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Development and Development Policies of the Transport Sector in Developing Countries[1]

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[1] This paper was prepared for a training course of the Overseas Human Resources and Industry Development Association (HIDA), which was taken place in March 2015. As the topic might imply, the paper covers not only sector development policies but also a range of development issues which could be quite useful for the present-day students/researchers of international development, the original paper was revised in view of tackling contemporary international development. The author would only be more than happy if the students and researchers could make use of the paper for their studies.

1. Transport Sector Development Plan

Transport sector development begins with formulation of a medium-term transport sector development plan. The plan can be understood graphically as well as content-wise in the following sub-sections.

(1) National Development Plan and Transport Sector Development Plan

The national development plan which covers all sector developments: agriculture sector, power sector, transport sector, communication sector, manufacturing sector, and so forth, is usually prepared by national government of developing counties. All those sectors could have individual sector development plans such as National Agriculture Sector Development Plan, National Power Sector Development Plan, National Transport Sector Development Plan, and so forth. Each national sector development plan is formulated in a concerted manner with other sector dev plans within the framework of comprehensive national development plan such as "Integrated National 5-year Economic and Social Development Plan". The national sector development plan (e.g., national transport sector development plan), then, consists of two types of lower-level development plans: namely, "regional sector development plans (e.g., "A" region transport sector development plan, "B" region transport sector development plan, "C" region transport sector development plan, and so forth)" (Table 1) and "sector-mode development plans (e.g., "national railway development plan, national road development plan, national port development plan, and so forth)" (Table 2).

(i) Regional (Region by Region) Transport Sector Development Plan within National Transport Sector Development Plan

The regional transport sector development plan such as "A" Region Transport Sector Development Plan, "B" Region Transport Sector Development Plan, and so forth (Table 1) within a country is one type of independent plan which means that the plan is formulated by the regional government within the framework of national transport sector development plan. Therefore, a table of contents of regional sector dev. plan is quite like that of national sector dev. plan. The difference is largely area coverage, nationwide or region wide.

Table 1 Regional (Region by Region) Transport Sector Development Plan within National Transport Sector Development Plan

National Development Plan

National Sector Development Plan

		National Agticulture Sector Dev. Plan	National Power Sector Dev. Plan	National Transport Sector Dev. Plan	National Comunication Sector Dev. Plan	National Manufacturing Sector Dev. Plan	……
National Development Plan / Regional (Region by Region) Development Plan	Region "A" Dev. Plan	"A" Region Agriculture Sector Dev. Plan	"A" Region Power Sector Dev. Plan	"A" Region Transport Sector Dev. Plan	"A" Region Communication Sector Dev. Plan	"A" Region Manufacturing Sector Dev. Plan	……
	Region "B" Dev. Plan	"B" Region Agriculture Dev. Plan	"B" Region Power Sector Dev. Plan	"B" Region Transport Sector Dev. Plan	"B" Region Communication Sector Dev. Plan	"B" Region Manufacturing Sector Dev. Plan	……
	Region "C" Dev. Plan	"C" Region Agricultue Dev. Plan	"C" Region Power Sector Dev. Plan	"C" Region Transport Sector Dev. Plan	"C" Region Communication Sector Dev. Plan	"C" Region Manufacturing Sector Dev. Plan	……
	Region "D" Dev. Plan	"D" Region Agriculture Dev. Plan	"D" Region Power Sector Dev. Plan	"D" Region Tansport Sector Dev. Plan	"D" Region Communication Sector Dev. Plan	"D" Region Manufacturing Sector Dev. Plan	……
	……	……	……	……	……	……	……

Source: Author

(ii) National Transport Sub-sector (Mode) Development Plans within National Transport Sector Development Plan

The other type of plan is national transport sub-sector (mode) development plan (Table 2). The national transport sub-sector (mode) development plan deals with nationwide individual transport mode developments such as National Railway Development Plan, National Road Development Plan, National Port Development Plan, National Airport Development Plan and so on.

Not only the national transport sector development plan but also other individual national sector development plans must be formulated separately from the national (comprehensive) development plan, yet within or under its framework. By the same token, the national transport sub-sector (mode) development plan as well as other individual national sub-sector development plans may either be separate from or included in the regional (holistic) transport sector development plan, while the regional (region by region) transport sector development plan could be formulated independently from the national transport sector development plan. The regional transport sub-sector (mode) development plan can be prepared either separately from or included in the regional transport sector

development plan.

Table 2 Transport Sub-sector (Mode) Development Plans within National Transport Sector Development Plan

	National Development Plan						
	National Sector Development Plan						
	National Agticulture Sector Dev. Plan	National Power Sector Dev. Plan	National Transport Sector Dev. Plan	National Comunication Sector Dev. Plan	National Manufacturing Sector Dev. Plan	……	…….
National Development Plan / National Sub-sector (Mode) Development Plan (within each national sector)	National Crop Dev. Plan	National Hydro-Power Dev. Plan	National Railway Dev. Plan	National Telephone Network Dev. Plan	National Steel Industry Dev. Plan	……	…….
	National Livestock Dev. Plan	National Thermal Power Dev. Plan	National Road Dev. Plan	National Radio/TV Dev. Plan	National Cement Industry Dev. Plan	……	…….
	National Fishery Dev. Plan	National Renewable Energy Dev. Plan	National Port Dev. Plan	National Internet Dev. Plan	National Machinery Industry Dev. Plan	……	…….
	National Forest Dev. Plan	National Geothermal Dev. Plan	National Airport Dev. Plan	……	……	……	…….
	……	…….	……	……	……	……	…….

Source: Author

(2) Formulating the Transport Sector Development Plan: Sequence and Contents

To formulate the sector development plan, a 6-step sequence approach would normally form the contents of the plan.

(i) Identification of Needs

The first step in the process is to identify the overall transportation needs of the area/region/country by exploring, for example, the rate of economic growth and to provide a basis for weighing the transport needs against the requirements of the other sectors of the economy through a general economic survey of the country, and further to identify the country's conditions of the transportation system and policies to determine priorities within the sector through a detailed survey.

(ii) Establishment of Sector Development Objectives

Through past experiences of both developed and developing countries, the widely agreed-upon objectives of transport sector development have been established and can be layout as below.

Primary Objective: To provide transport services of a level, quality, and geographical pattern that will meet the needs of the economy at least in terms of cost and at acceptable rates of return.

Subsidiary Objectives: (a) To use the existing infra and facilities more efficiently. (b) To make new investments paying special attention to balanced and efficient distribution among the transport modes based on demands for different types of service and their relative costs and benefits. (c) To make efficient use of available investment funds within each mode.

(iii) Fixing Targets

Based on (i) and (ii) above, specific targets, quantitatively and /or qualitatively, are set forth, which are useful in evaluating performance of the plan implementation eventually.

(iv) Formulation of Policies (and Strategies)

Once the targets are specified, sector development policies are formulated in line to discussions and analyses of (i), (ii) and (iii) above.

(v) Identification of Development Projects and Their Implementation Programs

To achieve the objectives and targets, investment projects need to be identified and listed in accordance with priorities, together with their implementation programs which include financing requirements and sources.

(vi) Feasibility Study (F/S) for Individual Project

Before implementing projects, every project must be justified by means of feasibility study. (The F/S is a study analyzing the economic, technical, and financial viability of the project and evaluating its socio-economic and environmental impacts. The results of the F/S are contained in the feasibility study report, based on which the prospective executing agency and other organizations concerned decide whether the project should be implemented.) The F/S is usually undertaken separately from the sector development plan.

2. Development Policies for the Transport Sector

Transport sector development policies are generally formulated in the sector development plan. They are divided into three types of policies: sector development core policies, institutional development policies and project investment policies as below.

(1) Sector Development Core Policies

(i) Pricing and Competition Policy

Railways: A commercially oriented marketing approach, with flexible adjustments in prices as costs change or market conditions warrant, should be employed.

Ports: To determine tariffs, the principle of marginal cost pricing is recommended. Similarly, as in the case of railways, financial viability must be considered for setting tariffs for various services such as berths, port labor, crane service, storage area, or water depth.

Airports: The situation of airports is like the case of ports in many respects.

Roads: Concerning the trucking industry, government regulations of trucking rates are not required. The same could apply to passenger transport by bus. To recover the costs arising out of the use of the road infra, an appropriate system of user charges is usually introduced through such taxes on fuel and tires, for example. Congestion should also be priced. Bridge and road tolls are another way of charging user a fee to use parts of the road system.

➢ PPP in the form of BOT is another way of constructing toll roads.

(ii) Energy Saving Policy

Five suggestions by the World Bank are worth noting.

(a) Since road transport uses twice as much energy per ton-kilometer as rail for the same haul, some savings could be realized by shifting appropriate road freight traffic to the railways.

(b) Car, Bus, and truck drivers could save about 20% of the fuel they use by less-energy consuming driving, careful maintenance practices and so on.

(c) Car and van pooling significantly cuts down on the number of vehicles used to carry a give number of commuters to and from cities.

(d) Measures to control congestions (congestion pricing, case of parking meters, and so on) promise good returns in terms of energy saving.

(e) Updating vehicle fleets can save fuel.

It is said that an improvement of energy efficiency in road transport of 30% or so over 5-year period is both technically and economically feasible. It should also be reminded that energy efficiency is the only part of the total efficiency of transport operations and there are offsetting costs.

(iii) Labor Policy

The issue is how to solve the problem of excess workers. A variety of measures can be. recommended as follows.

(a) Shift of excess workers to alternative work opportunities.

(b) Reduction of excess workers through attrition by not replacing most of those who leave, retire or otherwise.

(c) Retention of quality manpower such as creative technicians and managers and of incentive system to raise pay rates and promote posts.

(2) Institutional Development Policies

(i) Operational System Policy

Transport activities (busing business and the truck business) should be operated whenever

possible on a competitive basis. Competition within the rail mode, however, is seldom practical. Nevertheless, the railway is in acute competition with trucks and buses, and its management if given a chance and the incentives to do so should act competitively.

(ii) Planning Coordination Policy

The infra investment plans (new or upgrading old facilities) for various modes need to be coordinated. The coordination role should be assigned to the ministry of transport or the alternative of a separate transport coordinating agency that has the purely technical role of analyzing and coordinating plans for each mode of transport operations that are the responsibly of the operating entities, public or private.

Any coordinating plans should take into consideration some criteria for choosing among proposed investment projects such as a cost-benefit analysis for similar projects in nature and the least cost analysis for those with a specific transport objective to be attained. However, one should clearly understand that the cost-benefit analysis gives only limited guidance (though useful) to intermodal transport priorities. Choosing projects among different transport modes, in fact, call for the exercise of judgment.

(iii) Intermodal Coordination Policy

Any intermodal coordination unit in the ministry of transport should engage in the planning and policy-making functions and analyze alternative policies on such matters as tariffs, standards of service, and levels and methods of cost recovery to ensure economically sound and consistent treatment of the various modes, based on adequate statistical information about current conditions and operations. Such units are often requested to set the requirements of data collection; they usually have various modal agencies collect data.

(iv) Training Policy

Transport agencies are often requested to train their staff in technical and managerial matters. Training should cover such areas as modern management system, and financial information and control system as well as project and policy analysis and management. Training should be undertaken through agencies' own programs and structured OJT.

(v) "Organizing for Maintenance" Policy

In most developing countries, maintenance of infra facilities such as roads, bridges, port machinery, locomotives, railway roadbeds, and maintenance of the maintenance machinery itself has been an urgent problem. To overcome this problem, public sector maintenance organizations for railways, roads and ports need to reduce surplus unskilled workers and increase quality manpower such as managers, supervisors, mechanists, and other skilled staff who can handle, among others, inventory control, adequate workshops and foreign exchange for spare parts procurement.

It is found in these recent years that many middle-income countries can increase efficiency

and quality of road maintenance by relying more on competitive contracting with private firms and less on the force account system of the ministry of public works. Low-income countries where the private sector is still comparatively weak the situation is vice versa.

Maintenance needs more emphasis in ports and railways. Railway roadbed and track maintenance is a specialized function that must be carried out by the railway's own workforce. Maintenance of equipment and some other facilities such as cargo-handling equipment, bulkheads, berth side pavement and so on can be carried out by private contractors.

(3) Project Investment Policies

(i) "More Efficient Use of Facilities" Policy

To avoid or at least postpone or reduce the need for expensive new construction projects, policymakers and managers should endeavor to find ways of using existing facilities more efficiently first, specially:

Railways: Increase capacity by running longer trains, installing automatic traffic controls, efficient scheduling;

Roads: Better traffic engineering, car- and vanpooling, special bus lanes; and

Ports: Faster cargo-handling methods, use of multiple shifts, judicious pricing of berth space per unit of time.

(ii) "More Comprehensive Scope of Project" Policy

The scope of projects should include not only creating new physical facilities but also measures to improve capacity utilization, organizations, and methods for maintenance, training for management and technical staff, and changes to enhance competition and put decision-making on an economically sound basis.

In other words, the appraisals of the following six aspects are to be taken into consideration: Economic Appraisal, Technical Appraisal, Institutional Appraisal, Financial Appraisal, Commercial Appraisal, Social Appraisal.

(iii) Railway Project Policy

Railways improvement is broad in scope and complex in design. Projects to modernize individual parts of their railway systems will have limited success unless they are accompanied by reforms of railway management and government policies affecting railways.

To solve the problem above, "An Action Plan Approach" may be recommended. This approach is quite like the sector plan formulation discussed in 1-(2) above.

This approach formulates an action plan for railway project investment and disinvestment. The plan covers four aspects in sequence, namely:

(a) Railway Issues: To identify and prioritize such issues as management policies, organization, pricing formulas, operating and maintenance procedures, investment in new equipment, rehabilitation of existing equipment and infrastructure, discontinuation of unprofitable

operations and so on.

(b) Targets Setting: To establish specific targets on priority issues selected for better performance within 5 years or so.

(c) Basic Policies: To establish a central policy which is to provide railway management a commercial orientation and put competition with trucks on a businesslike basis.

(d) Investment Projects: To select priority investment and disinvestment projects through appraisal of six different aspects (economic, technical, institutional, financial commercial and social).

(iv) Road Project Policy

Road project policy should be pursued from various aspects as follows.

(a) Planning Aspect: Identification and preparation of maintenance and renewal projects as well as new projects must be based on priorities and competing demand.

The transport implications of the pattern of development must be considered the integrated development with industries such as agriculture, logging, and mining.

Rural road development should go hand in hand with rural agricultural development, and a participatory approach is indispensable to satisfy real needs of the people and in obtaining their contribution in road maintenance.

(b) Technical Design Aspect: Overdesign and over investment as well as under-design and under-investment must be avoided. Common international design standards should be employed; it is not necessary to design too high standards of vertical grade, horizontal curvature, and width.

To cope with traffic demand in a timely manner, it is often recommended to construct the road in stages, from light pavement to stronger pavement. Yet, this method often encounters serious risks unless good maintenance is provided, and a stronger pavement is added in the future

(c) Maintenance Aspect: To implement maintenance projects successfully, the following tasks are to be fulfilled: First, to secure maintenance funds in the government budget. Second, design and implement an appropriate and efficient organization of maintenance services in the government. Third, ensure an adequate supply of fuel and spare parts (with allocation of foreign exchange for this purpose). Fourth, to maintain and renew the maintenance equipment. Fifth, establish a system of accounts and of charges for equipment use. Sixth, to prevent the diversion of equipment and staff to other uses such as new construction projects. And seventh, to train and motivate mechanics, operators, and other staff through various programs and incentives.

Of special notes are that completed maintenance projects show rate of return often several times greater than the opportunity cost of capital/investment, and funds required

for efficient maintenance is said to be some 1 to 2% of the value of the road capital stock.

(d) Labor versus Capital Aspect: Countries with high unemployment and under-employment should have strong reasons for labor intensive technologies in road construction and maintenance.

(e) Rural Access Aspect: Farmers' access to a local market or centers where various social services are available should be ensured. Tracks and paths, generally used by pack animals, handcars, oxcarts, motorcycles and small farm tractors pulling trailers, can be built by local labor through community self-help programs.

(v) Port Project Policy

Recently in most developing countries, construction of new ports or of additional berths in existing ports is not likely to be financially justified. Instead, what existing ports require are modern container-handling equipment and, in lesser instances, loading facilities for bulk cargo. (When the container-handling facilities are planned for a port, complementally plans for trucks or trains must be made for incoming containers to their inland destinations and outgoing containers to the port.)

Further coastal and river transport is an alternative or supplement to land transport. Building wharves, dredging channels, and installing aids to navigation would enable a country to use water transport for a substantial part of its freight.

Water transport can serve some transport needs which do not require rapid delivery, with less capital investment and lower operating costs than railways or roads.

(vi) Airport Project Policy

An airport project is composed of runways, and/or ground facilities for servicing planes, handling baggage, accommodating passengers, and communications and navigation aids.

Priority should be given to rehabilitating existing runways or other facilities that have become dilapidated for lack of maintenance and to establishing the appropriate organizations and procedures for regular maintenance.

The airline and charter service operations are likely to be handled most efficiently by private companies competing with minimum regulation, except for traffic control and safety.

(vii) Project Appraisal Policy

Appraisal or evaluation of economic soundness of projects in the transport sector requires a careful forecast of demand and a detailed analysis of costs and benefits.

(a) Demand Forecast: Traffic volumes need to be forecast over long periods. This practice plays a crucial role in determining investment projects. Yet, forecasting transport demand confronts uncertainties and difficulties such as distributing shares among competing transport modes, and estimating "normal traffic (traffic without the project)", "generated traffic (traffic arising from the reduced costs of transport as a result of the project)" and

"diverted traffic (traffic diverted to or from other modes or other parts of the same network)".

Nevertheless, there are a number of reasons that traffic forecasting is more manageable than it might appear. We can name them below. First, a large part of the traffic of railways and ports are often consisting of a few bulk commodities such as coal, ores, and grains, which makes traffic analysis fairly simple. Second, as many transport investment projects are lumpy, it is no longer necessary to refine forecasts once a justifiable demand is fixed at a certain level. Third, existing traffic and its trend can determine much of the future traffic in the short and medium term. Fourth, in many cases, the forecast need not extend beyond the time when the traffic reaches the project capacity. Fifth, because future benefits are discounted by opportunity costs of capital or by other discount rates which are relatively high in the developing countries, the correctness of burdens in the more distant future is substantially less important. Sixth, in case of rapidly growing road transport, an overestimate of its traffic might be made up in a short period of time. Seventh, in case of railway transport, contrary to the case of road, cautious demand forecasting is required as traffic for railways has been growing less rapidly in many developing countries.

Two methods of forecasting are usually exercised. One is the simple extrapolation method which estimates future traffic from past trends by considering changes that are likely to modify these trends. The other is the integrated method which undergoes three steps as follows: to estimate the volume and location of future agricultural, industrial, and mining output and consumption, including imports and exports as well as future population, to translate the output and population data into traffic – both by volume and origin and destination, and to distribute the traffic to the traffic mode that can carry it most efficiently.

(b) Project's Economic Analysis: The transport sector has been an early and important user of cost-benefit analysis. Much effort has gone into the quantification of costs and benefits, which raises both conceptual and practical problems. Costs include new project investment costs and O & M costs, while benefits are calculated as savings in travel time, fuel, labor, vehicle maintenance, infra facility maintenance and so on.

The proper basis for measuring costs and benefits is the "with and without project" principle; what will the costs and benefits be with the new investment project and what would they have been without it? And the cost-benefit analysis estimates "NPV (Net Present Value)", "B/C Ratio (Benefit/Cost Ratio)" and "EIRR (Economic Internal Rate of Return)" for deciding whether to invest in a new investment project.

3. Investing in Sector Projects

(1) Definition of Project

The project concept essentially provides a disciplined and systematic approach to analyzing and managing a set of investment activities. However diverse the specific activities they embrace, projects are likely to include several or all the following elements, although in varying proportions and with different emphases:

- ➢ Capital investment in civil works, equipment, or both (the so-called bricks and mortar of the project).
- ➢ Provision of services for design and engineering, supervision of construction, and improvement of operations and maintenance.
- ➢ Strengthening of local institutions concerned with implementation and operation of the project, including the training of local managers and staff.
- ➢ Improvement in policies such as those on pricing, subsidies, and cost recovery that affect project performance and the relationship of the project both to the sector in which it falls and to broader national development objectives.
- ➢ A plan for implementing the above activities to achieve the project's objectives within a given time frame.

(2) Project Cycle of the World Bank Loan

Any infra project cannot be realized without going through a certain sequential procedure. This procedure is generally called "the project cycle", which has long been developed by the World Bank. The simplest presentation of the project cycle is "Plan-Do-See (or Plan-Do-Check-Action)" procedure. The infra project is planned first (Plan), is then implemented (Do) as planned, and is finally evaluated to measure its performance after the project is completed (See).

The project cycle of the World Bank is a little more complicated as the World Bank engages in the project as an external financier. It encompasses six phases: (i) identification, (ii) preparation, (iii) appraisal, (iv) L/A negotiation and board presentation, (v) implementation and (vi) evaluation.

(i) Identification

The first phase of the cycle is concerned with identifying project ideas that appear to represent a high-priority use of the country's resources to achieve an important development objective. Such project ideas should meet an initial test of feasibility; that is, there should be some assurance that technical and institutional solutions -at costs commensurate with the expected benefits- will be found and suitable policies adopted.

Development projects are identified in a variety of plan documents such as national/regional/sector development plans, mater plans and so forth.

(ii) Preparation

Once a project idea has passed the identification "test," it must be advanced to the point at

which a firm decision can be made whether to proceed with it. This requires a progressive refinement or the design of the project in all its dimensions; technical, economic, financial, social, institutional, and so on. In other words, project feasibility (F/S) is examined intensively and extensively.

As a result of feasibility study, the feasibility study report is prepared.

(iii) Appraisal

Before approving a loan, the World Bank as financier normally requires a formal process of appraisal to assess the overall soundness of the project and its readiness for implementation. For an internally generated and financed investment, the extent of formal appraisal varies widely in accordance with government practice. Some explicit appraisal, however, is necessary, or at least a desirable, part of the decision-making process before funds are committed.

The World Bank staff are responsible for the appraisal work and prepare the appraisal report as a crucial document to decide its lending.

(iv) Loan Agreement Negotiations and Board Presentation

Once the project appraisal is completed, the case is presented to the board meeting of the World Bank. A set of concerned documents such as the appraisal report, the draft loan agreement which is negotiated with the Borrower before the board meeting and so forth are examined at the board meeting from the lender's point of view.

The loan agreement is the document which is prepared at this phase.

(v) Project Implementation and Supervision

The implementation phase covers the actual implementation or construction of the project, up to the point at which it becomes fully operational or project completion. It includes monitoring of all aspects of the work or activities as it proceeds, and supervision by "oversight" agencies within the country or by the World Bank.

During this phase, a variety of documents are prepared. The most important are (quarterly or bi-monthly) project progress reports and a project completion report, which summarize project progress status periodically.

(vi) Project Post Evaluation

The ex-post evaluation of a completed project seeks to determine whether the project objectives have been achieved and to draw lessons from experience with the project that can be applied to similar projects in the future. Although the World Bank and other lending agencies such as JICA of Japan routinely require an ex-post evaluation of all projects that they finance, few developing countries have established a comprehensive system for evaluating the results of their project investment portfolio.

The result of post-evaluation is summarized in a report called the post-evaluation report.

(3) Project Cycle of Japan's ODA Loan (Yen Loan)

(i) Project Identification and Preparation

Unlike the World Bank's project cycle, Japanese ODA treats "Identification" and "Preparation" as one stage of the project cycle.

(a) Identification

Project identification is carried out in various ways. Projects are identified by governmental agencies when preparing a national/regional or sectorial development plan, by bilateral aid agencies (such as USAID, KfW, DfID and AFD) or multilateral aid agencies (such as the World Bank and ADB) in the course of country economic/sector survey or post-evaluation of a completed project, by public or private entities of the country itself or other potential donor countries when conducting a project-finding survey, or by local municipalities, local residents, non-governmental organizations (NGOs), academics, etc.

(b) Preparation

Project preparation brings a project defined in a preliminary way to the point which it can be appraised, i.e., at which it is possible to determine whether the project is such as may be effectively implemented (and if so, how it might be implemented), whether the project cost is acceptable in the light of its expected contribution to economic and social development, and whether the project is environmentally sound. Project preparation is usually carried out by means of a "Feasibility Study."

The Japan International Cooperation Agency (JICA)[1] carries out feasibility studies (F/S) on projects, under its technical cooperation scheme and on a grant basis. In addition, Japan Bank for International Cooperation (JBIC)[2] has a facility called Special Assistance for Project Formation (SAPROF) to assist prospective Borrowers in preparing projects.

The Feasibility Study is a study whose purpose is to enable the prospective project-sponsoring authority and other organizations concerned, including lenders, to decide whether a project should be launched/financed or not. The F/S is normally carried out by the LDC Government itself, or by qualified consultant(s) hired by the LDC Government for the purpose. The F/S is a basic study on the project covering its economic, technical, financial, environmental, and social aspects, and must be based on a thorough and extensive survey carried out to internationally accepted standards. The F/S report is known as the Feasibility Report.

The F/S must include the following points:

➢ Background information on the project, such as data indicating the recent economic situation of the country and of the sector targeted by the project, information on the project site and surrounding area, history of project formulation, etc.

➢ Major policy issues regarding the targeted sector (tariff, subsidy, structural adjustment, privatization, etc.) and the government's development policy.

➢ Objectives of the project

➢ Analysis of the need for the project, including supply-and-demand analysis and determination of the relative priority of the project in the country's national/regional/sector economic development plan

➢ Detailed comparison of the various potentially viable alternatives

➢ Detailed description of the project (purpose, scope, site, etc.)

➢ Preliminary engineering design and analysis of technical feasibility, taking into account natural and site conditions, availability of materials and labor, possible construction methods.

➢ Cost estimate for the project (both foreign and local currency components and financing plan)

➢ Implementation schedule

➢ Project implementation, operation, and maintenance scheme

➢ Executing agency and institutional arrangements (including analysis of the technical and financial capability of project-related institutions and the need or not for consultant's assistance)

➢ Evaluation of the technical soundness, economic and financial viability

➢ Evaluation of environmental and social impacts and mitigation measures (potential impacts should be carefully reviewed under the EIA)

➢ Possible project risks

➢ Recommendations and procedures necessary for implementation of the project (e.g. government approval for the project or of the findings of the EIA for the project, land acquisition, planning for resettlement of local population affected by the project, etc.), if any.

(ii) Project Appraisal

(a) Purpose of and Steps in Appraisal

The purpose of JBIC appraisal is to ascertain if and to what extent the project concerned will contribute to the economic and social development, or economic stabilization of the recipient country, whether the project is planned appropriately and in sufficient detail, and whether successful implementation and sustainable operation and project benefits may be expected.

Project appraisal is, in principle, carried out by two JBIC staff, a country operation officer and an engineering-oriented staff, in line with the following processes.

Examination of Project-related Documents and Information

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Appraisal Staffing and Schedule

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Request for Supplementary Information and Data

↓

Dispatch of Appraisal Mission to the Field

↓

Board Presentation of the Appraisal Results

↓

(Publication of the Appraisal Results)

(b) Appraisal Report

The general structure of the Appraisal Report is as follows.

Chap. 1 History of the Project
Chap. 2 Economy of Borrower's Country and its Development Policy
Chap. 3 Needs for the Project
Chap. 4 Project Plan
Chap. 5 Project Costs and Financing Plan
Chap. 6 Project Implementation, Management and Operation Plan
Chap. 7 Financial Evaluation ***(FIRR)***
Chap. 8 Economic Evaluation ***(EIRR)***
Chap. 9 Operation and Effect Indicators (Performance Indicators)
Chap. 10 Environmental Consideration
Chap. 11 Social Dimension
Chap. 12 Monitoring
Chap. 13 Conclusion

(c) Prior Notification, Exchange of Notes and Loan Agreement

The Government of Japan normally announces its decision to extend a loan to a Borrower at an international conference, such as a consultative group meeting or through the Japanese Embassy in the Borrower's country. This is termed "Prior Notification."

Following Prior Notification, the two governments enter negotiations on a formal agreement. When an agreement is reached, the two governments sign and exchange notes (Exchange of Notes: E/N) confirming the matters agreed upon.

The E/N spells out the principal terms and conditions of the Loan, with the details being stipulated in the Loan Agreement. The E/N generally contains or refers to the following items and matters:

- Names of the Borrower and Project
- Loan Amount
- Terms of the Loan (interest rate, repayment period, grace period, disbursement period)
- Conclusion of Loan Agreement between JBIC and the Borrower
- Procurement Conditions: Tied or Untied, Contract(s) to be financed by JBIC and application of JBIC's Guidelines for Procurement

➢ Provision for:

> The principle of fair and free competition among the shipping and maritime insurance companies/entities of Japan and the country of the Borrower with regard to products procured under the Loan.

> Exemption of taxes on the principal and interest of the Loan, etc.

> Guarantee by the Government of the Borrower's country (in cases where the Borrower is not the Government)

> A clause requiring deposit and utilization of counterpart funds.

> Commodity list

Following the project appraisal, the project is presented to the board of JBIC. Soon after the board approves the project loan, the Loan Agreement (L/A) is prepared and concluded between JBIC and the Government of the Borrower in the light of the contents of the E/N. The Loan Agreement covers, if not all, almost all the items of the E/N mentioned above. The principal difference between the E/N and the Loan Agreement is that the E/N gives an outline of the Loan, while actual implementation of the Loan is carried out in accordance with the provisions of the Loan Agreement, which include technical and other details of the Loan not specifically stipulated in the E/N.

(iii) Project Implementation (Procurement, Disbursement and Supervision)

(a) Selection of Consultants and Contractor/Supplier

After the loan agreement is signed, the project enters the construction stage. First, consultants will be employed, in accordance with JBIC's *"Guidelines for the Employment of Consultants under JBIC ODA Loans"*, as consultants play an important role in ensuring the efficient and effective preparation and implementation of the project, by their services relating to engineering design, supervision, and management of the project and in capacity-building for the project-related entities.

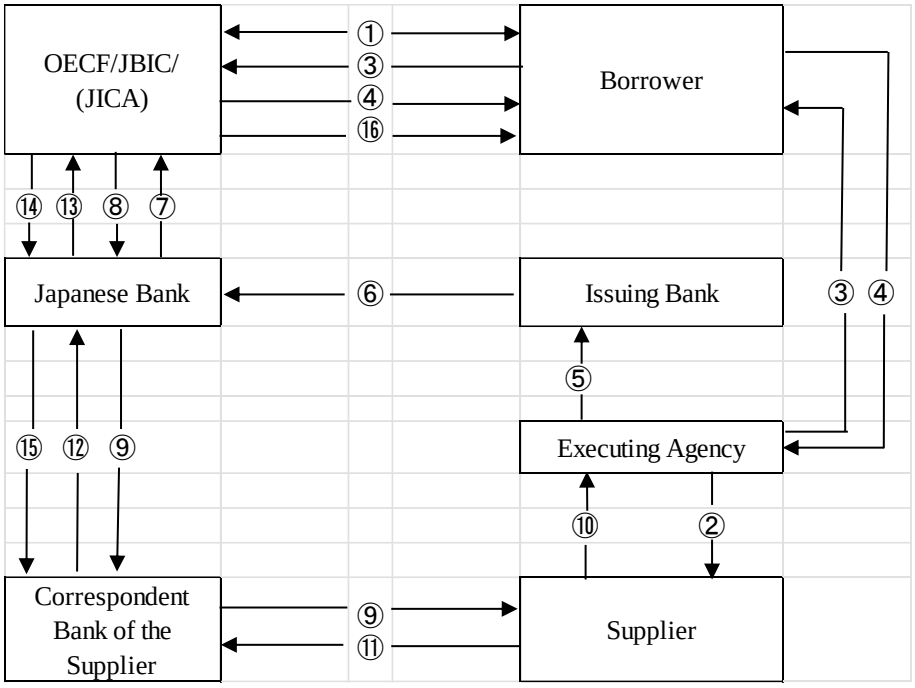
Procurement of goods and services needed for construction of the project follows, in principle, through the international competitive bidding (ICB) process. Procurement is carried out in line with JBIC's *"Guidelines of Procurement under JBIC ODA Loans"*, which stipulates policies and procedures regarding pre-qualification (P/Q), tender documents, evaluation of tendering and contract, on the principle of economy, efficiency, transparency, and non-discrimination. JBIC reviews these procurement procedures as specified in the loan agreement, to ensure that a project will be implemented by a well-qualified contractor.

(b) Disbursement

The Commitment Procedure (Figure 1) is employed as a disbursement procedure that involves the use of a Letter of Credit (L/C), which is commonly used for general export and import

settlements. Under the JBIC's Commitment Procedure, a Letter of Credit issued by the issuing bank is not effective by itself; it becomes effective and payment to the supplier can be ensured when a Letter of Commitment (L/COM), which guarantees JBIC's payment under such Letter of Credit, is issued by JBIC. For each shipment, the supplier requests the negotiating bank to negotiate the necessary documents, and in response, the negotiating bank asks JBIC to make disbursements through the Japanese bank designated in the Loan Agreement ("Japanese Bank"). In turn, JBIC makes disbursements to the negotiating bank through the Japanese Bank.

Figure 1 Flow Chart of Commitment Procedure



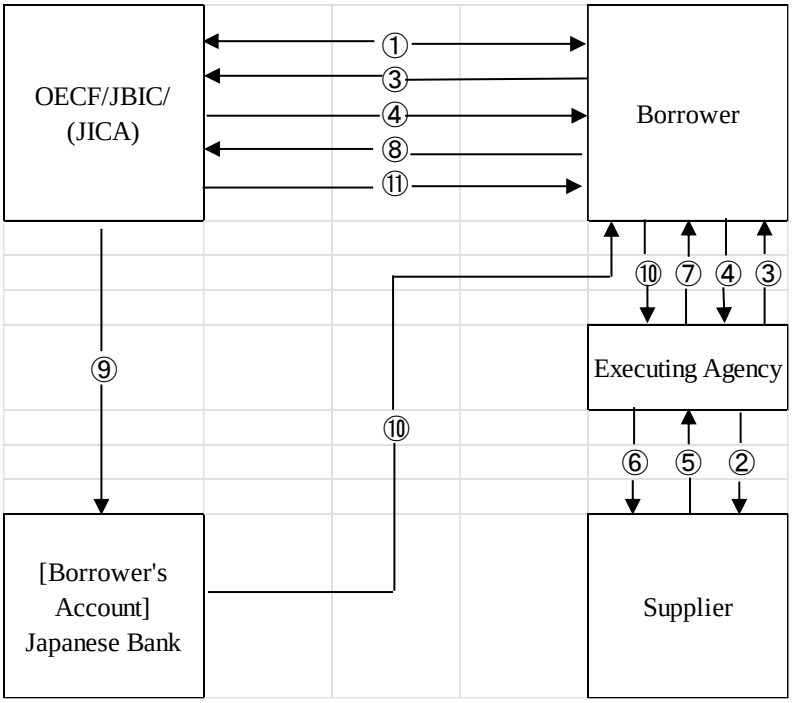
① Conclusion of Loan Agreement	⑨ Advising of Issuance of L/C
② Conclusion of Contract	⑩ Performing the Contract
③ Request for Review of Contract	⑪ Negotiation (for Shipping Documents)
④ Notice of Contract Concurrence	⑫ Request for Reimbursement
⑤ Request for Issuance of Letter of Credit (L/C)	⑬ Request for Disbursement
⑥ Issuance of Letter of Credit	⑭ Disbursement
⑦ Request for Issuance of Leeter of Commitment (L/Com)	⑮ Reimbursement
⑧ Issuance of L/Com	⑯ Notice of Disbursement

The Reimbursement Procedure is another disbursement procedure where the Borrower or the Executing Agency makes payments to the Supplier first and then requests JBIC to reimburse

such payment, together with evidence of payments. JBIC makes disbursements once it confirms that such payments are in accordance with the L/A and the concurred contract. Disbursements are made by paying into the non-resident yen account that the Borrower opened with an authorized foreign exchange bank.

The Reimbursement Procedure (Figure 2) can be used regardless of the contract currency. It is commonly used for projects in which the contract currency is the local currency. It is also used for commodity loans or structural adjustment loans where payments have already been made before the effective date of the L/A (i.e., retroactive reimbursement).

Figure 2 Flow Chart of Reimbursement Procedure



① Conclusion of Loan Agreement
② Conclusion of Contract
③ Request for Review of Conract
④ Notice of Contract Concurrence
⑤ Performing the Contract
⑥ Payment
⑦ Evidence of Payment
⑧ Request for Reimbursement
⑨ Reinbursement
⑩ Remittance
⑪ Notice of Disbursement

(c) Supervision

During implementation of the project, JBIC monitors the progress of project, where necessary, discussing matters with the Borrower with a view to enduring the smooth and successful

implementation of the project. JBIC's supervision covers both the implementation of the project (including physical construction, engineering, and institutional development of project-related and beneficiary entities) and loan procedures (including entry into force of the loan agreement, procurement, disbursement, payment of interest and repayment of principal, etc.)

JBIC supervision missions review project implementation progress, discussing with the Executing Agency how any problem encountered might be resolved and doing everything possible to ensure that all necessary action takes place in a timely and effective manner. The periodic progress reports on the project to be prepared by the Executing Agency required by the Loan Agreement are useful for identifying, at an early stage, any problem(s) during project implementation.

JBIC has a grant-basis facility called Special Assistance for Project Implementation (SAPI) to assist Borrowers to implement and supervise the project effectively and efficiently. This facility may be used to address obstacles and problems affecting project implementation.

(iv) Project Post-Evaluation

(a) Lessons Learned

Post-evaluation is carried out to learn lessons from the completed project for better planning and more effective implementation of future projects.

(b) Performance Review

JBIC's post-evaluation also analyses the performance of the project in comparison with the project plan at the time of project appraisal (this analysis covers scope, design, estimated benefits: ***FIRR and EIRR***, etc.), based on the project completion report (PCR) submitted by the Borrower as required by the respective loan agreement.

(v) Monitoring after Completion

Post-evaluation gives JBIC a detailed knowledge of the operational aspects after project completion. JBIC carries out the monitoring of the operational and maintenance performance of projects for a certain period to ensure effective medium and long-term operation and maintenance and sustainability of project benefits. If post-evaluation or follow-up monitoring reveals that operational and maintenance need to be improved, JBIC gives advice as appropriate, in the interest of improving operation and maintenance of the project. JBIC has a facility known as Special Assistance for Project Sustainability (SAPI) under which consultants employed by JBIC undertake an intensive study of obstacles or constraints hindering the effective operation and maintenance of a project.

References

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Note: (The old) JICA had been the Japan's sole agency for ODA technical cooperation until the new JICA was established in 2008. JBIC was established in 1999 by merging the Overseas Economic Cooperation Fund of Japan (OECF), the Japanese government sole agency for ODA financial assistance (Yen loan), and the Export and Import Bank of Japan. In 2008, the old JICA merged with the ODA wing of JBIC (the former OECF), which produced the newborn JICA.

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