years after the opening to determine whether they are successful and attractive to companies.

#### 2. Points to consider in developing new special economic zones

This study reviews ex-post evaluations completed before the end of FY2017 such as Sihanoukville Port Special Economic Zone (SPSEZ) in Cambodia, Thang Long Industrial Park (TLIP) in Viet Nam, and Seethawaka Industrial Park in Sri Lanka. As there have been only a few evaluated cases, this study also refers to on-going projects including Thilawa Special Economic Zone (Thilawa SEZ) in Myanmar and industrial parks in Ethiopia.

Below are points to consider based on the analysis of the development process.

##### Consideration 1. Commitment of government leaders

Special economic zones have their own objectives according to their types and seek to achieve the objectives mainly by attracting foreign companies. In order to lure businesses, special economic zones need to offer attractive incentives (e.g. tax incentives and procedural deregulations). In order to make this a reality, government leaders need to demonstrate their commitment and show their strong leadership over financial and other regulatory authorities. The



Process of special economic zone development

concrete commitment of government leaders can also make the special economic zone more appealing to foreign companies.

In general, various difficulties and problems arise in the implementation phase of special economic zone development projects, such as poor infrastructure, delays in permits and approvals, volatile business environments, and environmental and social impacts. Solutions to these problems often require inter-ministerial collaboration. Moreover, the realization of these solutions requires the leadership and problem-solving actions by government leaders.

The Thilawa SEZ in Myanmar has so far succeeded. Although it is still under development, it has already been attracting many enterprises. Investors have highly valued the leadership of Myanmar government leaders in delegating authorization to the Thilawa SEZ Management Committee, building a one-stop service to ensure immediate issuance of permits and approvals, and quickly solving problems at a high level. Meanwhile, industrial parks in Ethiopia also attracted many companies soon after the construction had been completed because they were effectively designed to meet the needs of private companies under the leadership of the Prime Minister, his advisor (a minister), and the Commissioner of the Investment Commission.

On the other hand, in Cambodia, the SPSEZ has not housed many companies yet although the affiliated administrative department has been authorized in accordance with the Law on the Special Economic Zones. It will be important, going forward, to devise countermeasures and seek a commitment from government leaders to put the remedial measures into action.

##### Consideration 2. Market research and selection of locations

After setting development goals (Process 1), the target companies and location of the special economic zone are to be selected based on the results of market research, including interviews with potential target industries and companies and analysis of the comparative advantages of the country in the chosen industries.

There may be significant differences between locations in terms of land ownership, infrastructure development costs, labor force, and accessibility.

In order to select the location of the special economic zone, conditions which the potential target industries require should be considered.

In the case of manufacturing-oriented special economic zones, many companies, especially Japanese firms, would prefer locations near the national capital or metropolitan cities in terms of the availability of skilled laborers and technical workers, market accessibility, the standards of living of locally-stationed foreign employees, and the capacity of suppliers (industrial agglomeration). Some would prefer locations near national borders (e.g. Cambodia and Laos) to secure access to markets in neighboring countries and logistics hubs near seaports.

The SPSEZ faces difficulties in attracting enterprises because it has not fully taken advantage of its location near a port or properly addressed the market needs. In order to differentiate itself from other special economic zones in the vicinity, the SPSEZ needs to explore opportunities to take advantage of its location near a seaport by inviting logistics and processing firms in addition to manufacturing enterprises that it targeted at the beginning.

##### Consideration 3. One-stop service

Companies that wish to operate in a special economic zone need to obtain various permits and approvals, such as investment approvals, business registration, visas and work permits, import and export licenses, foreign currency transfer permits, construction approvals, and environment clearances, which are usually obtained from different ministries and agencies. It may be difficult to get these permits and approvals, especially in developing countries where administrative procedures are not systematic. This may cause a huge obstacle to attracting private enterprises.

One-stop service makes it easier to attract investors by developing an integrated system where a single administration in charge of special economic zones carries out all necessary procedures. The form of this service varies widely, ranging from authorizing an agency to issue permits and approvals on behalf of related ministries to only allowing an agency to receive and transfer applications to relevant ministries. Streamlined procedures and the strong authority of the administration in charge of special economic zones will be highly advantageous for companies moving into special economic zones.

The Thilawa SEZ is highly valued by investors for its transparency, speediness, and time efficiency achieved by establishing an integrated system where the Thilawa SEZ Management Committee carries out all administrative procedures from receiving and screening applications to issuing permits and approvals. As the Management Committee requires personnel with wide expertise to give various permits and approvals, JICA has been providing technical support to assist it in standardizing the procedures and developing human resources.

##### Consideration 4. Development projects:

###### land rental rates and infrastructure standards

When selecting a special economic zone to operate in, companies compare overall operating costs, taking into account incentives, labor costs, and rental rates (land and rental factories). As the decision relies mostly on the rental rates, they should be competitive with those of domestic and neighboring special economic zones and industrial parks. The rates should be set not based on actual facility development costs but rather according to market competitive rates. Needless to say, special

economic zones should provide good on-site infrastructure (e.g. utilities and roads) without losing their competitive edge due to the increased costs by seeking to obtain its high quality. For example, it is considered that the SPSEZ has faced difficulties in attracting enterprises partly because its rates set based on the construction costs are less competitive than those offered by other existing special economic zones. On the other hand, in Ethiopia, the costs of special economic zone development were partially borne by the government, which regarded the costs as necessary for industrialization. As a result, the Ethiopian industrial parks could increase their price competitiveness and attract many companies.

##### Consideration 5. Operations: participation of private entities

The above discusses how to make special economic zones more attractive. Whether or not they can attract foreign direct investment depends on various factors. It is essential to adopt a strategic marketing approach by taking into account their specific needs such as perspectives of business strategies of individual companies, global business trends in target industries, the structure of supply chain, and comparison with rivals. It is also noted that investors expect not only one-stop administrative services but also troubleshooting services after start-up, such as assistance in securing labor force, accounting and overseas money transfer services.

As it is not easy for government officers to learn to provide these services, it is advised to involve private entities in the operation of special economic zones. For example, the ex-post evaluation of the TLIP operated by a Japanese private company indicated that the smooth implementation of the project was attributed to the strong commitment by core companies. Meanwhile, the Thilawa SEZ, which is operated jointly by the public and private sectors, has attracted an increasing number of companies under the initiative of a consortium of Japanese firms. In the case of the SPSEZ, however, the Port Authority of Sihanoukville, the operating agency, seems to have difficulties in conducting marketing targeted to potential clients and providing aftercare services due to the lack of experience in the operation of special economic zones.



The One Stop Service Center in the Thilawa Special Economic Zone

\*\*1 All descriptions are based on the Project Research unless particularly noted.

A Cross-sectoral Analysis of Lessons Learned for Financial Intermediary Loans Jiro Tsunoda, Senior Advisor

### Points to Consider in Project Formulation and Perspectives to Draw Lessons

Financial Intermediary Loans are implemented through the financial institutions of the recipient country to support projects aimed at specific objectives such as the promotion of small and medium-scale enterprises in manufacturing, agriculture and other specified industries. These loans are known as “Two Step Loans (TSL)” because the funds pass through two or more financial institutions before the end-beneficiaries receive the funds. In this section, a senior advisor in the financial sector conducts a cross-sectoral analysis of lessons learned from five TSL projects assessed in ex-post evaluations in FY2016 to develop points to consider in formulating projects and perspectives to draw lessons.

#### 1. Characteristics of Two Step Loans

The TSL scheme has an advantage of promoting medium- and long-term investment for private sector development in developing countries. By using financial institutions in borrowing countries as intermediaries, this scheme can also help strengthen the capacity of the banking sector and facilitate financial sector development. The TSL scheme has the following aims.

##### Aims of TSL

(1) Policy guidance	Promote investment in priority policy areas.
(2) Private sector development	Promote private sector-driven economic growth in target policy areas.
(3) Procurement of medium- and long-term funds	Use government borrowings to secure investment funds in target policy areas, bridge the gap between investment and savings, and maintain medium- and long-term investment.
(4) Enhancement of financial intermediary functions	Enhance medium- and long-term development financial flows led by the banking sector.
(5) Enhancement of credit appraisal capacity	Create opportunities for financial institutions in borrowing countries to finance businesses thereby strengthening the medium- and long-term credit appraisal and management capacity of the banking sector.
(6) Enhancement of MIS* capacity of borrowing institutions	Strengthen the governance and capacity of borrowing government agencies or financial institutions to manage the MIS and external borrowings.

\*Management Information System

##### Points to consider in project formulation

As the TSL scheme has various aims, the following analysis is required in the project planning phase.

##### (1) Identification and analysis of investment needs in target policy areas

- Information should be collected on the numbers and geographical distributions of end users, investment trends, availability of business development services\*, and needs for funding in target policy areas.
- The government agencies in charge of target policy areas should have clear strategies and policies. The target businesses should be considered worthwhile to invest in to promote economic growth, and the outcome indicators should be measurable.
- When target policy areas have already been financed by private financial institutions, regardless of whether based on government policy or not, attention should be paid to prevent TSL from reducing (crowding out) the existing private investment.

##### (2) Governance standards of financial institutions in borrowing countries

- The banking sector needs to have established a mechanism for financial transactions and achieved a certain level of governance to serve as a financial intermediary.

##### (3) Credit appraisal capacity of financial institutions in borrowing countries

- Financial institutions should have sufficient appraisal information on end borrowers and target policy areas as well as capacity to appraise the creditworthiness of borrowers (especially in the case of medium- and long-term financing). It is desirable that supplementary measures have been taken, such as guarantee systems and partial government guarantees.

##### (4) Financial management capacity of borrowing institutions

- Borrowing institutions need to have established and developed capacity to manage an MIS to use repayments as revolving facilities.

##### (5) Necessity of technical support

- If the analysis of the above-mentioned points (2) to (4) indicates that technical assistance should be provided to borrowers or borrowing financial institutions, it is critical to consider how to secure financial resources for experts or consultants, what kind of technical assistance to provide, and how to build a capable team to cultivate and maintain a sense of ownership in counterparts.

\* Business development service is a general term for support (except for financial support) to assist micro, small, and medium enterprises in entering the market, raising their productivity, and honing their competitive edge. The support includes training, consulting services (e.g. advice and diagnosis), marketing support, information provision, legal and accounting services, technology development and dissemination, and promotion of subcontracting and other business networks.

#### 2. A cross-sectoral analysis of lessons learned

The lessons learned from the five projects through external evaluations, including good practices, are related to the above-mentioned points to consider in project formulation (e.g. importance of technical assistance). Their relationships are shown in the table below.

Project	Lessons learned	Relevant points to consider in project formulation under the TSL
India “New and Renewable Energy Support Project”	Consideration at the early stage of project preparation for support to strengthen project monitoring capability of an executing agency.	(2) (5)
India “Micro, Small and Medium Enterprises Energy Saving Project (Phase 2)”	Detailed analysis of the environment within which a project is to be realized and examination of technical assistance, in the preparatory stage of energy conservation finance projects.	(1) (5)
Egypt “Micro Enterprise Assistance Project”	The importance of understanding the lending structure of executing agencies and intermediaries and of the needs assessment of the intermediaries and end-borrowers for non-financial services (marketing, account management, startup business plan, investment training, etc.).	(1) (3)
Viet Nam “Energy Efficiency and Renewable Energy Promoting Project”	Review and revisions of the terms and conditions of sub-loan as required.	(2) (4)
Viet Nam “Small and Medium-sized Enterprises Finance Project (III)”	Review of the terms and conditions of revolving funds.	(1) (4)

These lessons indicate that a full understanding of business environments and the financial sector in the project planning stage is indispensable for smooth achievement of TSL outputs (e.g. expanding investment in target areas). This reaffirms the importance of collecting information on the foreign debt policy of the borrowing government and the management of government debts and consulting with a wide range of stakeholders on the development financing (especially, medium- and long-term financing) and intermediary functions, credit appraisal capacity and financing attitudes of banks as well as the efforts of financial management authorities to improve the intermediary functions of financial institutions. It is also noted that this process should include analysis of key points in TSL project design, such as identifying obstacles to businesses, building a roadmap toward solutions, and considering involving experts or consultants to provide technical support for capacity building.

In addition to these lessons learned for project design, other essential lessons can be learned from the ex-post evaluation of TSL projects to improve access to medium- and long-term finance for end users. For example, it is indicated that if end users have limited access to funding despite the great financial needs in the private sector in target policy areas, this can be attributed to the financing functions of banks, such as (1) their financing attitudes arising from the asymmetry of information on end users and (2) possibility of placing more emphasis on financial integrity than on financial intermediary functions. Moreover, the perspective of sustainability reveals another point to consider: debt management capabilities/systems and the policies/strategies of the borrowing government behind the performance of revolving funds.



An energy-saving printing machine funded by Micro, Small and Medium Enterprises Energy Saving Project (Phase 2) (India)



A hydroelectric generation project site funded by Energy Efficiency and Renewable Energy Promoting Project (Viet Nam)

## Efforts to Improve Evaluation Methodology

### JICA-WB-ADB Joint Case Study

#### Achievements and Future Challenges in the Water and Sanitation Sector in Sri Lanka

The Evaluation Department of JICA conducted a joint case study with the Independent Evaluation Group of the World Bank (WB) and the Independent Evaluation Department of the Asian Development Bank (ADB) from 2016 to 2017 to review their support over the previous 10 years in the water and sanitation sector in Sri Lanka.

This study consisted of three phases: (1) review of literature and operational documents; (2) field survey; and (3) report drafting. The report was finalized in July 2017, upon approval from all the three organizations. This study was not aimed at evaluating each project for ratings but at reviewing the efforts over the last 10 years to examine outcomes and lessons learned and analyze future issues. In order to compare the improvements made by JICA, WB, and ADB projects in the sector, this study used WB's analytical method for qualitative and quantitative analysis. After the report was completed, a feedback seminar was held in Sri Lanka in October 2017 to share the contents of the report with major stakeholders and discuss issues to be addressed in the sector in the future.

The results of the study revealed the following points. As leading donors in the sector, JICA, WB, and ADB had implemented projects worth 3.3 billion USD in total over the decade since 2007. Although there was no official mechanism for donor coordination, government coordination and informal information sharing among donors on a practical level prevented

overlapping of target areas and projects and facilitated the division of roles among the three development partners. While JICA focused on metropolitan urban water supply, ADB on provincial urban water supply and WB on rural water supply. In the water sector, 23 out of the 25 districts in Sri Lanka, except for Gampaha and Galle Districts, had been supported by at least one of the three donors. Thus, support from the three development partners was distributed in a geographically balanced manner to contribute to improving the water sector across the country.

In the rural water supply sector, ADB and JICA carried out projects by using/improving the community-based maintenance model built by WB.

Sri Lanka's water sector developed according to its economic development level. In 2016, 96% of the total population had access to improved water sources.\*<sup>1</sup> This was the highest percentage in South Asia, even coming close to matching higher middle income countries such as Thailand and Malaysia. On the other hand, the tap water coverage remained low at 48%. There was also a need to improve water supply service in rural areas, especially in terms of water quality and availability (e.g. facility operating hours and affordable prices). In the sanitation sector, the overall rate of access to sanitation facilities was high, but many problems remained unsolved, such as regional disparities in the installation of facilities and the adequacy of treatment.

Based on these analysis results, the report suggested that going forward, the following priorities and urgent issues should be addressed:

- Undertake regulatory reforms, including appropriate charging, in the water and sanitation sector and provide support to geographical areas and social groups without access to clean water
- Further disseminate the community-based operation and maintenance model for small-scale rural water supply facilities and strengthen its sustainability
- Expand off-site sewage treatment areas and improve the operation of on-site sewage treatment facilities such as septic tanks in the urban sanitation sector
- Improve information management systems and databases to promote the use of constructed water supply and sanitation facilities to provide services that meet the actual needs of end users
- Strengthen capacity to coordinate other sectors related to water and sanitation (e.g. public health and urban development) to achieve the integrated management of water resources and improve the sanitary environment.

This study not only conducted a quantitative analysis of each donor's project outcomes and their impacts but also tried to give a comparative analysis of the donors. However, because different organizations used different indicators and there were not sufficient examples, the comparative analysis did not provide effective results. Based on this lesson learned, it was suggested that the Government of Sri Lanka and its development

partners should establish a common set of indicators in the future to develop an effective roadmap to achieve the SDG indicators.\*<sup>2</sup>

In the sanitary sector, facing various problems to be resolved, a sector-specific development master plan was completed in June 2016, with support of JICA. It is therefore expected that development projects will be carried out toward the comprehensive achievement of the SDGs while ensuring smooth inter-sectoral and inter-organizational coordination based on the lessons learned from this study.

In contrast with other donors emphasizing the independence of the evaluation departments, JICA's Evaluation Department evaluates projects in collaboration with operational departments and overseas offices. This collaborative relationship made a positive impact in some phases of the review process. For example, this cooperative relation enabled the JICA Evaluation Department to hold a feedback seminar in Sri Lanka to involve local stakeholders and international development partners in the discussion for the future based on the recommendations of the report. This seminar seems to have provided a valuable opportunity to promote learning from review.

\*<sup>1</sup> Access to improved water sources is one of the targets of the Millennium Development Goals.

\*<sup>2</sup> Referring to the indicators used to measure the progress of the Sustainable Development Goals (SDGs) advocated by the United Nations.

### Building Evaluation Methodology for Private Sector Investment Finance

JICA's Private Sector Investment Finance (PSIF) is a scheme to provide loans and investments to private sector enterprises that make a positive impact on social and economic development in developing regions. This financial support can enable businesses to operate in developing regions where private financing is limited. New PSIF projects have started one after another since the full resumption of the scheme was decided by a ministerial meeting on the export of packaged infrastructure systems on October 16, 2012, after the establishment of the new JICA as a sole ODA agency. As these projects will enter the ex-post evaluation phase, JICA's Evaluation Department has begun considering how to evaluate PSIF projects. This study also includes comparison and analysis of evaluation methods for private sector investment projects by multilateral development banks (MDBs) because the evaluation needs to take into consideration the characteristics of private sector financing and investment which are different from those of development assistance to public sector entities in developing countries.

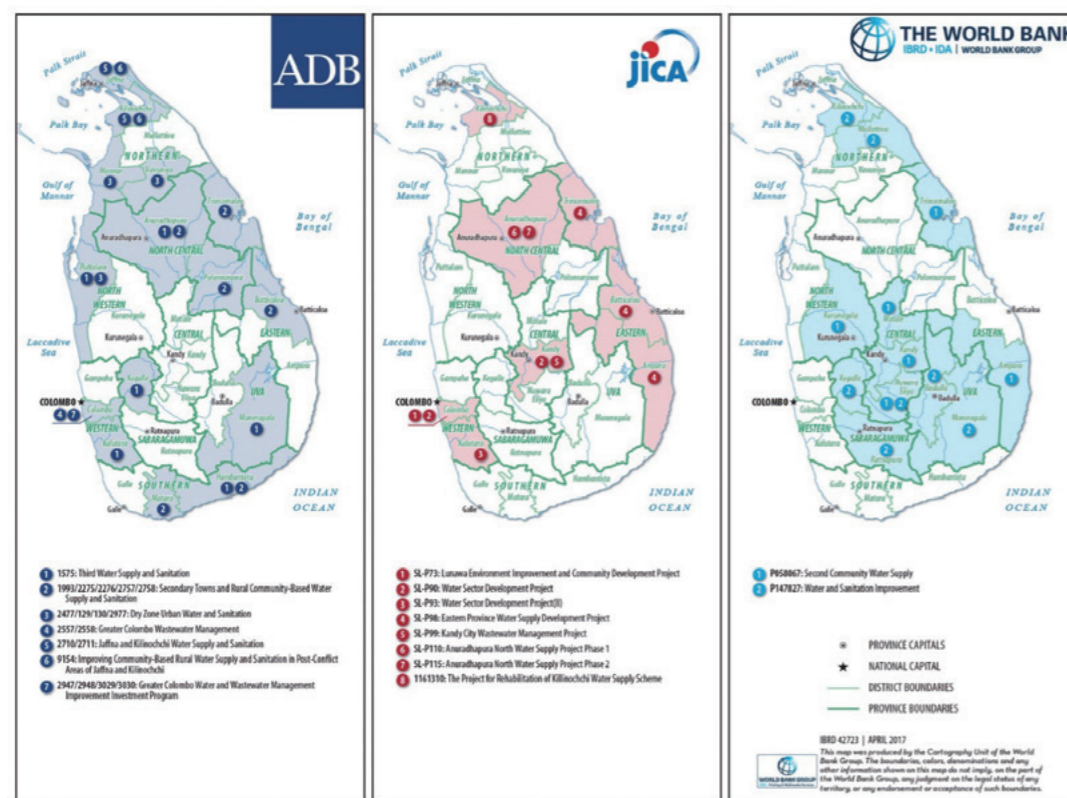
Based on these analysis results as well as the existing evaluation framework, JICA continues to develop evaluation methodology.

#### Evaluation of private sector investment projects by multilateral development banks

The International Finance Corporation (IFC), the European Bank for Reconstruction and Development (EBRD), the Asian Development Bank (ADB), and other MDBs generally evaluate their individual projects in two steps: (1) self-evaluation by operational departments and (2) validation of the self-evaluation by independent evaluation departments. Each institution has established its own evaluation methodology reflecting its operational characteristics while following the Good Practice Standards (GPSs) of the Evaluation Cooperation Group (ECG)\*<sup>1</sup> in terms of evaluation timing and criteria. The IFC evaluate sample projects selected from those that have reached early operating maturity (EOM) defined according to the type of investment, while the ADB and the EBRD evaluate all such projects. The evaluation criteria are comprised of development outcome, investment profitability, MDB work quality, and additionality (financial and non-financial value added by the participation of MDBs). The development outcome is assessed based on (1) private-sector business performance (assessment of the achievement of business objectives, profitability, and prospects for

growth), (2) economic sustainability (qualitative and quantitative analysis of costs and benefits of investees and their stakeholders including customers, suppliers, and competitors), (3) private sector development (IFC and ADB) or transition to a market economy and progress in privatization (EBRD), and (4) environmental and social impacts. The assessment of private-sector business performance is characterized by its emphasis on differences between benchmark (market expectations) and actual performance, while assessing the achievement of the predefined target values. The disclosure of information (evaluation results) is carefully managed as it includes data that must be kept confidential for business reasons. The evaluation of environmental and social impacts assesses compliance with safeguard standards and analyzes actual environmental and social impacts.

\*<sup>1</sup> The Evaluation Cooperation Group (ECG) was established with participation of major MDBs in 1996 to harmonize evaluation methodology. The ECG members have developed and implemented Good Practice Standards (GPSs) to promote the harmonization of performance indicators and evaluation criteria.



Source: "Toward Sustainable Water and Sanitation Services in Sri Lanka" The World Bank (2017).

## Trial Implementation of Ex-post Evaluations of Science and Technology Research Partnership for Sustainable Development (SATREPS) Project and Review of its Evaluation Method

Science and Technology Research Partnership for Sustainable Development (SATREPS) is an international joint research initiative started in 2008 to discover new knowledge that will provide solutions to global issues and apply the outcomes to the future benefit of society (transfer the research results to society) through technical cooperation between research institutions in Japan and developing countries to address the social needs of developing countries. In FY2016, the first four projects went through external evaluations, and those results indicated that the projects had achieved relatively high performance as follows.

Country	Project Title	Overall Rating
Thailand	Integrated Study Project on Hydro-Meteorological Prediction and Adaptation to Climate Change in Thailand (IMPAC-T)	A
Indonesia	Wild Fire and Carbon Management in Peat-forest in Indonesia	B
Zambia	Establishment of Rapid Diagnostic Tools for Tuberculosis and Trypanosomiasis and Screening of Candidate Compounds for Trypanosomiasis	B
Tuvalu	Project for Eco-technological management of Tuvalu against sea level rise	D

Moreover, JICA Evaluation Department reviewed the results of these trial evaluations and consulted with operational departments, as well as Japan Science and Technology Agency (JST), to coordinate perspectives for ex-post evaluations of SATREPS projects, as summarized below.

### 1. Demarcation of roles between relevant agencies according to their respective evaluation policies

JICA's ex-post evaluation aims to measure achievements and determine evaluation ratings by using logic models such as a project design matrix (PDM) agreed among JICA and its implementation partners. In the case of SATREPS projects, as "Research Evaluation" will be conducted by JST and Japan Agency for Medical Research and Development (AMED), and their evaluation criteria, perspectives and timing are different from JICA's project evaluation. Therefore, JICA agreed to entrust "Research Evaluation" of SATREPS projects to JST and AMED.

### 2. Confirming a common understanding of "Utilization of Research Outcome"

During the course of the ex-post evaluation, evaluators realized that the interpretation of "Utilization of Research Outcome" are various among the stakeholders of the Project. Therefore, evaluators had to redefine the roadmap toward "Utilization of Research Outcome", through examining target levels for project activities, outputs, objectives, and overall goals. It will be important to identify a common understanding of "Utilization of Research Outcome" among project team members before starting evaluation.

### 3. Reviewing perspectives for the evaluation of SATREPS projects in the Five DAC Evaluation Criteria

Among the Five DAC Evaluation Criteria, the following four criteria (except for efficiency) were reviewed to redefine necessary perspectives for the evaluation of SATREPS projects.

#### [Relevance]

It is essential to confirm whether the time axis of the research is aligned with the time axis of the recipient government needs. This should be examined through the analysis of "development needs." Moreover, if the project shall be conducted in collaboration with other donors or schemes, the components of the collaboration during and after the project should be examined through the analysis of "Appropriateness of Project Planning or Approaches."

#### [Effectiveness]

Some of the projects launched shortly after the SATREPS scheme was introduced, and they were implemented without a PDM or set indicators.

Their actual effectiveness should be evaluated by referring to the judgement of measuring achievements in the terminal evaluation.

#### [Impact]

The sustainability of project impacts should be analyzed from the following five perspectives: (1) utilization of research outcome; (2) capacity building and training of researchers; (3) continuity of relevant research; (4) implementation of new research derived from project outcome; and (5) operation and maintenance of provided research equipment.

Moreover, the impacts of projects whose overall goals have been set but not clearly defined with indicators, should be evaluated based on the definition agreed on and shared by the project team members through the terminal evaluation. If no overall goal has been set, the evaluation of overall goal attainment may be omitted from the sub-rating of impact, but the potential impacts identified at the time of the terminal evaluation should be analyzed in terms of impacts of the research, and the evaluation results should be summarized for reference.

#### [Sustainability]

The political, institutional/organizational, technical and financial sustainability of each project should be evaluated from the above-mentioned five perspectives in the evaluation of impacts, as well as in terms of (6) financial capacity to continue relevant research including research funding from other organizations. In particular, the efforts to apply research outcomes to the benefit of society should be evaluated through the analysis of (1) "utilization of research outcome".

### 4. Introducing the perspective of additionality

The additionality of each project should be stipulated through the ex-post evaluation to determine the additional effects which JICA supported through the SATREPS scheme (e.g. what additional values would be brought by the participation of JICA to the research project; what additional values the SATREPS can bring; and how likely the SATREPS research projects can contribute to solving the global issues), and the results should be described in as much detail as possible separately from the evaluation results based on the Five DAC Evaluation Criteria. Although this does not need to be included in the ratings, it should be summarized in each evaluation report for reference.

With all these in mind, JICA will proceed with full scale ex-post evaluations of SATREPS projects.

## Evaluations of Projects in Fragile States

JICA operates in conflict-affected countries and areas (hereinafter, "fragile states"). In these cases, many difficulties arise in the ex-post evaluation process. For example, evaluators can hardly enter the target country or area due to the deteriorating security situation after project termination, and beneficiaries were often displaced by conflicts. In order to facilitate evidence-based evaluation in such a restricted situation, JICA reviewed ex-post evaluations conducted in Afghanistan, one of the fragile states, between 2015 and 2017 to draw lessons and identify points to consider in remote evaluation in vulnerable and other inaccessible countries and regions. The results of this review are outlined below.

### 1. Evaluated projects

	Country	Scheme	Project title
①	Afghanistan	Technical Cooperation	Inter-Communal Rural Development Project (ex-post evaluation in FY 2015)
②	Afghanistan	Grant Aid	The Project for Construction of Basic Education Facilities in Afghanistan (ex-post evaluation in FY 2015)
③	Afghanistan	Technical Cooperation	JICA Support Programme for Reintegration and Community Development in Kandahar (ex-post evaluation in FY 2016)
④	Afghanistan	Technical Cooperation	Strengthening of Teacher Education Program, Strengthening of Teacher Education Program Phase 2 (ex-post evaluation in FY 2016)

### 2. Difficulties and countermeasures in external ex-post evaluations in fragile states

#### (1) Strengthen communication with local evaluation assistants

Local evaluation assistants who conducted field studies based on instructions from a remote location played an important role in the evaluations in Afghanistan. Their understanding of JICA's evaluation criteria and method is the key to enhancing the quality of evaluation. In the above-listed evaluations, evaluators did not visit Afghanistan but discussed details with local assistants face to face in India.

**Countermeasures:** Take sufficient time to discuss details with local evaluation assistants in a third country during the ex-post evaluation process. Provide indirect support to ensure smooth implementation, such as maintaining networks and identifying skilled surveyors in the country where the evaluation is carried out.

#### (2) Secure support from the recipient government

In Afghanistan, there was a need to obtain support from high-ranked government officials, such as Vice Minister, to secure the safety of surveyors and the cooperation of local agencies. It was, however, difficult for local evaluation assistants to make appointments with those officials. Moreover, it was reaffirmed that evaluation in such a fragile states requires wider and closer support from JICA's overseas office than usual, mainly for the following two reasons: (1) JICA national staff at overseas office who knows what happened in the project implementation process can provide valuable information; and (2) they can also enhance the safety of local evaluation assistants during field surveys.

**Countermeasures:** Review and improve the support system of JICA overseas offices to provide information necessary for evaluation.

#### (3) Follow-up of project results without accurate maps

The above-mentioned projects ① and ③ included community development to construct small-scale infrastructure, such as roads and water supply facilities, on a pilot basis, while the project ② supported construction of several schools. Their ex-post evaluations tried to assess these infrastructure facilities but found it difficult to confirm the scope of the small-scale infrastructure projects because only simple maps were available. Some facilities could not even be located due to the drastic changes in the surroundings and the changes in school names after project termination.

**Countermeasures:** These difficulties were unpredictable in the project implementation phase. Given the advancement of technology, it is advisable for future infrastructure development projects to maintain geographic information system (GIS) data, including pictures with GPS data, in the project planning and implementation phases.

# Process Analysis

JICA has been trying to find appropriate ways to revisit and deepen analysis on the process through which project effects are produced, under the technical guidance of the Advisory Panel on Enhancement of Ex-post Evaluation\*1.

This year, a trial-based “ex-post process analysis\*2” was carried out on a project in Kenya, as shown in the table below, to refine the methodology for future application. This ex-post analysis focused on the project implementation process to confirm how the project had (or had not) produced outcomes as planned/intended. Another trial-based process analysis is currently performed on a project in Thailand by using the case study method of the Global Delivery Initiative (GDI)\*3 led by the World Bank.

In December 2017, JICA held a seminar for development consulting companies to present past findings including lessons learned from the process analysis of the Delhi Mass Rapid Transport System Project in India and Strengthening Management for Health in Nyanza Province in Kenya. The seminar was attended by more than 100 people, who actively engaged in discussion aimed at improving the implementation and management of projects.

Below is a detailed description of the ex-post process analysis of Strengthening Management for Health in Nyanza Province in Kenya.

## Target projects for FY2017

	Kenya Strengthening Management for Health in Nyanza Province	Thailand Project on Strengthening of Multi- Disciplinary Teams for Protection of Trafficked Persons in Thailand
Scheme	Technical Cooperation	Technical Cooperation
Sector	Health	Gender and Development
Cooperation period	July 2009 to June 2013	March 2009 to March 2014



A debriefing session on process analysis

\*1 The Advisory Panel on Enhancement of Ex-post Evaluation, comprised of external experts, was established in FY2016 to track and analyze in greater depth the process of how a project produces effects, in addition to assessing the project results themselves, and develop new methodologies and improve systems to maintain and enhance the quality of internal evaluations.  
 \*2 Although “ex-post process analysis” is based on a concept of “process evaluation” of “program evaluation”, which evaluates activities and operations of on-going projects, it is different in some respects, such as taking an ex-post perspective and providing feedback not for the implementation of the analyzed projects but for the formulation and implementation of succeeding and/or similar projects.  
 \*3 The GDI is a knowledge platform for the international development community. It is an initiative led by the World Bank and participated by the United Nations Development Programme and other multilateral and bilateral donors as well as development research institutions to share the results of systematic analyses focusing on what works, as well as why and how. To be more specific, this initiative aims to classify challenges when implementing development projects (“delivery challenges”), systemize the knowledge required to address such challenges and share it alongside information on personal networks that can help solve them so that development practitioners can access useful knowledge and experts on a timely basis to improve their project implementation.

## Case Study A Verification of the Process from Strengthening Health Administration Capacity to Improving Health Service Quality under the Decentralized System in Kenya

“Ex-post process analysis” was carried out on the Technical Cooperation Project for Strengthening Management for Health in Nyanza Province in Kenya (July 2009 – June 2013). Based on the results of the ex-post evaluation simultaneously performed from the perspective of Five DAC Criteria, this ex-post process analysis confirmed which project activities and approaches had resulted in specific effects and what factors had led to the results by placing analytical focus on the project implementation process.

Many of the JICA projects aimed at strengthening a health system selectively enhance specific components of the health system, such as personnel, information, service delivery, and technology (equipment/pharmaceuticals). However, based on prospects for political change toward decentralization, this project took a system thinking approach that sees “the problems in a system that is structured by interrelated components and structural solutions to these individual components of the problems would enhance the whole system” and explored solutions from different angles. This approach was unique in considering the organization and individuals (health management teams and team members) that play a key role in the management of the health system as “change agents,” focusing on changing their behavior from passive followers of centralized authorities to active advocates who take

initiative in strengthening and developing the whole health system, and strengthening their core capacities (leadership and governance capacities) to solve problems.

Although the ex-post evaluation based on the Five DAC Criteria had difficulties in verifying the effects of the project in the target area due to the rezoning of administrative districts as a result of decentralization, it was confirmed that the health management team members targeted by the project contributed to improving the work environment and the quality of health services in the teams/workplace they were newly assigned to after the realignment by using the knowledge, skills, and core capacities they had acquired through the project.

Based on these results from the ex-post evaluation, the ex-post process analysis built a hypothesis on factors affecting the results and examined and analyzed the project implementation process.

The results of the analysis concluded that the process of this project was broken down into four stages, (1) visioning, (2) empowerment, (3) servant leadership development\*4, and (4) ownership cultivation, and found them as contributing factors for sustaining the effects of the project despite the drastic change in the political system from the beginning of the project to the time of ex-post evaluation. The details of each stage are described in the table on the right.

\*4 It refers to leadership established by providing support and services to other people to gain their trust and induce their active cooperation.

### (1) Visioning

At the start-up stage, the project motivated provincial and district health management team members to shake off conventional ideas and passive obedience (unlearning) and clarify a vision of what they really should do (visioning). The reason for this approach was the passive attitudes of provincial and district health management team members induced by the centralized control structure and the

support from various development partners. At the beginning of the project, health management team members followed top-down instructions, or otherwise they would not do anything against their conventional ideas. Recognizing their passive attitudes and conventional ideas as a problem, the project worked to change their attitudes through dialogue sessions at the early stage so that they could act independently in a decentralized system.

### (2) Empowerment

This project repeatedly gave health management team members a message that “you can do it.” In order to develop an “I can do it” feeling, the project also took an approach that would stimulate their demands. For example, the project provided IT training to them but purposefully refused their request to provide them computers. This

aimed to stimulate their demands by placing them in a situation where they had IT skills but no computers. As a result, they got several computers by their own efforts. Thus, this project took an approach that could help counterparts build a sense of self accomplishment by purposefully forcing them into a situation where they had to meet their own needs.

### (3) Servant leadership development

The project organized a five-month training program on core capacities as well as knowledge and skills on the components of the health system. In particular, the training program focused on servant leadership development. For example, health management team members had conventionally supervised health workers in a high-handed manner by picking holes in their work and reproaching them. In contrast, the training program focused on team building to foster servant leadership. As a result, the satisfaction levels of both health management team members and health workers were reported to have risen. Moreover, many improvements were seen in performance on each component of the health system.



A team building session during the project

### (4) Ownership cultivation

Throughout the project process, all possible measures were taken to develop a sense of ownership in the recipient government. As an example of such efforts, the project repeatedly told the recipient government that “the support would not continue forever.” Even when rapid decentralization at the final stage of the project brought up a question of whether the project outcomes could be maintained under the county system to be soon adopted, the project stuck to the principle. Both Japanese and Kenyan sides agreed to develop an exit strategy to maintain the outcomes without support after the project completion, and the project team made a concerted effort to proceed with the strategy. This consistency from the beginning to the end of the project is considered to have cultivated a sense of ownership in the Kenyan side and contributed to sustaining the project effects at the time of the ex-post evaluation.



The ex-post evaluation confirmed that medical documents were neatly organized.

## Sharing and Application of Process Analysis Results: Delhi Mass Rapid Transport System Project in India

In FY2016, a process analysis was carried out on the Delhi Mass Rapid Transport System Project in India, using a project ethnography approach (See JICA Annual Evaluation Report 2016), and then, the information and lessons learned from this case study were shared both inside and outside of JICA.

First, the report of the study, "Breaking Ground: A Narrative on the Making of Delhi Metro," was published online on JICA's "Process Analysis" page. The analysis results were also presented at seminars for internal and external audiences in April, June, and December 2017. Moreover, the report of the case study was printed and presented to the Delhi Metro Rail Corporation (DMRC), an implementing agency of the project. This was also featured by major newspapers in India.

The results of this case study have been utilized for managing new and on-going projects. The information and lessons learned from the study were disseminated from the Evaluation Department to operational departments so that they can apply these findings when formulating new projects in the railroad sector and when responding to problems faced during the project implementation.

This case study was also published on the online library of the Global Delivery Initiative (GDI), which is led by the World Bank and other donors to provide information for solving problems in project implementation processes. As the study is highly valued in terms of providing cross-sectoral lessons beyond the railroad sector and highly applicable insights to development partners, the results of the study are expected to be used more widely beyond the organizational boundaries.



Presentation ceremony of the booklets to DMRC (left: Chief Representative, JICA India Office, right: Managing Director, DMRC)

(Reference)

Process Analysis (JICA website)

[https://www.jica.go.jp/english/our\\_work/evaluation/process.html](https://www.jica.go.jp/english/our_work/evaluation/process.html)

Global Delivery Library: Case Studies (GDI web library)

<http://www.globaldeliveryinitiative.org/library/case-studies/delhi-metro-effective-project-management-indian-public-sector>

## Column

### Egypt-Japan University of Science and Technology: E-JUST

In addition to the above-mentioned studies, a case study was carried out focusing on the organizational capacity development process of implementing agencies in partner countries<sup>5</sup>.

As described below, the Technical Cooperation Project for Egypt-Japan University of Science and Technology (E-JUST)<sup>6</sup> at the specific period was examined in detail as a case study focused on cooperation for organizational capacity development. The process was analyzed from the perspective of problem-solving in public management to determine how and why all or part of the university and JICA personnel had fulfilled their functions and how and why changes (improvements) had been made.

One of the keys to success in the context of development cooperation is how counterpart organizations (project implementing agencies) function. Even if appropriate equipment and training are

provided, sustainability will be limited unless functionalities of the counterpart organizations work well. Therefore, the analysis of their organizational functions can provide insights for future implementation. This design-focused case study included literature research on the establishment of E-JUST and interviews with 16 Egyptian and Japanese key players involved in the establishment and early operation of the project. The results of the interviews and analysis indicated that the monthly teleconference meetings named Strategic TV Conference and attended by Strategic Working Group (SWG) members, including E-JUST President and Vice Presidents and Japanese university faculties, played a pivotal role of organizational and operational coordinator and facilitated agenda setting, consultation (including advice from the SWG), follow-up and actions as a whole.

<sup>5</sup> This case study was conducted as part of the study of "Managing International Cooperation for Organizational Capacity Development" by JICA Research Institute (Michael Barzelay, Professor of Public Management, London School of Economics and Political Science (LSE); Masakatsu Okumoto, Research Fellow, JICA Research Institute; and Hideki Watanabe, Research Fellow, JICA Research Institute (as of September 2017)).

<sup>6</sup> The E-JUST project is currently underway (Phase I: October 2008 – January 2014; Phase II: February 1, 2014 – January 31, 2019). It is a national project jointly implemented by Japan and Egypt to build and run a university of science and technology to provide a Japanese-style laboratory-based education. Moreover, this project is aimed not only at enhancing the quality of academic education and research but also at establishing a new university and developing its organizational capacity.

## Column

### International Discussion on the Five DAC Criteria

With the world changing rapidly, the DAC Network on Development Evaluation (EvalNet) held its 21st meeting in Paris in November 2017 to discuss the Five DAC Criteria which is conventionally used by development organizations to evaluate their projects. Most donor agencies argued to continue to evaluate projects based on the Five DAC Criteria as they were still effective. On the other hand, some development agencies suggested that the analysis and rating methods should be reviewed further from a broader perspective. This issue will be kept under discussion at future meetings.

Moreover, questions were raised on how to harmonize the Five

DAC Criteria with the Sustainable Development Goals (SDGs) adopted by the United Nations and how to incorporate the perspective into their evaluations. EvalNet will go on having discussions involving not only donor countries but also recipient countries (partners) to examine specific examples.



## Column

### Standard Indicator Reference for Project Improvement and its Linkage to the Sustainable Development Goals (SDGs)

Operations evaluation focuses on assessing project effects to improve future projects and make development assistance more effective. JICA has made and updated standard indicators references as one of the tools for these purposes.

○JICA Standard Indicator Reference in Financial Assistance Projects

Standard indicators are organized and categorized into different development issues. Their purpose is to clearly show the "objective"

and "quantitative" effects of financial assistance (Grant Aid and ODA Loan) projects in developing countries. As of March 2018, "JICA Standard Indicator Reference in Financial Assistance Projects" has compiled standard quantitative indicators for nine major sectors. These indicators are organized in accordance with the development objectives chart in thematic guidelines (see Reference below).

### <Reference> Development objective chart

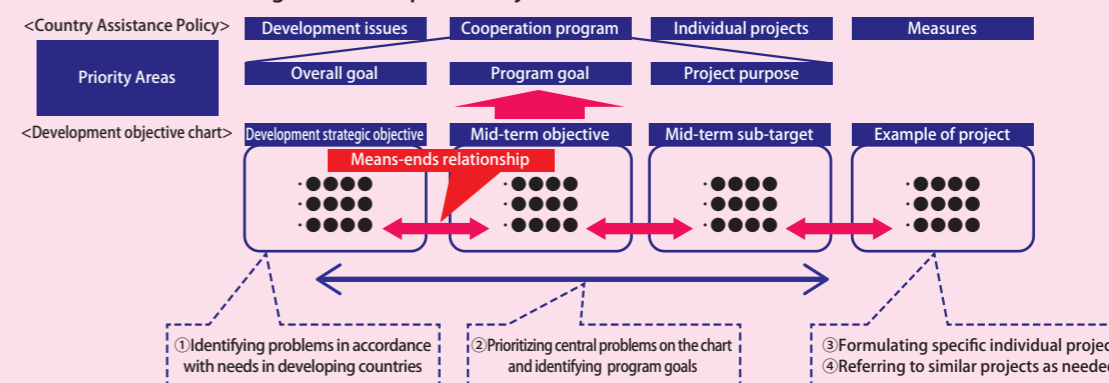
- What is a development objectives chart?

A tool for overviewing a structure of each development issue to show the whole picture and considering a direction and cooperation approach to solve problems.

- How to view the chart

Breakdown each issue into "Development strategic objective," "Mid-term objective" and "Mid-term sub-target" ensuring their rational means-ends relationship and show "Example of project to achieve the sub-target" (approach) accordingly.

Figure: Development objective chart



○JICA Standard Indicator Reference and Typical Lessons Learned in Technical Cooperation Projects

"JICA Standard Indicator Reference and Typical Lessons Learned in Technical Cooperation Projects" is composed of standard indicators as well as typical lessons learned in 22 sectors in accordance with the development objective chart in thematic guidelines. This Reference is under revision. As of March 2018, the revision has been completed for 15 sectors.

○UN-SDGs Global Indicators Added for Reference to JICA Standard Indicator References

In line with recent global trend of Sustainable Development

Goals (SDGs), JICA is updating these Standard Indicator References by adding the SDGs Global Indicators for reference of development practitioners. JICA is also working to translate the References into English for JICA overseas offices' national staff engaged in project formulation, implementing agency staff in partner countries, and other international development partners.

Link: JICA Standard Indicator Reference and Lessons Learned [https://www.jica.go.jp/english/our\\_work/evaluation/index.html](https://www.jica.go.jp/english/our_work/evaluation/index.html)

# JICA's Efforts in Promoting Impact Evaluation

Aiming to further enhance the effectiveness and quality of projects, JICA has been promoting Evidence-Based Practice as well as the implementation of impact evaluation as a major tool for this purpose. Such evaluation is proactively conducted, especially when a project has little evidence for its effects or when a project is to be scaled up. (see p. 5 for the detail of the Impact Evaluation).

With these efforts, impact evaluations are increasing year by year not only in number but also in scope, recently covering a wide variety of sectors, such as waste management and financial services, as well as public-private partnership projects. The efforts in promoting impact evaluation also includes internal and external human resources development and attempts to produce high-quality evidence at a reasonable cost by using existing data.

## Case 1. Off-Grid Solar Power Project in Sub-Saharan Africa

### Assessing the development effects delivered by Private Sector Investment Finance business models

The composition of capital inflows into developing countries changed remarkably over the past 20 years, leading to a reversal in the ratio of public-to-private capital flows. This rapidly changing environment challenged JICA, an official development assistance agency, to take on a new role in private sector financing. In recent years, JICA started supporting feasibility studies for business start-ups that could contribute to attaining Sustainable Development Goals (SDGs) and launched the Private Sector Investment Finance scheme to invest in and finance private-sector projects. JICA is also starting to conduct impact evaluations on these new types of support to assess whether private sector business models can achieve a satisfactory development impact.

JICA's Private Sector Investment Finance scheme has invested in WASSHA Inc., which is engaged in off-grid solar power business in Sub-Saharan Africa. WASSHA installs solar panels at kiosks (retail shops) in villages without electricity and provides LED lamp rental services as well as mobile phone charging services for customers coming to the kiosks. This

rental business is likely to enable Base of the Pyramid consumers with limited purchasing power to access electricity by market mechanism. In general, rural electrification in developing countries is likely to produce development effects, such as longer study hours for children and clean, safe lights for better health. So, how much change has the JICA-invested WASSHA Off-Grid Solar Power Project made to the lives of non-electrified rural communities?

The development impact of the WASSHA project is being evaluated jointly by JICA and WASSHA, using a randomized controlled trial where kiosks to be tied up with WASSHA are randomly divided into two groups, one with solar panels (intervention group) and one without solar panels (control group), to compare their changes after a certain period of time.

Going forward, support for private enterprises operating in developing countries is also expected to conduct impact evaluation, especially using a randomized controlled trial, to maximize the development impact of technologies and business models of the private business.

## Case 2. Project on Life Improvement and Livelihood Enhancement of Conditional Cash Transfer Beneficiaries through Financial Inclusion in Honduras

### Assessing the changes made by a package of "graduation model" training programs to family budget managing, money saving, and livelihoods behaviors

The Technical Cooperation Project on Life Improvement and Livelihood Enhancement of Conditional Cash Transfer Beneficiaries through Financial Inclusion in Honduras, Central America, aimed to develop a model to promote life improvement and livelihood enhancement for conditional cash transfer (CCT) beneficiaries through their financial inclusion and institutionalize the model to spread it across the country. There was, however, little evidence to support the effectiveness of financial inclusion in improving the lives of CCT beneficiaries. Therefore, the project verified the effectiveness of the devised development model using a randomized controlled trial before scaling up the model.

The project developed a package of life improvement and livelihood enhancement training programs based on the "graduation model" developed and promoted by the Consultative Group to Assist the Poor (CGAP) to empower the poorest to make a livelihood. The training package consisted of (1) family budget management training, financial education, and livelihood enhancement training by municipal administrative officers and financial institution staff, (2) coaching (home-visit and group consultations), (3) provision of assets for livelihood activities (agricultural

and cooking materials) from central and local governments, and (4) provision of financial products and services from private financial institutions. In order to assess the development impact of this package, CCT beneficiaries in rural and urban areas in selected five districts across the nation were randomly divided into intervention and control groups to compare their changes in family budget management, money saving, and livelihood behaviors after a certain period of time.

According to the analysis results, the intervention group gained more knowledge on interest rate calculations and financial services and had a stronger tendency to set a savings target than the control group did. The former group was also more likely to keep household accounts, use financial services, and save more money than the latter group was. It is also noted that as a result of the project, women in rural areas in Honduras, where machismo (male dominance) had been widespread, were empowered to negotiate household expenditures as they usually kept household accounts.

Based on these results, it has been decided to scale up the model developed through the project in other districts.

### Column

#### Decision Making Based on Evidence Obtained from Impact Evaluation

The Project for Promotion of Sustainable 3R (Reduce, Reuse, and Recycle) Activities in Maputo, Mozambique, was remarkable in that the technical cooperation project decided its course of action based on the results of an impact evaluation conducted on its pilot project.

In developed countries, there were a lot of practical experience in encouraging residents to separate waste to improve solid waste management and reduce environmental burden. On the other hand, developing countries with many poor people had not found any effective intervention. Therefore, the project experts and their counterparts devised several approaches to popularize the practice of separating valuable waste and validated their effectiveness. More specifically, a pilot project was carried out and evaluated using a randomized controlled trial, which was considered to be the most objective means to verify effectiveness, to choose the most feasible approach from the following three possible interventions: (1) provision of daily necessities to

cooperators; (2) provision of waste separation containers; and (3) home-visit guidance.

The results of the randomized controlled trial indicated that although all the three approaches would be effective in encouraging residents to separate waste, the provision of waste separation containers would be most cost-effective. It was, however, confirmed that even the provision of waste separation containers would be less cost-effective than other recyclable waste collection approaches. It was verified that the separate collection of recyclable waste was not the best idea in the suburbs of Maputo city targeted by the project. Eventually, it was determined to be premature to adopt the separate waste collection system to promote 3R activities in Maputo, and it was decided to put off the planned scale-up activity. This project is a good example of using the impact evaluation results to avoid the risk of scaling up a less effective development approach.

## Case 3. Impact Evaluation based on Existing Data

An impact evaluation usually requires micro data on a certain size of sample (hundreds to thousands). The data collection is money and time consuming. This often makes it difficult to conduct impact evaluations. In order to break free from these restrictions, JICA is working to promote impact evaluation using existing data ("real-world evaluation"). The use of public information, such as existing survey results and satellite images, as well as a wide variety of data JICA has collected through its projects enables it to minimize costs without sacrificing the quality of impact evaluation. JICA has so far conducted two real-world evaluations to analyze important issues that will make a large impact on SDGs.

One of them is the impact evaluation of forest conservation and afforestation projects contributing to attaining the SDGs 13 (Climate Action) and 15 (Life on Land). JICA has provided focused support to protect forests, especially in India, since the 1990s and has so far implemented more than 20 ODA loan projects. Meanwhile, JICA has not quantitatively measured how much contribution these past reforestation projects made to increasing forest coverage in India because it takes years for trees to grow. Therefore, JICA has collected years of land cover data based on satellite imagery as well as topographical, precipitation, temperature and other geographical information system (GIS) data to make a convincing impact evaluation. This analysis has been already presented at conferences and

symposiums held by the Japan Evaluation Society and the South Korean Ministry of Forestry.

Another example is the impact evaluation of urban transport infrastructure projects aligned with the SDGs 9 (Industry, Innovation and Infrastructure) and 11 (sustainable cities and communities). JICA has so far assisted more than 60 cities in formulating transport master plans and conducting feasibility studies, through which it has accumulated a wealth of person trip (PT) data (daily means of transport and travel time of passengers). These existing data have been used to conduct an impact evaluation of the Saigon East-West Highway Construction Project, which continued in Ho Chi Minh, Viet Nam, for more than 10 years. This project enhanced transport capacity in the metropolitan area by constructing an arterial highway traversing the city and an underwater tunnel crossing the Saigon River. The impact evaluation is analyzing the changes made by the project to the traffic volumes and travel time in the metropolitan area by using a massive amount of PT data in 2002 and 2014 (including more than 200,000 trip data, respectively). Moreover, the impact evaluation is examining the geographical spread of economic activities and looking for any sign of negative impact, such as air pollution, by using remote sensing (satellite) data on night lights and particulate matter (PM) 2.5.

## Human Resources Development for Impact Evaluations

Further promotion of impact evaluation requires people able to properly plan, implement, and manage impact evaluations and apply the results to practical cases. In order to develop such human resources, JICA provides capacity building training (Impact Evaluation: Toward Evidence-based Practice (EBP)).

This year, the training course was held for seven days from September 5 to 13 (weekdays only). It was attended by 18 people from development consulting companies, universities, and local administrations, among others. The training curriculum, designed based on relevant international standard textbooks as well as lecturers and training sessions provided by universities and international organizations, covered a wide variety of topics related to impact evaluation designs, statistics, and social survey methods. The curriculum also included practical applications, such as specific

examples and lessons learned from past impact evaluations conducted by JICA. Moreover, it allocated much time to practical exercises and skill verification tests in order to instill the understanding of the lectures and promote applications in actual situations.

The training received high praise and satisfaction from participants, many of whom said that they would like to share the knowledge gained through this training with their colleagues and local counterparts and that they would like to apply the knowledge to their projects. Past participants also reported that they had actually engaged in impact evaluations and applied the knowledge gained through the training to them. The participants of this training are expected to further contribute to the promotion of impact evaluation.

## Working Group Meeting on "Leveraging Project Data to Improve Operations" Jointly Organized by JICA, German GIZ, and the World Bank

A Working Group Meeting of Delivery Challenges in Operations for Development Effectiveness (DeCODE), a learning database built as a pillar of the Global Delivery Initiative (GDI) led by the World Bank to provide a platform for international development partners to create, share, and learn knowledge, was held in Bonn, Germany, from October 25 to 27, 2017. Jointly organized by JICA, the World Bank, and GIZ, the meeting attracted 35 participants, mainly development practitioners, from 17 organizations including the three organizers.

DeCODE aims to help practitioners learn lessons for future projects by enabling them to easily retrieve information on delivery challenges faced in their daily work from the online database of project evaluation results categorized by the GDI taxonomy.

In collaboration with the GDI Secretariat led by the World Bank, JICA has entered 1,172 ex-post evaluation reports into the DeCODE database and found that the GDI taxonomy and JICA knowledge lessons had much in common in project management terms. JICA's

statement on this commonality attracted attention from meeting attendees and generated an active discussion among them. Representatives from other organizations also made presentations on how they used past project data and induced an in-depth discussion. The Working Group Meeting built a shared understanding of the importance of developing and enhancing DeCODE as global public goods.



# Statistical Analysis on External Evaluations

Since FY2014, JICA has been engaging in statistical analysis of external evaluations to grasp the trends in performance of projects and gain insights from the ratings to improve project design and implementation.

## 1. An Overview of the Statistical Analysis

### Background

Since FY2009, JICA has conducted ex-post evaluations based on coherent methodologies and criteria, including the Five OECD-DAC Criteria, for all the three assistance schemes of ODA Loan<sup>\*1</sup>, Grant Aid and Technical Cooperation. As of FY2016, the number of external evaluations in the meantime reached 1,020 (refer to p.8 for the rating criteria, main examination items, and rating flowchart for external evaluation).

### Objectives

This statistical analysis aimed to analyze the past external evaluations quantitatively to understand their trends and gain insights to improve project design and implementation.

### Subject of this statistical analysis

This statistical analysis was conducted on 1,020 external evaluations<sup>\*2</sup>, consisting of evaluations on projects in all three schemes from FY2009 to FY2016<sup>\*3</sup> and those of ODA Loans from FY2003 to FY2008<sup>\*4</sup> (i.e. 653 ODA Loan, 223 Grant Aid and 144 Technical Cooperation projects).

### Method

(1) The analysis of the trend and distribution of external evaluation results (overall ratings and sub-ratings based on the Five DAC Criteria) was conducted on a total of 1,020 projects across the three schemes.

(2) Factors that may influence evaluation results were analyzed quantitatively by converting them to variables. In analyzing what will influence the overall rating of project, a regression model was created.

### Notes

The rating system is a useful tool to assess the performance of development projects and provide hints that helps understand the current situation and ways for improvement. This system is, however, subject to the following constraints: (1) it limits the assessment to the scope of the DAC evaluation Criteria (for example, it does not evaluate aspects like contribution of the donor); (2) it cannot fully adjust the different difficulties the project faced, such as the nature of assistance (e.g. presence of innovations) and project environments (e.g. vulnerability of the recipient country); and (3) it only assesses the results of past activities but does not evaluate the ongoing activities or their future (potential) outputs.

The quantitative approach can only grasp those factors convertible to variables. Therefore, it is necessary for evaluation to also examine qualitative data that cannot be shown in variables taking into consideration of project background and setting. Considering qualitative and quantitative data in a balanced and complement manner and finding out their values by a comprehensive understanding based on the project background and other contexts are important in project evaluation.

<sup>\*1</sup> ODA Loans include Yen Loan and Private Sector Investment Finance, although projects under the latter finance have not yet reached the timing for evaluation. Therefore, ODA Loans referred to in this analysis mean Yen Loans.

<sup>\*2</sup> Two projects evaluated in FY 2016 with their overall rating "N.A." were excluded from this analysis.

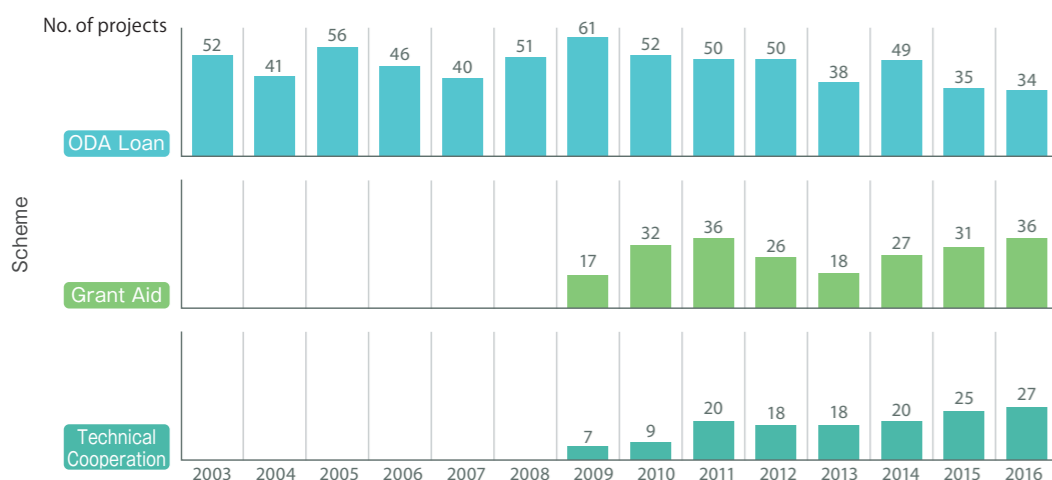
<sup>\*3</sup> External evaluation target projects with assistance of one billion yen or more and those likely to provide useful lessons learned.

<sup>\*4</sup> For the ex-post evaluations of ODA Loans conducted by the former Japan Bank for International Cooperation, those with ratings were covered in this analysis.

## 2. Descriptive Statistics: Trends and Distributions of External Evaluation

Number of evaluation

<Figure 1> Transition in the Number of External Evaluations per Fiscal Year by Scheme

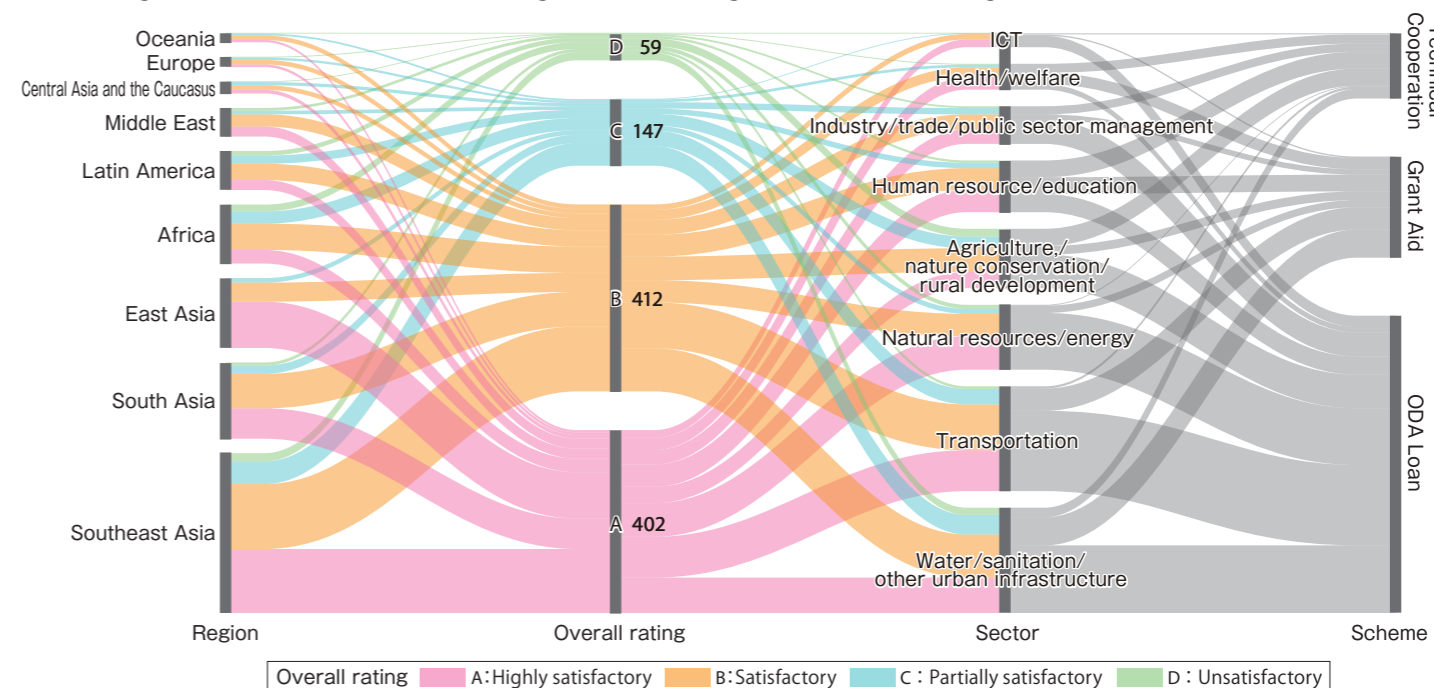


The rating system was first adopted for the external evaluation of ODA Loans in FY2003. During the 14 years up to FY 2016, a total of 653 projects (an average of 47 per year) were evaluated (64%). The same evaluation system was introduced to Grant Aid and Technical Cooperation projects from FY2009. To date, a total of 223 Grant Aid projects (an average of 28 per year) (22%) and a total of 144 Technical Cooperation projects (an average of 18 per year) were evaluated (14%).

## Distribution of Ratings

Figure 2 below provides an overall picture of the correlation of key information on external evaluations. This figure simultaneously shows the interrelation between the region<sup>\*5</sup>, overall rating, sector<sup>\*6</sup> and scheme of external evaluation results (A: Highly satisfactory; B: Satisfactory; C: Partially satisfactory; D: Unsatisfactory). The relation between the sector and scheme is not shown in colors representing different overall ratings because they are not interrelated through the variable of overall rating. Still, this figure can illustrate how the distribution of projects by sector is related to the distribution of projects by scheme. It is also noted that this figure is based only on the results of external evaluations and does not represent all JICA projects.

<Figure 2> Interrelation between the region, overall rating, sector and scheme (figures show the number of cases)



First of all, in this figure, the distribution of overall ratings indicates that projects rated "A" and "B" account for 75% of the total projects (A: 402 projects; B: 412 projects, C: 147 projects; D: 59 projects). The ratio on each vertical axis represents the distribution ratio of projects broken down by relevant variable. By placing the overall rating axis between the region and sector axes, this figure simultaneously shows the regional and sectoral distribution ratio of each rating group. For example, many of the projects rated "A" are located in the Southeast and East Asian regions and categorized in the transportation, natural resources/energy, and water/sanitation/other urban infrastructure sectors. The regional distribution of projects suggests that many projects are located in Southeast, South, and East Asia. The regional distribution of overall ratings shows that many projects are rated "A" and none rated "D" in East Asia. In other regions, projects rated "A" are almost the same in number with, yet slightly fewer than, those rated "B." The sectoral distribution of projects indicates that the transportation and water/sanitation/other urban infrastructure sectors are dominant. The reason for the apparently small number of projects in the health/social security sector is that health and social security projects rarely become subject to external evaluation because they are mostly implemented

under the scheme of Grant Aid or Technical Cooperation, as suggested by the relation between the sector and scheme. The sectoral distribution of overall ratings shows that projects are largely rated "A" or "B" in all sectors and rarely rated "C" or "D," especially in the natural resources/energy sector. A relatively large number of projects are rated "C" in the water/sanitation/other urban infrastructure and transportation sectors; however, given that there are also many projects rated "A" in these two sectors, this is considered because the number of projects implemented in these sectors is particularly large.

Lastly, the relation between the sector and scheme suggests that ODA Loan has a particularly large share in many sectors. The sectoral distribution of Grant Aid projects is similar to that of ODA Loan projects. Technical Cooperation focuses on specific sectors, with a particularly large share in the human resources/education and health/social security sectors. These analysis results describe some characteristics of each scheme, but as mentioned above, this figure only represents the results of external evaluations, and therefore the analysis of both external and internal evaluations may suggest a different tendency.

<sup>\*5</sup> Each region includes the following countries: Southeast Asia: Indonesia, Cambodia, Thailand, the Philippines, Vietnam, Malaysia, Myanmar, Laos and East Timor; Pacific: Kiribati, Samoa, Solomon, Tonga, Tuvalu, Vanuatu, Papua New Guinea, Palau, Fiji, Marshall Islands and Micronesia; East Asia: Republic of Korea, China and Mongolia; Central Asia and the Caucasus: Azerbaijan, Armenia, Uzbekistan, Kazakhstan, Kyrgyz, Georgia, Tajikistan and Turkmenistan; South Asia: Afghanistan, India, Sri Lanka, Nepal, Pakistan, Bangladesh, Bhutan and Maldives; Latin America and the Caribbean: Argentina, Antigua and Barbuda, Ecuador, El Salvador, Guyana, Guatemala, Grenada, Costa Rica, Colombia, Jamaica, Saint Vincent and the Grenadines, Dominican Republic, Nicaragua, Haiti, Paraguay, Brazil, Peru, Bolivia, Honduras and Mexico; Africa: Angola, Uganda, Ethiopia, Eritrea, Ghana, Gabon, Cameroon, Guinea, Kenya, Côte d'Ivoire, Democratic Republic of Congo, Zambia, Sierra Leone, Zimbabwe, Sudan, Swaziland, Seychelles, Senegal, Tanzania, Togo, Nigeria, Namibia, Niger, Burkina Faso, Burundi, Benin, Botswana, Madagascar, Malawi, Mali, Mauritius, Mauritania, Mozambique, Rwanda, Lesotho and Republic of South Africa; Middle East: Algeria, Iran, Egypt, Saudi Arabia, Syria, Tunisia, Morocco, Jordan and Lebanon; and Europe: Albania, Ukraine, Slovakia, Serbia, Turkey, Bulgaria, Bosnia and Herzegovina, Macedonia and Romania.

<sup>\*6</sup> Categorization of sectors is based on those defined in our statistical analysis.

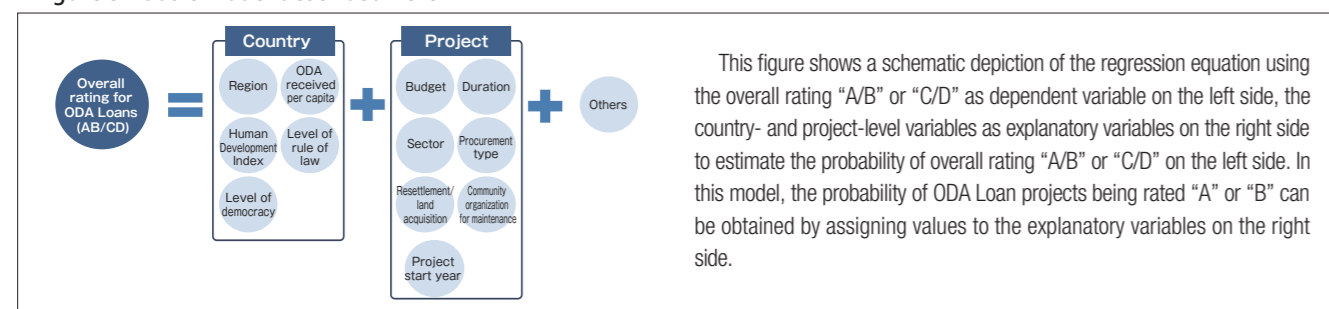


### 3. Analysis Results (Multivariate Analysis): An examination of factors that may influence evaluation results (ODA Loan)

This section describes part of the multivariate analysis conducted since FY2015 based on ex-post evaluations. In FY2015, the study started with descriptive statistical analysis to grasp the whole picture, followed by the preliminary regression analysis of ODA Loan and Grant Aid projects. Variables were selected from various factors that may influence the hypotheses developed from field experiences to examine their effects using a basic method of economic analysis<sup>7</sup>. In FY2016 and FY2017, based on the preliminary analysis results, additional project-level variables were collected through interviews with relevant departments, and country-level variables were also added by systematically selecting and screening data from public sources. Experimentally, the analysis method was also refined by considering the evaluation rating as project diagnosis and performing logistic regression analysis with two values, ratings "A/B" or "C/D", as a dependent variable. At

the same time, numerical explanatory variables were examined in using all contributions manner to verify their model compatibility and further analyses were conducted using selected few basic regression models. These analysis results are described below with focus on the basic model-based<sup>8</sup> analysis of 625 ODA Loan projects whose external evaluations were completed by 2015 because in this preliminary analysis stage, when only external evaluation results have been databased, it is considered difficult to obtain meaningful analysis results that can lead to improvements in the whole scheme including Grant Aid and Technical Cooperation. These basic models will be further developed by adding new variables that can facilitate the understanding of target phenomena as well as examining the existing variables from logical perspectives to determine whether or not to continue to use them.

<Figure 3> Basic model described here



<sup>7</sup> The results of the analysis are partially described in JICA Annual Evaluation Report 2015.

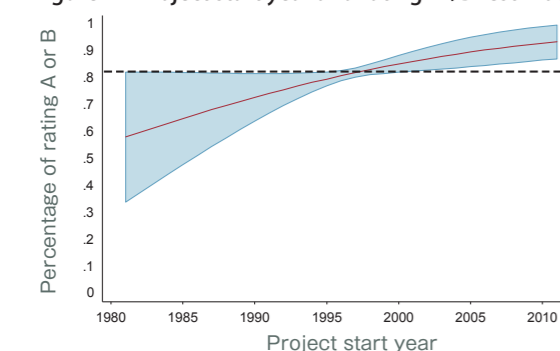
<sup>8</sup> The logistic regression model was developed according to the objectives and based on the Bayesian Information Criterion (BIC) values for all modeling combinations of explanatory variables supposed to influence one of the two explained values (Rating "A/B" or "C/D"). The basic model described here uses a total of 11 explanatory variables: seven project-level variables ((1) sector; (2) project planning cost; (3) planned project period; (4) resettlement and land acquisition; (5) existence of a community organization for maintenance; (6) project start year; and (7) region) and four country-level variables ((8) net ODA received per capita; (9) social effectiveness (human development index); (10) level of rule of law; and (11) level of democracy).

#### Analysis Result 1: Enhancement of project performance

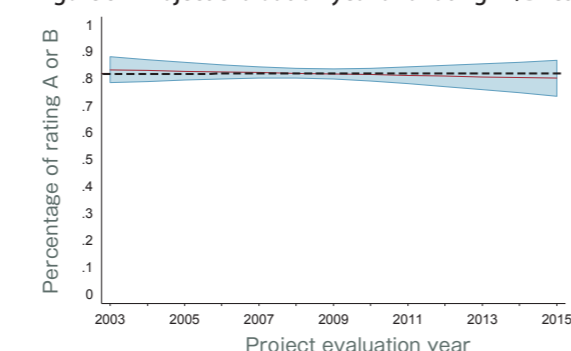
In this analysis on ODA Loan projects, focus was first placed on the relation between the project start year and the probability of being rated "A/B." As shown in Figure 4, the average probability categorized by project start year increased over time, from less than 0.6 for projects started in the 1980s to more than 0.8 for those started in the 1990s, though the estimation range varied due to the different number of projects implemented. In particular, more than 90% of the projects started within the past four to five years were rated "A/B." This, however, did not mean that the evaluation standards were

loosening, because the percentage of rating "A/B" categorized by project evaluation year remained at the same level, as shown in Figure 5, and because another analysis indicated no special deviations in background factors, such as the duration of project implementation or the time lapsing between the project end and the time when the evaluation was undertaken. Therefore, as shown in Figure 6, the study went further to link the tendency of ratings with measures taken to improve ODA Loan projects and analyze the possibility that these measures would result in enhancing project performance.

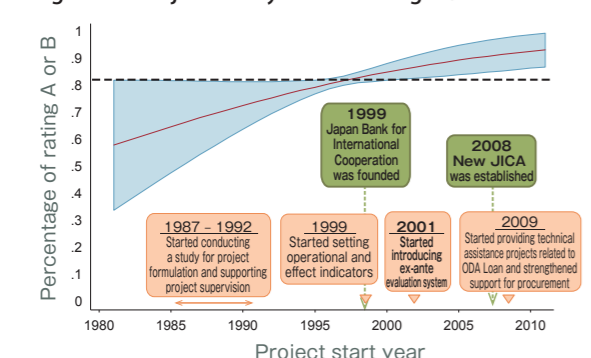
<Figure 4> Project start year and rating "A/B" estimated



<Figure 5> Project evaluation year and rating "A/B" estimated



<Figure 6> Project start year and rating "A/B" estimated and measures taken to improve for projects



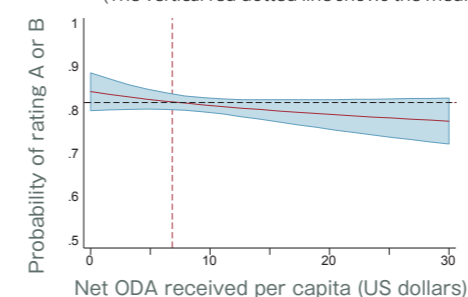
Explanation to the figures: The black broken line represents the average probability (0.82) of ODA Loan projects being rated "A/B" (throughout the period analyzed in this study). The red solid line shows the percentages of rating "A/B" estimated by assigning different values to the horizontal axis parameter while controlling other variables. The light blue shaded area around the red line represents a 95% confidence interval, which shows the accuracy of the estimated values. The narrower the shaded area, the more precise the estimate will be.

#### Analysis Result 2: Relation between the net ODA received per capita and the percentage of rating A/B

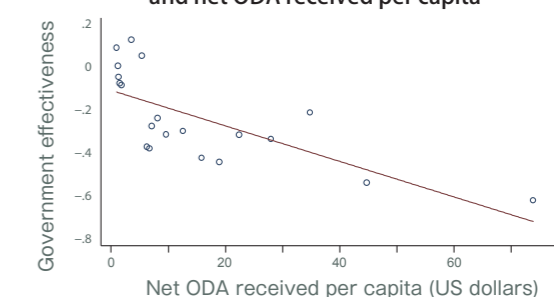
This analysis focused on the relationship between the net ODA received per capita<sup>9</sup> and the probability of projects being rated "A/B." In general, as shown in Figure 7, project performance would decline, though slightly, with increasing net ODA received per capita. Based on the analysis of ex-post evaluations by the World Bank<sup>10</sup>, which indicated that "state capacity is important for the

success of projects," the relationship between the "government effectiveness"<sup>11</sup> defined by the World Bank and the net ODA received per capita was analyzed. Our analysis results also supported the negative relationship (the lower the state capacity, the more the country received ODA), as shown in Figure 8.

<Figure 7> Net ODA received per capita and rating "A/B" estimated (The vertical red dotted line shows the median of the variables)



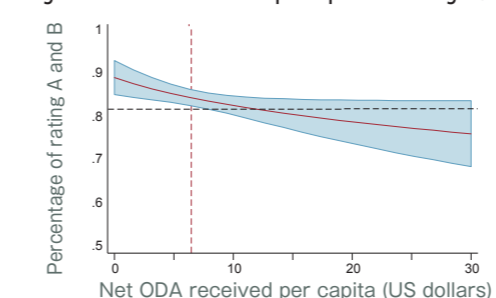
<Figure 8> Relationship between the "government effectiveness" and net ODA received per capita



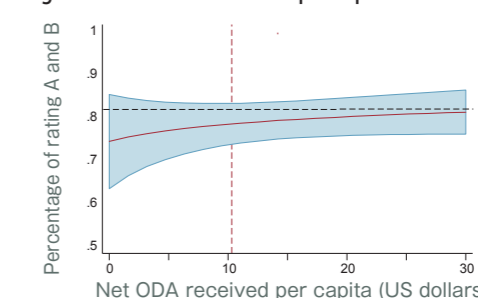
In order to further delve into the relationship shown in Figure 7, the target projects were further analyzed by dividing them according to the procurement of contractors into two groups: local competitive bidding (LCB) and non-LCB (international competitive bidding (ICB)-oriented) projects<sup>12</sup>. The results showed a more marked downward trend in the group of LCB projects than in the entire set of projects (Figure 9). Meanwhile, the group of non-LCB projects exhibited no noteworthy changes but a slightly increasing or static trend (Figure 10). One of the reasons why project effectiveness (performance) varied depending on the contractor selection method was considered because LCB-oriented projects involving local

contractors in construction works and other services would be susceptible to state capacity limitations and industrial constraints in the countries where they were implemented. On the other hand, it was suggested that non-LCB (ICB-oriented) projects would not suffer negative impacts, at least not one large enough to affect the project performance, because their construction was executed by contractors with global technology levels. It was therefore assumed that the impact on the probability of being rated "A/B" would be smaller in non-LCB projects than in LCB-oriented projects. This assumption will be further examined, including the definition of the LCB variable itself.

<Figure 9> Net ODA received per capita and rating "A/B" estimated (LCB)



<Figure 10> Net ODA received per capita and rating "A/B" estimated (non-LCB)



In addition, although not shown in any figure, the analysis of the relationship between the GDP per capita and the estimated probability of rating "A/B", it was observed that the probability decreased with increasing GDP. One of the reasons why this tendency appeared despite the assumption that the state capacity would increase with increasing GDP was considered that in the case of ODA Loan projects, the costs borne by borrowing governments would increase with GDP growing to middle-income levels. Moreover, given that the increased share borne by borrowing countries would raise the share of LCB procurement

and lower the engagement level of JICA, it was presumed that the positive impact of involving international contractors in construction would lessen and so would the percentage of rating "A/B." Although it is difficult to logically build up these hypotheses only from the relationships between the correlated parameters analyzed here, we believe that useful insights can be gained to improve future JICA projects by examining the problems identified through quantitative evaluation at a practical level while referring to assumptions base on quantitative data analysis.

#### Suggestions and Insights from the ODA Loan Model

The analysis of net ODA received per capita suggested that difficulties in project implementation due to state capacity limitations could be reduced, depending on the contractor selection method. Proper procurement can enhance the effectiveness of ODA Loan projects or mitigate the risk of lower performance. It is, however, noted that as shown in the analysis of GDP per capita, this solution may be difficult in some cases. For example, when the borrowing government bears a large share of the project costs, the positive

impact made by the procurement of proper contractors for ODA Loan projects may be limited or become too small to offset the impact of government systems. Still, as shown in Figure 6, the performance of ODA Loan projects has improved through various measures. Going forward, it is desirable to establish a mechanism to ensure the proper selection of contractors and facilitate the appropriate design of projects according to the objectives.

<sup>9</sup> It refers to net ODA received per capita (USD) by countries and territories on the DAC List of ODA Recipients. The ODA includes all loans and grants provided by DAC member organizations, bilateral agencies, and non-DAC member countries to promote economic development and welfare.

<sup>10</sup> Hanson, J. K., & Sigman, R. (2016). State Capacity and World Bank Project Success.

<sup>11</sup> Government Effectiveness, one of the Worldwide Governance Indicators (WGI) published by the World Bank.

<sup>12</sup> International competitive bidding (ICB) is an international tender open to all interested parties. Local competitive bidding (LCB) is also competitive but open only to local parties in borrowing countries. In this analysis, projects with LCB accounting for more equal than 50% of the total disbursed loans are categorized as LCB projects, and the others as non-LCB projects. The non-LCB projects select contractors mainly through ICB but also through a few other methods. A project using multiple procurement methods including ICB is categorized as a LCB project if ICB procurement does not account for a majority.