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Environmental Impact Assessment for International Cooperation

Furthering the Understanding of Environment Impact Assessment Systems for Experts Engaged in International Cooperation Activities

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Overseas Environmental Cooperation Center, Japan

Foreword

Environmental Impact Assessment (EIA) is a system for identifying and introducing measures to prevent environmental adverse impacts caused by development project. EIA could be an effective instrument to achieve sustainable development. The concept of sustainable development was introduced at United Nations Conference on Environment and Development held in Rio de Janeiro, Brazil in 1992. Principle 4 of the Rio Declaration, stated “In order to achieve sustainable development, environmental protection shall constitute an integral part of the development process and cannot be considered in isolation from it.” Principle 17 stated that “Environmental impact assessment, as a national instrument, shall be undertaken for proposed activities that are likely to have significant adverse impacts on the environment and are subject to a decision of a competent national authority.” In other words, integration of environmental consideration into any development project is required and EIA is the system to achieve the goal. For this reason, EIA has become increasingly significant in recent years.

Developing countries face a dilemma that had been common with Japan once experienced during the days of rapid economic growth. The pressure to escape poverty creates more demands for continual economic development, regardless of the grave pollution and destruction on natural environment, and emerging of global environmental problems. Recently, developed countries and international donor agencies increasingly demand developing countries for environmental considerations when providing development assistance. With these backgrounds, many developing countries have already introduced EIA systems. Demand to introduce and implement EIA system is critical for developing countries, for those driving towards economic expansion under seeking the equilibrium for sustainable development.

The origin of Environmental Impact Assessment system started with the enactment of the National Environmental Policy Act (NEPA) in 1969 by the U.S. Japanese cabinet adopted EIA in the first half of the 1970's and promulgated the Environmental Impact Assessment law in June 1997, being the last to establish the law among the OECD members. At the supplementary resolutions at the House of Representatives and Councilors during the Diet deliberations on the Law, it was requested that Environmental Impact Assessment should be applied to the projects implemented by Japanese industries and official development assistant (ODA) in overseas countries, to ensure proper environmental consideration. In Japan, many experts go to developing countries to collaborate with them and facilitate technology transfer to preserve environment. This effort plays a main pillar in the international cooperation activities of the environmental protection field in Japan. These experienced environmental experts might have a comprehensive understanding on EIA system in Japan, but they are unfamiliar with EIA of abroad.

This publication outlined the EIA systems useful for development assistance project, in order to help those environmental experts who are involved in development assistance or technological

cooperation work in developing countries.

Many large-scale economic development programs are undertaken with the cooperation of financial support from bilateral and multilateral donors such as the World Bank (WB), Asian Development Bank (ADB)or Japanese organizations such as JICA or JBIC(ex-OECF). Therefore there is a very close relationship between the EIA in developing countries and the EIA guidelines of these aid agencies. In particular, the environmental assessment of the World Bank is mandatory on all projects that may potentially have a significant influence on the environment, many countries plan to introduce a new environmental assessment system for preparation of the EIA report. With the efforts of these aid agencies, public-participation type development becomes the mainstream that places emphasis on public participation in each step of the structure, implementation and assessment of projects. The procedures introduce in here differ from that of Japan, that the scope of assessment does not remain at environmental aspects, but also covers economic, social and cultural aspects as well.

In consideration of the above conditions, this document describes EIA systems for development assistance based on the World Bank, which is thought to play a leading role in environmental impact assessment systems for development assistance for developing countries.

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Environmental Impact Assessment for International Cooperation

Furthering the Understanding of Environmental Impact Assessment Systems for Experts engaged in International Cooperation

1. What is Environmental Impact Assessment?

In 1981, the US Agency for International Development (USAID) revised the National Environmental Policy Act (NEPA). By its revision, Environmental impact assessment (EIA) became a mandate to development assistance project. This was the first attempt to introduce EIA systems in the field of development assistance. This book introduces EIA system of multilateral development banks such as the World Bank and the Asian Development Bank, which play prominent roles in the implementation of EIA in developing countries.

Objectives

The objective of environmental impact assessment is to offer information to decision makers concerning matters that may be brought about as a result of decisions relating to a new project, program, plan or policy. Environmental impact assessment must realize decision-making based on the inputted information including potentially important factors and it must be beneficial for both the proponent and the citizens. Furthermore, environmental impact assessment is a technique that presents in a systematic manner a technical assessment of impacts on the environment that the project is likely to cause and explains the significance of predicted impacts and as a result, it indicates the scope for modification or mitigation. Finally it makes the concerned ministries/agencies assess the potential results of the project before a decision is given. Project developers and administrative agencies who have a responsibility for environmental consideration can use environmental impact assessment technique to improve the quality of both the project plan and decision-making by identifying possible effects in the early stages. The specific objections of the environmental impact assessment system are as follows:

i) To disclose significant environmental effects of proposed projects to decision-makers and the public.
ii) To identify ways to avoid or reduce environmental damage.
iii) To prevent adverse environmental impacts by requiring implementation of feasible alternatives or mitigation measures.
iv) To disclose reason of approvals for the projects with significant environmental impacts to the public.
v) To foster interagency co-ordination.
vi) To enhance public participation.

Significance of EIA

Environmental impact assessment is not a procedure for preventing actions with significant environmental impacts from being implemented. Rather the intention is that project actions are authorised in the full knowledge of their environmental impacts. There are some cases that EIA takes place in a political context. It is inevitable that economic, social or political factors will outweigh environmental factors in many instances. This is why the mitigation measures are so central to EIA. Decisions on proposals in which the adverse environmental effects have been mitigated are much easier to make and justify than those in which mitigation has not been achieved. The significance of EIA is:

1) EIA is more than technical reports, it is a means to a larger intention – the protection and improvement of the environmental quality of life.
2) EIA is a procedure to identify and evaluate the effects of activities (mainly human) on the environment - natural and social. It is not a single specific analytical method or technique, but uses many approaches as appropriate to the problem.
3) EIA is not a science but uses many sciences in an integrated inter-disciplinary manner, evaluating phenomenon and relationships as they occur in the real world.
4) EIA should not be treated as an appendage, or add-on, to a project, but be regarded as an integral part of project planning. Its costs should be calculated as an adequate part of planning and not regarded as something extra.
5) EIA does not give decisions but its findings should be considered in policy- and decision-making and should be reflected in final choices. Thus it should be part of the decision-making process.

The findings of EIA should be focused on the significant and essential issues. It is also required to provide a sufficient explanation on why they are important, and study its validity in order to facilitate a basis for policy decisions.

2. History of EIA Systems and Measures taken around the World

2.1 Historical Background of EIA

Introduced in the US as its beginning, several countries have followed and applied EIA systems. At the same time, international efforts in sustainable development have been promoting to assist developing nations. In recent years, the concept of strategic environmental assessment (SEA) – applying EIA consideration in earlier stage of policy-making, become prevailing and some practical cases are reported.

Beginning of the System

US was the first country to develop a system of environmental impact assessment (EIA). When "Silent Spring" written by Rachel Carson was published in 1962, social awareness to environmental issues in the US had reached high proportions and grew as very intense movements at the latter half of 1960's. With these social backgrounds, the National Environmental Policy Act (1969) of the United States of America (NEPA) was constituted and for the first time, EIA requiring environmental consideration in large-scale projects was enforced as legislation. The influence of NEPA in which the concept of EIA system as its bedrock was extended beyond the US and provoked the introduction of EIA policy in many countries in Europe and Asia. Following the US initiative, several countries began to provide EIA systems; for example Australia (1974), Thailand (1975), France (1976), Philippines (1978), Israel (1981) and Pakistan (1983).

Generally, EIA is more efficient and effective to be implemented as early as possible, for example at the policy or project-planning phase. In practice however, the implementation period of the EIA, as well as its scope and procedures vary by each country and agency, and each system holds their own unique characteristics.

International Efforts

International efforts are classified into the following four areas:

1) Legally binding international documents such as international treaty and protocol.
2) Non-legally binding international documents such as resolutions, recommendations and declarations by international organizations.
3) Guidelines for development assistance.
4) Guidelines for overseas projects.

Spurred by several recommendations by international organizations, in particular, the Organization for Economic Cooperation and Development (OECD) and the European Union (EU), EIA had been prevailed throughout the world in 1980s.

【Treaty】

Aside from the United Nations Law of the Sea Treaty, which was adopted in 1982, many other international treaties and protocols with provisions relating to EIA were concluded in the 1990's. e.g. Convention on Environmental Impact Assessment in a Transboundary context (the Espoo Convention) (1991), Protocol on Environmental Protection to the Antarctic Treaty (1991), Biodiversity Treaty (1992), United Nations Framework Convention on Climate Change (1992).

Efforts of International Organizations

【UNEP - United Nations Environmental Programme】

Activities of the United Nations began in 1982, with the adoption of World Charter for Nature at the United Nations General Assembly. The Charter stated that environmental impact assessment should be ensured to minimize adverse effects on nature, nature assessments should be included in the fundamental elements of all planning and should be publicly disclosed and deliberated. The United Nations Environment Program (UNEP) took these stipulations on board, set up an EIA expert committee and common guidelines for the promotion of EIA, examined standards and regulatory models, and then in 1987 adopted the "Goals and Principles of Environmental Impact Assessment". The 13 rules stipulated here were to facilitate introduction and promotion of EIA systems in member country as well as promote development of international EIA procedure in the case of individual countries may give rise to significant transboundary impacts on other countries.

【OECD - Organization for Economic Cooperation and Development】

The OECD “Declaration on Environmental Policy” (1974) was the first international document to incorporate EIA. This declaration was the follow up activities after the United Nations Conference on the Human Environment (1972) and it set the trend for environmental policy in OECD member countries. Article 9 of the declaration stated that it was critical that environmental impact of significant public or private activities be assessed prior to implementation. The oldest of recommendations and declarations concerning matters relating to environmental impact assessment procedures was the OECD “Council Recommendation on Assessment of Projects which may have Significant Effects on the Environment” (1979) where there are 8 articles covering recommendations for EIA procedures of member countries. In 1983, a special group “The Ad Hoc Committee on Environmental Assessment and Development Assistance” was established under the Environment Committee to examine EIA procedures, methods and implementation mechanisms while maintaining close relations with the Development Assistance Committee (DAC). In 1985, “Council Recommendation on Environmental Assessment of Development Assistance Projects and Programmes” which gave examples of EIA implementations and targets of EIA was adopted. In 1986, “Council Recommendations on Measures Required to Facilitate the Environmental Assessment of Development Assistance Projects and Programmes” concerning EIA procedures and organizational system were adopted. The recommendations stipulated the “the Recommendation”. Then in 1989, checklist for possible use by high-level decision-makers in bilateral and multilateral development assistance institutions was drafted and was released as executive committee recommendations. Based on these three recommendations, DAC also adopted “Good Practices for Country Environmental Surveys and Strategies”, “Good Practices for Environmental Impact Assessment of Development Projects”, “Guidelines for Aid Agencies Involuntary Displacement and Resettlement in Developing Countries” and “Guidelines for Aid Agencies on Global Environmental Problems” in 1991.

【EU - European Union】

The EU directive relating to EIA was adopted in 1985. This directive required a defined EIA to be implemented prior to official authorisation for projects with potential significant environmental impact and required member countries to introduce formal EIA systems by 1988 in order to realise the above. From 1985, the provision of EIA systems in European countries has been progressed centering on the EU member countries.

Later on, due to the increasing divergence of measures among each member country, a revised bill was passed in December 1995 at the Environment Ministers' Summit and it subsequently came into force in January 1998. In the "5th Action Plan on the Environment – Towards the Realization of Sustainable Development" (1993), the introduction of strategic environmental assessment was proposed which implements environmental considerations before the adoption stage of a basic plan or implementation plan that forms the framework for the approval of development. In other words, attempt the environmental conservation from the initial stage of policy makers to the latter stage of project implementation. Deliberations are currently taking place for its adoption.

Development Assistance Agencies

【World Bank】

The World Bank (WB) is an exponent multilateral development bank that provide loan and finance to the developing countries and development assistance projects. The World Bank's "Environmental Policy and Procedures" adopted in 1984 stated the integration of environmental consideration at the initial stages of defining and preparation of a project. Furthermore, in 1989 the WB established the Operation Directive: OD relating to EIA in order to outline the methods and procedures for EIA implementation in proposed projects to WB staff, and the related guidelines "Environmental Assessment Source Book", with the aim of providing sector specific manuals. The OD became an independent operational directive 4.01 in 1991 and was further revised in 1998. In January 1999, the OD compilation "Operational policies 4.01, OP", "Bank Procedures, 4.01, BP" and "Good Practices 4.01, GP" were published as 3 types of operational directives. (See Appendix 2 & 3)

【JICA – Japan International Cooperation Agency】

Following the above-mentioned OECD recommendations, the Japan International Cooperation Agency (JICA) has been co-operating with the Overseas Economic Cooperation Fund (OECF, now reborn and Japan Bank for International Co-operation) and in 1988 “Sectoral Study for Development Assistance – Environment” was completed. Based on this report, covering 20 different fields relating to development studies have been drafted. (See section 5.2 and Appendix 4)

【JBIC – Japan Bank for International Cooperation】

In 1989, the OECF, the forerunner or JBIC, published the “OECF Environmental Guidelines for ODA Loans”. These guidelines were revised in 1995 and the second edition has been in use since 1997. The OECF merged with the Export-Import Bank of Japan on 1st October 1999 and reborn as the Japan Bank of International Cooperation (JBIC). JBIC have decided to draft new environment guidelines. (See Clause 5.3 and Reference Appendix 5)

Global Environmental Problems & Japan

With the start of 1990’s, amidst a background of high recognition relating to global environmental problems such as depletion of ozone layer, global warming and acid rain, the UN Conference on the Environment and Development (Earth Summit) was held in Rio de Janeiro, Brazil in 1992, and the Agenda 21 which aims at the realization of sustainable development, was adopted. In compliance with this, Japan established the Environment Basic Law in 1993, replacing the Basic Law for Environmental Pollution Control, and in 1997 established the Environmental Impact Assessment Law.

Efforts in Developing Countries

In developing countries, the Asian countries started taking environmental measures very early, with many countries having an EIA system in place by the 1980’s. On the other hand, the Latin American countries did not start making legislation until the latter half of the 1980’s. Legislative moves in the developing African countries have yet to become popular. A survey conducted by the Environmental Agency of Japan in 1996 reveals that currently over 50 countries have provided EIA related systems and legislation.

Move towards Strategic Environmental Assessment (SEA)

In recent years, the significance of EIA in various administrative policy- and plan-making levels is being recognized by countries such as Canada, the Netherlands, Denmark and based on the concept of Strategic Environmental Assessment (SEA) cases of implementation can be seen. Within the EU, the "5th Environmental Action Plan- Towards the Realization of Sustainable Development" (1993) was a plan that indicated the incorporation of environmental consideration or assessment in the European administration policy and planning. "The Directive on Environmental Assessment in Basic Plans and Implementation Plans (draft)" was proposed in 1996 and is currently under examination.

In addition, when the Diet Resolution on the EIA Law was passed in Japan, the following was added as one of the supplementary resolution. "To ensure environmental consideration in top level planning and policymaking, the research and studies on strategic environmental assessment should be implemented and concrete consideration should be promoted to smoothly lead the establishment of SEA system based on international trend and state of Japan".

2.2 EIA in Environmental Laws of Various Countries

Developed Countries

【US】

EIA system was introduced with the enforcement of the National Environ-mental Policy Act (NEPA) in 1969. Only fundamental items were stipulated in NEPA, and supplemented some specific system in Regulations of National Environmental Policy Act set up in 1978. The NEPA procedures contain unique specifications not found in the EIA systems of other countries, such as EIA should be applied not only to project approval action but action on legislative and other such proposals (SEA), and EIA statements should be prepared by federal agencies.

【Canada】

EIA was introduced in 1973 with the passing of a federal cabinet directive. Following this, the Canadian Environ-mental Assessment Act (CEAA) was passed in 1992 and came into force in January 1995. The CEAA includes class-screening procedures for imple-menting simple assessments utilizing the existing EIA previously appointed. The procedures for public review for analyzing the contents of an EIS based on third party arbitrator or committee, establishment of public registers for disclosing information & documentation relating to EIA, and the establishment of funds to facilitate public participation

【UK】

Local government covers administration of regional land use programs & development control by the Town and Country Planning Regulations in which EIA procedures are stipulated. Approval for highways, power stations & other major infrastructure projects however, is issued by the national government in accordance with relevant laws, e.g. the Highways Act or Electricity Act. EIA procedures for these projects are stipulated in the individual laws. Individual laws are made to comply with EC directives for maintaining an approval system that is used by both national & local governments. In EIA procedures the significant role local government agencies play as regional planning agencies in development regulation administration & flexible cooperation between agencies & project executors from the early stages of project development.

【Netherlands】

Under the EC Directive, EIA systems in the Netherlands are stipulated in the provisions of the Environmental Management Act which was prepared by compiling approval & other regulations relating to environmental policy. EIA regulations stipulating the types of projects requiring EIA and approval procedures was issued in 1987 and put into operation the same year. EIA systems include such features as the contribution of public participation in the development of scoping guidelines that determine the scale of surveys & other procedures for each project. And the establishment of an independent EIA committee to ensure that the information provided in the EIS is sufficient. The Environmental Management Act and EIA Regulations were amended in 1994 to include screening procedures to narrow down categories of projects requiring EIA.

【France】

EIA systems were introduced into French legislation with the passing of Law on Nature Protection in 1976 and its government ordinance the following year. This was the first legislative system incorporating EIA in Europe. The EIA system in France is classified into three types: projects exempted from EIA procedures including public projects, private projects requiring public agency approved, and Town planning, projects requiring a simple EIA, and projects requiring the implementation of a detailed EIA.

【Italy】

Under the EC Directive, EIA procedures were stipulated in Law n.349 (which established the Italian Ministry of the Environment) (1986), and “Regulations on Environmental Adoptability” was set up in 1988 to require EIA of projects of certain categories. The main features of the Italian systems include co-ordination of studies from the initial stages based on notification from the project executors of implementation research projects, and the establishment of an independent committee to evaluate the technical items of EI Statements.

【Germany】

In 1975, the “Cabinet Directive on the Environment Assessment Principle for Federal Public Measures was promulgated whereby the possible environmental consequences of all federal planning and authorization procedures were subject to examination. Following this, the “Act on Implementation of the Council Directive on the Assessment of the Effects of Certain Public and Private Projects on the Environment” was issued in 1990 in compliance with the European Directive. In addition to stipulating the type of projects requiring EIA and the necessary procedures, this law also incorporates them into the authorization procedures for the concerned acts.

Source：”Current Environmental Impact Assessment System (1995)”, Study Group for Environmental Impact Assessment System

Developing Countries

【China】

It is stipulated in the "Environmental Protection Law (pilot-phase)" (1979) that all construction related projects must implement EIA. EIA procedures were clearly defined in the Basic Construction Items Environmental Preservation Management Law established in 1981. The main features of the administrative systems in China include the fact that no provisions are made for public participation, the EIA work is carried out by qualified executive EIA organizations. Filling out of simple EIS forms is sufficient for small-scale projects.

【Philippines】

Regional branches of Environmental Management Bureau (EMB), Department of Environment and Natural Resources (DENR) are primarily responsible. Projects that are environmentally critical or located in environmentally sensitive areas are subject to EIA. Projects cannot be implemented unless an environmental compliance approval has been issued by the EMB. Two types of documents are produced as part of the EIA process: Project Descriptions and Environmental Impact Statements. A public hearing is conducted if the project is large or located in a particularly sensitive area. After project approval, the compliance with the EIA recommendations are monitored usually by the DENR regional offices (a mixed team including project organizers, the local community and Non-Government Organizations).

【Indonesia】
EIA system is known as AMDAL (Analisis Mengenai Dampak Lingkungan) & its overall management rests with BAPEDAL (the Environmental Impact Management Agency). Indonesia simplified EIA procedure in 1993. Under the new regulation, the AMDAL committee includes more NGO representatives, has extended the review concept to regional planning activities, & speeded up the process. BAPEDAL has also been given greater responsibilities for supervising EIA procedures. All projects implemented since 1987 needed to be reviewed. Public participation is allowed at any stage of EIA process, at the discretion of the committee. Public agencies are also required to disclose information to the

【Sri Lanka】
In Sri Lanka, the National Environmental Acts was amended in 1988 to provide for regulations pertaining to environmental impact assessment. The Central Environmental Authority is responsible for guidelines, project selection, and coordination of various project-approving authorities related to EIA. The procedures include provisions for public hearings, public announcement of approvals, and appeals against unsuccessful projects.

【Thailand】
National Environment Quality Act was passed in 1975, and the EIA system was determined by the following revision in 1978. Target projects were determined according to a decree from the Ministry of Science, Technology, and Environment in 1987. In 1992, a new National Environment Quality Act was passed. Regulating in detail the EA process, the time required for completion was shortened. The necessity for receiving approval for government projects from the cabinet, the issuers of the proposal have compiled an environmental assessment report, which they have presented to the National Environmental Board. In the report, the Board & the Office of the Environment Policy & Planning conduct investigations, decide the project approval. For public or private projects not requiring cabinet approval, the report presents an environmental assessment to the Office of the Environment Policy & Planning, which then presents its findings to the National Environmental Board.

【Pakistan】
EIA procedures were determined in the Pakistan Environmental Protection Ordinance passed in 1983. However, in reality this law has not been implemented. In 1992, regulation of the administrative bodies began to see the law implemented.
All people planning projects that could adversely affect the environment are obligated to present a detailed environmental assessment, which includes the following, to the Pakistan Environmental Protection Council when their project is at the planning stage.
A) Impacts of the planned activities.
B) Environmental protection measures
C) Unavoidable adverse affects on environment
Countermeasures discussed by the project planning report to minimize adverse affects on the environment.

Source: "Development and Environment Series 6, Environmental Law in Developing Countries, Southeast and East Asia" (1994). Institute of Developing Economics.

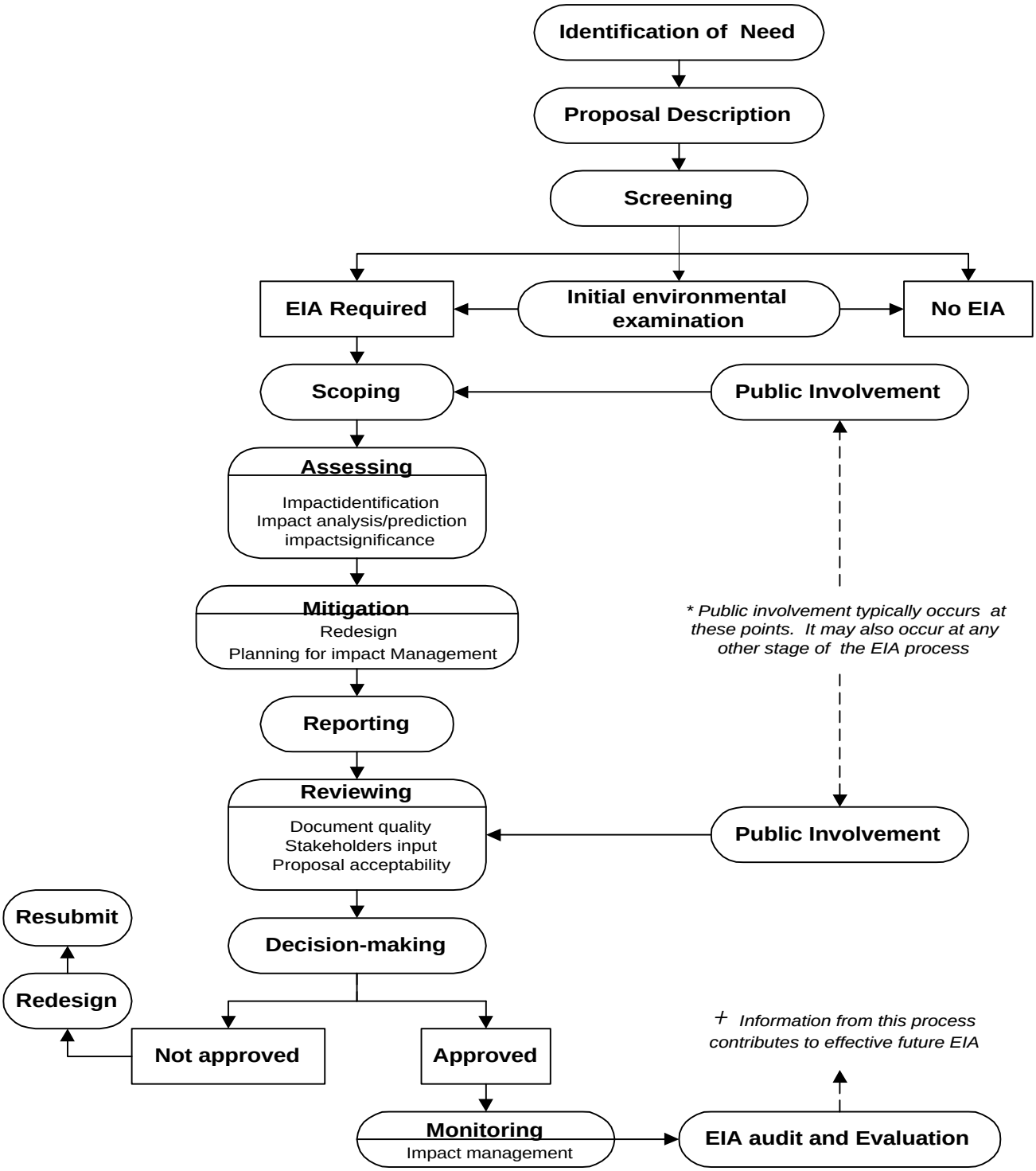

Figure 1 The EIA Process

3. EIA Process

3.1 Flow of EIA

After identified the needs of the proposed project, EIA process required to implement screening to determine the necessary of EIA and how far each assessment should be. When these degree are decided, the process proceeds into the step of scoping to identify environmental factors considered to be affected seriously, that will distilled up the key factors for assessment. In this stage, public consultation is required. At the same time, assess the expected effects, study the mitigation measure and make the EIA report. Based on this EIA report, hold the public consultation again, and then submit the final report to the decision-makers. It is recommended to have public consultation upon needs. After decision was approved, the proposed projects will be implemented with the environmental monitoring. Figure 1 shows the whole EIA process.

3.2 Step-wise Structure of EIA

EIA Process can be itemized into the following 9 steps. (Referring the model of Ahmad and Sammy) Public disclosure and participation are the key factors throughout the EIA system, and should be implemented at the effective timing at every step. Practically, however, the timing of implementation differs by systems applied by each country/organizations.

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1) Preliminary Activities and Decision of Terms of Reference (TOR)
2) Scoping
3) Baseline Study
4) Environmental Impact Evaluation
5) Mitigation Measures
6) Assessment of Alternative Measures
7) Preparation of Final Document
8) Decision-making
9) Monitoring of Project Implementation and Its Environmental Impacts

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Modified Ahmad, Y.J. and Sammy G.K.(1985) Guidelines to Environmental Impact Assessment, Hodder and Stoughton, London

Description

Step 1 Preliminary Activities & TOR	Preliminary activities include the defining of the Terms of Reference (TOR) for the project and also the determining of the personnel required for the assessment. A brief summary of the project is extremely helpful at this stage. The summary should be clear and explicit and should list exactly what the development project entails.

The existing laws and regulations that are applicable to the project should also be reviewed along with the regulating authorities. The same procedure must be adopted for technical, financial and managerial resources available for the project.

It is very important to identify the team that will carry out the EIA procedure along with a coordinator and the decision-maker who will read the final report. Members of the EIA team usually have the specialized professional expertise of different areas related to the various aspects of the project. Thus, an EIA team might include an engineer, an economist, a physical geographer and a sociologist, with a senior government official to play the role of a coordinator. All these need to be identified and declared before the actual EIA process may begin.

The composition of the EIA team varies from country to country. In the United States, the developer carries out the functions of both the EIA preparation and the decision-making with the Environmental Protection Agency (EPA) involved only in reviewing and monitoring the project. In other countries, a government organization may actually carry out the EIA process. Some countries may not have the appropriate means and facilities for this purpose, and therefore, in such cases, a team of consultants may be employed to help with the assessment. This often turns out to be an expensive proposition. A team partly of local governmental personnel and partly of consultants might serve the purpose very well in such cases. Similarly, the decision-maker may be a person, a committee, or a number of organizations, etc.

Step 2
Scoping

Scoping is a process for identifying environmental impacts of the project. At a very early stage in the preparation of an EIA, the impacts of the project on the environment are identified. When the list of the impacts is very large, only the most significant impacts are selected. This process, therefore, determines the limits and the scope of the environmental degradation involved with the project. Scoping actually controls the cost and time of the assessment in deciding the scope of the EIA and therefore is a very important step both in identifying the impacts and controlling the size of the EIA.

The following techniques are used for scoping.

- Checklist technique
- Matrix technique
- Networks technique
- Overlay technique

Step 3
Baseline Study

A baseline study is the study of the original status of the environment in the area before the development work of the project is started. This study serves the purpose of a base reference against which the changes due to implementation of the project are measured. Baseline studies are based on the experience with respect to environmental aspects and cover everything important about the environmental impacts of the project. On the other hand, a proper scoping highlights the significant environmental issues of the project with respect to its locality and regional environment. Hence, scoping and baseline studies often run into each other. Baseline studies are rather easily carried out in the countries where the required technical expertise, long-term database for environmental measures (for instance in the case of river flow) and relevant research papers and reports are available for the area concerned. Thus, the baseline studies are more easily prepared in developed countries. The local expertise, such as consulting a forester or a soil scientist, could be utilized instead to complete the baseline studies in the developing countries. In such cases, the team responsible for the EIA must have the ability to find out the appropriate personnel for the required information. Failing that, the overseas consultants can be hired but it will raise the cost of the EIA preparation. In other words, it is the price a country has to pay for not having the required database.

Step 4
Environment
Impact
Evaluation

Environmental impact evaluation actually grows out of scoping and baseline study of the project. In principle, EIA assigns various quantified values to different levels of all the impacts affecting the project. This step is generally considered as the most technical in nature and therefore is the most difficult and controversial part of the EIA. It is difficult because not every impact, especially natural and social impacts, can be quantified. For example, it is very difficult to agree on a number that can sum up all the negative impacts of deforestation. Occasionally, it is possible to use surrogate measures, such as the amount of money required to mitigate the damage or the amount of money local inhabitants are willing to pay to clean up the river. However, the accuracy and appropriateness of such techniques can be questioned. Again, an existing data set can be extremely useful for impact evaluation, but it is also costly.

Impact evaluation actually calls for very careful considerations of the most important impacts and their accurate numerical representation. This has to be done not only for the proposed project but also for all possible alternatives, so that a well-balanced final decision can be reached regarding the fate of the project. Impact evaluation is therefore dependent on the quality of the scoping that is done earlier on the project.

Step 5 Mitigation Measures

Mitigation measures are taken after the impact evaluation. These measures are taken to reduce the magnitude or intensity of the impacts affecting the environment. This of course will incur some costs, but it is expected that such measures will, in the long run, mitigate the impacts so as to make the project both economically and environmentally viable. The EIA team has to decide between two alternatives, either having a high cost and low pollution program or having a low cost but a high pollution situation.

Step 6 Assessment of Alternative Measures

Assessment of alternative measures becomes possible at this stage. The proposed project and all other relevant versions have been examined for environmental impacts by now. They have also been corrected by applying the mitigation measures to minimize the adverse effects on the environment. They have also been subjected to some kind of standardization such as impact quantification so that all the relevant versions can be easily compared. The next step is to assess the environmental degradation and improvement in terms of economic losses and gains. In standard EIAs, a summary for each version of the project is given together with the comparative assessment using benefit-cost analysis (BCA). Benefit-cost analysis has a long history of use as a method for evaluating development projects and therefore is popular with a very wide range of people, such as, engineers, economists, bureaucrats, etc. However, there is a difficulty in the assessment as not everything is quantifiable. There is no exact numerical representation for a beautiful view, for instance. Although attempts have been made to describe such situations numerically. Therefore, not all assessments use net benefit criteria. The benefit-cost analysis, when used, is equally applied to all options to make the comparative assessment easy. For instance, it is more desirable to put up with limited pollution at a lower cost of mitigation than to remove the pollution completely at a much higher cost.

Step 7
Preparation of the final document

Preparation of the final document should meet the following two objectives. First is to prepare a complete and detailed account of the EIA. The second is to prepare a brief summarized account for a decision-maker, who may not be a technical person.

The detailed document is usually called as the *reference document*. This document is used by the technical personnel that is associate with the project. It is also referred for preparing future EIAs in the same geographical area, or for the same type of project in a different area. The referred part usually contains the technical calculations, graphs, and the results of field and laboratory measurements.

The summarized non-technical account is usually called as the *working document*, which is written clearly without using technical language to communicate to the decision-maker the findings of the EIA team. Main objective of this document is that the non-technical decision-makers must properly understand the findings and recommendations of the EIA team so that they can take a well-informed and correct decision promptly

Step 8
Decision-making

Decision-making is the process which starts after the above-mentioned steps of EIA are completed. Usually the decision is taken by a manager or a committee, or personnel from the concerned ministry who had not been associated with the EIA during its preparation. Technical and economic aspects of project alternatives are thoroughly considered but, at times, political expediency and project feasibility control the final choice. In general, a decision-maker has three choices:

- accepting one of the project alternatives
- returning the EIA with a request for further study in certain specific areas
- totally rejecting the proposed project along with alternative versions.

As pointed out by Ahmad and Sammy (1985), EIAs are expected to aid decision-making; and therefore, preparation and drafting of an EIA should always be carried out with this clear objective in mind.

Step 9 Monitoring of Project Implement-ation & its Environmental Impacts	**Monitoring of project implementation and its environmental impacts** is usually carried out while the selected project is under actual implementation. The monitoring is basically the process of inspection to make sure that the proper guidelines and recommendations stated in the EIA are faithfully followed. Such inspections may also be carried out after the completion of the project to determine as to what accuracy the environmental impacts have been predicted by the EIA. This could be a very valuable exercise for the environmental impact assessors.

4. Outline of EIA for Development Assistance

4.1 EIA and Development Planning

EIA has an important role to play resolving these environmental problems through its ability to contribute to environmentally sound and sustainable development. Developing countries in Asia have recognized the importance of incorporating EIA processes into development planning. Development planning takes place at a number of different scales, and environmental concerns need to be considered at each one of them. Development planning is designed in various stages. This chapter describes the structure of EIA and development planning.

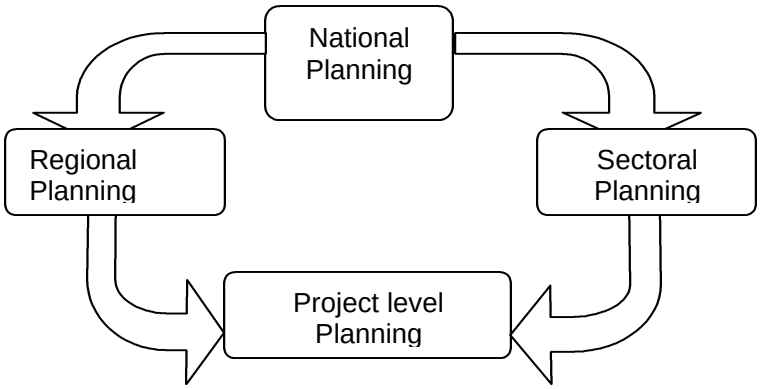


Figure 2: Development planning hierarchy
（Modified Asian Development Bank, 1993a）

Development Planning Hierarchy

National Planning — The aim of national planning is to set broad economic, environmental, and social development goals for the country's continuing development. At this level, the employed mechanisms include the formulation of a national conservation strategy, environment and natural resources management plans, state-of-the-environment reports, environment and natural resources profiles for developing countries and incorporation of environmental and natural resources considerations in economic planning and national development plans. These activities are the important elements of the overall national environmental policy.

Regional Planning — Regional planning defines broad land use allocations for a geographic region, normally at the sub-country level. At the regional level, the approach should integrate environmental concerns into development planning. Such an approach is referred to as economic-cum-environmental (EcE) development

planning (Asian Development Bank, 1993a). This approach facilitates adequate integration of economic development with management of renewable natural resources to achieve sustainability. It fulfils the need for macro-level environmental integration, which the project-oriented EIA is unable to address effectively. Such regional plans can set the context for project-level EIA. In considering regional plans, the environmental impacts of alternatives need to be assessed.

Sectroral Planning

Sectoral planning focuses on the needs of individual development sectors (for example, energy, transport, and forestry). At the sectoral level, environmental guidelines and sectoral reviews and strategies should be formulated and integrated into various sectoral plans. This will help to address specific environmental problems that may be encountered in planning and implementing sectoral development projects. Sectoral plans, however, must also consider the relationships between sectors to avoid land use and infrastructure conflicts.

Project Planning

At the project planning level, EIA is the primary tool for integrating environmental considerations into project design and execution. Project proponents and regulatory agencies prefer to consider the environmental impacts of a single project. Ideally, EIA at the project level should take place in the context of regional and sectoral level planning; if this is not feasible, the scope of EIA reports may have to include the considerations of broad land use issues. In addition, if environmental effects are considered only at the project level, decision makers will have difficulty taking account of cumulative environmental effects**.** These are impacts which at first instant may appear minor for any one project, but can become significant when groups of related projects are considered together. The absence of regional and sectoral planning increases the time duration and cost involved in the preparation of the EIA report and thus project approval becomes costly and time-consuming.

Table 2　Integration of environmental concerns into development planning

Level	Integration of Environment Policies & Procedures	Environmental impact assessment Planning or Management Techniques Used
National	Environmental policy included in national action plan	• Environmental Profiles • International Assistance Agency • Country programming
Regional	Economic-cum-environmental development	• Integrated regional development planning • Land use planning • Environmental master plans
Sectoral	Sectoral review linked with other economic sectors	• Sector environmental guidelines • Sector review strategy
Project	Environmental review of project activities (EIA procedures)	• EIA • Environmental guidelines

Source: Asian development Bank, 1993a (Modified)

EIA, EcE, and sectoral planning are important mechanisms by which environmental factors are included in the development planning process. EcE and sectoral planning evaluates development from the national or sub-country perspective, whereas the EIA is project oriented. When EcE or sectoral plans are available they simplify the EIA process. If they are not available (as is often the case), the project EIA must attempt to evaluate the regional and national implications of the project.

The integration of environmental considerations within the planning process has evolved similarly in both developing and industrialized countries. In Asia, the Asian Development Bank (ADB) and other institutions are currently assisting developing countries to establish, formulate, and apply regional EcE development plans and project EIA planning tools and methodologies. As such, EIA is being used as a tool for influencing development decisions not only in industrialized countries, but also in developing countries as well.

4.2　EIA Inputs to the Project Cycle

Increasingly, Asian countries are enacting laws requiring EIAs for all major projects. Indeed, in many countries EIA must be an integral part of the feasibility study. Where these laws are enforced, they can be a powerful means of directing development towards sustainability.

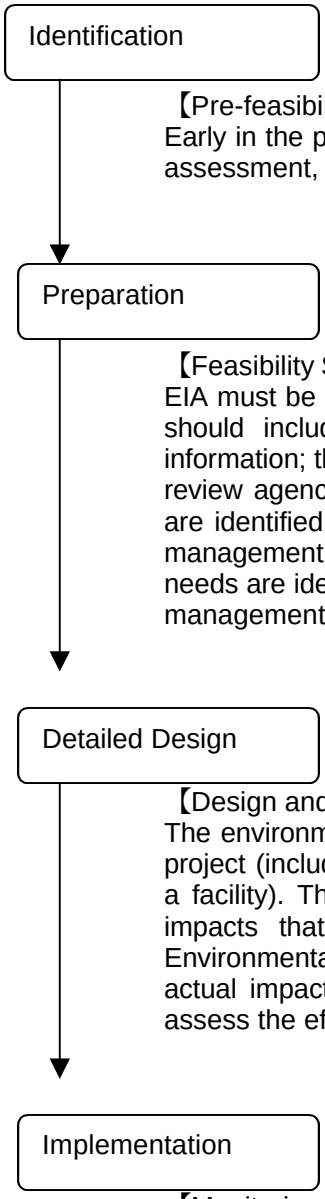
Another major trigger for EIA is project financing.　In many cases, a review of the project's EIA is a mandatory requirement of financing. Few lending institutions and investors, whether international

financial institutions or private sources of capital, are willing to risk their funds on projects which do not meet environmental standards. These conditions have resulted in a careful integration of environmental review procedures at various stages of the "project cycle."

A generalized project cycle can be described in terms of six main stages:
1) project concept;
2) pre-feasibility;
3) feasibility;
4) design and engineering;
5) implementation; and
6) monitoring and evaluation.

EIA has a role to play at each stage in the cycle, as shown in Figure 2. Most EIA activities take place during the pre-feasibility and feasibility stages, with less effort devoted to implementation, monitoring, and evaluation stages. In general, EIA should enhance the project and augment the project planning process.

As shown in Figure 2, each step of EIA process has its own objectives for each step. Most EIA put importance on pre-feasibility study and feasibility study, while implementation, monitoring, evaluations are not. Generally, EIA enhance the project plan and makes it more efficient.


Identification
【Pre-feasibility Study】
Early in the project cycle, the EIA process involves the site selection, screening, initial assessment, and scoping of significant issues.
Preparation
【Feasibility Study】
EIA must be an integral part of the project feasibility study. A project's feasibility study should include a detailed assessment of significant impacts, including baseline information; the prediction of effects and their quantification, and review of the EIA by a review agency. Subsequent to these initial steps, environmental protection measures are identified, environmental operating conditions are determined, and environmental management is established. At the last stage in the feasibility study, the monitoring needs are identified, and the environmental monitoring program and the environmental management plan are formulated.
Detailed Design
【Design and Engineering】
The environmental management plan is put into effect during the implementation of a project (including construction, operation, maintenance, and ultimate abandonment of a facility). This plan must include mitigation measures to reduce the environmental impacts that cause adverse effects during the implementation of the project. Environmental monitoring must be designed to provide information on the activity's actual impacts, check the compliance with environmental operating conditions, and assess the effectiveness of environmental mitigation measures.
Implementation
【Monitoring and Evaluation】
The evaluation of monitoring results is necessary to ensure that the environmental objectives are achieved and, if necessary, the project modifications or remedial measures are undertaken to address unforeseen impacts. Resources for the design and implementation of effective monitoring programs have often been inadequate. As a result, follow up work to ensure that the EIA recommendations are actually carried out has rarely been completed. Many national environmental agencies and international assistance agencies (IAAs) such as the ADB recognize the importance of follow-up evaluations. These agencies now call for many additional requirements before approving the funding for the implementation of environmental management plans and monitoring programs.

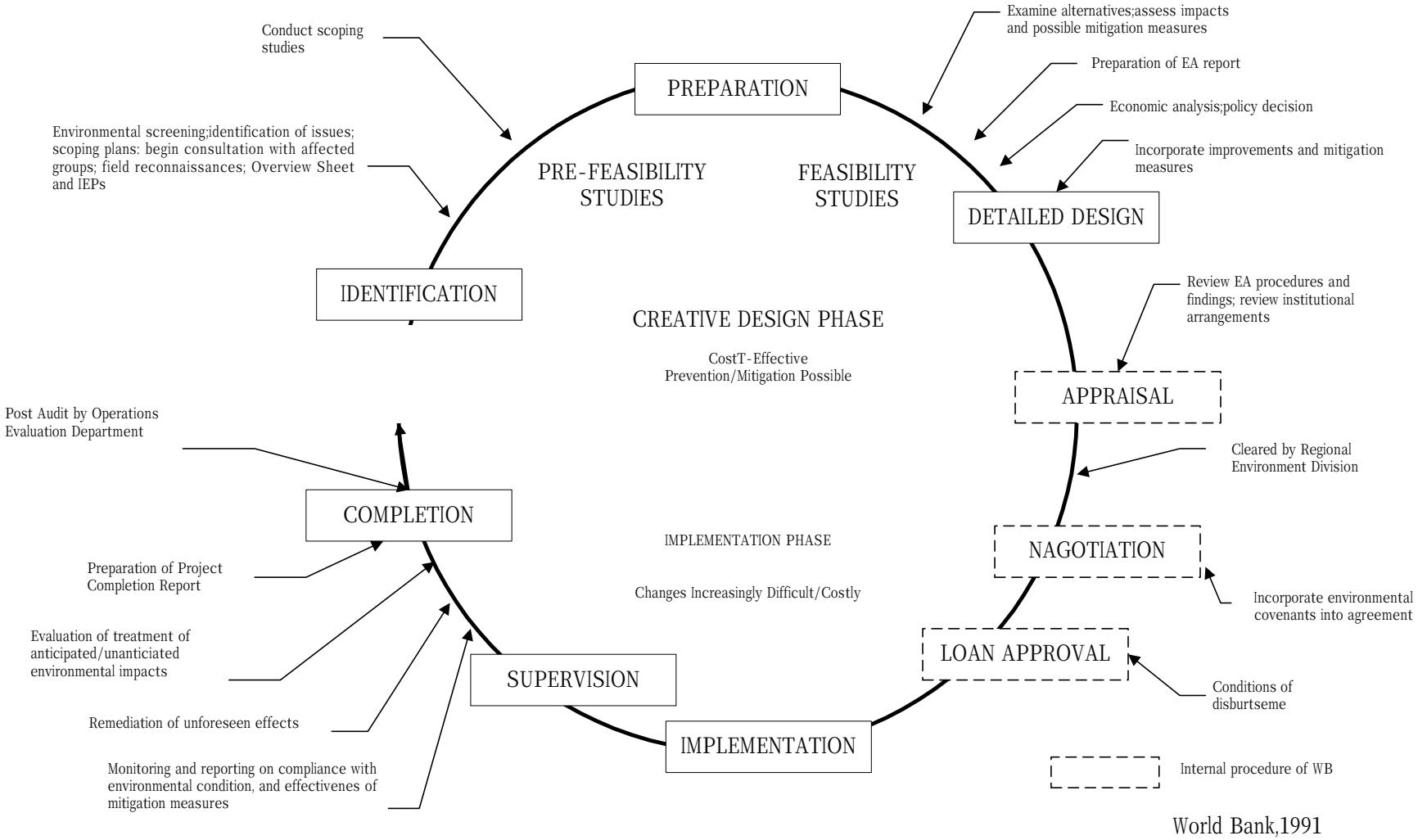


Figure 3 Environmental Assessment and the Project Cycle

4.3 Outputs in the Development Planning Decision

The main goal of EIA is to influence development decision-making by providing sound information on environmental impacts and also the means for preventing or reducing the adverse effects on the environment. Three major outputs of the EIA process provide the primary means for integrating the results of a specific EIA into the development planning decision process and the concurrent environmental regulatory process.

- Identification and analysis of the environmental effects of proposed activities (including their probability of occurrence);
- Environmental management plan which outlines the mitigation measures to be undertaken; and
- Environmental monitoring program which outlines the data that must be collected during the implementation of the project.

All three outputs are required for the EIA process to be effective. In some jurisdictions, the documentation for the EIA process requires that three separate documents be prepared, one for the impact assessment, one for the environmental management plan, and one for the environmental monitoring program. In other cases, all the three are presented together as the part of the EIA document.

Environmental management is usually integrated into the project management system associated with the construction, operation, and maintenance of the project. Environmental monitoring is normally considered one of the responsibilities of the environmental management system. When successfully integrated with the environmental management system for the project, environmental monitoring can provide a valuable feedback about the effectiveness of environmental protection measures. Where monitoring shows that the environmental protection measures have been ineffective, the corrected action should be undertaken accordingly.

EIA Analysis

EIA analysis has three sequential phases, that is, identification, prediction, and assessment. Identification involves characterizing the existing physical, social, economic, and ecological environment and identifying components of a development project which are likely to impact that environment. The impacts may be described according to the geographical area and time period over which they are expected to occur.

During the prediction phase, the project impacts are quantified using standards and by comparison with the findings of other projects. Basically, the predictive function of an EIA is to forecast the nature and magnitude of the identified environmental impacts, and to estimate the likelihood of occurrence

for those impacts. The assessment phase judges the importance or significance of the predicted impacts. The results of the assessment phase, in terms of the beneficial or adverse impacts for the proposed project and its development alternatives, are communicated to decision-makers. Population groups that may be directly or indirectly affected by the project are identified. The assessment determines costs and benefits to user groups and the population affected by the project. It also specifies and compares trade-off between various alternatives.

Environmental Management Plan

One of the goals of the EIA process is to develop an implemental set of environmental protection measures. These measures are normally set out in an environmental management plan.

Environmental protection measures are taken to:

1) mitigate environmental impacts;
2) provide in-kind compensation for lost environmental resources; or
3) enhance environmental resources.

A well-structured environmental management plan usually covers all phases of the project from pre-construction to decommissioning. It addresses all major environmental issues and impacts identified during the EIA process. The plan outlines environmental protection and other measures that would be undertaken to ensure compliance with the environmental rules and regulations so as to reduce or eliminate adverse impacts. The plan defines:

- the technical work program to carry out this plan, including details of the required tasks and reports, and the necessary staff skills, supplies, and equipment;
- a detailed accounting of the estimated costs to implement the plan; and
- the planned operation for the implementation of the plan, including a staffing chart and proposed schedules of participation by the various members of the project team, and an outline of activities and inputs from various governmental agencies.

Environmental Monitoring Plan

Environmental monitoring involves the systematic collection of data to determine

1) the actual environmental effects of a project;
2) the compliance of the project with regulatory standards; or
3) the degree of implementation of environmental protection measures and their successful application.

The information generated by monitoring programs provides the feedback necessary for effective application of the environmental protection measures to achieve an environmentally sound project.

The environmental monitoring program plan outlines the monitoring objectives; the specific information to be collected; the data collection program (including sampling design); and the management of the monitoring program. Program management assigns the institutional responsibility, defines the reporting requirements, ensures the enforcement capability, and confirms that the adequate resources are provided in terms of skilled staff, equipment, training, and funds.

5. EIA Program for Developmental Assistance

5.1 EIA Process in World Bank

In May 1987, a series of structural changes were introduced to strengthen the Bank's environmental policies, procedures and resources. These changes had resulted in the creation of an Environment Department along with Environmental Divisions in each of the four regional technical departments, however, recently environmental divisions were vanished along with the Bank's re-organization of its structure.

In October 1989, the Operational Directive was introduced on Environmental Assessment (EA), which required an environmental assessment for all projects with possible environmental connotations. In 1999, World Bank revised this Directive and developed three documents, i.e. OP4.01, BP4.01 and GP4.01. (See Appendix 3.) By these manuals, all prospective loans needed to be screened and classified into categories depending on the nature and magnitude of probable environmental impact. There are a total of four categories. The determination of each category depends on a combination of factors: project location, sensitivity of environmental issues, nature of impact, and magnitude of impact. For example, the location of a project near sensitive and valuable ecosystems, archaeological sites, cultural and social institutions, a high density of population, water courses, etc., may give it the rating of class A, which represents the highest potential class for adverse environmental impacts.

5.1.1 Project Identification

-Screening:	To decide the nature and magnitude of the Environmental Assessment (EA) to be carried out, the process usually begins with the screening as the project is identified. In the screening, the team determines the nature and magnitude of the proposed project's potential environmental and social impacts, and assigns the project to one of the environmental categories of A, B, or C.
Category A:	*For this category, a full EA is required. Category A projects are expected to have "adverse impacts which may be sensitive, irreversible, and diverse", such as direct pollutant discharges large enough to cause degradation of air, water or soil; large-scale physical disturbance of the site and surroundings; extraction, consumption, or conversion of substantial amounts of forest and other natural resources; measurable modification of hydrologic cycles; hazardous materials in more than incidental quantities; and involuntary displacement of people and other significant social disturbance.*

Category B :	For this category a full EA is not required, but some environmental analysis is necessary. Category B projects have impacts which are "less significant, sensitive, and diverse". Few, if any of these impacts are irreversible, and remedial measures can be more easily designed". Typical Category B projects entail rehabilitation, maintenance or upgrading rather than new construction.
Category C :	For this category, no EA or other type of environmental analysis is required. Category C projects have actually a negligibly minimum direct adverse effect on the physical setting. Typical category C projects usually focus on education, family planning, health and human resource development.
Category FI:	A proposed project is classified as Category FI if it involves investment of Bank funds through a financial intermediary, in subprojects that may result in adverse environmental impacts.
Note **:**	Projects with multiple components are classified according to the component which represents the most significant adverse impact on the environment. For instance, if the category A component is the most prominent, then the full project is classified as category A.

-Scoping:	Once a project is categorized, a scoping process is undertaken to identify the key issues and develop the Terms of Reference (TOR)for the EA. It is essential to identify more precisely the relevant environmental impacts and define the project's area of influence at this stage. As a part of this process, the relevant information about the project and its significant environmental effects are faithfully disseminated to the affected local communities and NGOs, and then followed by the serious consultations with the representatives of the same groups. The main purpose of these consultations is to focus the EA on issues of concern at the local level.
-Public Consultation:	Consultation with affected communities is recognized as the key towards identifying the environmental impacts and designing their mitigation measures. The consultation with affected groups and local NGOs during at least two stages of the EA process is almost compulsory: i) at the scoping stage, shortly after the EA category has been assigned, ii) after a draft EA report has been prepared. Consultation throughout EA preparation is also generally encouraged, particularly for projects that affect peoples' livelihood and for community-based projects. In projects with major social components,

	such as that requiring involuntary resettlement or affecting indigenous people, the consultation process should involve active public participation in the EA. The project development process and the social and environmental issues should be closely linked during the consultations.

5.1.2 Preparation of EA Report

When a project is classified as category A, a full-scale EIA is normally prepared including an EIS (Environmental Impact Statement). However, category B projects are subject to a more limited EA, the nature and scope of which is determined on a case-by-case basis.

The main components of a full EA report are the following:

***-Executive Summary*:**	The Executive Summary should consist of a concise discussion of significant findings of the EA together with the recommended actions for the project.
***-Policy, Legal and Administrative Framework*:**	The policy, legal and administrative framework within which the EA is prepared, must be thoroughly discussed. The environmental requirements must be pointed out and properly explained to the co-financiers, if any.
***-Project Description*:**	The staff should provide a concise description of the project's geographic, ecological, social and temporal implications, including any off-site investments that may be required by the project, such as dedicated pipelines, access roads, power plants, water supply, housing and raw material and product storage materials.
***-Baseline Data*:**	The baseline data provides the description of relevant physical, biological, and socioeconomic conditions and also includes the assessment of the dimensions of the project area, pointing out to any possible changes which could be anticipated before the project begins. This information is very vital for the preparation of EA, and provides the valuable data on current and proposed development activities within the project area, even if they are not directly connected to the project.

5.1.3 Appraisal Process

***-Impact Assessment*:**	This is the first step in the appraisal process and includes the identification and assessment of good as well as adverse impacts, which are likely to result from the proposed project. The impact assessment should also identify any residual adverse impacts that cannot be mitigated. Various opportunities for the environmental improvement and

	further enhancement should be thoroughly explored. The range and quality of available data, including any key data gaps and uncertainties associated with predictions should be specifically identified/estimated. The topics that do not require any further attention should be categorically specified.
***-Analysis of Alternatives*:**	The main objective of EA is to assess investment alternatives from an environmental perspective. This is, in fact, a more proactive side of EA where the design of the project is further improved through consideration of the other alternatives. This approach is therefore different from a purely defensive task of reducing the adverse impacts of a given design. The Bank's EA OD actually calls for the systematic comparison of the proposed investment design, site, technology, and operational alternatives in terms of their potential environmental impacts. It also considers the capital and recurring costs, the suitability under local conditions, and the institutional, training and monitoring requirements. For each alternative, the environmental costs and benefits should be quantified so as to represent them quantitatively. The economic values should also be attached to them where feasible. The basis for the selected alternative should also be stated specifically.
***-Public Consultation*:**	Consultation with affected communities is recognized as a vital key towards identifying the environmental impacts and designing the effective mitigation measures. The Bank's policy requires consultation with affected groups and local NGOs during at least two stages of the EA process: (1) at the scoping stage, shortly after the EA category has been assigned, and (2) after a draft EA report has been prepared. Consultation throughout EA preparation is also generally encouraged, particularly for projects that affect peoples' livelihood and for community-based projects. In projects with major social components, such as those requiring involuntary resettlement or affecting indigenous people, the consultation process should involve the active public participation in EA and project development process. The social and environmental issues should also be properly linked to the public consultation / participation in the development process.

5.1.4 Implementation Plan

***-Mitigation or Management Plan*:**	A mitigation plan consists of a set of measures to be taken during the implementation of the project. During the operation, the focus of these measures is to eliminate, offset, or reduce the resulting adverse environmental impacts to the acceptable levels. The plan identifies the

	feasible and cost-effective measures and estimates their potential environmental impacts, capital and recurring costs and institutional, training and monitoring requirements. The plan should also provide the details on the proposed work programs and schedules to help ensure that the proposed environmental actions are well coordinated with construction and other project activities throughout the implementation of the project. The plan should also consider compensatory measures if mitigation measures are not feasible or cost effective.
***-Environmental Monitoring Plan*:**	This plan specifies the parameters for the monitoring process, as to who will carry out the monitoring, and how much will it cost, and what other inputs, such as training etc. would be necessary.
-Project Implementation:	The borrower is responsible for implementing the project as agreed and outlined in the approved EA report. The Bank supervises the implementation of environmental aspects dutifully as the integral part of the overall project supervision, even using the environmental specialists when necessary.

5.1.5 Environmental Impact Evaluation

-EIA Review & Project Appraisal (Evaluation of EIS):	Once the draft of EIA report is finalized, the borrower submits it to the Bank for review by the environmental specialists. If it is found satisfactory, then the Bank project team is authorized to proceed with the next step of the appraisal of the project. During the project appraisal, the Bank staff reviews the EIA's procedural and substantive elements with the borrower. They resolve any outstanding issues, and assess the adequacy of the institutional responsibility for the environmental management based on the findings of EIA. They also ensure whether the mitigation plan is adequately budgeted or not, and determine if the recommended actions are economically analyzed and properly addressed in the project design.

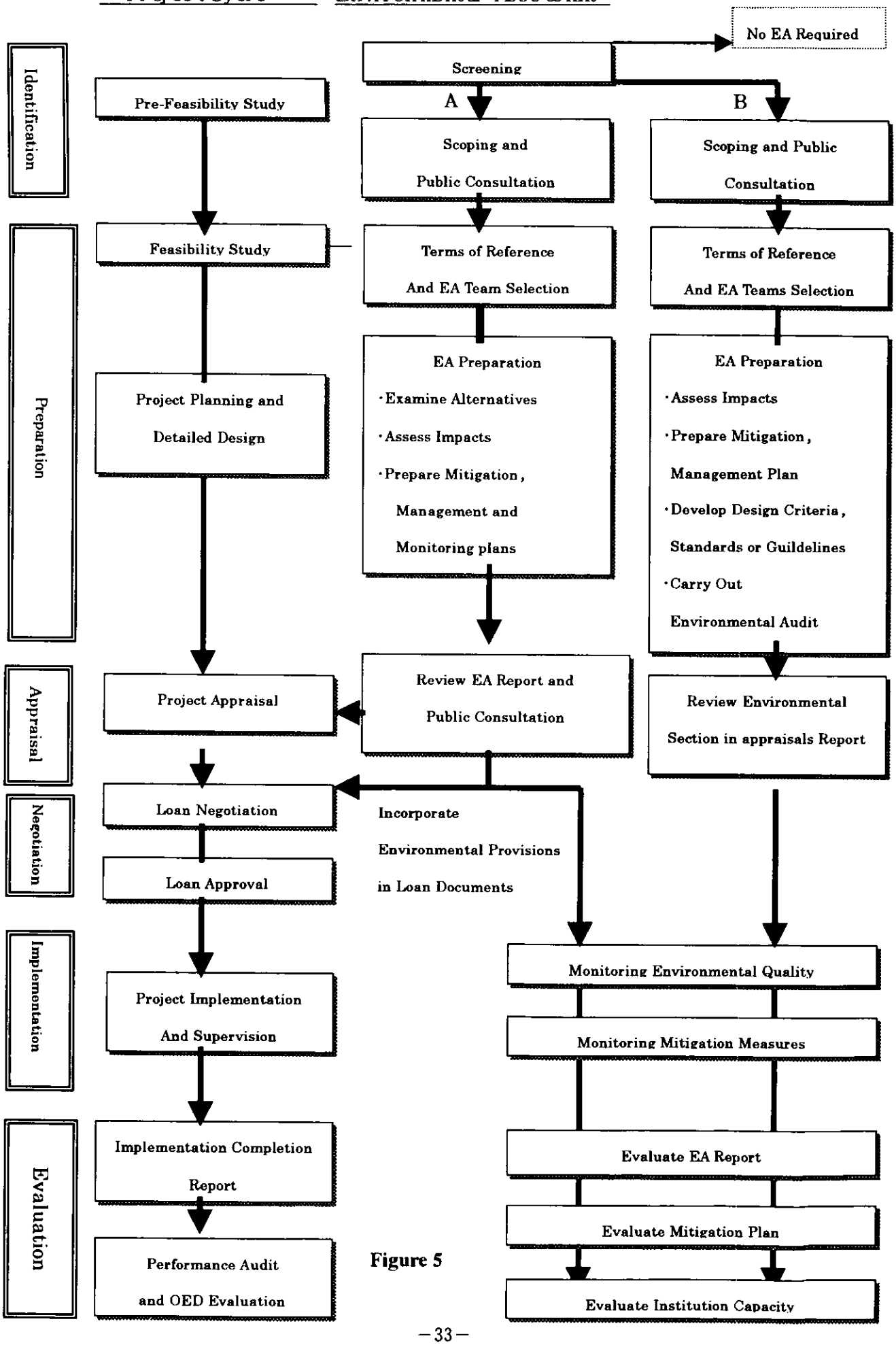

Project Cycle
Environmental Assessment
Identification
Preparation
Appraisal
Negotiation
Implementation
Evaluation
Pre-Feasibility Study
Feasibility Study
Project Planning and Detailed Design
Project Appraisal
Loan Negotiation
Loan Approval
Project Implementation And Supervision
Implementation Completion Report
Performance Audit and OED Evaluation
Screening
No EA Required
A
B
Scoping and Public Consultation
Terms of Reference And EA Team Selection
EA Preparation
·Examine Alternatives
·Assess Impacts
·Prepare Mitigation, Management and Monitoring plans
Review EA Report and Public Consultation
Scoping and Public Consultation
Terms of Reference And EA Teams Selection
EA Preparation
·Assess Impacts
·Prepare Mitigation, Management Plan
·Develop Design Criteria, Standards or Guildelines
·Carry Out Environmental Audit
Review Environmental Section in appraisals Report
Incorporate Environmental Provisions in Loan Documents
Monitoring Environmental Quality
Monitoring Mitigation Measures
Evaluate EA Report
Evaluate Mitigation Plan
Evaluate Institution Capacity

Figure 5

5.2 Environmental Consideration in JICA

Background & Present Circumstances

In 1988, an aid study team “Sectoral Study for Development Assistance – Environment”, was set up within JICA which prepared a report on the implementation of international cooperation in the environmental field and its fundamental coordination of organization and systems in order to strengthen and expand international cooperation on the Japan’s official development assistance program. Based on the proposals of this report, it was decided to develop guidelines available for development projects. Starting with the “Guidelines for Environmental Impact Studies relating to Dam Construction Projects” in 1990, guidelines for environmental consideration in other 20 field including social development, mining development and agricultural development, have been developed as of today.

In 1992 JICA published “Guides for Environmental Consideration in Preparatory and Full-scale Studies.” In addition, number of cases is increased that an expert in charge of environmental consideration is included in the preparatory and full-scale study teams dispatched for developing master plans and feasibility studies for large scale infrastructure projects.

Perspectives of Environmental Consideration Implementation

- The understanding of the concept of environmental impact is not always the same between Japan and the country in question and efforts are required to implement specific environmental considerations that incorporate the contents and scale of the project and regional characteristics at each stage of the preparatory and full-scale study. Accordingly, practical environmental studies and EIA processes need to be implemented strategically based on the experience of environmental consideration experts in charge of the project and with reference to environmental consideration cases implemented in the past.
- It is important that staff in charge of Environmental Consideration involved in the preparatory study team to co-operate with counterpart government agencies carry out the scoping with care as it will be reflected in the operational directive for environmental consideration prepared by the subsequent full-scale study team.
- It is important that the legislation system for the environment in the target country is identified and to discuss with the counterpart agencies and responsible persons at the environmental government agency which items will be important for the EIA concerning the project at hand. It is important to form a consensus with counterpart at this stage.

As projects will be implemented on the land of developing country by the decision making of the developing government, It is important to comply with national laws, guidelines and measures concerning environmental consideration of the said country.

It is, however, the fact that EIA policies and systems vary by each country, for instance some do not have any legislative system, or an existing system has not been properly applied. While recognizing this situation, a flexible approach should be adopted for incorporating environmental considerations, where discussions are held in sufficient consideration of the developing countries' policies and implementation systems and by comprehending the concerned agencies' awareness of the issues in question. In other words, the basic policy of environmental considerations at JICA is to promote sustainable development to improve the life standards of general public and to help promote environmental harmony in accordance with the intentions of the recipient countries.

Preparatory Work in Japan

1. Examination of the Proposals

The following procedures need to be taken if the proposal is examined and the contents do not fall under soft infrastructure proposals of no significant environmental impact such as mapping proposals, electric or telecommunications proposals.

2. Preliminary screening

Based on the proposal documents, national data is collected and analyzed, and Project Description (PD) and Site Description (SD) is developed. Preliminary screening is carried out in Japan based on these documents and where significant environmental impact is probable; an environmental expert is assigned to the preparatory study team. A questionnaire for the government of the recipient country is prepared along with a Scope of Works (S/W) document with environmental related items added to it.

Work at the Project Site

3. Examination of Guidelines of the Recipient Country

At the survey of the project site, first the current Initial Environmental Examination (IEE)/EIA systems and related legislative systems, guidelines etc (from hereon referred to as recipient country guidelines) are examined and confirmed to determine whether the project is a target of the IEE/EIA process or not.

(Case 1) The recipient country's EIA guidelines are fully sufficient.
Project is implemented using the recipient country's Guidelines.

(Case 2) The contents of the recipient country's guidelines are not sufficient.
The recipient country's guidelines are used as a base and JICA screening and scoping items are added.

(Case 3) The recipient country has no EIA guidelines.
JICA guidelines are used.

4. Screening

The contents of the PD, SD and screening developed in Japan are re-examined based on the results of the field study, data analysis etc. Scooping is subsequently carried out on those projects, which as a result of the above IEE or EIA are deemed necessary.

5. Scoping

In order to identify environmental items to be analyzed in the IEE in the case of Master Plan (M/P), and EIA in the case of Feasibility Study (F/S), a checklist is prepared and the degree of impact concerning each environmental item is evaluated. At this point, appropriate use is made of the guide for each item in the guidelines and care is taken to make an accurate and thorough understanding of the estimated environmental impact. The result is recorded in the Scope of Works (S/W) and Minutes of Meeting (M/M). An indication should be added to the Minutes of Meeting (M/M) so that environmental items that may have an impact but could not be determined at this stage can be settled in the full-scale study.

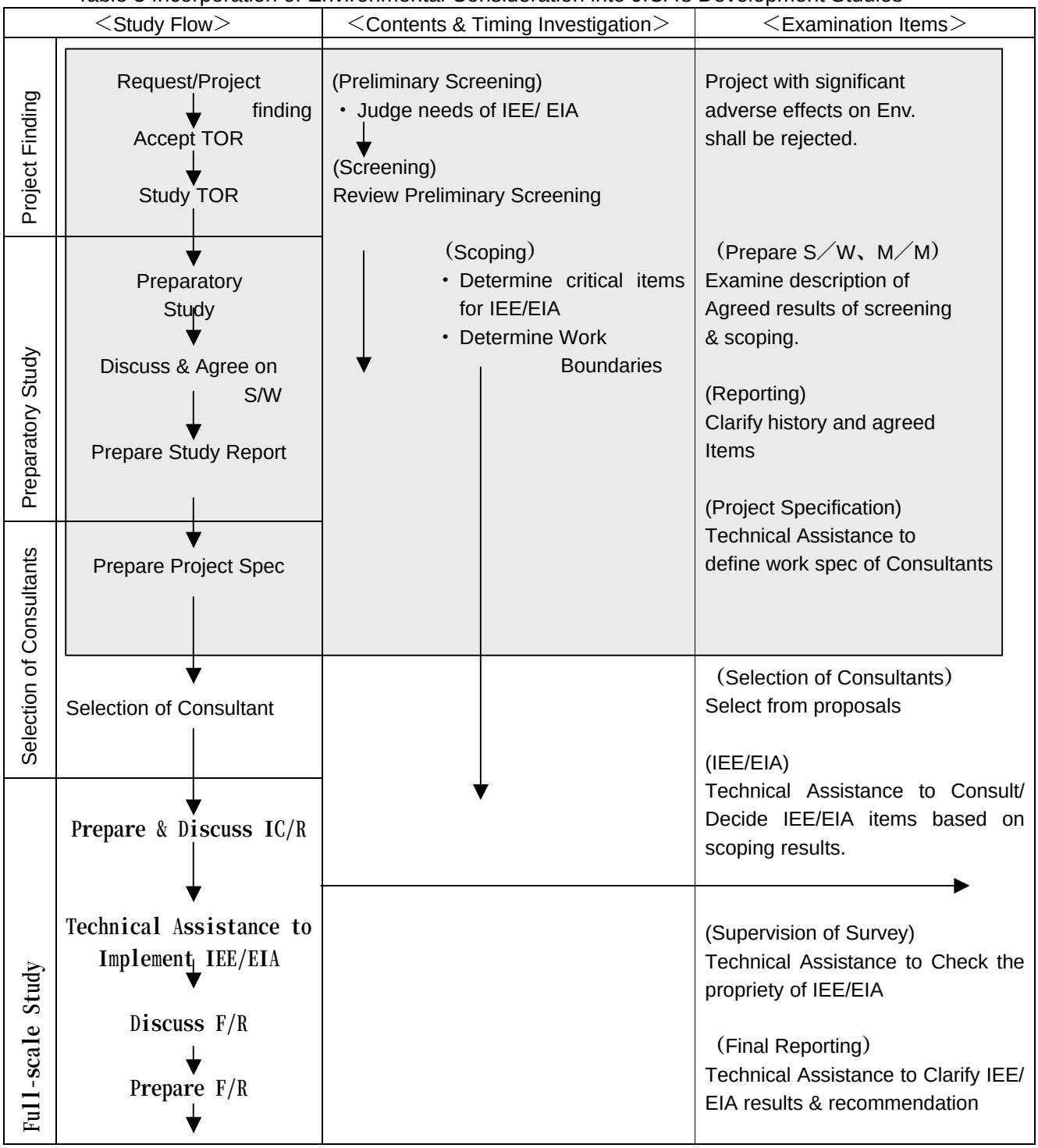
Table2　Project Implementation stage, and Corresponding

<table>
<tr><th colspan="4">Project Implementation Stages</th><th>Environmental Consideration Stages</th></tr>
<tr><td rowspan="4">Implementation by JICA</td><td colspan="3">Preparatory Study</td><td>Preliminary Environmental Survey</td></tr>
<tr><td rowspan="3">Full-scale Study</td><td>Master Plan Study</td><td rowspan="3">Feasibility Study</td><td>Technical Assistance for Initial Environmental Examination (IEE)</td></tr>
<tr><td rowspan="2">Feasibility Study</td><td rowspan="2">Technical Assistance for Environmental Impact Assessment (EIA)</td></tr>
<tr><td></td></tr>
<tr><td rowspan="3">Implementation by Executing Agency</td><td colspan="3">Preparation of Project Implementation Plan (including detailed design)</td><td>Examination of Environmental Conservation Measures</td></tr>
<tr><td colspan="3">Project construction</td><td>Implementation of Environmental Conservation Measures</td></tr>
<tr><td colspan="3">Project Facility Operation</td><td>Environmental Monitoring</td></tr>
</table>

Note:

1. This table does not indicate strict correspondence
2. Some projects do not require IEE or EIA
3. Preparation of the project implementation plan includes the detailed design of the environmental conservation facilities and their construction.

Table 3 Incorporation of Environmental Consideration into JICA's Development Studies



(Source : JICA "Sectoral Study for Development Assistance – Environment",1988

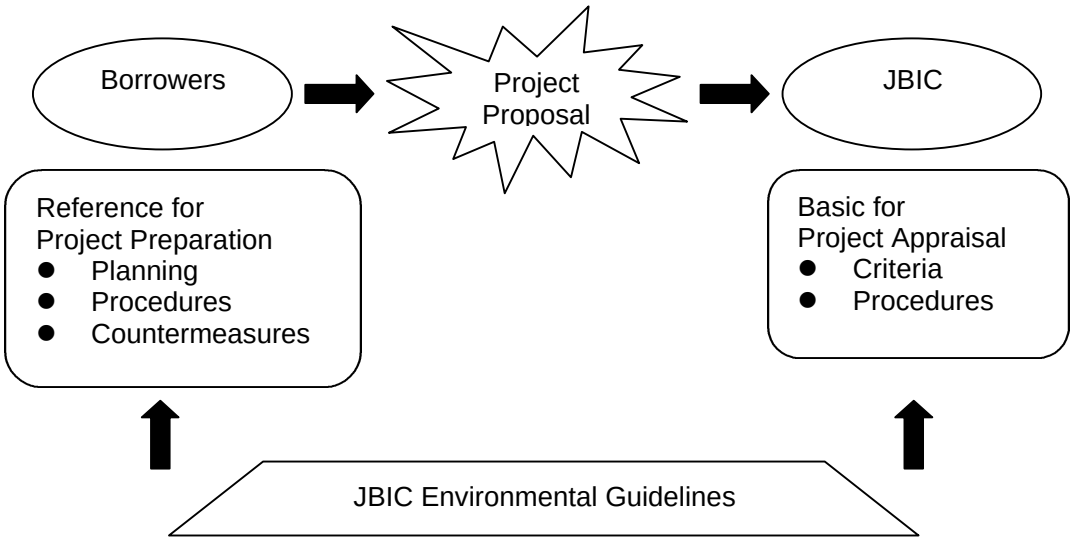
Note : ▭ is mainly covered by the guidelines

5.3 JBIC Environmental Guidelines

*This section covers ODA loans implemented by Japan Bank for International Cooperation, (Ex-OECF - Overseas Economic Cooperation Fund).

OECF, which was the predecessor organization of Japan Bank for International Cooperation (JBIC), published “OECF Environmental Guidelines” in 1989 in order to enhance and define environmental consideration on implementing development assistance project funded by yen loan. And the 2nd revision was published in 1995. This guideline is for the use of both borrowers (project proposer) and OECF. The borrower requested sufficient understanding on the guidelines before making proposal, that means, make necessary pre-study to design project plan fulfills the criteria described in the Guidelines. OECF referred this guideline when appraise the project proposal.

On October 1, 1999, OECF consolidated with Export-Import Bank of Japan (EIBJ) and reborn as the Japan Bank for International Cooperation (JBIC). “JIBC Environmental Guidelines for ODA Loans” hereafter “the Guidelines”, introduced in this section, will be adapted to the evaluation of ODA related projects. JBIC will engage in drafting new guideline available for both ODA projects (ex-OECF tasks) and Other Official Flows (OOF, Ex-EIBJ tasks).



Project Classification & Screening for EIA

The Guidelines introduce classification system as a screening process of EIA in the light of magnitude of expected potential environmental impact. Proposed projects are classified into category A, B or C according to the JBIC criteria stated in the Guidelines.

By this criteria, it is assumed that;

- Category A project may have potential significant environmental impact and detailed assessments are required
- Category B projects may have less environmental impact rather than Category projects, however, still careful environmental considerations are required.
- Category C projects are obviously to have no or very little environmental impact.

Under the Guidelines, only projects classified to category A are subject to EIA. Conceptually, following projects are to be classified to category A;

- Typical Large Scale Infrastructure Projects
  Such as Road & Railroad, Airport, Ports & Harbors, Electric Power Generation, Industry in general etc., or
- Project implemented in/may affect an Environmental Vulnerable Area such as Tropical natural forest, Densely populated area, etc., or
- Character of Project indicates high probability of significant impact.

Classification & appraisal

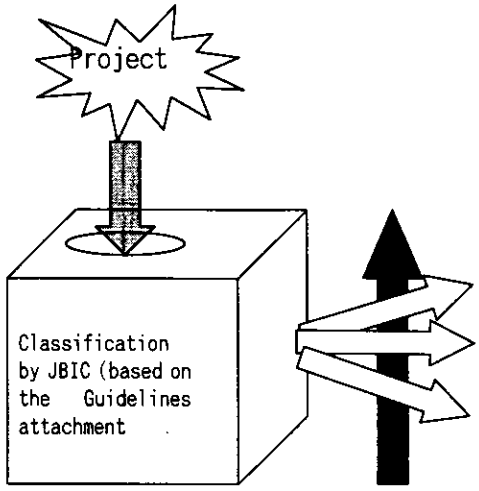
Taking into account a probability of the impacts of projects, the Guidelines defines differentiated procedures for each category as follows;

Category A：
Submission of Environment Impact Assessment Report (hereinafter “EIA Report”) is required. The EIA Report must be accompanied by a summary in English or Japanese. The project is then appraised in the light of the Guidelines.

Category B：
Although submission of an EIA Report is not required, the project is to be appraised in the light of the Guidelines.

Category C：
Submission of an EIA Report is not required, and appraisal in the light of the Guidelines may be omitted.

Classification & Appraisal



	Submission of Environment Impact Assessment Report	Appraisal in the light of JBIC Env. Guidelines
A	レ	レ
B		レ
C		(レ)

Classification is done by JBIC itself at the moment of appraisal of requested projects according to the Guidelines. On the other hand, most of recipient countries have their own EIA systems and unique screening process in their EIA systems. Those screening process include;

- Prescribed inclusion list of projects
  (with/without threshold values of scale of projects)
- Case by case screening procedure
  (with/without negotiation of relevant authorities, initial environmental examination, public consultation)

If a recipient country has appropriate standards based on EIA law or Cabinet approval, etc., to determine whether a project should go through an EIA process, and if those standards are appropriate from JBIC Guidelines* perspective, the standards will be respected.

Final decision is made by JBIC. Therefore even if an EIA is not necessary for a project in a recipient country, or if there are no regulations on EIA in a recipient country, an EIA report should be made and submitted for a project if it is categorized as "A" by the JBIC. In order to avoid mismatch like this, the recipient country should take into account criteria of JBIC and its consideration. Thus coordination of classification of JBIC and recipient countries' screening in very early stage of project preparation is quite essential, because EIA procedures usually need considerable time

and costs.

Under the Guidelines, responsibility of carrying out EIA for category A is falls in to the recipient country, not into OECF, because;

- Principle of Japanese Official Development Assistance is that assistance should be addressed self-help efforts of recipient countries so that ownership of projects is essential.
- Responsible actions, such as planning of project, consulting relevant organizations and public, implementing counter measures etc., could be to be taken only the owner of the project, recipient country.
- In planning a project, site sitting study and feasibility study, which are done by recipient countries for JBIC loan project, should be combined to EIA process.

Assistance for implementing EIA

Guide to Preparing EIA

JBIC is distributing *the Guide to Preparing EIA* for several project types to recipient countries. The Guide summarizes the objectives, assessment items, methods, etc. in order to provide a basis for implementing EIA. The Guide is useful for promoting EIA although it does not preclude the originality of the borrowing country. It is noted that the Guide does not include criteria for JBIC's appraisal. Concerning environmental considerations for JBIC's appraisal, JBIC Environmental Guidelines for ODA Loans must be referred to.

The Guidelines defines the project for Category A, but adopted Engineering Service Loan will categorize as Category B. Request for Engineering Service Loan will be appraisal from the criteria of the Guideline. Therefore, large-scale construction project which requests Engineering Service Loan should prove the project would not bring critical adverse impacts by implementing preliminary study on Environment.

Engineering Service Loan

For large-scale construction project which shall be financed by JBIC, the engineering service loan can be provided in order to perform engineering works such as detailed design. Thus environmental study or survey needed for EIA procedures for the project can be performed by utilize the engineering service loan for the project. Basically engineering service loan is provided for the project of which construction is expected to be

financed by JBIC, it should be avoided that the project is abundant by the outcome of EIA.

Environmental Assessment Support SAPROF

JBIC can perform a supplementary study under the scheme of the Special Assistance for Project Formation (SAPROF)[1] as a SAF[2]. In light of the fact that, more and more often, SAPROF studies include environment-related studies, the JBIC enhanced SAPROF in fiscal 1995. Under this enforcement, if a developing country's EIA is deemed inadequate because of insufficient resources, the JBIC conducts additional and supplementary environmental study. The studies are undertaken by experts in environmental field hired by the JBIC.

The Scheme covers assistance for, 1)identifying recipient's environmental assessment laws, regulations and standards, 2) ascertaining EIA implementation principles and mechanism, 3)ascertaining existing EIA reports and related reports, 4) field survey, sample collection and data analysis, 5) evaluation and forecast, 6)making proposals for mitigating environmental impacts and 7) advice to executing agencies regarding environmental consideration measures, etc...

Notes)

1) SAPROF

SAPROF is one of three categories of SAFs. Owing to inadequate financial or technical resources, a project for which assistance is requested that is basically feasible often cannot be adequately prepared by the developing country. For such projects, JBIC performs a supplementary study named SAPROF.

2) SAF

JBIC carries out SAF in order to assist recipient countries from project formation through completion and ongoing operation, and to carry out projects effectively responding to developing countries' diverse needs. SAF is carried out by consultants employed and dispatched by JBIC.

Appendix 1: Scoping Techniques

1 Scoping Techniques

【Checklist technique】

Checklist technique is used for identifying the project impacts. Such lists usually cover all possible impacts of the project. In the earlier days of EIAs, simple checklists containing only the environmental indices were extensively used. The detailed description of the impacts of each environmental aspect was later added to the selected environmental indices. It was usually in the form of a questionnaire to elicit the necessary information. This type of checklist is usually called as descriptive checklist. It is also possible to use checklists which include not only the list of environmental aspects but also rank the impacts and alternatives according to their significance. More comprehensive checklists indicate relative importance of individual environmental aspects as well as total ranking calculated for all versions of the project.

【Matrix technique】

A matrix serves as a checklist and a summary of the impact assessment. The matrices are very suitable for EIAs as they link a particular environmental aspect to a specific action of the development project and in a way explain the nature of the impact. Leopold and his associates in the late 1960s designed a precise evaluation procedure for landscape aesthetic (Leopold,1969; Leopold and Marchand, 1968) and produced one of the first systematic methodologies for the entire field of EIA. The procedure is centered around a large matrix containing 8800 cells; the horizontal axis has 100 columns for development characteristics representing activities that might cause positive or negative environmental impacts. The vertical axis consist of 88 rows of environmental aspects representing environmental quality variables such as physical and chemical; biological; cultural; and ecological. The identified effects are then evaluated according to their magnitude and importance on scales 1-10 where 10 being the maximum. Each cell is divided by a diagonal line, and magnitude and importance of the impact are entered in the relevant half of the cell (one in each half of the cell). This type of matrix is usually called as an interaction matrix.

The following characteristics of Leopold matrix are extremely useful:

- As a basic tool, it is excellent.
- The matrix provides the assessor with the entire picture of the environmental impacts of the project highlighting the particular part of the project with the major impact.
- It allows the application of only the relevant part of the matrix for a particular project.
- It indicates both beneficial as well as adverse impacts by writing a plus or minus sign to the entries in the cells.

Modified versions of the Leopold matrix have also been used by many agencies. Modifications of the matrix include redesigning or condensing the matrix, or describing its impact rating in codes. The

purpose of modification is to summarize the nature of the impact and also indicate whether the negative impacts can be mitigated (Canter,1996).

There are other types of matrices. A stepped interaction matrix is used to examine changes, which are caused to other aspects of the environment. A development step affecting a particular aspect can show its effect on other aspects as well due to the interdependence of the environmental aspects. The impact assessor of the project may find it necessary to either modify one of the standard matrices (e.g. the Leopold matrix) or write a new one to better suit the local conditions.

【Network technique】

Networks are used to show interrelationships among the different aspects of the environment of the area and also indicate the flow of energy or impact throughout the environment such as in the case of upland ecosystem or a drainage basin. These networks are similar to those used in ecological studies. There are different types of networks such as sequence diagrams, directed diagrams or impact trees. The networks can be used to show both temporal and spatial flows of impacts.

【Overlay technique】

Overlay techniques were previously used in planning before they were adopted in designing formal EIAs. Individual impacts such as the effects on soil, water, settlements and noise are individually summarized and clearly highlighted by mapping over the area using chloropleths (shaded zones) to indicate the relative intensity of the impact. By this technique, the individual maps are transferred on to transparencies which are then laid over one another to produce a composite effect. Thus, the individual effects are summed up to show the total impact of the project. Of course only a limited number of impacts can be shown by this method. However, it is possible to summarize a large amount of information on each transparency. The physical constraint on this method has been eased with the advent of new modern computer technology and the Geographic Information System (GIS). It is now easy to carry out temporal changes or projected environmental modifications by revising the raw data directly in the files and perform the repeated overlays.

Appendix 2: A Brief History of World Bank Environmental Policy

1 A Brief History of World Bank Environmental Policy

Environmental concerns became an explicit part of Bank policies / activities in 1970, when the position of environmental adviser was established in World Bank. The environmental policies and assessment procedures of the Bank evolved slowly during the following fifteen years, and rapidly during the past decade, reflecting the changes in thinking that took place in the international development community. The first internal instructions to Bank staff on the environment concerned with how to approach social issues associated with involuntary resettlement. Operational Manual Statement, OMS 2.33, was released in February 1980. This was followed by a statement on tribal people in Bank operations issued in February 1982 (OMS 2.34, later updated by Operational Directive 4.40 in September 1991).

The first operational policy statement on environmental aspects of the Bank's work (OMS 2.36) was issued in May 1984. This policy required that environmental considerations be introduced at the time of project identification and preparation. It also categorically recognized that such modifications could also occur at the time of appraisal, negotiation, and implementation of the project. With this, the Bank became the first multilateral development agency to screen projects for their environmental consequences and to adopt environmental guidelines for the evaluation of future lending operations. Moreover, by the mid-1980s, the Bank was already financing projects containing specific environmental components, even including several projects of primarily pure environmental nature.

Since 1984, and particularly from 1989, Bank policies in relation to the environmental effects of the projects have become more and more concerned, expanding to include many relevant areas such as agricultural pest management (1985), management of wild lands (1986), protection of cultural property (1986), collaboration with NGOs (1988), and environmental policy for dam and reservoir projects (1989). See (1) for a list of environment-related Bank policies.

(1) World Bank Environmental Policies

- **Environmental Assessment**
  All Bank projects are screened for their potential environmental impacts. The projects categorized in class A are subject to a full EA.
- **Environmental Action Plan**
  This policy outlines the Bank support for the preparation of the environmental action plans submitted by the governments of the borrowing countries.
- **Agricultural Pest Management**
  This particular Bank's policy promotes the effective and environmentally sound pest

management practices and advocates the use of integrated pest management techniques in the agricultural development projects.

- ***Water Resources Management***

  This policy outlines the involvement of World Bank in water resources management to support for the provision of water, sanitation facilities, flood control, and water for productive activities in a manner that is economically viable, environmentally sustainable, and socially equitable.

- **Indigenous Human Resources**

  This directive recognizes that special action is required where Bank-supported investments affect indigenous peoples, tribes, ethnic minorities, or other groups whose social and economic status restricts their capacity to assert their interests and rights to land and other productive resources.

- **Involuntary Resettlement**

  This directive recognizes that involuntary resettlement may cause severe long-term hardships, impoverishment, and environmental damage unless some appropriate measures are properly planned and carried out carefully to avert the untoward incidents.

- **Forestry**

  World Bank involvement aims to reduce the deforestation, improve the environmental quality of the forested areas, promote the afforestation measures, reduce the poverty, and encourage the regional economic development.

All these policy matters have been, or, are in the process of being updated and strengthened continuously. More recent directives include policy matters on indigenous people (1991), water resources management (1993), and forestry (1993). The revised policy for protecting and managing cultural property will soon be released.

In 1993, all existing ODs were subsequently revised and incorporated into a new system of operational policies and Bank procedures. The new system comprises three categories of directives: operational policies (OP), Bank procedures (BP), and good practice (GP).

(2) Using EAs to Direct Environmental Lending

Since 1989, and particularly after the Rio Earth Summit in 1992, the governments of various countries and the developmental institutions have established EA policies and procedures with the active participation of the NGOs and the private sector. They are strictly implemented with the application to a wider range of the development projects. Now most of the major investment decisions are made only after taking the potential environmental consequences into account.

The ultimate purpose of EA is to safeguard and uphold the ecological quality and ensure the responsible use of natural resources. However, the ensuing results can only be fully evaluated after a project has been completed. Many of the Bank-funded investment projects that have undergone EAs are still being implemented, therefore, the effectiveness of these EAS can only be assessed by looking at their influence on project design, preparation, and implementation. According to the Bank's experience, the EAS are contributing significantly to the environmental and social sustainability of the Bank-supported development initiatives.

(3) Assessing the EA Portfolio

Between 1989 and 1995, more than 1,000 World Bank projects were screened for their potential environmental impacts. About 600 of these projects have been screened by UNCED, and 228 were screened in the fiscal year 1995 alone (see table 1). Among the investment projects approved by the Bank's Board of Directors in the fiscal year 1995, 23 projects (10 percent) were classified as category A, which require a full environmental assessment. However, 81 projects (36 percent) were classified as category B, which require some sort of the environmental analysis, and the remaining 124 projects (54 percent) were classified as category C, which require no EA. In the fiscal year 1995, category A projects were generally concerned with the agriculture, energy and power, transport, urban, and water and sanitation sectors, reflecting a fairly consistent sectoral distribution over the past three years (see table 2).

Table 1. Projects with EA Category Screened after the Rio Earth Summit, Fiscal 1993-95

Project category	Number of projects	Percentage of total
A	67	11
B	242	40
C	289	48
Total	598	100

Note: percentages may not add to 100 due to rounding.

(4) Making EA Effective

To improve the EA effectiveness, the Bank has undertaken two reviews of EAS. Many good points learnt from the past experiences have been faithfully incorporated to update the EA practice. In addition, the Bank's Operations Evaluation Department is continuously reviewing the effectiveness of the environmental assessments and environmental action programs (EAPS). The purpose of this review is to evaluate (a) the impact of EAS and EAPS on the Bank operations and the borrower`s

capacity both before and during the project implementation, (b) the efficacy of the review process furnished by the EAs/EAPs in meeting the Bank's environmental objectives as reflected in the ODs, and (c) the limit to which the Bank furnishes the support to build the capacity for emerging environmental initiatives. However, the review covers only the period of the past five years after the OD 4.00 was issued. The evaluation process of the preparation of the case studies of eight countries have been completed in the fiscal year 1996. The second review had enabled the assessment of the EA process in a more systematic and detailed fashion. The improvements in the institutional and operational strength of EAs were the result of the constructive efforts to link EA recommendations with the project preparation and implementation. The review therefore, concluded that the EA process was now firmly rooted in the Bank's normal business activity. The EA's effectiveness in improving the performance of the environmental assessment of a project largely depends on two factors: its quality in technical terms and the magnitude of its influence on a project's conceptualization, design, and implementation.

Table 2 Distribution of Category A Projects, by Sector, for Fiscal Years 1993-95

Sector	1993	1994	1995
Agriculture	3	7	4
Energy and power	10	9	7
Industry	0	0	0
Mining	0	1	0
Tourism	1	0	0
Transport	3	4	5
Urban	0	4	4
Water and Sanitation	2	0	3
Total number of projects	19	25	23

(5) Quality of EAs

The results of the second EA review showed that the Bank and borrower countries are improving the quality of EAs. This has been especially true in the past three years. Direct and site-specific impacts have been identified and evaluated better in EAs for the Bank-financed projects for a broader range of sectors and geographical locations. EAs have more consistently identified and discussed fully the most relevant environmental issues and impacts by providing a good basis for developing the sound mitigation measures and monitoring plans. For example, analysis of environmental impacts was an integral part of Swaziland's Urban Development Project, where alternative locations were evaluated for the water supply, sewerage treatment, and solid waste disposal component. As a result, changes were made in the design criteria and certain options were eliminated because they were environmentally untenable. Further alternatives were accepted.

Appendix 3 The World Bank's New Operational Manual

OP 4.01

January 1999

These policies were prepared for use by World Bank staff and are not necessarily a complete treatment of the subject.

Environmental Assessement

Note: OP, BP, and GP 4.01 together replace OMS 2.36, *Environmental Aspects of Bank Work*; OD 4.00, Annex A, *Environmental Assessment*; OD 4.00, Annex B, *Environmental Policy for Dam and Reservoir Projects*; OD 4.01, *Environmental Assessment*; and the following Operational Memoranda: *Environmental Assessments: Instructions to Staff on the Handling of the Borrower's Consultations with Affected Groups and Relevant Local NGOs*, 4/10/90; *Environmental Assessments: Instructions to Staff on the Release of Environmental Assessments to Executive Directors*, 11/21/90; and *Release of Environmental Assessments to Executive Directors*, 2/20/91. Additional information related to these statements is provided in the *Environmental Assessment Sourcebook* (Washington, D.C.: World Bank, 1991) and subsequent updates available from the Environment Sector Board, and in the *Pollution Prevention and Abatement Handbook*. Other Bank statements that relate to the environment include OP/BP/GP 4.02, *Environmental Action Plans*; GP 4.03, *Agricultural Pest Management*; OP/BP/GP 4.04, *Natural Habitats*; OP 4.07, *Water Resources Management*; OP 4.09, *Pest Management*; OP 4.11, *Safeguarding Cultural Property in BankFinanced Projects* (forthcoming); OP/BP 4.12, *Involuntary Resettlement* (forthcoming); OP/GP 4.36, *Forestry*; OP/BP 10.04, *Economic Evaluation of Investment Operations*; and OD 4.20, *Indigenous Peoples*. This OP and BP apply to all projects for which a PID is first issued after March 1, 1999. Questions may be addressed to the Chair, Environment Sector Board.

1. The Bank1 requires environmental assessment (EA) of projects proposed for Bank financing to help ensure that they are environmentally sound and sustainable, and thus to improve decision making.

2. EA is a process whose breadth, depth, and type of analysis depend on the nature, scale, and potential environmental impact of the proposed project. EA evaluates a project's potential environmental risks and impacts in its area of influence;2 examines project alternatives; identifies ways of improving project selection, siting, planning, design, and implementation by preventing, minimizing, mitigating, or compensating for adverse environmental impacts and enhancing positive impacts; and includes the process of mitigating and managing adverse environmental impacts throughout project implementation. The Bank favors preventive measures over mitigatory or compensatory measures, whenever feasible.

3. EA takes into account the natural environment (air, water, and land); human health and safety; social aspects (involuntary resettlement, indigenous peoples, and cultural property);3 and

transboundary and global environmental aspects.4 EA considers natural and social aspects in an integrated way. It also takes into account the variations in project and country conditions; the findings of country environmental studies; national environmental action plans; the country's overall policy framework, national legislation, and institutional capabilities related to the environment and social aspects; and obligations of the country, pertaining to project activities, under relevant international environmental treaties and agreements. The Bank does not finance project activities that would contravene such country obligations, as identified during the EA. EA is initiated as early as possible in project processing and is integrated closely with the economic, financial, institutional, social, and technical analyses of a proposed project.

4. The borrower is responsible for carrying out the EA. For Category A projects,5 the borrower retains independent EA experts not affiliated with the project to carry out the EA.6 For Category A projects that are highly risky or contentious or that involve serious and multidimensional environmental concerns, the borrower should normally also engage an advisory panel of independent, internationally recognized environmental specialists to advise on all aspects of the project relevant to the EA.7 The role of the advisory panel depends on the degree to which project preparation has progressed, and on the extent and quality of any EA work completed, at the time the Bank begins to consider the project.

5. The Bank advises the borrower on the Bank's EA requirements. The Bank reviews the findings and recommendations of the EA to determine whether they provide an adequate basis for processing the project for Bank financing. When the borrower has completed or partially completed EA work prior to the Bank's involvement in a project, the Bank reviews the EA to ensure its consistency with this policy. The Bank may, if appropriate, require additional EA work, including public consultation and disclosure.

6. The *Pollution Prevention and Abatement Handbook* describes pollution prevention and abatement measures and emission levels that are normally acceptable to the Bank. However, taking into account borrower country legislation and local conditions, the EA may recommend alternative emission levels and approaches to pollution prevention and abatement for the project. The EA report must provide full and detailed justification for the levels and approaches chosen for the particular project or site.

EA Instruments

7. Depending on the project, a range of instruments can be used to satisfy the Bank's EA requirement: environmental impact assessment (EIA), regional or sectoral EA, environmental audit, hazard or risk assessment, and environmental management plan (EMP).8 EA applies one or more of these instruments, or elements of them, as appropriate. When the project is likely to have sectoral or regional impacts, sectoral or regional EA is required.9

Environmental Screening

8. The Bank undertakes environmental screening of each proposed project to determine the appropriate extent and type of EA. The Bank classifies the proposed project into one of four categories, depending on the type, location, sensitivity, and scale of the project and the nature and magnitude of its potential environmental impacts.

(a) *Category A*: A proposed project is classified as Category A if it is likely to have significant adverse environmental impacts that are sensitive,10 diverse, or unprecedented. These impacts may affect an area broader than the sites or facilities subject to physical works. EA for a Category A project examines the project's potential negative and positive environmental impacts, compares them with those of feasible alternatives (including the "without project" situation), and recommends any

measures needed to prevent, minimize, mitigate, or compensate for adverse impacts and improve environmental performance. For a Category A project, the borrower is responsible for preparing a report, normally an EIA (or a suitably comprehensive regional or sectoral EA) that includes, as necessary, elements of the other instruments referred to in para. 7.

(b) *Category B*: A proposed project is classified as Category B if its potential adverse environmental impacts on human populations or environmentally important areas—including wetlands, forests, grasslands, and other natural habitats—are less adverse than those of Category A projects. These impacts are sitespecific; few if any of them are irreversible; and in most cases mitigatory measures can be designed more readily than for Category A projects. The scope of EA for a Category B project may vary from project to project, but it is narrower than that of Category A EA. Like Category A EA, it examines the project's potential negative and positive environmental impacts and recommends any measures needed to prevent, minimize, mitigate, or compensate for adverse impacts and improve environmental performance. The findings and results of Category B EA are described in the project documentation (Project Appraisal Document and Project Information Document).**11**

(c) *Category C*: A proposed project is classified as Category C if it is likely to have minimal or no adverse environmental impacts.

Beyond screening, no further EA action is required for a Category C project.

(d) *Category FI*: A proposed project is classified as Category FI if it involves investment of Bank funds through a financial intermediary, in subprojects that may result in adverse environmental impacts.

EA for Special Project Types

Sector Investment Lending

9. For sector investment loans (SILs),**12** during the preparation of each proposed subproject, the project coordinating entity or implementing institution carries out appropriate EA according to country requirements and the requirements of this policy.**13** The Bank appraises and, if necessary, includes in the SIL components to strengthen, the capabilities of the coordinating entity or the implementing institution to (a) screen subprojects, (b) obtain the necessary expertise to carry out EA, (c) review all findings and results of EA for individual subprojects, (d) ensure implementation of mitigation measures (including, where applicable, an EMP), and (e) monitor environmental conditions during project implementation.**14** If the Bank is not satisfied that adequate capacity exists for carrying out EA, all Category A subprojects and, as appropriate, Category B subprojects—including any EA reports—are subject to prior review and approval by the Bank.

Sector Adjustment Lending

10. Sector adjustment loans (SECALs) are subject to the requirements of this policy. EA for a SECAL assesses the potential environmental impacts of planned policy, institutional, and regulatory actions under the loan.**15**

Financial Intermediary Lending

11. For a financial intermediary (FI) operation, the Bank requires that each FI screen proposed subprojects and ensure that subborrowers carry out appropriate EA for each subproject. Before

approving a subproject, the FI verifies (through its own staff, outside experts, or existing environmental institutions) that the subproject meets the environmental requirements of appropriate national and local authorities and is consistent with this OP and other applicable environmental policies of the Bank.16

12. In appraising a proposed FI operation, the Bank reviews the adequacy of country environmental requirements relevant to the project and the proposed EA arrangements for subprojects, including the mechanisms and responsibilities for environmental screening and review of EA results. When necessary, the Bank ensures that the project includes components to strengthen such EA arrangements. For FI operations expected to have Category A subprojects, prior to the Bank's appraisal each identified participating FI provides to the Bank a written assessment of the institutional mechanisms (including, as necessary, identification of measures to strengthen capacity) for its subproject EA work.17 If the Bank is not satisfied that adequate capacity exists for carrying out EA, all Category A subprojects and, as appropriate, Category B subprojects—including EA reports—are subject to prior review and approval by the Bank.18

Emergency Recovery Projects

13. The policy set out in OP 4.01 normally applies to emergency recovery projects processed under **OP 8.50**, *Emergency Recovery Assistance*. However, when compliance with any requirement of this policy would prevent the effective and timely achievement of the objectives of an emergency recovery project, the Bank may exempt the project from such a requirement. The justification for any such exemption is recorded in the loan documents. In all cases, however, the Bank requires at a minimum that (a) the extent to which the emergency was precipitated or exacerbated by inappropriate environmental practices be determined as part of the preparation of such projects, and (b) any necessary corrective measures be built into either the emergency project or a future lending operation.

Institutional Capacity

14. When the borrower has inadequate legal or technical capacity to carry out key EArelated functions (such as review of EA, environmental monitoring, inspections, or management of mitigatory measures) for a proposed project, the project includes components to strengthen that capacity.

Public Consultation

15. For all Category A and B projects proposed for IBRD or IDA financing, during the EA process, the borrower consults projectaffected groups and local nongovernmental organizations (NGOs) about the project's environmental aspects and takes their views into account.19 The borrower initiates such consultations as early as possible. For Category A projects, the borrower consults these groups at least twice: (a) shortly after environmental screening and before the terms of reference for the EA are finalized; and (b) once a draft EA report is prepared. In addition, the borrower consults with such groups throughout project implementation as necessary to address EArelated issues that affect them.20

Disclosure

16. For meaningful consultations between the borrower and projectaffected groups and local NGOs on all Category A and B projects proposed for IBRD or IDA financing, the borrower provides relevant material in a timely manner prior to consultation and in a form and language that are understandable and accessible to the groups being consulted.

17. For a Category A project, the borrower provides for the initial consultation a summary of the

proposed project's objectives, description, and potential impacts; for consultation after the draft EA report is prepared, the borrower provides a summary of the EA's conclusions. In addition, for a Category A project, the borrower makes the draft EA report available at a public place accessible to projectaffected groups and local NGOs. For SILs and FI operations, the borrower/FI ensures that EA reports for Category A subprojects are made available in a public place accessible to affected groups and local NGOs.

18. Any separate Category B report for a project proposed for IDA financing is made available to projectaffected groups and local NGOs. Public availability in the borrowing country and official receipt by the Bank of Category A reports for projects proposed for IBRD or IDA financing, and of any Category B EA report for projects proposed for IDA funding, are prerequisites to Bank appraisal of these projects.

19. Once the borrower officially transmits the Category A EA report to the Bank, the Bank distributes the summary (in English) to the executive directors (EDs) and makes the report available through its InfoShop. Once the borrower officially transmits any separate Category B EA report to the Bank, the Bank makes it available through its InfoShop.21 If the borrower objects to the Bank's releasing an EA report through the World Bank InfoShop, Bank staff (a) do not continue processing an IDA project, or (b) for an IBRD project, submit the issue of further processing to the EDs.

Implementation

20. During project implementation, the borrower reports on (a) compliance with measures agreed with the Bank on the basis of the findings and results of the EA, including implementation of any EMP, as set out in the project documents; (b) the status of mitigatory measures; and (c) the findings of monitoring programs. The Bank bases supervision of the project's environmental aspects on the findings and recommendations of the EA, including measures set out in the legal agreements, any EMP, and other project documents.22

"Bank" includes IDA; "EA" refers to the entire process set out in OP/BP 4.01; "loans" includes credits; "borrower" includes, for guarantee operations, a private or public project sponsor receiving from another financial institution a loan guaranteed by the Bank; and "project" covers all operations financed by Bank loans or guarantees except structural adjustment loans (for which the environmental provisions are set out in OP/BP 8.60, *Adjustment Lending*, forthcoming) and debt and debt service operations, and also includes projects under adaptable lending—adaptable program loans (APLs) and learning and innovation loans (LILs)—and projects and components funded under the Global Environment Facility. The project is described in Schedule 2 to the Loan/Credit Agreement. This policy applies to all components of the project, regardless of the source of financing.

For definitions, see **Annex A**. The area of influence for any project is determined with the advice of environmental specialists and set out in the EA terms of reference.

See OP/BP/GP 4.12, *Involuntary Resettlement* (forthcoming); **OD 4.20**, *Indigenous Peoples*; and OP 4.11, *Safeguarding Cultural Property in Bank-Financed Projects* (forthcoming).

Global environmental issues include climate change, ozone-depleting substances, pollution of international waters, and adverse impacts on biodiversity.

For screening, see para. 8.

EA is closely integrated with the project's economic, financial, institutional, social, and technical analyses to ensure that (a) environmental considerations are given adequate weight in project selection, siting, and design decisions; and (b) EA does not delay project processing. However, the borrower ensures that when individuals or entities are engaged to carry out EA activities, any conflict of interest is avoided. For example, when an independent EA is required, it is not carried out by the consultants hired to prepare the engineering design.

The panel (which is different from the dam safety panel required under **OP/ BP** 4.37, *Safety of Dams*) advises the borrower specifically on the following aspects: (a) the terms of reference for the EA, (b) key issues and methods for preparing the EA, (c) recommendations and findings of the EA, (d) implementation of the EA's recommendations, and (e) development of environmental management capacity.

These terms are defined in **Annex A**. Annexes **B** and **C** discuss the content of EA reports and EMPs.

Guidance on the use of sectoral and regional EA is available in EA Sourcebook Updates 4 and 15.

A potential impact is considered "sensitive" if it may be irreversible (e.g., lead to loss of a major natural habitat) or raise issues covered by **OD 4.20**, *Indigenous Peoples*; **OP 4.04**, *Natural Habitats*; OP 4.11, *Safeguarding Cultural Property in Bank-Financed Projects* (forthcoming); or OP 4.12, *Involuntary Resettlement* (forthcoming).

When the screening process determines, or national legislation requires, that any of the environmental issues identified warrant special attention, the findings and results of Category B EA may be set out in a separate report. Depending on the type of project and the nature and magnitude of the impacts, this report may include, for example, a limited environmental impact assessment, an environmental mitigation or management plan, an environmental audit, or a hazard assessment. For Category B projects that are not in environmentally sensitive areas and that present well-defined and well-understood issues of narrow scope, the Bank may accept alternative approaches for meeting EA requirements: for example, environmentally sound design criteria, siting criteria, or pollution standards for small-scale industrial plants or rural works; environmentally sound siting criteria, construction standards, or inspection procedures for housing projects; or environmentally sound operating procedures for road rehabilitation projects.

SILs normally involve the preparation and implementation of annual investment plans or subprojects as time slice activities over the course of the project.

In addition, if there are sectorwide issues that cannot be addressed through individual subproject EAs (and particularly if the SIL is likely to include Category A subprojects), the borrower may be required to carry out sectoral EA before the Bank appraises the SIL.

Where, pursuant to regulatory requirements or contractual arrangements acceptable to the Bank, any of these review functions are carried out by an entity other than the coordinating entity or implementing institution, the Bank appraises such alternative arrangements; however, the borrower/coordinating entity/implementing institution remains ultimately responsible for ensuring that subprojects meet Bank requirements.

Actions that would require such assessment include, for example, privatization of environmentally sensitive enterprises, changes in land tenure in areas with important natural habitats, and relative price shifts in commodities such as pesticides, timber, and petroleum.

The requirements for FI operations are derived from the EA process and are consistent with the provisions of para. 6 of this OP. The EA process takes into account the type of finance being considered, the nature and scale of anticipated subprojects, and the environmental requirements of the jurisdiction in which subprojects will be located.

Any FI included in the project after appraisal complies with the same requirement as a condition of its participation.

The criteria for prior review of Category B subprojects, which are based on such factors as type or size of the subproject and the EA capacity of the financial intermediary, are set out in the legal agreements for the project.

For the Bank's approach to NGOs, see **GP 14.70**, *Involving Nongovernmental Organizations in Bank-Supported Activities*.

For projects with major social components, consultations are also required by other Bank policies—for example, **OD 4.20**, *Indigenous Peoples*, and OP/BP 4.12, *Involuntary Resettlement* (forthcoming).

For a further discussion of the Bank's disclosure procedures, see *The World Bank Policy on Disclosure of Information* (March 1994) and **BP 17.50**, *Disclosure of Operational Information*. Specific requirements for disclosure of resettlement plans and indigenous peoples development plans are set out in OP/BP 4.12, *Involuntary Resettlement* (forthcoming), and OP/BP 4.10, forthcoming revision of **OD 4.20**, *Indigenous Peoples*.

See OP/BP 13.05, *Project Supervision*, forthcoming.

These procedures were prepared for use by World Bank staff and are not necessarily a complete treatment of the subject.

Environmental Assessment

Note: OP, BP, and GP 4.01 together replace OMS 2.36, *Environmental Aspects of Bank Work*; OD 4.00, Annex A, *Environmental Assessment*; OD 4.00, Annex B, *Environmental Policy for Dam and Reservoir Projects*; OD 4.01, *Environmental Assessment*; and the following Operational Memoranda: *Environmental Assessments: Instructions to Staff on the Handling of the Borrower's Consultations with Affected Groups and Relevant Local NGOs*, 4/10/90; *Environmental Assessments: Instructions to Staff on the Release of Environmental Assessments to Executive Directors*, 11/21/90; and *Release of Environmental Assessments to Executive Directors*, 2/20/91. Additional information related to these statements is provided in the *Environmental Assessment Sourcebook* (Washington, D.C.: World Bank, 1991) and subsequent updates available from the Environment Sector Board, and in the *Pollution Prevention and Abatement Handbook*. Other Bank statements that relate to the environment include OP/BP/GP 4.02, *Environmental Action Plans*; GP 4.03, *Agricultural Pest Management*; OP/BP/GP 4.04, *Natural Habitats*; OP 4.07, *Water Resources Management*; OP 4.09, *Pest Management*; OP 4.11, *Safeguarding Cultural Property in Bank-Financed Projects* (forthcoming); OP/BP 4.12, *Involuntary Resettlement* (forthcoming); OP/GP 4.36, *Forestry*; OP/BP 10.04, *Economic Evaluation of Investment Operations*; and OD 4.20, *Indigenous Peoples*. This OP and BP cover all projects for which a PID is first issued after December 11, 1998. Questions may be addressed to the Chair, Environment Sector Board.

1. Environmental assessment (EA) for a proposed Bank-financed operation is the responsibility of the borrower. Bank1 staff assist the borrower, as appropriate. The Region coordinates Bank review of EA in consultation with its Regional environment sector unit (RESU)2 and, as necessary, with the support of the Environment Department (ENV).

Environmental Screening

2. In consultation with the RESU, the task team (TT) examines the type, location, sensitivity, and scale of the proposed project,3 as well as the nature and magnitude of its potential impacts. At the earliest stage of the project cycle, the TT, with the RESU's concurrence, assigns the proposed project to one of four categories (A, B, C, or FI; see **OP 4.01, para. 8**), reflecting the potential environmental risks associated with the project. Projects are categorized according to the component with the potentially most serious adverse effects; dual categories (e.g., A/C) are not used.

3. The TT records in the Project Concept Document (PCD) and the initial Project Information Document (PID) (a) the key environmental issues (including any resettlement, indigenous peoples,

and cultural property concerns); (b) the project category and the type of EA and EA instruments needed; (c) proposed consultation with project-affected groups and local nongovernmental organizations (NGOs), including a preliminary schedule; and (d) a preliminary EA schedule.4 The TT also reports the project's EA category in the *Monthly Operational Summary of Bank and IDA Proposed Projects* (MOS), and prepare (and update as necessary) an Environmental Data Sheet (EDS)5 for the project. For Category A projects, the EDS is included as a quarterly annex to the MOS.

4. If, during project preparation, the project is modified or new information becomes available, the TT, in consultation with the RESU, considers whether the project should be reclassified. The TT updates the PCD/PID and the EDS to reflect any new classification and record the rationale for the new classification. The new classification that appears in the MOS is followed by "(R)" to indicate a revision.

5. Any exemption with respect to the application of this policy to any emergency recovery project processed under **OP 8.50**, *Emergency Recovery Assistance*,6 is subject to approval by the Regional vice president, in consultation with the Chair, ENV, and the Legal Department (LEG).7

EA Preparation

6. During preparation of the PCD, the TT discusses with the borrower the scope of the EA8 and the procedures, schedule, and outline for any EA report required. For Category A projects, a field visit by an environmental specialist for this purpose is normally necessary.9 At the time of the Project Concept Review;10 the RESU provides formal clearance of the environmental aspects of the PCD/PID. For Category B projects, the Concept Review decides whether an environmental management plan (EMP) will be required.

7. EA is an integral part of project preparation. As necessary, the TT assists the borrower in drafting the terms of reference (TOR) for any EA report.11 The RESU reviews the coverage of the TOR, ensuring among other things that they provide for adequate interagency coordination and for consultation with affected groups and local NGOs. To support preparation of the TOR and the EA report, the TT gives the borrower the documents *Content of an Environmental Assessment Report for a Category A Project* and *Environmental Management Plan*.12 As applicable, Bank and borrower staff refer to the *Pollution Prevention and Abatement Handbook*, which contains pollution prevention and abatement measures and emission levels that are normally acceptable to the Bank.

8. For a Category A project, the TT advises the borrower that the EA report must be submitted to the Bank in English, French, or Spanish, and an executive summary in English.

9. For all Category A projects, and for Category B projects that are proposed for IDA funding and that will have a separate EA report, the TT advises the borrower in writing that (a) before the Bank proceeds to project appraisal, the EA report must be made available in a public place accessible to affected groups and local NGOs and must be officially submitted to the Bank; and (b) once the Bank officially receives the report, it will make the report available to the public through its InfoShop.13

10. During the design phase of a project, the TT advises the borrower on carrying out the EA in accordance with the requirements of **OP 4.01**. The TT and the lawyer identify any matters pertaining to the project's consistency with national legislation or international environmental treaties and agreements (referred to in **OP 4.01, para. 3**).

Review and Disclosure

11. When the borrower officially submits a Category A or Category B EA report to the Bank, the

Region places a copy of the full report in the project file. It also sends the English-language executive summary of a Category A EA report to the Board Operations Division, Corporate Secretariat, under cover of a transmittal memorandum confirming that the executive summary and the full report (a) have been prepared by the borrower and have not been evaluated or endorsed by the Bank, and (b) are subject to change during appraisal. The results of a Category B EA, when there is no separate report, are summarized in the PID.

12. For Category A and B projects, the TT and the RESU review the results of the EA, ensuring that any EA report is consistent with the TOR agreed with the borrower. For Category A projects, and for Category B projects proposed for IDA funding that have a separate EA report, this review gives special attention to, among other things, the nature of the consultations with affected groups and local NGOs and the extent to which the views of such groups were considered; and the EMP with its measures for mitigating and monitoring environmental impacts and, as appropriate, strengthening institutional capacity. If not satisfied, the RESU may recommend to Regional management that (a) the appraisal mission be postponed, (b) the mission be considered a preappraisal mission, or (c) certain issues be reexamined during the appraisal mission. The RESU sends a copy of Category A reports to ENV.

13. For all Category A and B projects, the TT updates the status of the EA in the PCD/PID, describing how major environmental issues have been resolved or will be addressed and noting any proposed EA-related conditionalities. The TT sends the InfoShop a copy of all EA reports.

14. At the Project Decision stage,14 the RESU provides formal clearance of the environmental aspects of the project, including their treatment in the draft legal documents prepared by LEG.

Project Appraisal

15. For Category A projects and for Category B projects proposed for IDA funding that have a separate report, the appraisal mission normally departs only after the Bank has received the officially transmitted EA report and reviewed it (see paras. 11-13).15 For Category A projects, the appraisal mission team includes one or more environmental specialists with relevant expertise.16 The appraisal mission for any project (a) reviews both the procedural and substantive elements of the EA with the borrower, (b) resolves any issues, (c) assesses the adequacy of the institutions responsible for environmental management in light of the EA's findings, (d) ensures the adequacy of financing arrangements for the EMP, and (e) determines whether the EA's recommendations are properly addressed in project design and economic analysis. For Category A and B projects, the TT obtains the RESU's and LEG's concurrence with any change during appraisal and negotiations in any environment-related conditionality from that approved at the Project Decision stage.

Sector Investment and Financial Intermediary Lending

16. The appraisal mission develops clear arrangements with the borrower to ensure that the implementing institutions will be able to carry out or oversee EAs of proposed subprojects;17 specifically, the mission confirms the sources of required expertise and the appropriate division of responsibilities among the ultimate borrower, the financial intermediary or sector agency, and the agencies responsible for environmental management and regulation. As appropriate, the TT reviews Category A and B subproject EA reports in accordance with **OP 4.01, paras. 9 and 11-12**.

Guarantee Operations

17. Environmental assessment of a guarantee operation is carried out in accordance with **OP**/BP 4.01. Any EA for an IBRD guarantee operation must be carried out in sufficient time for (a) the RESU to review the results of the EA, and (b) the TT to take the findings into account as part of appraisal.

The TT ensures that a Category A EA report for such an IBRD guarantee operation is available at the InfoShop no later than 60 days before the expected date of Board presentation, and any required Category B EA report no later than 30 days before the expected date of Board presentation.

18. For the purposes of disclosure of EA reports, IDA guarantees are governed by the same policy framework as IDA credits. When a deviation from this policy framework is justified on operational grounds, the procedures for IBRD guarantees may be followed (see para. 17).

Documentation

19. The TT reviews the borrower's Project Implementation Plan to ensure that it incorporates EA findings and recommendations, including any EMP. In preparing the loan package for submission to the Board, the TT summarizes in the Project Appraisal Document (PAD) the reasons for the project classification; the findings and recommendations of the EA, including the justification for the recommended emission levels and approach to pollution prevention and abatement; and any issues related to the country's obligations under relevant international environmental treaties and agreements to which it is a party (see **OP 4.01, para. 3**). For a Category A project, the TT summarizes the EA report in an annex to the PAD,**18** including such key elements as the procedures used to prepare the report; environmental baseline conditions; the alternatives considered; the predicted impacts of the chosen alternative; a summary of the EMP, covering the areas outlined in **OP 4.01, Annex C**; and the borrower's consultations with affected groups and local NGOs, including the issues raised and how they have been taken into account. The annex also describes negotiated environment-related loan conditionalities and covenants; when necessary, documentation of the government's intention to grant appropriate permits; and environmental supervision arrangements. For sector investment and financial intermediary loans, the documents include appropriate measures and conditions for subproject EA work. The TT and LEG ensure that loan conditions include an obligation to carry out the EMP and include as additional conditions specific measures under the EMP, as appropriate for facilitating effective supervision and monitoring of EMP implementation.

Supervision and Evaluation

20. During implementation, the TT supervises the project's environmental aspects on the basis of the environmental provisions and the borrower's reporting arrangements agreed in the legal documents and described in other project documentation.**19** The TT ensures that procurement arrangements are consistent with the environmental requirements set out in the project legal agreements. The TT also ensures that supervision missions contain adequate environmental expertise.

21. The TT ensures that environment-related covenants are included in the monitoring system. It also ensures that reports provided by the borrower on project progress adequately discuss the borrower's compliance with agreed environmental actions, particularly the implementation of environmental mitigation, monitoring, and management measures. The TT, in consultation with the RESU and LEG, reviews this information and determines whether the borrower's compliance with environmental covenants is satisfactory. If compliance is not satisfactory, the TT discusses an appropriate course of action with the RESU and LEG. The TT discusses with the borrower actions necessary to correct the noncompliance, and it follows up on the implementation of such actions. The TT advises Regional management of the actions taken and recommends any further measures. During implementation, the TT obtains the RESU's concurrence with any change in environment-related aspects of the project, including environment-related conditions cleared by LEG.

22. The TT ensures that the borrower's operating plan for the project includes actions required to carry out the project's environmentrelated aspects, including provision for continued functioning of any environmental advisory panel as agreed with the Bank.

23. The Implementation Completion Report20 evaluates (a) environmental impacts, noting whether they were anticipated in the EA report; and (b) the effectiveness of any mitigatory measures taken.

Role of the Environment Department

24. ENV supports the Regions throughout the EA process with advice, training, dissemination of good practice, and operational support. As appropriate, ENV provides to other Regions the EA reports, related materials, precedents, and experience that originate in any one Region or from external sources. ENV carries out project audits to help ensure compliance with the Bank's EA policy, and it conducts periodic reviews of the Bank's EA experience to identify and disseminate good practice and develop further guidance in this area.

Financing EA

25. Project Preparation Facility advances21 and trust funds may be available to potential borrowers that request Bank assistance in financing EA.

Specific Applications

26. Procedures for the environmental assessment of projects involving dams and reservoirs and pest management are set out in Annexes B and C, respectively.

"Bank" includes IDA; "EA" refers to the entire process set out in OP/BP 4.01; "project" covers all operations financed by Bank loans or guarantees except structural adjustment loans (for which the environmental provisions are set out in OP/BP 8.60, *Adjustment Lending*, forthcoming) and debt and debt service operations, and also includes projects under adaptable lending—adaptable program loans (APLs) and learning and innovation loans (LILs)—and projects and components funded under the Global Environment Facility; "loans" includes credits; "borrower" includes, for guarantee operations, a private or public project sponsor receiving from another financial institution a loan guaranteed by the Bank; "Project Concept Document" includes the Initiating Memorandum; and "Project Appraisal Document" includes the Report and Recommendation of the President (President's Report).

As of November 1998, the Regional environmental sector units are as follows: AFR — Environment Group; EAP, SAR, and ECA — Environment Sector Unit; MNA — Rural Development, Water, and Environment Sector Unit; LCR — Environmentally and Socially Sustainable Development Sector Unit.

"Location" refers to proximity to or encroachment on environmentally important areas, such as wetlands, forests, and other natural habitats. "Scale" is judged by Regional staff in the country context. "Sensitivity" refers to projects that may have irreversible impacts, affect vulnerable ethnic minorities, involve involuntary resettlement, or affect cultural heritage sites. For further discussion, see the *Environmental Assessment Sourcebook, Update No. 2: Environmental Screening* (available from the Environment Department).

See OP / BP 10.00, *Investment Lending: Identification to Board Presentation*, for the loan processing context in which decisions on the environment category and the EA process are made.

For the EDS, see Annex A.

See OP 4.01, para. 13.

LEG input is provided through the lawyer assigned to the project.

For sector investment and financial intermediary operations, Bank and borrower staff need to consider the potential for significant cumulative impacts from multiple subprojects.

Such a field visit by an environmental specialist may also be desirable for some Category B projects

Or, for a sector adjustment loan (SECAL), the equivalent Regional review.

According *to Guidelines: Selection and Employment of Consultants by World Bank Borrowers* (Washington, D.C.: World Bank, January 1997, revised September 1997), the TT reviews the qualifications of and, if acceptable, gives a no-objection to any consultants retained by the borrower to prepare the EA report or to serve on a panel.

For these two documents, see OP 4.01, Annexes B and C.

See OP 4.01, para. 19, and BP 17.50, *Disclosure of Operational Information*

Or, for SECALs, before departure of the appraisal mission.

In exceptional cases, the RVP, with the prior concurrence of the Chair, ENV, may authorize the appraisal mission's departing before the Category A EA report is received. In such cases, the RESU's clearance of the project is conditional

on the Bank's receiving, before appraisal ends and negotiations begin, an EA report that provides an adequate basis for continued project processing (GP 4.01 provides examples of such exceptional cases).

It may be desirable to include environmental specialists on the appraisal mission team for some Category B projects, as well.

The TT provides to the implementing institutions, for use (as appropriate) in the preparation and appraisal of subprojects, copies of *Content of an Environmental Assessment Report for a Category A Project* (**OP 4.01, Annex B**), *Environmental Management Plan* (**OP 4.01, Annex C**), and *Pollution Prevention and Abatement Handbook*.

For a SECAL, a Category A EA report is summarized in a technical annex to the President's Report. This technical annex is made available to the public through the InfoShop.

See OP/BP 13.05, *Project Supervision*, forthcoming.

See **OP** / **BP** / **GP** 13.55, *Implementation Completion Reporting*.

See **OP** / **BP** 8.10, *Project Preparation Facility*.

These procedures were prepared for use by World Bank staff and are not necessarily a complete treatment of the subject.

Environmental Data Sheet for Projects in the IBRD/IDA Lending Program

Country: _____

Project ID No.: _____

Project Name: _____

_____

Appraisal Date: _____

IBRD Amount ($m): _____

Board Date: _____

IDA Amount ($m): _____

Managing Division: _____

Sector: _____

Lending Instrument: _____

Status: _____

Date for receipt of EA report by Bank: _____

Date Assigned: _____

EA Category: _____

Date data sheet prepared/update:
_____

Please do not leave any items blank. Use "N/A" (not applicable) or "TBD" (to be dtermined) when appropriate.

Major Project Components:

Project Location: (besides geographic location, information about the key environmental characteristics of the area likely to be affected by the project, and proximity of any protected areas or sites or critical natural habitats)

Major Environmental Issues: (identified or suspected in project)

Other Environmental Issues: (of lesser scope associated with project)

Proposed Actions: (to mitigate environmental issues described above)

Justification/Rationale for Environmental Category: (presents reasons for environmental category selected and explanation of any changes from initial classification, including whether any changes relate to alternatives)

Reporting Schedule: Category A EA report: Start-up date, date for first draft, and current status. Category B: Is there a separate EA report? If yes, when is it due?

Remarks: (gives status of any other environmental studies, lists local groups and local NGOs consulted and, where EA reports were made public locally, tells whether borrower has given permission to release EA report, etc.)

Signed by: (Task Team Leader)

_____

Signed by: (Head, Regional Environment Sectoral Unit)

_____

These procedures were prepared for use by World Bank staff and are not necessarily a complete treatment of the subject.

Application of EA to Dam and Reservoir Projects

1. During project identification and before assigning an environmental category, the task team (TT) ensures that the borrower selects and engages independent, recognized experts or firms, whose qualifications and terms of reference (TOR) are acceptable to the Bank, to carry out environmental reconnaissance that includes

(a) identifying the potential environmental impacts of the project;

(b) ascertaining the scope of the environmental assessment (EA), including any resettlement and indigenous peoples concerns;

(c) assessing the borrower's capacity to manage the EA process; and

(d) advising on the need for an independent environmental advisory panel.1

The TT obtains from the borrower a copy of the results of the reconnaissance and ensures that they are taken into account in environmental screening and in the preparation of the EA TOR. For dam and reservoir projects that are in an advanced stage of preparation when proposed for financing to the Bank, the TT in consultation with the Regional environment sectoral unit (RESU) determines whether any additional EA work is needed, and whether an independent environmental advisory panel is needed. A field visit for this purpose is normally required (see **BP 4.01, para 6**).

2. During project preparation, the TT assesses the environmental soundness of the country's macroeconomic and sector policies on matters that affect the project. If the TT identifies any issues, it discusses with the government measures to improve the policies.

3. If the borrower engages an environmental advisory panel, the TT reviews and indicates to the borrower the acceptability of the TOR and shortlists.

4. In reviewing the EA, the TT and the RESU ensure that the EA examines demand management opportunities. In appraising the project, they ensure that the project design adequately takes into account demand management as well as supply options (e.g., conservation of water and energy, efficiency improvements, system integration, cogeneration, and fuel substitution).

5. The TT ensures that the borrower establishes within the implementing ministry or agency an in-house environmental unit, with adequate budget and professional staffing strong in expertise relevant to the project, to manage the project's environmental aspects.

See **OP 4.01, para. 4**.

These procedures were prepared for use by World Bank staff and are not necessarily a complete treatment of the subject.

Application of EA to Projects Involving Pest Management

Sector Review

1. The task team (TT) ensures that any environmental assessment (EA) of the agriculture or health sector evaluates the country's capacity to manage the procurement, handling, application, and disposal of pest control products; to monitor the precision of pest control and the impact of pesticide use; and to develop and implement ecologically based pest management programs.

Project EA

2. During project identification, the TT assesses whether the proposed project may raise potential pest management issues. Projects that include the manufacture, use, or disposal of environmentally significant1 quantities of pest control products are classified as Category A. Depending on the level of environmental risk, other projects involving pest management issues are classified as A, B, C, or FI.2 When substantial quantities of highly toxic pesticide materials for use under the project are transported or stored, a hazard assessment may be appropriate.3

3. The TT records in the Project Concept Document (PCD) and the initial Project Information Document (PID) any pest management issues that the EA will address. For Category A projects, the TT reports in the *Monthly Operational Summary for Bank and IDA Proposed Projects* (MOS) whether the project (a) will finance procurement of pest control products directly or will provide credit that may be used to purchase pest control products (and whether any specific products are excluded from financing), (b) will finance goods or services that significantly change pesticide use patterns, or (c) includes components—including support for development and implementation of integrated pest management (IPM) programs—aimed at reducing environmental and health hazards associated with pest control and the use of pesticides.

4. The TT ensures that the EA covers potential issues related to pest management and considers appropriate alternative designs or mitigation measures. Depending on the issues identified, the environmental management plan4 includes a pest management plan.

Pest Management Plan

5. A pest management plan is a comprehensive plan, developed when there are significant pest management issues such as (a) new land-use development or changed cultivation practices in an area, (b) significant expansion into new areas, (c) diversification into new crops in agriculture,5 (d) intensification of existing low-technology systems, (e) proposed procurement of relatively hazardous pest control products or methods, or (f) specific environmental or health concerns (e.g., proximity of protected areas or important aquatic resources; worker safety). A pest management plan is also developed when proposed financing of pest control products represents a large component of the

project.6

6. A pest management plan reflects the policies set out in **OP 4.09**, *Pest Management.* The plan is designed to minimize potential adverse impacts on human health and the environment and to advance ecologically based IPM.7 The plan is based on on-site evaluations of local conditions conducted by appropriate technical specialists with experience in participatory IPM. The first phase of the plan—an initial reconnaissance to identify the main pest problems and their contexts (ecological, agricultural, public health, economic, and institutional) and to define broad parameters—is carried out as part of project preparation and is evaluated at appraisal. The second phase—development of specific operational plans to address the pest problems identified—is often carried out as a component of the project itself.8 As appropriate, the pest management plan specifies procedures for screening pest control products. In exceptional cases, the pest management plan may consist of pest control product screening only.

Screening of Pest Control Products

7. Pest control product screening is required when a project finances pest control products. The screening establishes an authorized list of pest control products approved for financing, along with a mechanism to ensure that only the specified products will be procured with Bank funds. Screening without a pest management plan is appropriate only when all of the following conditions are met: (a) expected quantities of pest control products are not significant from a health or environment standpoint; (b) no significant environmental or health concerns related to pest control need to be addressed; (c) the project will not introduce pesticide use or other nonindigenous biological control into an area, or significantly increase the level of pesticide use; and (d) no hazardous products9 will be financed.10

Appraisal

8. Depending on the complexity of the issues involved and the degree of risk to human health or the environment, the appraisal mission includes appropriate technical specialists.

9. The TT records in the Project Appraisal Document (PAD) pest management concerns arising from the EA and any proposed project interventions pertinent to pest management, for example:

(a) a list of pest control products authorized for procurement, or an indication of when and how this list will be developed and agreed on;

(b) existing pest management practices; pesticide use; the policy, economic, institutional, and legal framework for regulating, procuring, and managing pesticides; and the extent to which all these are consistent with an IPM approach;

(c) proposed project activities (or ongoing parallel activities, including other projects supported by the Bank or other donors) aimed at addressing (i) the shortcomings identified, and (ii) any constraints to adopting IPM;

(d) proposed mechanisms for financing, implementing, monitoring, and supervising components relating to pest management or pesticide use, including any role envisaged for local nongovernmental organizations;

(e) the capacity of responsible institutions to carry out the activities described; and

(f) the overall sectoral context and other issues that will not be directly addressed under the project but that should be addressed as long-term objectives.

10. The main elements of the pest management measures are reflected in the legal agreements between the borrower and the Bank.[11]

Supervision and Evaluation

11. Depending on the nature and complexity of the pest management and pesticide-related issues confirmed at appraisal, supervision missions may need to include appropriate technical specialists. This need is reflected in the supervision plan.

12. The Implementation Completion Report evaluates the environmental impact of pest management practices supported or promoted by the project, as well as the borrower's institutional oversight capacity. It also discusses whether the project has resulted in improved pest management practices according to the criteria that define the IPM approach.

For the purposes of this statement, "environmental significance" takes into account the impacts (including benefits) on human health.

For environmental screening, see **OP 4.01, para. 8**.

For definitions, see **OP 4.01, Annex A**.

See **OP 4.01, Annex C**

Particularly such crops as cotton, vegetables, fruits, and rice, which are often associated with heavy use of pesticides.

A pest management plan is not required for the procurement or use of impregnated bednets for malaria control, or of WHO Class III insecticides for intradomiciliary spraying for malaria control.

See **GP 4.03, Part II**, for information on IPM.

For the content of a pest management plan, see **GP 4.03**.

Hazardous products include pesticides listed in Class Ia and Ib of the World Health Organization (WHO) *Classification of Pesticides by Hazard and Guidelines to Classification* (Geneva: WHO, 1994-95); materials listed in the UN *Consolidated List of Products Whose Consumption and or Sale have been Banned, Withdrawn, Severely Restricted, or not Approved by Governments* (New York: UN, 1994); and other materials that are banned or severely restricted in the borrower country because of environmental or health hazards (see the country's national pesticide registration list, if it has one). Copies of the WHO classification and UN list, which are updated periodically, are available in the Bank's Sectoral Library. Staff may consult the Rural Development Department for further guidance.

GP 4.03, Part III, provides further information on pest control product screening.

Loan conditionality may be needed to ensure the effective implementation of project components; for example, (a) establishing or strengthening pesticide regulatory and monitoring framework and capabilities, (b) properly operating and/or constructing pesticide storage or disposal facilities, (c) agreeing on a time-bound program to phase out use of an undesirable pesticide and properly dispose of any existing stocks, or (d) initiating research or extension programs aimed at providing alternatives to undesirable pesticide use.

THE WORLD BANK OPERATIONAL MANUAL
Good Practices

GP 4.01

January 1999

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Environmental Assessment

Note: OP, BP, and GP 4.01 together replace OMS 2.36, *Environmental Aspects of Bank Work*; OD 4.00, Annex A, *Environmental Assessment*; OD 4.00, Annex B, *Environmental Policy for Dam and Reservoir Projects*; OD 4.01, *Environmental Assessment*; and the following Operational Memoranda: *Environmental Assessments: Instructions to Staff on the Handling of the Borrower's Consultations with Affected Groups and Relevant Local NGOs*, 4/10/90; *Environmental Assessments: Instructions to Staff on the Release of Environmental Assessments to Executive Directors*, 11/21/90; and *Release of Environmental Assessments to Executive Directors*, 2/20/91. Additional information related to these statements is provided in the *Environmental Assessment Sourcebook* (Washington, D.C.: World Bank, 1991) and subsequent updates available from the Environment Sector Board, and in the *Pollution Prevention and Abatement Handbook*. Other Bank statements that relate to the environment include OP/BP/GP 4.02, *Environmental Action Plans*; GP 4.03, *Agricultural Pest Management*; OP/BP/GP 4.04, *Natural Habitats*; OP 4.07, *Water Resources Management*; OP 4.09, *Pest Management*; OP 4.11, *Safeguarding Cultural Property in Bank-Financed Projects* (forthcoming); OP/BP 4.12, *Involuntary Resettlement* (forthcoming); OP/GP 4.36, *Forestry*; OP/BP 10.04, *Economic Evaluation of Investment Operations*; and OD 4.20, *Indigenous Peoples*. The OP and BP apply to all projects for which a PID is first issued after March 1, 1999. Questions may be addressed to the Chair, Environment Sector Board.

1. Environmental assessments (EAs) of Bank[1] projects are carried out in a broad range of sectoral, geographical, cultural, and socio-economic contexts. Projects assessed may be large or small, concentrated at one specific site or dispersed over a large area (e.g., in the form of numerous subprojects). For these reasons EAs vary greatly in terms of the type of analysis, the types of relevant issues and impacts, and the breadth and depth of coverage. Moreover, since environmental impacts usually occur in a variety of natural and social settings and affect multiple sectors, it takes a multidisciplinary team to carry out most EAs adequately.

2. Consequently, meaningful guidance on EA—complementing the policy and procedural requirements in **OP** and **BP 4.01**—has to cover specific sectors as well as cross-sectoral issues. It must also explain how to apply different types of EA for different types of projects and how different methods developed by different disciplines may be used in support of EA. The Bank provides such guidance to its staff and borrowers in the *Environmental Assessment Sourcebook* (1991) and the *Environmental Assessment Sourcebook Updates* issued periodically since 1993. These documents are available electronically and in hard copy from the Environment Sector Board.

3. **GP 4.01, Annex A**, *Checklist of Potential Issues for an EA*, lists some of the issues that an EA may need to address and gives sources for further information. **Annex B**, *Types of Projects and Their Typical Classifications*, illustrates the environmental classification of several kinds of Bank projects.

Timing of EA Reports

4. **OP** and **BP 4.01** require that EA reports for Category A projects be submitted to the Bank prior to appraisal. The Bank considers EA to be part of the information it requires to appraise a project adequately. Therefore, it allows exceptions only in very specific circumstances, such as the following:

(a) Sector investment loans and financial intermediary operations: EAs for subprojects that are not known prior to the Bank's appraisal of the project are prepared at the same time as the subprojects are prepared (see **OP 4.01, paras. 9 and 11-12**). However, information on the EA process for subprojects is presented prior to appraisal.

(b) Loan guarantees: EA reports for loan guarantees may be submitted during appraisal. However, appraisal is not complete until the findings of the EA have been appropriately incorporated into project design and reflected in project documentation (see **BP 4.01, para. 17**). Regional environment sector unit (RESU) review and clearance are required, as for other projects.

(c) Projects with several components of which only one is classified as Category A: If a convincing case can be made that, unless appraisal of the components that are not in Category A is allowed to proceed, the project or any of its components may be in jeopardy, the Regional vice president, with the prior concurrence of the Chair, Environment Sector Board, may authorize the appraisal mission's departing before the EA report is received (see **BP 4.01, footnote 14**). Still, appraisal is not complete until the EA has been taken into account in the project design and reflected in the project documentation; and the RESU's clearance at the Project Decision Meeting is conditional on submission of a satisfactory EA report prior to negotiations.

If a satisfactory sectoral or regional EA has been carried out prior to the preparation of such projects as are described here, and that EA has influenced the selection and design of these projects, the argument for allowing an exception is considered more solid than when there has been no previous EA.

Format of EA Report

5. The effectiveness of EA depends to a large extent on the way information is presented to stakeholders and decision makers. For all Category A and many Category B projects, one of the most important instruments of communication is the EA report, which presents the results of the EA process, including recommendations for a project's final design and implementation.

6. An EA report should present analysis, findings, and recommendations clearly and concisely, and it should be able to be easily reproduced and disseminated. To achieve these objectives, the task team should provide borrowers with the following guidelines:

(a) Whenever possible, limit the report to one volume of no more than 150 pages. Supplementary technical information may be put into one or more annexes (collectively titled "Technical Annexes") to the main volume; these annexes should also be as concise as possible.2

(b) Use loose-leaf binders rather than spiral or book binding.

(c) Use standard sizes of paper (generally whatever standard borrower uses).

(d) Use font size 11 or 12.

(e) One-page figures, tables, charts, maps, and other illustrations may be used to improve presentation and facilitate understanding, but fold-out or pull-out formats should be avoided because they are difficult to reproduce.

7. For projects with several subprojects that individually require Category A EA, the same guidelines should be followed for each EA report; however, the use of technical annexes is strongly discouraged. It is highly recommended that the borrower summarize the findings of the individual EA reports in one summary volume (which, if concise, may be the same as the EA summary that is submitted to the Board).

Processing the EA Report

8. The World Bank InfoShop is responsible for making EA reports available to the public. To facilitate the InfoShop's work, the task team should

(a) request borrowers to provide at least two original sets of the EA report (or two legible copies suitable for reproduction in the Bank);

(b) transmit the complete EA report to the InfoShop under cover of a memorandum (both in paper copy and as a Lotus Notes attachment addressed to "PIC") giving (i) the name, division, e-mail address, telephone extension, and fax number of a contact person to whom the InfoShop may address questions;3 (ii) the name of the person or division that reviewed the EA report before appraisal; (iii) the full name of the project for which the EA was produced;4 (iv) any special information on the EA (e.g., that EA for subprojects will be carried out later and is not yet available); and (v) on a separate page, a list of the titles of the main volume and all other volumes and annexes comprising the EA report; and

(c) enclose a copy of the EA summary that was sent to the Board.

"Bank" includes IDA; "EA" refers to the entire process set out in **OP** / **BP** 4.01; "project" covers all operations financed by Bank loans or guarantees except structural adjustment loans (for which the environmental provisions are set out in OP/BP 8.60, *Adjustment Lending*, forthcoming) and debt and debt service operations, and also includes projects under adaptable lending—adaptable program loans (APLs) and learning and innovation loans (LILs)—and projects and components funded under the Global Environment Facility; "loans" includes credits; and "borrower" includes, for guarantee operations, a private or public project sponsor receiving from another financial institution a loan guaranteed by the Bank.

The World Bank's InfoShop provides technical annexes to the public only when they are specifically requested, and it charges an additional fee for each annex requested.

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Checklist of Potential Issues of an EA

When relevant, the EA addresses the following issues:

(a) *Agrochemicals.* The Bank promotes the use of integrated pest management (IPM) and the careful selection, application, and disposal of pesticides (see **OP 4.09**, *Pest Management*). Because fertilizers affect surface and ground-water quality, their use must also be carefully assessed.

(b) *Biological diversity.* The Bank promotes conservation of endangered plant and animal species, critical habitats, and protected areas (see **OP** /**BP** /**GP** 4.04, *Natural Habitats*).

(c) *Coastal and marine resources management.* The planning and management of coastal marine resources, including coral reefs, mangroves, and wetlands, are addressed in *Guidelines for Integrated Coastal Zone Management*, Environmentally Sustainable Development Studies and Monographs Series No. 9 (Washington, D.C.: World Bank, 1996).

(d) *Cultural property.* OP 4.11, *Safeguarding Cultural Property in Bank-Financed Projects* (forthcoming), confirms the Bank's commitment to protect archaeological sites, historic monuments, and historic settlements.

(e) *Global externalities.* When a project has potential global environmental externalities (i.e., emissions of greenhouse gases or ozone-depleting substances, pollution of international waters, or adverse impacts on biodiversity), the EA identifies the externalities, analyzes them in terms of their impacts, and proposes appropriate mitigation measures.

(f) *Hazardous and toxic materials.* Guidelines are available from the Environment Sector Board (ENV) on the safe manufacture, use, transport, storage, and disposal of hazardous and toxic materials.

(g) *Indigenous peoples.* **OD 4.20**, *Indigenous Peoples* (to be reissued as OP/BP 4.10), provides specific guidance on addressing the rights of indigenous peoples, including traditional land and water rights.

(h) *Induced development and other socio-cultural aspects.* Secondary growth of settlements and infrastructure, often referred to as "induced development" or "boomtown" effects, can have major indirect environmental impacts, which local governments may have difficulty addressing.

(i) *Industrial hazards.* All energy and industry projects should include a formal plan to prevent and manage industrial hazards (see *Techniques of Assessing Industrial Hazards: A Manual*, Technical Paper No. 55 [Washington, D.C.: Technica, Ltd., and World Bank, 1988]).

(j) *Industrial pollution.* The Bank supports an integrated approach to pollution control, viewing pollution prevention as generally preferable to reliance on end-of-pipe pollution controls alone. It encourages the adoption of "cleaner production" and stresses the need for good management and operating practices. Guidance on industrial projects is provided in the *Pollution Prevention and Abatement Handbook.*

(k) *International treaties and agreements on the environment, natural resources, and cultural property.* The EA should review the status and application of such current and pending treaties and agreements, including their notification requirements. The Legal Department, which maintains a list of international treaties, can obtain the information required on applicable laws in individual countries.

(l) *International waterways.* **OP** /**BP** /**GP** 7.50, *Projects on International Waterways*, provides guidance.

(m) *Involuntary resettlement.* OP/BP/GP 4.12, *Involuntary Resettlement* (forthcoming), provides guidance.

(n) *Land settlement.* Land settlement should generally be carefully reviewed because it can have complex physical, biological, socioeconomic, and cultural impacts.

(o) *Natural habitats.* The Bank is committed to protecting natural habitats and provides for compensatory measures when lending results in adverse impacts (see **OP** /**BP** /**GP** 4.04, *Natural Habitats*).

(p) *Natural hazards.* The EA should review whether the project may be affected by natural hazards (e.g., earthquakes, floods, volcanic activity) and, if so, should propose specific measures to these concerns (see **OP** /**BP** /**GP** 8.50, *Emergency Recovery Assistance*).

(q) *Occupational health and safety.* All industry and energy projects, and relevant projects in other sectors, should include formal plans to promote occupational health and safety (see *Occupational Health and Safety Guidelines* [Washington, D.C.: World Bank, 1988]).

(r) *Ozone-depleting substances.* Use of ozone-depleting substances (e.g., chlorofluorocarbons and methyl bromide), which is widespread in such applications as refrigeration, foams, solvents, and fumigation, is regulated under the Montreal Protocol and Vienna Convention. Guidance on ozone-safe alternatives is available from the Montreal Protocol Operations Unit in the Bank's Global Environment Coordination Unit (ENV).

(s) *Ports and harbors.* Guidelines are available from the Transportation, Water, and Urban Development Department on addressing common environmental concerns associated with port and harbor development (see *Environmental Considerations for Port and Harbor Developments*, Technical Paper No. 126 [Washington, D.C.: World Bank, 1990]).

(t) *Tropical forests.* Guidance is provided by the Bank's July 1991 paper *Forest Policy*; **OP** /**GP** 4.36, *Forestry*; and **OP** /**BP** /**GP** 4.04, *Natural Habitats*.

(u) *Watersheds.* Bank policy promotes the protection and management of watersheds, as an element of lending operations for dams, reservoirs, and irrigation systems (see **OP** 4.07, *Water Resources Management*).

(v) *Wetlands.* The Bank promotes conservation and management of wetlands (e.g., estuaries, lakes, mangroves, marshes, and swamps) (see **OP** /**BP** /**GP** 4.04, *Natural Habitats*).

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Types of Projects and Their Typical Classifications

Bank and international experience shows that projects in certain sectors or of certain types are normally best classified as illustrated below. These examples are only illustrative; it is the extent of the impacts, not the sector, that determines the extent of the environmental assessment and, hence, the category.

Category A Projects/Components

(a) Dams and reservoirs
(b) Forestry production projects
(c) Industrial plants (large-scale) and industrial estates, including major expansion, rehabilitation, or modification
(d) Irrigation, drainage, and flood control (large-scale)
(e) Aquaculture and mariculture (large-scale)
(f) Land clearance and leveling
(g) Mineral development (including oil and gas)
(h) Port and harbor development
(i) Reclamation and new land development
(j) Resettlement
(k) River basin development
(l) Thermal power and hydropower development or expansion
(m) Manufacture, transportation, and use of pesticides or other hazardous and/ or toxic materials
(n) New construction or major upgrading of highways or rural roads
(o) Hazardous waste management and disposal

Category B Projects/Components

(a) Agroindustries (small-scale)
(b) Electrical transmission
(c) Irrigation and drainage (small-scale)
(d) Renewable energy (other than hydroelectric dams)
(e) Rural electrification
(f) Tourism
(g) Rural water supply and sanitation
(h) Watershed projects (management or rehabilitation)
(i) Protected areas and biodiversity conservation
(j) Rehabilitation or maintenance of highways or rural roads
(k) Rehabilitation or modification of existing industrial facilities (small-scale)
(l) Energy efficiency and energy conservation

Category C Projects/Components

(a) Education
(b) Family planning
(c) Health
(d) Nutrition
(e) Institutional development
(f) Most human resources projects

These policies were prepared for use by World Bank staff and are not necessarily a complete treatment of the subject.

Definitions

1. *Environmental audit*: An instrument to determine the nature and extent of all environmental areas of concern at an existing facility. The audit identifies and justifies appropriate measures to mitigate the areas of concern, estimates the cost of the measures, and recommends a schedule for implementing them. For certain projects, the EA report may consist of an environmental audit alone; in other cases, the audit is part of the EA documentation.

2. *Environmental impact assessment (EIA)*: An instrument to identify and assess the potential environmental impacts of a proposed project, evaluate alternatives, and design appropriate mitigation, management, and monitoring measures. Projects and subprojects need EIA to address important issues not covered by any applicable regional or sectoral EA.

3. *Environmental management plan (EMP)*: An instrument that details (a) the measures to be taken during the implementation and operation of a project to eliminate or offset adverse environmental impacts, or to reduce them to acceptable levels; and (b) the actions needed to implement these measures. The EMP is an integral part of Category A EAs (irrespective of other instruments used). EAs for Category B projects may also result in an EMP.

4. *Hazard assessment*: An instrument for identifying, analyzing, and controlling hazards associated with the presence of dangerous materials and conditions at a project site. The Bank requires a hazard assessment for projects involving certain inflammable, explosive, reactive, and toxic materials when they are present at a site in quantities above a specified threshold level. For certain projects, the EA report may consist of the hazard assessment alone; in other cases, the hazard assessment is part of the EA documentation.

5. *Project area of influence*: The area likely to be affected by the project, including all its ancillary aspects, such as power transmission corridors, pipelines, canals, tunnels, relocation and access roads, borrow and disposal areas, and construction camps, as well as unplanned developments induced by the project (e.g., spontaneous settlement, logging, or shifting agriculture along access roads). The area of influence may include, for example, (a) the watershed within which the project is located; (b) any affected estuary and coastal zone; (c) off-site areas required for resettlement or compensatory tracts; (d) the airshed (e.g., where airborne pollution such as smoke or dust may enter or leave the area of influence; (e) migratory routes of humans, wildlife, or fish, particularly where they relate to public health, economic activities, or environmental conservation; and (f) areas used for livelihood activities (hunting, fishing, grazing, gathering, agriculture, etc.) or religious or ceremonial purposes of a customary nature.

6. *Regional EA*: An instrument that examines environmental issues and impacts associated with a particular strategy, policy, plan, or program, or with a series of projects for a particular region (e.g., an urban area, a watershed, or a coastal zone); evaluates and compares the impacts against those of alternative options; assesses legal and institutional aspects relevant to the issues and impacts; and

recommends broad measures to strengthen environmental management in the region. Regional EA pays particular attention to potential cumulative impacts of multiple activities.

7. *Risk assessment*: An instrument for estimating the probability of harm occurring from the presence of dangerous conditions or materials at a project site. Risk represents the likelihood and significance of a potential hazard being realized; therefore, a hazard assessment often precedes a risk assessment, or the two are conducted as one exercise. Risk assessment is a flexible method of analysis, a systematic approach to organizing and analyzing scientific information about potentially hazardous activities or about substances that might pose risks under specified conditions. The Bank routinely requires risk assessment for projects involving handling, storage, or disposal of hazardous materials and waste, the construction of dams, or major construction works in locations vulnerable to seismic activity or other potentially damaging natural events. For certain projects, the EA report may consist of the risk assessment alone; in other cases, the risk assessment is part of the EA documentation.

8. *Sectoral EA*: An instrument that examines environmental issues and impacts associated with a particular strategy, policy, plan, or program, or with a series of projects for a specific sector (e.g., power, transport, or agriculture); evaluates and compares the impacts against those of alternative options; assesses legal and institutional aspects relevant to the issues and impacts; and recommends broad measures to strengthen environmental management in the sector. Sectoral EA pays particular attention to potential cumulative impacts of multiple activities.

Appendix 4　Environmental Consideration in JICA

Outline of Environmental Consideration in JICA

1. Introduction

Various studies for development aid project (social development, mine industry, agriculture, etc.) have been implemented in developing countries as a part of JICA's co-operative activities. Recently, the process of environmental consideration draws more public attentions in developing countries when manipulating master plan and its feasibility for large-scaled project like developing social infrastructure, since it studies the problems of social environments in particular the problems of involuntary resettlements.

2. Concepts of Environmental Consideration in ODA projects

2.1 Background of enhancing environmental consideration

Recently, public concerns for environmental problems are rapidly increasing and along with it, the significance of Environmental Impact Assessment (EIA) in every large-scale development project is widely recognized. Since OECD adopted "Council Recommendation on Environmental Assessment of Development Assistance Projects and Programmes" in 1985, major bilateral aid organizations and multilateral donor bank such as the World Bank began to establish guidelines for EIA.

Environmental Impact Assessment – so called EIA, is a system to set goals for natural conservation and to facilitate countermeasures to prevent/mitigate adverse impacts on environment by performing field study and predicting impacts against every development projects identified as the detailed surveillance is required. Participation opportunities of local residents relating to the project area is very important for EIA implementation, thus, it should be open to the public.

Table 1

Year	Month	Activities
1988	12	Recommendation to enhance environmental consideration in the report of "Sectional Study for Development Assistance on the Environment"
1989	8	Environmental Office was newly established in Planning Department
1989	9	Place an environmental officer in each Department.
1990	2	Environmental Guidelines for EIA study of Dam Construction Projects
1990	4	Allocate new budget on project study for environmental consideration
1991	5	Reorganized Environmental Office into Environment, WID and other global issues Office.
1992	3	Environmental Guidelines on JICA Development Study for EIA of Agricultural and Rural Development Project
1992	7	Manuals for Environmental Consideration for Preparatory Stud, Feasibility Study and Master Plan Study
1992	9	Environmental Guidelines for Infrastructure Projects (following 13 sectors) – Port and Harbors, Airport, Roads, Railways, River and Erosion control, Solid

		waste management, Sewerage, Groundwater development, Water Supply, Regional Development, Tourism Development, Transport Development, Urban Transportation Development)
1993	3	Environmental Guidelines for Forestry Development
1993	4	Environment, WID and other issues Office promoted into Environment, WID and other issues Division
1993	4	Allocate new budget on EIA study (development Study)
1993	7	Environmental Guideline for Mining Industry Development (Operation Manual) for 3 sector (Industry, Mining, Power plant)
1994	3	Environmental Guideline for Fishery Development
1994	3	Q&A for Environmental Consideration on Development Study
1994	3	Report of Study for assisting countermeasures against desertification
1994	4	Increase budget for environmental officers for Grand Aid projects (preparatory and master plan study)
1995	3	Report of Study for assisting Bio-diversity Conservation
1996	1	JICA's Basic Study for Expanding Environmental Cooperation

Note) 20 underlined Guidelines for Environmental Consideration are published.

2-2 Basic Concept

JICA's aid report "Sectoral Study for Development Assistance-Environment" published in 1988 defined that "Environmental Consideration" is to study whether a development project will have significant impacts on the environment or not, to assess the impacts and to incorporate measures to prevent or alleviate their effects, if necessary.

The premise of this definition is the understanding that development aid should not end with a one-time involvement but should be continuous and sustainable. Thus, it is believed that environmental consideration is prerequisite for securing the sustainability of the development.

If environmental consideration is not sufficiently undertaken for implementing a development project and, if careful attention is not paid to the management of the surrounding natural resources, the base of the development might be jeopardized and the development might be halted. The base of the people's livelihood or even their subsistence can be also threatened. It is necessary, therefore, to try to ensure the sustainable development by harmonizing the development project with natural resources and the base of livelihood and subsistence of the residents in the area.

3. Most Desirable Environmental Consideration

Among the large-scale development projects, JICA has few cases to implement EIA focused on social environment from the planning phase of the project. Results obtained from case analysis

indicate that EIA focus on social environment will complement conventional JICA's EIA, and will change the projects successful from not. Project proposer should patiently explain necessities and plausibility of the project and mitigation plan thoroughly to the project affected residents (local community).

Needless to say the significance of performing field study, impact prediction, assessment for natural environment, it is important to establish a firm system for sufficient care of social environment. JICA should promote to include an environmental expert into project team for consideration of social environments, and to enhance capacity building in this field as well.

Table: Comprehensive Matrix {Roads}

Project Type			Sectoral Development								Comprehensive Development				
Sectors / Environmental Items			1 Ports & Harbors	2 Airports	3 Roads	4 Railways	5 River & Erosion Control	6 Soil Waste Management	7 Sewerage Development	8 Groundwater	9 Water Supply	10 Regional Development	11 Tourism Development	12 Transportation Development	13 Urban Transportation Development
Social Environment	1	Resettlement	◎	◎	◎	◎	◎	○	○		○	○	○	○	○
	2	Economic Activities	○	○	○	○						○	○	○	○
	3	Traffic & Public Facilities	○	○	○	○	○	○				○	○	○	○
	4	Split of Communities		○	○	○	○					○	○	○	○
	5	Cultural Property	○	○	○	○	○					○	○	○	○
	6	Water/Rights/Rights of Common	◎	○	○	○	◎			○	○	○	○	○	
	7	Public Health Condition				○		○				○	○	○	
	8	Waste	○	○	○	○	○	○	○			○	○	○	○
	9	Hazards (Risk)	○	○	○	○						○	○	○	○
Natural Environment	10	Topography & Soil Condition	○	○	○	○	○					○	○	○	
	11	.Soil Erosion		○	○	○						○	○	○	
	12	Groundwater			○	○		○		◎		○			
	13	Hydrological Situation	○	○	○	○	◎	○			○	○	○	○	○
	14	Coastal Zone	◎	○	○	○	○	○				○	○	○	
	15	Fauna & Flora	◎	◎	◎	◎	◎	○	○		○	○	○	○	○
	16	Meteorology										○		○	
	17	Landscape	○	○	○	○	○	○	○		○	○	○	○	○
Pollution	18	Air Pollution	○	○	◎			◎	○			○		○	○
	19	Water Pollution	○	○	○	○	○	◎	○	○	○	○	○	○	
	20	Soil Contamination	○		○			○						○	○
	21	Noise & Vibration	○	◎	◎	◎	○	○	○	○	○	○	○	○	○
	22	Ground Subsidence								◎					
	23	Offensive Odor	○					◎	○			○		○	

Note) ◎：The environmental items to which special attention has to be paid.
They might cause serious impact they may affect the project formulation depending on the magnitude of the impacts and the possibility of the measures.

○：The environmental items which may have a significant impact depending on the scale of project and site conditions

No mark：The environmental items requiring no impact assessment since the anticipated impacts are in general, not significant.

In case of the comprehensive development projects, all the items are classified in ○, because their studies are usually at the master planning stage and the extent of impacts are not clear.

Appendix 5　JBIC Environmental Guidelines for ODA Loan

*This section covers ex-OECF related projects, now implementing by Japan Bank for International Cooperation (JBIC)

1. JBIC Environmental Guidelines for ODA Loans (Hereinafter “the Guidelines”)

1.1 Components of the Guidelines

The components of Guidelines are as below;

- I. Purpose of the Guidelines
    1) Nature of the Guidelines
    2) Classification of projects
    3) EIA report
    4) Basic rules for environmental consideration
- II. Check Items and Comments

1.2 Outline of the Guidelines

1.2.1. Project Classifications and Screening for EIA

The Guidelines introduce classification system as a screening process of EIA in the light of magnitude of expected potential environmental impact. Proposed projects are classified into category A,B or C according to the OECF criteria stated in the Guidelines (see BOX 1).

1.2.2. Requirement for EIA Report

(1) In the case of Category A projects, the recipient country is required to submit the EIA Report to the JBIC following completion of the requisite procedures in that country.
(2) It is desirable that the contents of the EIA Report submitted in accordance with (1) above be made available to the public in the recipient country.

Box 1　Criteria for Classification of Project

Details of each of the 3 categories are given below. However, it should be borne in mind that the items are examples only and the list is not exhaustive.

I.　Category A: Projects corresponding to at least one of the following items

(1)　Large projects (both new and rehabilitation) of the following kinds:

① Road and railroad
② Airports
③ Ports and harbours
④ Electric power generation
⑤ Industry in general
⑥ Mining development
⑦ Forestry
⑧ Irrigation
⑨ Waste disposal
⑩ Development necessitating submergence of large areas
⑪ River basin development
⑫ Development involving the manufacture or use of a large amount hazardous and/or toxic materials or pesticides
⑬ Development involving reclamation affecting bodies of water

(2)　Projects implemented in, or which may affect, such areas as the following:

① Areas where there is the danger of salt accumulation or soil erosion
② Semi-arid areas
③ Natural forests in tropical areas
④ Water sources
⑤ Habitats of value to protection and conservation and/or sustainable use of fish and wildlife resources (including coral reef or mangrove ecosystems)
⑥ Areas of unique interest (historical, cultural or scientific)
⑦ Areas of concentrations of population or industrial activities
⑧ Areas of particular social interest to specific vulnerable population groups (nomadic people, etc., with traditional lifestyle)

(3)　Projects with such characteristics as the following:

① Projects expected to have a wide, diverse and irreversible environmental impact
② Projects affecting a large number of inhabitants (other than impacts resulting from involuntary resettlement)
③ Projects consuming a large amount of non-renewable natural resources
④ Projects resulting in the occurrence of significant change in land use or the social, physical and/or ecological environment
⑤ Projects Causing the generation or involving the disposal of a large amount of hazardous and/or toxic wastes.

2. Category B:

(1) Projects belonging to the following sectors and not belonging to Category A:

① Road and Railroad
② Airports
③ Ports and harbours
④ Water supply
⑤ Sewerage
⑥ Electric power generation
⑦ Electric power transmission
⑧ Industry in general
⑨ Mining development
⑩ Oil and gas pipelines
⑪ Diversion channels
⑫ Forestry
⑬ Irrigation
⑭ Waste disposal

(2) Projects other than (1) and with a less remarkable environmental impact than a Category A project

(3) Engineering Service Loans provided for projects belonging to Category A

3. Category C

(1) Projects not normally expected to have an environmental impact

(2) Certain telecommunication, education, human resource development projects, etc., may in certain cases, fall within this category.

1.3 Basic Rules

（1） A project is to comply with regulations, etc., stipulated in the laws of the recipient country relating to the environment, environmental conventions to which the recipient country is a party, etc.

1.3.1 Environmental Pollution

（2） Environmental Pollution

①In Principle, a project is to comply with the regulatory standards, such as emission standards, of the recipient country. The recipient country is also to endeavour to attain any existing government target values for the protection of the environment, such as Environmental Quality Standards

applying to the area around the project site.

②If emission standards are not currently established in the recipient country, when necessary, the JBIC encourages the recipient country to establish provisional emission target levels for the project, referring to the emission standards established by international organizations, Japan or other countries, taking cost-benefit considerations, etc., into consideration.

1.3.2 The Natural Environment

(3) The natural environment

①In principle, a project is to be implemented outside designated nature conservation areas established in accordance with the national laws, etc., of the recipient country. In addition, a project is not to have a significant impact on such conservation areas.

②Necessary action is to be taken to prevent significant project impact on the lives of endangered species and to ensure conservation of biodiversity.

1.3.3 Involuntary Resettlement

(4) Involuntary resettlement

①In the Planning and implementation of a project, there is to be adequate consideration for people who will be called upon to relocate and resettle involuntarily and/or lose a major source of income because of the project (hereinafter "project-affected people").

②There is to be careful examination of alternatives at the planning stage with a view to ensuring that the number of project-affected people is the smallest possible.

③For a project which necessitates involuntary resettlement, plans are to be prepared beforehand in order to mitigate any negative impact. These plans are to be prepared by the recipient country's government following appropriate hearings of the opinions of project-affected people.

④Plans to mitigate negative impacts of involuntary resettlement are to have as their objective the restoring of living, income, etc., for project-affected people after resettlement.

1.3.4 Measures to conserve the environment

(5) Measures to conserve the environment

①The cost of measures to conserve the environment (including the social environment, such as the cost of involuntary resettlement) are to be included in the project cost. In particular, for a project which requires measures involving pollution-control equipment and monitoring, financing to cover operation and maintenance is to be duly obtained.

②It is desirable, in the interests of objectivity in the evaluation and monitoring of project-running cost of

the pollution prevention equipment and monitoring equipment as such cost often has low priority in budget allocation.

1.4 Check Items and Comments

The chapter II of the Guidelines indicates environmental check items to which close attention is to be given and comments relating to those items. This chapter covers the major sectors where special environmental consideration is required among the loaning activities. The environmental issues, which each sector must be considered, are listed separately. The waste disposal sector was newly added to the check items and comments on the revised Guidelines. As a result, the total number of such sector covers by the Guidelines has increased to 17 from 16.

Box2 Sectors for check items and comments

1) Road and railroad
2) Airports
3) Ports and Harbor
4) Water supply
5) Sewerage
6) Thermal power plants
7) Hydropower plants
8) Electric power transmission lines, voltage reduction and distribution
9) Industry in general
10) Mining development
11) Oil and Gas pipelines
12) Cement plants
13) Fertilizer plants
14) Diversion channels
15) Forestry
16) Irrigation
17) Waste disposal and waste treatment

The check items and comments of each sector include 1) environmental pollution such as air pollution, waste pollution, soil contamination, noise, vibration, offensive odors, etc., 2) natural environment such as involuntary resettlement, historical/cultural heritage. Human environmental issues are not assessed under the Japanese EIA system. These issues are, however, included in the guidelines, considering importance of social environmental problems in developing countries.

Environmental Checklist (Irrigation)

	Check Items	Major	Small	None	Not Clear	Problems	Action & Countermeasures Planned	Remarks
Pollution	1. Air pollution caused by spraying of agricultural chemicals 2. Effect on aquatic organisms, fisheries, and other water utilization of changes in the water system resulting from project construction 3. Water pollution caused by effluent from irrigated fields	✓	✓	✓				
Natural Environment	1. Effect of construction and operation of the facility on the ecology 2. Effect on landscape		✓	✓				
	3.	✓						
Human Environment	1. Effect of the project on historical and cultural heritage 2. Effect on existing infrastructure 3. Relocation and effect on land-use 4. Effect on other water use		✓ ✓ ✓		✓			
Others	1. Effect on the environment during consiuction period 2. Environmental Monitoring							

Typical items to be checked

Magnitude of the impact should be described

Discription of identified Problems according to check items

Planned actions and Counter-measures for identified problems

Remarks to be recorded

Additional items should be described if necessary

If the magnitude is unclear, actions for clarification should be stated.

note: If the project contains dam construction as a component, the checklist for Hydropower should also be referred.

2. Project cycle and the Environmental Guidelines

At every stage of a development project, careful study of environmental impacts needs to be carried out in order to determine a suitable measure to minimize project's adverse impacts on the environment. The revised Guidelines are intended to be used both intending borrower and JBIC staff. Use of the Guidelines will make comprehensive and systematic environmental review possible at every stage of a development project.

2.1 Planning and preparatory stages

The JBIC has distributed the Guidelines to recipient countries to consider the environment as early as possible in a development cycle and to ensure that the environmental aspects of a project are fully covered. The Guidelines describe some guidance to be done at the preparatory stages by recipient country, and in accordance with project category, it is requested to submit EIA report or environment-related documents before JBIC appraisal. This means that well understanding and project preparation are indispensable for getting JBIC loan. Intending borrowers are advised to fully consider all the times described in the Guidelines and study environmental factors comprehensively from the earliest stage of a project cycle and carry out environmental protection measures proposed before making loan request.

2.2 Pre-Appraisal and Appraisal Stages

The Guidelines give guiding principles related to JBIC's environmental considerations in its appraisal of a project. JBIC staff assigned Operations Departments examine intending borrowers' environmental findings and measures taken in an EIA report or related documents such as a F/S report for each individual project. For missing no important factor, the Guidelines and the Environmental Profiles in a recipient country are referred to. The JBIC sends an intending borrower a further questionnaire, if necessary. In the case that borrower's country has regulatory standards, those are strictly observed. If borrower's country has no such standards, the standards of Japan or international organizations are referred to. In this case, close consultation between the borrower and the JBIC is necessary. As an EIA usually covers impact in its country only where a project will be implemented. JBIC adds to its evaluation if there are combined impacts posed by other projects or global level impacts such as on bio-diversity, climate changes, and acid rain.

JBIC appraisal mission discuss environmental problems and possible environmental-protection measures with intending borrower. JBIC appraisal mission make sure that each project's impact on the environment conforms to the Guidelines. JBIC reviews findings of appraisal by JBIC mission. Then, if necessary, the JBIC has further negotiations with borrower concerning appropriate measure to ensure environmental protection. The JBIC consults with the Japanese government in the process of negotiations. The negotiation must be completed before a L/A can be concluded. If further environmental studies on environment conservation measures are found necessary as a result of reviewing in accordance with the

Guidelines, the JBIC requires the borrowers to adopt appropriate measures. In this case, JBIC Engineering Service (E/S) Loans are available for implementing appropriate measures.

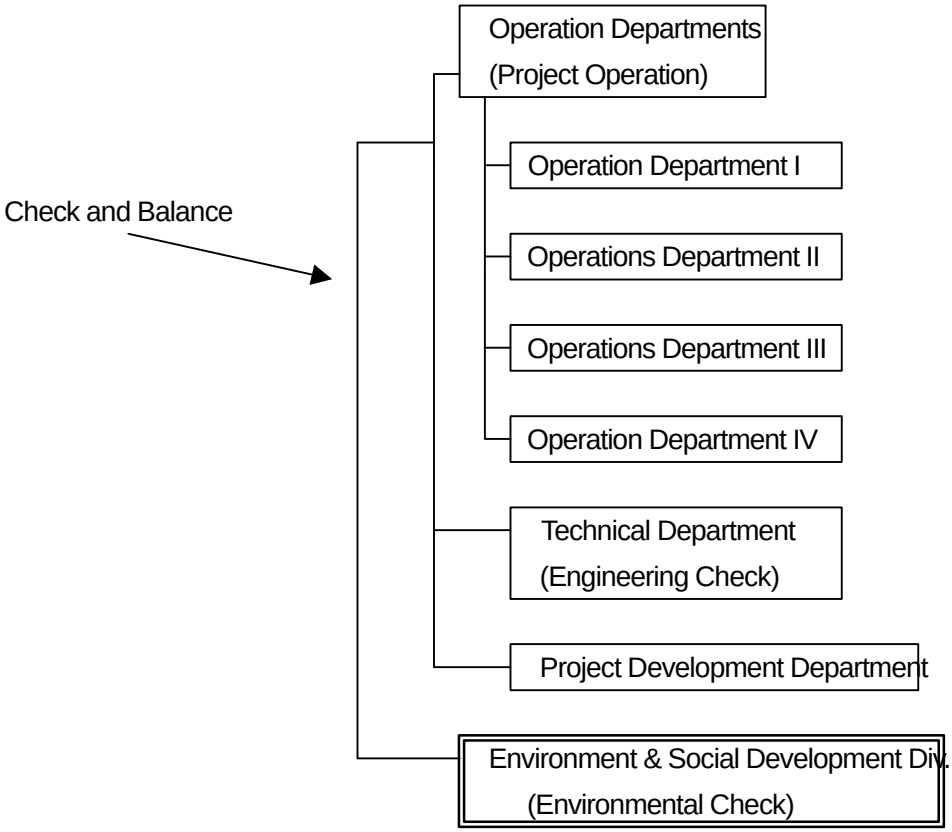
2.3 Implementation and Monitoring Stages

A project shall be carried out in such a way that will not have any considerable adverse effect on the environment during implementation and completion stages. The revised Guidelines (1995) strengthen more comprehensive environmental consideration policies during the project implementation and completion stage.

The Guidelines require that adequate measures and monitoring are carried out when considerable environment impact is expected. Moreover, the Guidelines newly require that a cost of measures to conserve the environment, such as pollution-control equipment, involuntary resettlement, and a cost of monitoring are to be included in whole development project cost. It is also necessary that executing agency of recipient country formulates an environment administration or utilizes a third party for monitoring and evaluation of project-related environmental measures.

3. Environmental Review Process in JBIC

Three major departments take part in environmental conservation in appraisal process. Operations Department consists of the divisions, which take in charge of loans for each recipient country. The division find needs of development assist recipient country to prepare projects and appraise request of assistance for the project. Another department, Technical Department, consists of three divisions, takes charge in technical appraisal and supervision. The other department, the Project Development Department deal with crosscutting issue. The Environment and Social Development Division in this department take charge in environmental and social development issue.



At appraisal stage, the Operations Department and the Technical Department jointly review primarily submitted request and relevant information in terms of necessity, economical feasibility, technical feasibility and environmental aspects of the project and summarize necessary information using several documentation formats including environmental checklists and several guidelines including the Guidelines.

Summarized information is reviewed by the Environment and Social Development Division to ensure that appropriate environmental review is taken by the other departments. This process is carried out through preparatory stage and appraisal stage. If the Environment and Social Development Division find the necessity of in depth consideration, the division may call environmental expert to review the submitted information including EIA report in detail and dispatch mission for supplemental survey.

If significant environmental impact is identified by the review process, JBIC negotiate with the recipient country to reform the project scope or design, or to formulate appropriate countermeasures for the impact. Even if such efforts are taken, the significant impact is found to be inevitable then the request is rejected.

The JBIC may put conditions to appraisal of projects in loan agreement or other manners, if necessary, in order to ensure recipient countries' implementation of proper countermeasure for mitigating the environmental impact.

4. Monitoring and Evaluation of Projects

A project shall be carried out in such a way that will not have any considerable adverse effect on the environment during implementation and completion stages. The revised Guidelines strengthen more comprehensive environmental consideration policies during the project implementation and completion stage. The Guidelines require that adequate measures and monitoring are carried out when considerable environment impact is expected. Moreover, the Guidelines newly require that a cost of measures to conserve the environment, such as pollution-control equipment, involuntary resettlement, and a cost of monitoring are to be included in whole development project cost. It is also necessary that executing agency of recipient country formulates an environment administration or utilizes a third party for monitoring and evaluation of project-related environmental preservation measures.

To monitoring proper implementation of projects, JBIC may requests recipient country to submit interim reports or dispatch mission for monitoring if necessary. Two categories of SAFs, SAPI[*1] (Special Assistance for Project Implementation) and SAPS[*2] (Special Assistance for Project Sustainability), can be utilize to ensure environmental consideration of on-going or completed projects by identifying problems and proposing remedial measures.

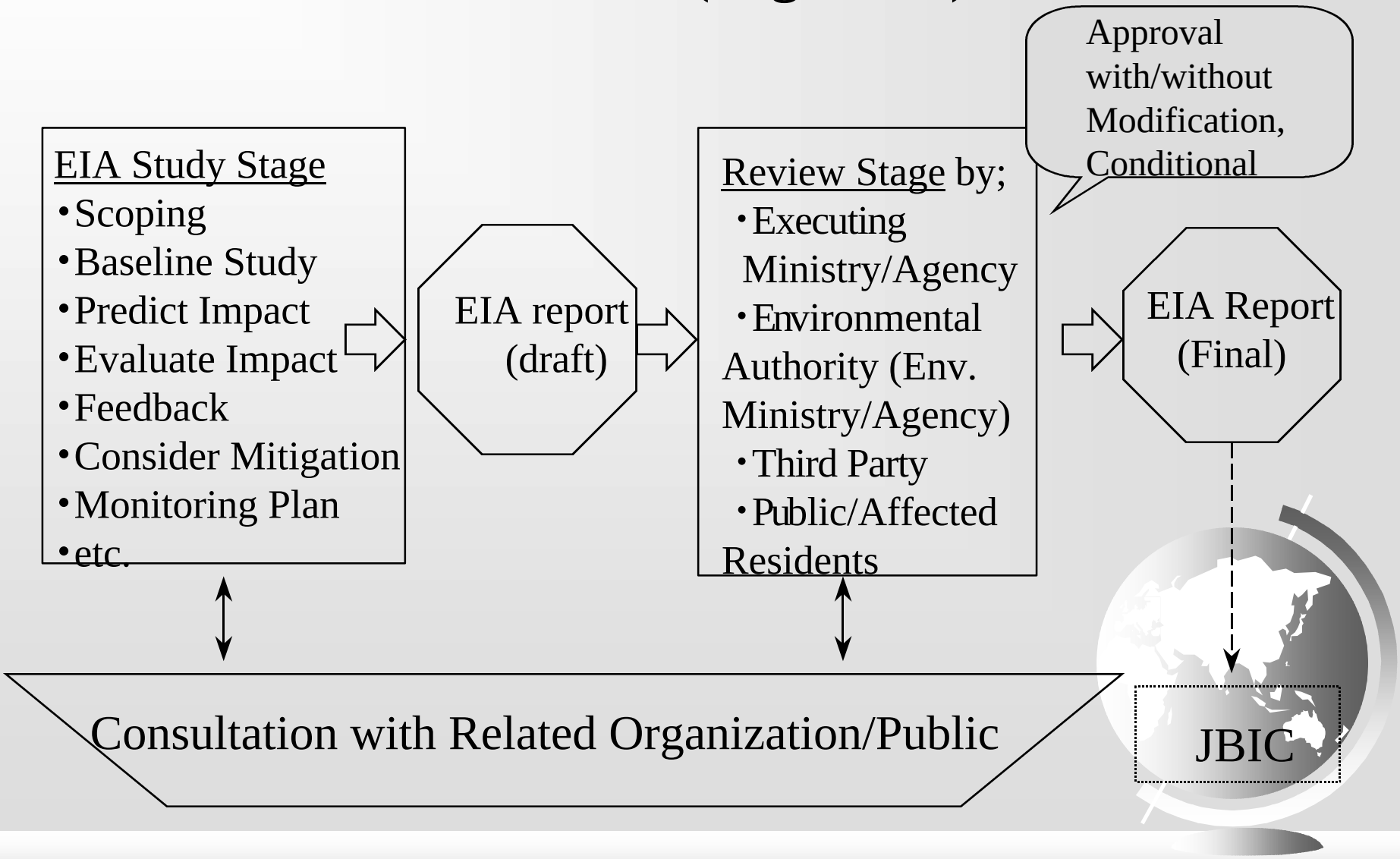
The Post Evaluation Group also carries out post-Evaluations of projects, which is a part of the Research Institute of Development Assistance in the JBIC. Post-Evaluations are conducted to verify that projects funded by JBIC were implemented and managed according to their initial plans and that they have achieved the expected results. The main purpose of the post-evaluation is to ensure that lessons learned from completed projects.

Note）

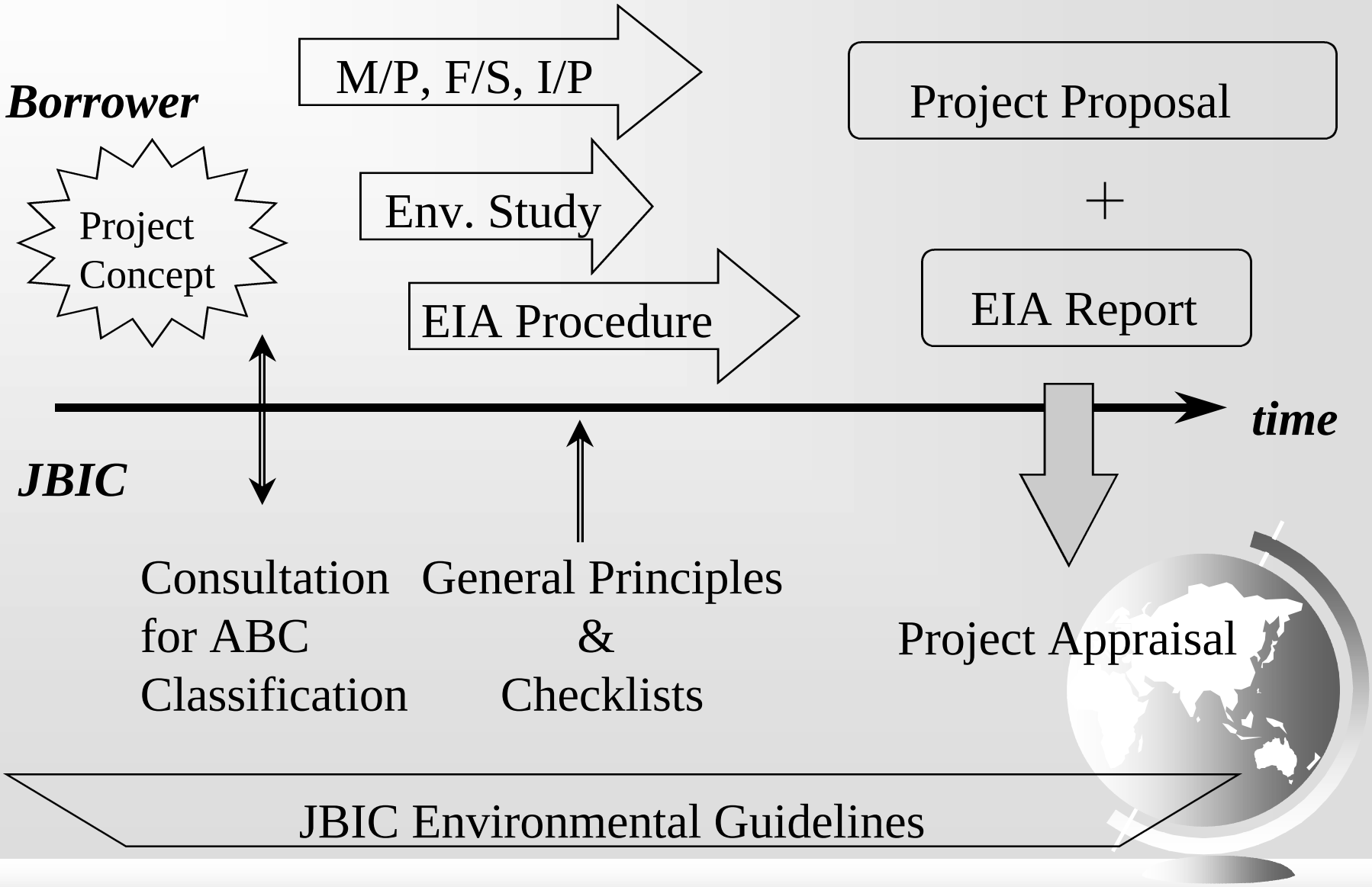
1) SAPI is an another category of SAPS. The primary purpose of SAPI is to study and identify problems that may hinder effective implementation of a particular project and to propose remedial measures to solve those problems in timely manner.

2) SAPS is last category of SAFs. The primary purpose of SAPS is to study and identify problems that impede effective operation or maintenance of a particular group of projects and to propose remedies.

Environment Impact Assessment Procedure (in general)



Implementation of Classification

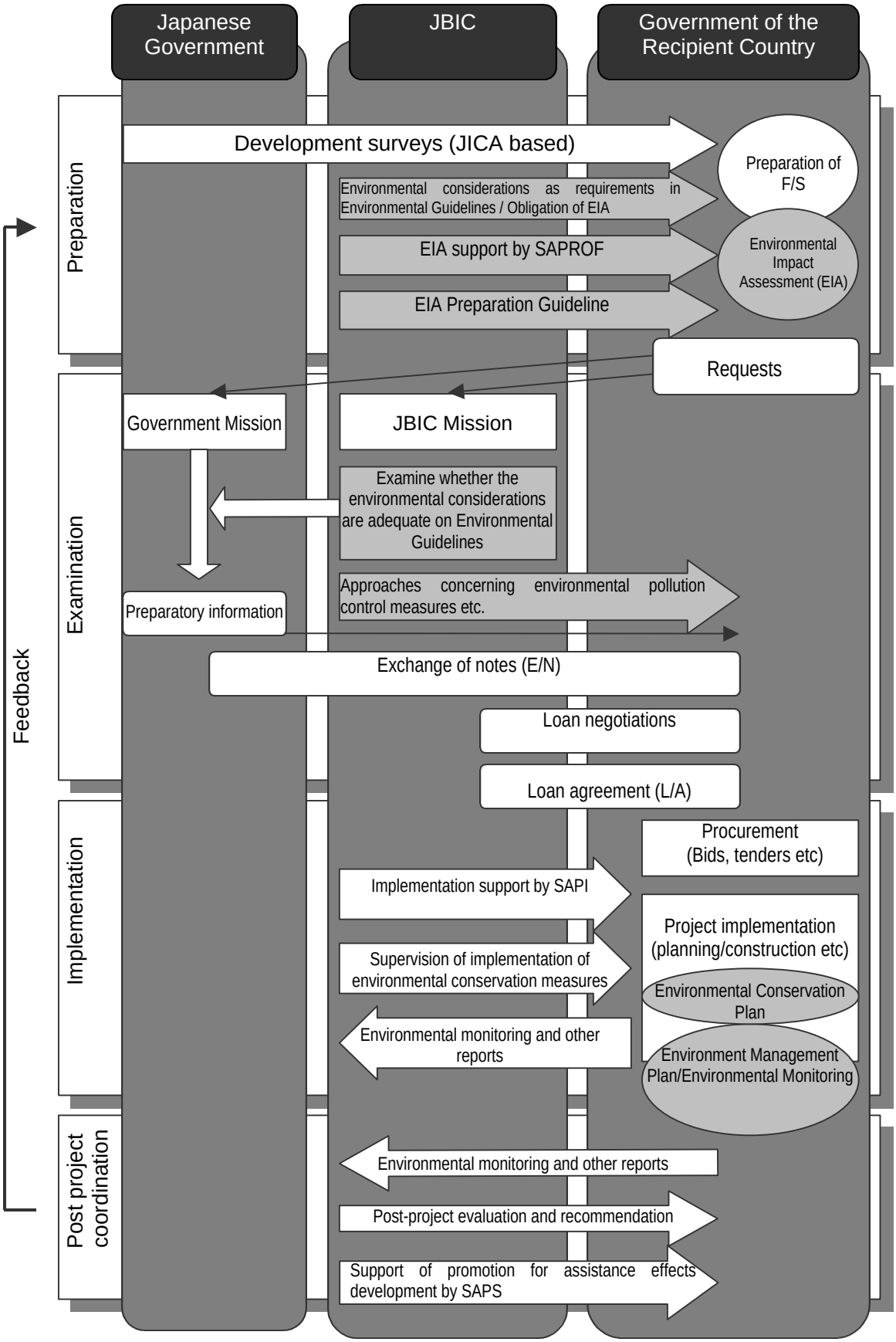


Possible Assistance for Environmental Consideration

- SAPROF(Special Assistance for Project Formation)
  - may provide additional environmental study
- Engineering Service (E/S) Loan
  - may support EIA process through impact study for category 'A' projects (see criteria for classification)

- JICA Development Study (M/P,F/S)
  - may include environmental consideration in line with JBIC Environmental Guidelines

Environmental Consideration in the “Yen Loan” Project Cycle



Appendix 6　Environmental Impact Assessment Law in Japan

1. Environmental Impact Assessment Law

Point

Pursuant to the recommendation submitted by the Central Environment Council, entitled "How Environmental Impact Assessment Systems Should Be", the Environment Agency worked on the formulation of an environmental impact assessment bill. Coordination has successfully been achieved among the government offices concerned, and on Friday, March 28, 1997, the Cabinet decided to adopt the bill. The bill was then passed into law by a unanimous vote of the Diet on June 9, and promulgated on June 13 of the same year.

1.1 History

Environmental impact assessment represents arrangements under which undertakers themselves pay attention to environmental preservation by assessing possible environmental impacts before implementing large-scale development projects, etc. Promotion of environmental assessment is an extremely important policy measure for the prevention of environment deterioration and structuring of a sustainable society.

In Japan during the decade beginning in 1975, efforts were made for the enactment of an "environmental impact assessment law", and in 1981 a bill for the purpose was submitted to the Diet. The bill was dropped, however, when the House of Representatives was dissolved in 1983. After the dropping of the bill, the Cabinet decided to adopt a guideline entitled "On the Implementation of Environmental Impact Assessment" in 1984 in conformity with the main principles of the bill (Cabinet-decided EIA Guideline) for the purpose of implementing effective measures for the time being. In addition, environmental impact assessment was implemented in accordance with specific laws, such as the Public Water Body Reclamation Law, administrative guidance measures, such as the Ministry of International Trade and Industry decision on the location of power stations, ordinances and administrative summaries of local governments, and so forth.

Subsequently, a comprehensive research on the situation of implementation, at home and abroad, of systems for environmental impact assessment, etc., was conducted from July 1994 through June 1996 by a team of personnel from all the Ministries and Agencies concerned, based on the Diet deliberation on the Basic Environment Law in 1993 as well as the government policy adopted in the Basic Environment Program.

Following the results, the Prime Minister asked the Central Environment Council (Chukanshin) on June 28, 1996 to make recommendations on "How Future Systems for Environmental Impact Assessment Should Be".

The Central Environment Council heard opinions of various groups in Japan, and published its recommendations on February 10, 1997 with an eye toward their legislation. In response to the basic principles incorporated in the Council's report, the Environment Agency made efforts for coordination among government offices. As a consequence, the Cabinet decided to adopt the "Environmental Impact Assessment Bill" on Friday, March 28. This bill was passed into law by unanimous vote in the House of Representatives and the House of Councilors on May 6 and June 9, respectively, and promulgated on June 13 of the same year.

1.2 Main points of the Law

The Environmental Impact Assessment Law was drafted resting on the Cabinet-decided EIA Guideline and incorporating all basic principles put forward by the Central Environment Council. Specifically, the following points have been adopted for the first time:

- To expand the scope of environmental impact assessment by including power stations (under law), conventional railroads (under cabinet order), and large-scale forestry roads (under cabinet order), etc., as new items (Article 2, paragraph 2);

- To introduce a scheme to individually evaluate the necessity for the implementation of environmental impact assessment for projects (screening) which do not necessarily meet the scale requirement for the implementation of environmental impact assessment but whose scales are larger than a certain level (Article 2, paragraph 3, and Article 4);

- With a view to initiating the procedure at an early stage, to introduce a scheme for obtaining opinions concerning investigation methods (scoping) (Articles 5 through 10);

- To enlarge opportunities for citizens' participation by abolishing limitations by area, providing for two stages of opportunity to submit opinions, the statement-of-planning stage and the statement-of-preparation stage, and so forth (Articles 8 and 18);

- To enlarge and improve the items mentioned in the statement of preparation, such as descriptions concerning uncertainties and the status of consideration of measures for environmental preservation, and entry of names of those contracted (Article 14);

- Under the Cabinet-decided EIA Guideline, the Director-General of the Environment Agency is entitled to express his/her opinions only when he/she is asked to do so by the competent Minister. Under the bill, however, he/she is entitled to express opinions as necessary (Article 23);

- The undertaker is to review the statement of assessment in response to the opinions of the Director General of Environment Agency, etc. (Article 25);

- To define the status of ex post facto investigation in the systems for environmental impact assessment by introducing accounts on such investigations in the statement of preparation (Article 14, paragraph 1, item 7-c);

- To make it possible for undertakers to implement environmental impact assessment anew even if the statements of assessment have been published on their projects or their projects have been granted permission, etc., before the enforcement of the bill (Article 32 and Article 4 of the supplementary provisions);

- To provide for an opportunity for local governments to submit opinions at each stage of the procedure and, with respect to the procedure to be followed by local governments concerning designated projects and category 2 projects, not to mention the procedure concerning those projects other than designated projects and category 2 projects, to make it possible to provide for necessary rules in local ordinances, insofar as they do not contravene the provisions of this law (Article 60).

The law also provides for the following exceptions:

- Exceptions concerning projects designated in city planning (The person empowered to determine city planning conducts environmental impact assessment for the undertaker. Measures are to be adopted to adjust the timing of publication and the period of inspection, and so forth.);

- Exceptions concerning port planning (To conduct assessment at a higher planning stage with citizens' participation);

With respect to power stations, moreover, following the decision to provide for an exception to allow the central government to be involved at an early stage, a required exception has been stipulated in the Electric Utility Law.

1.3 Outline of the Law

(1) Projects to which the law is applicable

Projects undertaken by the Government or permitted or approved by it which are likely to have a substantial impact on environment, such as roads, dams, railroads, airfields, and power stations:

1) "Category 1 projects" = projects larger than a certain level for which environmental impact assessment must be implemented

2) "Category 2 projects" = projects with a size comparable to that of category 1 projects for which implementation or otherwise of environmental impact assessment is judged individually

(2) Procedure for environmental impact assessment

1) Determination with respect to category 2 projects
With regard to category 2 projects, the administrative organ which grants permission, approval, etc., for the project in question determines whether or not to have environment impact assessment implemented after hearing the opinion of the prefectural governor and depending on the details of the project and the local characteristics.

2) Procedure for the statement of planning for environmental impact assessment
The person who intends to undertake a project to which the law is applicable (the undertaker) prepares a statement of planning concerning items of environmental impact assessment and techniques used for investigation, etc., hears opinions of the prefectural governor, mayor(s), residents, etc., and identifies a specific method for environmental impact assessment.

3) Procedure for statement of preparation for environmental impact assessment
Before starting on the project, the undertaker conducts investigation, estimation and assessment of environmental impact, and studies measures for environmental preservation, on the result of which the undertaker prepares a statement of preparation for environmental impact assessment and hears the opinions of the prefectural governor, mayor(s), residents, etc., on environmental preservation.

4) Procedure for statement of environmental impact assessment
The undertaker prepares a statement of environmental impact assessment on the basis of 3) above.
With regard to the statement of environmental impact assessment, the Director-General of the Environment Agency presents his/her opinion on environmental preservation, as necessary, to the administrative authorities that grant permission, approval, etc. Based on such opinion, the administrative authorities concerned present their opinion on environmental preservation to the undertaker.
Based on these opinions, the undertaker makes revisions in the statement of environmental impact assessment.

(3) Contents of statements of preparation, assessment, etc. (main differences from the existing system)

The environment which is subject to investigation, etc., is environment in general under the Basic Environment Law (the scope is not limited to pollution).

Items to be mentioned in the statements of preparation, etc., include those on the status of examination of measures for environmental preservation as well as those on investigations, etc., undertaken after the project has been started on.

(4) Examination concerning environmental preservation at granting permission, approval, etc.

When conducting examinations concerning permission, approval, etc., for the projects to which the law applies, administrative authorities that grant permission, approval, etc., for such projects examine whether or not proper consideration is given to environmental preservation in the projects concerned in accordance with the statements of environmental impact assessment.

(5) Other

With regard to power stations, exceptions will be provided for in the Electric Utility Law, in addition to the related provision in this law.

Projects Subject to the Environmental Impact Assessment Law

	Type of Project	Scale of Category 1 Project	Scale of Category 2 Project
1	Roads (new addition of large-scale forest roads)		
	National vehicle expressways	All	–
	Metropolitan expressways, etc.	All roads of 4 lanes or more	–
	General national roads	4 lanes, 10 km or more	7.5 km to less than 10 km
	Large-scale forest roads	2 lanes, 20 km or more	15 km to less than 20 km
2	River work (addition of dams of small scall river, industrial water weirs, irrigation weirs and water supply weirs relating to secondary waterways, and reduction of scale)		
	Dams	Area under water - 100 ha or more	75 ha to less than 100 ha
	Weirs		
	Lake and swamp water level adjustment facilities	Affected area - 100 ha or more	75 ha to less than 100 ha
	Discharge channels		
3	Railways (addition of general railways and tracks (equivalent to general railways)		
	Bullet Train railways (including standard new lines)	All	
	General railways (includes subways and elevation of tracks)	10 km or more	7.5 km to less than 10 km
	Tracks (equivalent to general railways)		
4	Airports	Runway of 2500 m in length or more	1875 m to less than 2500 m
5	Power Stations (includes new additions, in-house power generation and wholesale supply)		
	Hydroelectric power stations	Output of 30,000 kW or more	22,500 kW to less than 30,000 kW
	Thermal power stations (other than geothermal)	Output of 150,000 kW or more	112,500 kW to less than 150,000 kW
	Thermal power stations (geothermal)	Output of 10,000 kW or more	7500 kW to less than 10,000 kW
	Nuclear power stations	All	–
6	Final Waste Disposal Sites	30 ha or more	25 ha to less than 30 ha
7	Landfill and Drainage of Public Waterways	Over 50 ha	40 ha to less than 50 ha
8	Land Reallocation Projects	100 ha or more	75 ha to less than 100 ha
9	Development of New Residential Areas		
10	Industrial Estate Land Preparation		
11	Foundation Preparation for New City		
12	Land Preparation for Distribution Business Hub		
13	Land Preparation for Residential Areas (including industrial estates) Environmental Business Groups Public Corporations for Housing and City Development Public Corporations for Regional Promotion and Development		
	Port Planning	Landfill and Excavation 300 ha or more	–

1.4 Fundamental Items

The Fundamental Items prescribe the items which form the basis of the following: "Determination Standards for Category 2 Projects" (hereinafter referred to as "Determination Standards") as prescribed by the competent Minister according to the regulations of Article 4, Item 9 of the Environmental Impact Assessment Law (hereinafter referred to as "the Law"); "Guidelines for the Selection of Environmental Impact Assessment Items and Means for Logically Conducting Investigations, Estimation and Assessment in Relation to the Said Items" (hereinafter referred to as "Selection Guidelines for Environmental Impact Assessment Items") as prescribed by the competent Minister according to the regulations of Article 11, Item 3 of the Law; and "Measures for the Preservation of the Environment" (hereinafter referred to as "Environmental Preservation Measures") as prescribed by the competent Minister according to the regulations of Article 12, Item 2 of the Law.

The following three points form the basic approach (philosophy) to the Fundamental Items prescribed on this occasion.

1) Flexibility in determining on an individual basis which items and methods are to be applied.
2) Fine tune project plans in stages, such as screening, scoping and statement of preparation.
3) Clearly state data and basis to enable checking by anyone.

Major items which have been newly incorporated into the Fundamental Items prescribed on this occasion, as against the Fundamental Items in the previous Cabinet-decided Guidelines, are as follows.

(1) Screening

1) Determination Standards based on project content and Determination Standards based on environmental state have been prescribed as the Determination Standards for category 2 projects. In regard to the former, Determination Standards have been prescribed whereby projects will be subject to environmental impact assessment in cases where, based on the characteristics of individual projects, there will be a marked impact on the environment even if the scale of the project is small, and in cases where there are related projects about which there is the concern that the impact on the environment will be marked as a whole should they be conducted in conjunction even though individually the scale is small. As concerns Determination Standards based on the state of the environment, inclusion as subjects for environmental impact assessment has been clarified according to whether the project, even if it is a small scale project, will be located in any of the following types of areas: areas susceptible to environmental impact, such as areas where pollutants tend to accumulate, purely residential areas and wetlands; areas stipulated under environmental ordinances, such as natural park lands; and areas where the environment is actually declining or it is feared will decline.

(2) Subject Scope

1) Items subject to environmental impact assessment have been broadened in line with the regulations of the Basic Environment Law, and not only have new items been added (greenhouse gases, waste, ecosystem and opportunities for activities which involve contact with the environment including everyday activities), but an "Others" classification has also been established in each of the environmental items based on environmental medium, such as atmosphere, water and soil, to allow inclusion in the subject scope of various environmental items which were not covered in the previous Fundamental Items which listed seven typical pollution types.

2) The investigation, estimation and assessment of ecosystems has been renewed, with the selection of multiple items of note from the viewpoint of predominance, typicality and uniqueness in light of the characteristics of the ecosystem, and by ascertaining the ecology, the relationship with other living beings, and the state of the habitat environment.

3) Consideration will also be given to the influence of environmental items on each other.

4) An item has been established which is classified as "environmental load", with investigations, estimations and assessment to be conducted by ascertaining the degree of environmental load (emission volume) due to waste, greenhouse gases and other pollutants.

(3) Method of Implementation

1) The competent Minister has indicated standard items in Technical Guidelines based on the content of general projects, reference to which allows the appropriate addition and removal of environmental impact assessment items for individual projects based on information about project characteristics and regional characteristics. Furthermore, prioritization and simplification of methods for investigation, estimation and assessment is also to be done in line with project and regional characteristics.

2) Clarifications have been made in regard to the timing and site of investigations, including consideration of the state of subjects about which there is particular concern regarding impact, the allocation of appropriate investigation time frames, the conducting of verification of extraordinary years in relation to observation data gathered over a long period, and the validity of assumed conditions for investigations and regional selection.

3) Estimations are to be conducted during a period when impact can be accurately ascertained particularly at sites where there is particular concern of impact. And, for those areas in which there is a significant change in state during the period from the time of submission to the point in time up to which estimates were made, interim estimations are also to be conducted midway during that period, the validity of estimation area selection, units used and parameters in view of the state of the area clarified, the approach to background setting clarified, and the uncertainty in estimates analyzed and assessed.

4) Assessments are to be conducted from the viewpoint of avoidance and decrease of impact, and from the viewpoint of conformity with environmental preservation measures, with assessments conducted from the viewpoint of avoidance and decrease of impact to be made through comparative study of multiple proposals, and with an eye to the introduction of better technology which can be applied.

5) The link between investigations, estimations and assessments will be fortified by conducting investigations, estimation and assessment for each item.

6) Care is to be taken to conduct additional investigations should new facts become evident during the implementation of environmental impact assessment.

(4) Environmental Preservation Measures

1) For environmental protection measures, consideration will be given to the avoidance or decrease of environmental impact, with compensatory measures to be considered according to the results of these considerations. Consideration of compensatory measures will consist of a comparison of the type and content of the environment which will be damaged and the environment which will be created.

2) Consideration will be given to the necessity for post-investigations according to the degree of uncertainty of estimations and assessments, and response policies in line with post-investigation items, methods and results and the post-investigation officially announced.

(5) Miscellaneous

1) The Fundamental Items and Technical Guidelines shall be amended as necessary based on scientific knowledge, and the Fundamental Items shall be considered for review every five years.

Flow of the Procedure under the Environmental Impact Assessment Law