

# Environmental Assessment Sourcebook 1999

## CHAPTER 5

### STRENGTHENING LOCAL CAPABILITIES AND INSTITUTIONS

1. The success of environmental assessment (EA) as a means to ensure that development projects are environmentally sound and sustainable depends in large measure on the existence of environmental management capability in the institutions of the borrowing countries. The Bank is committed to using the EA process as a means for strengthening environmental institutions and local capability to deal with environmental concerns and to integrate them into the identification, design and implementation of economic development activities (OD 4.01, Annex A: "Environmental Assessment" [the EA OD], para 12).

2. In a project with environmental issues, the institutions involved in EA should have or be able to obtain the capacity to produce a satisfactory EA, to incorporate the EA findings into designs and implementation plans, to monitor and manage the construction and operation of the project, and to evaluate the results in order to improve future activities. Many projects also represent an opportunity to promote progress toward a longer-term objective: strengthening the country's overall institutional structure and process so that natural resource use is consistent with environmentally sound and sustainable development, whether the Bank is participating or not.

3. This Sourcebook chapter is intended primarily to provide guidance to Bank task managers (TMs) in using projects to help develop EA capabilities in the country. It is also intended to assist TMs in recognizing and making use of opportunities to contribute to improved environmental management capacity country-wide. There are three subsections:

(a) Environmental Management Institutions (b) Analyzing Institutional Capabilities (c) Recommendations for Strengthening Environmental Capabilities

### ENVIRONMENTAL MANAGEMENT INSTITUTIONS

4. The term "institutions" as used here covers government agencies, such as the Ministry of the Environment, the line agencies with activities that affect the environment (Ministries of Energy, Transportation, Agriculture, Tourism, etc.), or the State Pollution Control Board; nongovernmental organizations, such as a National Environmental Advocacy League; and private and quasi-private organizations, such as the environmental department of the national university, an industrial development corporation, or a national water supply and sewerage corporation. Also included under "institutions" are the legal framework within which the organizations function, including environmental laws and other legal instruments that define the organizations' responsibilities, authorities or privileges; the regulations or procedures with which the organizations carry out their functions; and the relationships that exist among them.

5. There is no universal model or set of institutions that will be satisfactory in every situation, nor is there necessarily one optimal institutional structure for any particular situation. Figure 5.1 (see Volume I: Policies, Procedures, and Cross-Sectoral Issues, page 156) is a diagram of a structure that is common, but no attempt is made here to define a standard. We can, however, describe the functional components that appear to be most useful in any structure.

6. In almost every country, some of these components will already exist. Which ones exist, and how effectively they function, will directly affect the ability of a project sponsor to conduct EA and apply the results in project preparation and implementation. For example, a project EA will be less difficult to carry out in countries where the legal framework already requires some form of EA and where government agencies

already have the capacity to administer EA processes. Mitigating measures, monitoring programs, and special operating requirements identified in an EA will be difficult to put into practice without strong implementing organizations and without an institutional structure in place to provide independent oversight and technical assistance.

7. The logical starting point for building local capabilities is to work with the existing institutions, identifying approaches for strengthening, modifying and supplementing them in ways that are implementable and effective within the political and sociocultural context. :

#### Policies and Legal Instruments

8. Clear policies, based in law, that facilitate incorporating environmental concerns into development planning and decisionmaking and that support environmental management and protection are fundamental. The form in which they are articulated is not particularly significant. However, the need for formal rather than ad hoc policies, implies the need for involvement of high-level leadership, a policy-making body, and a for policy formulation.

9. Environment-related responsibilities and powers are most effective when grounded in law. Legal authority to implement national environmental policy should be clearly established. Subsidiary legislation may be necessary to establish the authority for setting environmental quality and performance standards; for enforcing compliance with regulations; or for requiring licenses, permits or EAs for certain activities. These standards and procedures may themselves be promulgated as regulations, decrees or administrative orders.

10. The need for legal grounding does not necessarily imply passage of a new, comprehensive national environmental law; frequently much of the needed authority is already provided in legislation. What are then necessary are regulations to implement particular laws -e.g., environmental quality standards, EA guidelines and procedures, procedures for EA review and requirements for community involvement. Regulations are usually developed and issued through administrative processes, such as ministerial or presidential decrees.

#### National Environmental Organization for Policy-Making and Oversight

11. Effective environmental management depends on the existence of the following processes at the national level:

(a) Development of environmental policies and laws. (b) Incorporation of environmental concerns into economic development planning and budgeting. (c) Interagency coordination on environmental issues that cross sectoral boundaries. (d) Mechanism to resolve interagency disagreements on natural resource-use decisions. (e) Operation of monitoring programs. (f) Establishment of guidelines for EA. (g) Provision for independent review and approval of EAs prepared for line agencies.

12. A variety of organizational approaches have been implemented to perform the policy-making and related functions:

(a) an environmental committee of the existing cabinet (b) an interministerial environmental coordinating committee with secretariat) (c) an environmental ministry (d) an environmental unit within an existing ministry, such as the Ministry of Planning (e) an environmental directorate within the Prime Minister's office

In federally-organized countries, some of the national functions may be decentralized through establishing branches of the national agency or through delegation to state, regional, provincial or municipal environmental agencies.

#### Implementing Environmental Policies in Sectoral Development Programs

13. Ministries and other line agencies with natural resource and/or environmental protection responsibilities most directly affect the quality of the environment and therefore need to be given the responsibility for ensuring environmentally sound production or service performance and the capacity and the day-to-day operational authority to carry it out. Ideally, environmental concerns should be considered throughout their planning, project development, financing, implementation, monitoring and enforcement activities.

14. Requiring, reviewing or conducting EAs are important aspects of this work. Within the framework of national EA guidelines, individual ministries may define more specific EA procedures applicable in their sectors. Some countries have established special environmental units within the sectoral agencies most directly involved with environmental issues, while others have relied on a single environmental agency or on the use of consultants (see Table 5.1). There has not been sufficient study of existing experience to permit general evaluation of different approaches. Experience does show, however, that institutional arrangements must be custom-tailored to the sociocultural and political contexts of country and site.

15. Environmental units can be particularly effective when housed within agencies that have intersectoral planning, development or regulatory authority for a particular region. The best-known example is a river basin commission, that has the potential to integrate environmental concerns into all water resource and related land use decisions affecting water supply or water quality within a watershed. Another example is a coastal zone management agency, that develops plans for and/or reviews all types of development projects in the coastal area.

Table 5.1. Institutional Development in Rwanda

As part of the Gitarama Agricultural Project, the Bank is financing the preparation of a Master Plan for the future development of the Nyabarongo River Valley. The planning process includes preparation of an EA to determine the potential impacts on the ecology of the valley.

An environmental coordinating unit already exists within the Ministry of Plan (Miniplan), but it has as yet no administrative structure. The government of Rwanda (GOR) is exploring options for a permanent organizational structure to oversee environmental studies such as this one and to coordinate all environment-related activities in the country. Japan has provided grant funds, to be administered by the Bank, to assist GOR in that effort.

An environmental component has been incorporated in the project, to be executed by Miniplan. In it, the grant funds will be used primarily to provide local and international consultants who will assist Miniplan in formulating TORs for the environmental unit, determining staffing and training needs, and defining its organizational and administrative relationships within Miniplan and with each of the other relevant ministries and departments. The grant will also finance local and overseas training for the environmental unit staff and defray its operating costs for nine months.

The objective of the institutional strengthening activities is to provide GOR with institutional capacity to:

- . develop organizational mechanisms to ensure that environmental policies are followed in all development programs and projects
- . provide interagency coordination on environmental issues
- . assure follow-up to the National Strategy for the Environment and the Environmental Action Plan
- . assist line agencies in strengthening their own capacity to deal with environmental issues and develop environmentally sound investment programs
- . define overall needs for environmental education, information, promotion and training

## Incorporating Environmental Concerns into Project Implementation

16. The line agencies or enterprises that implement development decisions are also the organizations that should usually conduct or commission environmental assessments; these agencies also should be responsible for incorporating the EA findings into designs and implementation programs. When they are public sector agencies, they may already have self-contained environmental expertise; for instance, an energy ministry may control energy planning, power plant siting, environmental assessment of proposed generating stations and transmission lines, licensing, and supervision of utility operation. In such cases, it is particularly important that there be an objective review and approval of the EA by the national environmental body or other outside agency. At the other extreme, such production or development agencies may need to contract for the services of other agencies or consultants for environmental expertise and regulation (see Table 5.2).

17. The Bank has found that establishing environmental units with the resources and skills to conduct and/or review and implement the findings of EAs within the line agencies that oversee or execute environmentally significant projects works effectively in certain cases. Consultants are normally employed to carry out the EA work. In countries where the capacity of the implementing agencies is limited, the consultants may actually do more than that, serving in effect as environmental advisors.

18. In large projects, environmental units are necessary at the project level to monitor impacts and implementation of mitigation measures. Project units typically need the expertise to deal with physical, biological, and social impacts. This implies a minimum staff of three specialists -e.g., a chemist or geologist, a biologist, and a sociologist or anthropologist -plus a manager. More staff may be needed in any of the three divisions, depending on the size and characteristics of the project.

### Enforcement Agencies and Processes

19. There must be institutional capability to monitor compliance and, where enforcement action is needed, to carry it out (see Figure 5.2). Where there is a national environmental organization, it may have regulatory and enforcement powers, which it may exercise directly or through regional offices. Alternatively, enforcement authority may be delegated to state, provincial, or municipal agencies. The main types of regulatory units are national environmental protection agencies, pollution control boards, health departments, local and regional environmental units, government prosecutors' offices, municipal and marine police, coast guard, and a multitude of national, state and local agencies that manage wastes, establish zoning and building codes, review development applications, issue permits and licenses, and inspect projects. Funding agencies (including the Bank) have the option of withholding disbursements or cancelling loans or credits if an executing agency does not adhere to the requirements. It is important to note that the responsibility for enforcement of centralized decisions involving uses of particular natural resources may rest with local government, which therefore must not be neglected in institutional strengthening.

20. The courts may play a role in effecting compliance by efficiently enforcing environmental laws, but many court systems are severely overworked, with such large case backlogs that they are unable to respond to environmental offenses in a timely fashion. Moreover, many judges do not understand existing environmental laws and may be lax in enforcement.

Table 5.2. Pakistan Drainage Sector Environmental Assessment

As part of a project to produce a sectoral EA of the national drainage program and develop a comprehensive approach to drainage investment, the consultant is required to recommend institutional strengthening activities to promote economic and sustainable development in the sector, with appropriate environmental safeguards. Organizations involved in construction, operation and maintenance are of the Water and Power Development Authority (WAPDA), the Provincial Irrigation Departments (PIDs), and the Water User Associations (WUAs). Responsibility for environmental protection is divided among the Pakistan Environmental Protection Agency (PEPA), the four provincial EPAs, and the environmental unit of

WAPDA. The environmental protection agencies are new and small, and the links between them and the implementing agencies are weak. TORs call for recommendations on the following items:

- (a) improved linkages between the environmental institutions and WAPDA and the PIDs
- (b) improved interface between WAPDA and PIDs and their program to increase environmental awareness/capability
- (c) programs for adequate operation and maintenance, including funding, staffing, facilities and equipment
- (d) a rational and equitable cost recovery system to sustain the operation and maintenance functions
- (e) planning, authorizing and funding processes which provide decision-makers adequate information to meet their environmental protection responsibilities
- (f) training for national and provincial officials in environmental aspects of water sector planning
- (g) proposal for drainage staff development, including an evaluation of the benefits of a career ladder

WAPDA is lead agency for the EA and is designating a full-time project coordinator. The prime consultant is a local firm, with international subconsultants. WAPDA staff members who had been assembled for a previous Water Sector Investment Study participate in the project, as do planners in provincial Departments of Planning and Development. Institutional components account for 35 of the 222 staffweeks estimated to prepare the EA.

#### ANALYZING INSTITUTIONAL CAPABILITIES

21. Experience with Bank projects that include institutional strengthening has shown the importance of adequate analysis of the existing institutional structure. This is true whether the institutional component has had a short-term focus, emphasizing implementation of a single project, or has been oriented toward longer-term sustainability, addressing more complex, sector-wide or intersectoral issues (see Paul 1989a and 1990). Both types are relevant within the context of EA: institutional strengthening components can range from development of EA preparation capability for one project to development of environmental review and approval and monitoring capacity for projects nationwide. The Bank may also support broader institutional initiatives, involving strengthening of sectoral or national environmental policy and organization.

#### Common Institutional Problems

23. The institutional weaknesses that can impair the effectiveness of environmental management in general and environmental assessment in particular may be divided into five broad categories. They are described below as a guide to TMs in planning for institutional analysis. Annex 5-1 supplements the discussion with lists of the typical problems that have been encountered in each area; these may be helpful to TMs in preparing for assessments of institutional capacity for EA and environmental management.

#### Human Resources

24. The most common institutional problems in any environmental organization stem from shortages of qualified personnel and/or deficiencies in the management of the personnel available. The causes are frequently found to be some combination of lack of managerial capacity, low salaries, low job status, lack of strong leadership and inadequate resources for education and training.

#### Organizational Structure

25. The most obvious structural shortcomings affecting EA are the absence of the unit(s) needed to perform one or more key functions, such as EA review, technical supervision, monitoring or regulation, and the fragmentation of responsibility for key functions among many units without an effective mechanism to coordinate them. Other common weaknesses stem from structures that do not integrate environmental considerations into development planning, especially when intersectoral issues are involved.

#### Environmental Policy, Laws and Regulations

26. Common problems with legal instruments include the absence of (or lack of commitment to) a clear national policy, lack of up-to-date laws on environmental protection and legal authority for EA and other environmental management procedures, lack of implementing regulations, and inadequate or inconsistent laws or rules. Examples of the last category are incentive structures inconsistent with environmental laws and sanctions that are inadequate to promote compliance with environmental requirements.

#### EA and Environmental Management Procedures

27. It is frequently the case that national procedures for EA preparation and review have not been defined. Even where the necessary institutions exist, there may be needs to strengthen the decision-making processes whereby programs and procedures are identified, assigned priority, and implemented to get results. Often monitoring programs, if any, have not provided adequate baseline data for EA work and environment-related decisions. Successful interagency coordination, without which many environmental issues cannot be resolved, is difficult to achieve in the absence of established procedures. Many projects that result in adverse environmental impacts in spite of proper planning and design, do so because of weak or nonexistent programs essential to sound implementation - monitoring and supervision, operation and maintenance, and community involvement are the ones most frequently cited in this regard. :

#### Financial Issues

28. Financial factors may be the basis for many of the human resource, organizational structure and procedural weaknesses listed. Funding for the EA process and for follow-up functions (supervision, implementation of mitigation plans, monitoring, measurement of impacts, feedback) may be inadequate, either because the environment has been given low priority in economic planning and budget preparation or because the available resources are not being managed effectively. Poor project performance many times can be traced to insufficient provision for operating and maintenance costs. In the case of public infrastructure and service projects, unreliable or ineffective cost recovery systems may be at fault.

#### Inventory of Institutions

29. Any analysis of institutional capacity for EA in the context of a specific project should begin with a "map" of the organizational structure involved (Paul 1990). The breadth and depth of this analysis depend on the environmental aspects of the project. In any case, the inventory is likely to include organizations at more than one level of government, as well as the private entities and NGOs that may be affected or involved.

30. The inventory should include all institutions responsible for EA or EA implementation in the project concerned. The basic information needed for each is:

. range of responsibilities or area of cognizance (health, natural resources, pollution control, etc.) . principal functions (advisory, coordination, policy-making, resource management, regulatory, operating, EA, etc.) . legal authority for existence and functions . organizational structure . capacity to carry out functions - staffing and management, facilities and equipment, funding, etc.

Much of this information may already exist, collected during previous work in the country and sector, or assimilated by staff with experience in the country.

#### Conceptual Framework for Analysis

31. The analysis should yield an evaluation of the strengths and weaknesses of the institutional structure, specifically regarding its capability to carry out recommendations from the EA. The range of typical institutional problems is wide, and the questions that can be asked are correspondingly varied. Fundamental questions include:

- . What EA procedures apply to the organization(s) identified? Are there guidelines to make them operational? Are they being carried out?
- . How is environmental information assembled and analyzed, and by whom?
- . How is the information used in selecting, planning, designing and executing projects? Who are the actors involved in these processes?
- . When intersectoral issues arise, how are they resolved? Are the mechanisms for resolution formal or informal?
- . What are the procedures for monitoring, evaluating and reporting on project impacts during construction? During operation?
- . How clearly are responsibilities and authorities defined? Is each agency's authority commensurate with its responsibility?
- . What are the formal and informal lines of communication among the involved organizations?
- . Is there evidence of political and managerial commitment (adequate funding and other resources, leadership, etc.) to accomplish desired objectives?

32. It is important to provide a framework so that the analysis is not haphazard but systematic (Paul 1990). Usually a checklist or an interview form showing the basic items on which responses are needed and providing room for additional items will be sufficient for a specific project. Paul (1989b) offers a more rigorous model of a framework that may be useful in situations where extensive institutional analysis is a major project component.

#### Methods of Institutional Analysis

33. There are three general approaches that are effective in analyzing institutions -survey methods, structure-analytical methods, and process methods. More than one may be applied in a single project (Paul 1989b).

34. Survey methods involve quantitative or qualitative data collection and are useful for assessing institutional needs that can be measured -staffing, funding, water treatment chemical supplies, etc. They are applicable to existing organizational structures and especially helpful when there are numerous units.

35. Structured-analytical methods are suitable for institutional issues that can be rather narrowly defined. They utilize concepts of structure and function that are widely accepted in comparable situations as a basis for analysis of the practices and procedures of the institutions being examined. Consultants are usually employed to carry out the analysis. These methods are likely to be well-suited to EA work on specific projects.

36. Process methods are advisable when issues are ambiguous or complex, and when the perceptions of involved individuals are essential. The "process" is a joint one, in which members of the institutions themselves (and often other stakeholders, such as consumers of the institutions' services) participate jointly with the project designers and are encouraged to offer their views as contributions to the understanding of the issues. The act of participating in identification of issues and problems, and the shared understanding that may result, can facilitate acceptance of change, or even build a constituency for it. If senior managers are involved, process methods may also elicit commitment of leadership to institutional strengthening.



## RECOMMENDATIONS FOR STRENGTHENING ENVIRONMENTAL CAPABILITIES

37. The TM should identify and evaluate needs and opportunities for institutional strengthening that may arise in the EA process. Possibilities are manifold, and the approach to any particular situation is likely to be specific to country, sector, and type of loan. Nevertheless there are some useful principles and typical activities.

### Guidelines for Designing Implementable Solutions

38. Human resources are often the most critical element; they need to be developed and retained through education, training and opportunities for professional growth; support in the form of equipment and information; and compensation by means of adequate salaries, incentives, and career paths.

39. Existing organizational structure and procedures are the logical starting point for institutional strengthening. It is often tempting to create new agencies to conduct EA and oversee environmental management, but it will almost always be more difficult to implement such dramatic changes. Moreover, it is often the case that existing organizations are already able to conduct EA, perhaps with some modifications and additional resources. Existing laws and regulations may provide adequate authority to begin with; they may be strengthened gradually as needed or improved quickly through administrative orders or subsidiary legislation. The analytical work discussed above is therefore especially critical, to ensure that the existing capabilities are fully considered in the design of institutional strengthening components (see Table 5.3).

40. It is desirable to design organizational and procedural changes in concert with country officials and representatives of affected agencies. Their participation provides the benefit of local knowledge and may facilitate acceptance of change and commitment by leadership.

41. If new laws are needed, this may be an area for policy-based lending or dialogue.

42. When dramatic or complex organizational changes are necessary, it is preferable to implement them incrementally, allowing personnel and systems to assimilate the impacts of change gradually and providing time for funding, staffing and training so that the new functions begin as smoothly as possible (Paul 1989b).

43. Avoid overloading an organization (or a project) with so many goals, or such ambitious ones, that it cannot realistically achieve them. Success in achieving a part of the overall objective reinforces further progress, while failure in the attempt to reach the ultimate target all at once leads to frustration and disillusionment.

44. Emphasize the sustainability of institutional components, so that measures taken to strengthen local capabilities will endure. This implies paying attention to political and management commitment, reliable and predictable sources of funding for operation and maintenance, and provisions for support services.

45. Government agencies have limited budgets and may have ceilings on the sizes of their staffs. Retraining current employees may be the only way to introduce or augment environmental capability.

46. When consultants are needed, involve local experts as much as possible, in association with international consultants where appropriate. This provides the benefits of local knowledge, supports the strengthening of country capabilities in the private or academic sectors, and constitutes on-the-job training for the individuals employed.

47. Review of Bank projects with institutional strengthening components has shown that success is directly related to the degree of supervision (Paul 1989 and 1990). It is important that adequate resources be allocated to the supervision of institutional components, with special attention to:

(a) maintaining continuity of Bank personnel assigned;

(b) conducting periodic meetings with participants to review progress, adjust and fine-tune schedules, identify new problems and formulate solutions; and

(c) requiring evidence of real commitment by the borrower and government, in terms of leadership, staffing, and allocation of funds and other resources.

48. Project design should provide for flexibility in implementation. Design of institutional components is a processoriented task, and there must be flexibility to adapt to contingencies (Paul 1989).

#### Table 5.3. Institutional Strengthening in Mauritius

In 1988 the Bank sent a team to assist the Mauritian Government in preparing a National Environmental Action Plan (NEAP). The result was a report entitled "Economic Development with Environmental Management: Strategies for Mauritius." At the same time, the Government started an information and education campaign which led to intense public debate on the environment and quality of life.

The study's findings were incorporated into the NEAP, which was then endorsed by the Cabinet. Implementation began with the creation of a free-standing National Environment Commission (NEC), as well as an Environmental Protection Department (EPD) within the Ministry of Housing, Lands and the Environment. Responding to popular demand for environmental action, the Government organized an international conference in September 1988, with help from the Bank and UNDP. The participants discussed key environmental issues in Mauritius and assessed the technical soundness of the NEAP. Following the seminar, Government officials and a Bank team prepared an Environmental Investment Program (EIP), which includes a comprehensive list of environmental projects to implement the NEAP.

The NEAP and EIP formed the basis for discussions at a donors' meeting organized by the Government in Paris in 1989. The estimated cost of the EIP is US\$ 85 million. The Mauritian Government will provide the rest.

Since the Paris meeting, the Government has begun staffing the EPD and has recruited expatriate technical advisors under a UNDP technical assistance project executed by the Bank. A number of measures to protect the environment were announced, and a comprehensive legal framework was drafted. In June 1990, the Government approved a white paper on a National Environmental Policy. A project consisting of priority components of the EIP that are critical to implementation of other components and that are not being funded by other donors was identified for Bank funding. At the Government's request, the Bank has been assisting in donor coordination to speed implementation of the EIP.

#### Recommendations for Strengthening the Environmental Assessment Process

49. The actual preparation of an EA is ordinarily undertaken by consultants, in accordance with TORs prepared by the borrower and reviewed by the Bank. The TM and the Bank EA specialist should ensure that the implementing agency has the capacity to oversee the consultant's work, to review the EA and to follow-up on its recommendations (for further discussion, see Table 5.4). For Category A projects, an environmental unit is normally needed at the project site (and is highly recommended by the Bank) to carry out the monitoring and supervision required for follow-up. It is the TM's responsibility to ensure that such units are adequately funded, staffed and equipped, as part of the project if necessary.

50. Ideally, local consultants should conduct the EA, using international experts only to meet special needs. However, experienced international consultants may be needed initially to manage EAs in countries where the capability is not yet well developed. To help develop that capability, TMs should ensure that local experts are included in the EA team, not only to provide specialized knowledge but also to benefit from on-the-job training in EA preparation.

51. Where multiple projects are anticipated in a sector or region, or where the project is an increment of a larger one, such as a segment of a highway or one of several wastewater treatment plants, the TM and/or EA specialist should explore options for strengthening local capacity to undertake the EAs and implement their findings. One option to be evaluated is the creation of an environmental unit with EA capability within the implementing agency.

52. Regardless of the option chosen, the TM should ensure that the institution responsible for implementing the project has personnel assigned during the EA and design phases to work on the preparation, review and application of environmental documentation. Otherwise, they will miss the opportunity any project provides for invaluable on-the-job training.

53. In establishing or strengthening in-house environmental units at the project, implementing agency or ministry, two factors deserve special attention. First, the units must be empowered not only to carry out EA work but also to use EA findings to influence the design and implementation of projects. Second, there is a tendency for such units to become isolated from other agencies involved in the development process; lines of communication and operating procedures should reinforce integration.

54. A primary objective of the Bank's EA process is integration of EA with project planning, design and implementation and other related functions.

. Institutional arrangements that promote information exchange across sectoral and agency boundaries are desirable.

. Provisions for feedback from EA to project design and to planning for future projects are essential.

. Coordination with local and state permit-issuing agencies is especially important: permit application procedures may substitute for some EA components, and issuance of some permits may depend on completion of an EA.

55. Where appropriate, direct NGO involvement in EA is encouraged by the Bank. NGOs can be effective in providing local information, managing or assisting in the preparation of assessments, and monitoring aspects of EA implementation.

56. Emphasize the use of environmental assessments to identify institutional requirements for monitoring and management during project implementation. Findings of the assessment regarding staffing, training and equipment needs of operating and oversight agencies and required technical, financial and administrative support for operation and maintenance should be used in designing the project.

57. Note that certain training needs are likely to become obvious early in the EA process. In particular, the need for trained personnel to staff environmental units at the project site and to manage or monitor environment-related aspects of project implementation should become obvious at the time of scoping. The project should provide for timely training, including advanced degrees for professionals, in order to have those staff members available when construction begins.

58. It may be helpful to provide EA training courses for local officials and consultants. These should cover EA methods in general and the requirements of the EA OD in particular.

59. Consider the needs of local governments. EA and project implementation and operation may impose burdens directly or indirectly that local officials are ill-equipped to assume, yet their roles may be critical to project success. Local governments may be called upon to:

. participate in EA . participate in project planning and design . issue required permits . monitor construction activities and impacts . implement certain mitigation measures . monitor project operation after construction . operate public works constructed as part of the project

They may also have responsibility for managing indirect impacts of projects, such as:

. control of induced development . participation in resettlement programs . satisfaction of higher demand for municipal services

Additional staff, training, equipment and sources of funds may be called for to support local governmental agencies in these areas.

60. The concept of "twinning" --creating a working partnership between two institutions --can be applied to EA and other aspects of environmental management. It provides the opportunity for staff of a developing country institution to participate in the work of a similar organization, thus exchanging not only skills but also management as well as organizational experience. It is also more flexible than technical assistance by consultants, in that it creates a framework for solving newly-arising problems that may not have been envisioned when a technical assistance (TA) component was designed. (See Cooper 1984 for more details on Bank experience with twinning.)

#### Table 5.4. Review of Environmental Assessment Procedures in India

India has environmental legislation and environmental management procedures at both national and state levels. The adoption of the EA OD and preparation of the Sourcebook provided useful opportunities to identify differences between Bank and Indian procedures and to further explore those areas where Indian officials themselves have felt the need for improvement.

In an initial meeting between Bank staff and Indian officials in late 1989, three useful areas for investigation were identified:

- (a) a portfolio review of planned projects to ensure that the Bank's standards for EA preparation and review could be met by following Indian procedures
- (b) a sector-by-sector review of key environmental issues and the relevant Bank and Indian guidelines
- (c) identification of recurrent issues in the EA process and discussion of the means to address them

Follow-up discussions are still in their early stages, but a number of useful steps have already been taken. The portfolio review indicated a very elaborate set of national and state guidelines and legislation, of which the Bank was only superficially aware. To address this, a study has been commissioned which compares Indian requirements with Bank guidelines.

Preliminary sector reviews revealed that strong guidelines had been promulgated for some sectors, such as mining and thermal power generation, but that less attention had been devoted to sectors which include some of the Bank's largest lending operations, irrigation in particular. An overview of the environmental and sociological concerns in irrigation development has since been carried out.

Finally, senior officials in the Ministry of Environment indicated that they themselves were concerned about the quality of consultants carrying out EA and about the standards and guidelines for EA review. Consultant training will be included in training programs supported by the Bank. Standards and guidelines are the subject of continuing discussion.

#### Recommendations for National and Sectoral Levels

61. Strengthening of the existing legal framework may be necessary to provide authority for EA preparation and implementation of EA findings. Certain national agencies may need to be established or strengthened. In cases where the needs are limited, precisely known, and related to projects, a specific project can serve as

a vehicle for such strengthening. In other cases involving needs for more extensive institutional changes, a project EA may not be an appropriate vehicle. Policy-based lending and dialogue at the national or sectoral level, technical assistance projects for institutional strengthening at the national level, and country environmental action plans may serve the purpose better. Freestanding environmental projects can also be excellent vehicles for strengthening capacity at all levels of government (see Table 5.5). It is important that any EA findings regarding needs for institutional strengthening beyond the limits of the project be brought to the attention of Bank staff working on country and sectoral issues and strategies so that they can be incorporated in the appropriate lending and credit operations.

62. National policies, laws, sanctions and incentives should be consistent. A situation in which there are strong incentives for industrial expansion, inadequate laws to conserve sensitive natural areas, and weak penalties for failure to implement EA recommendations or control pollution is one in which it will be difficult to effect compliance with environmental policy and standards.

63. Ensure that the institutions responsible for review and monitoring of projects have adequate resources to perform their functions and procedures to communicate their findings to decisionmakers.

64. Assist with clarification or redistribution of environmental assessment and management responsibilities and authorities to eliminate vertical and horizontal fragmentation and redundancy.

65. Promote development of sectoral guidelines for environmental assessments. The EA process may be made more efficient and effective through the use of guidelines that are specific to both the kinds of projects the sectoral agencies carry out, support or oversee, and to the issues that are commonly encountered in them. The guidelines should be reviewed by the national agency responsible for EA policy and procedure. They may include:

- . baseline data collection requirements (parameters, frequency, duration, analytical techniques)

- . special studies normally required (e.g., air emission dispersion model, water quality model, traffic generation projections)

- . ecosystem types and sociocultural elements warranting special emphasis because of particular sensitivity to projects

- . required or recommended mitigation measures

- . monitoring and reporting requirements

66. Establish environmental education programs at all academic levels. It is clear in both developed and developing countries that it will be difficult to establish sustainable patterns of resource use as long as the general population is unaware of the opportunities and limitations of their ecosystems. This awareness is best started in elementary and secondary schools and through community outreach programs. In addition, it may often be necessary to strengthen curricula in universities and technical institutes to train professionals and technicians in environmental fields. In a given project, two or three academic institutions might be selected for strengthening in the areas of ecology, environmental science, environmental engineering and management. For Category A projects, the training component should also include funding for advanced degrees for a significant number of professionals in environment-related fields, to further strengthen project, sector and country capacity, as appropriate. :

Table 5.5. Poland: Environmental Management Project

Pollution from the industrial and energy sectors is severe in Poland. The fundamental cause is institutional: fines are lower than control costs; there are no strong incentives for municipalities and industry to decrease pollution; and regulatory agencies have limited authority, a weak monitoring system, and poor laboratory

equipment. This project will assist Poland in improving its environmental capacity through technical assistance, training, twinning, case studies and model projects in the following areas:

- (a) programming/budgeting in Ministry of Environmental Protection, Natural Resources and Forestry (MOE)
- (b) development of a country-wide monitoring strategy
- (c) economic incentives and institutional arrangements for environmentally sound resource use decision-making
- (d) preparation of environmental regulations
- (e) training for government, industry, and consultants in industrial pollution management
- (f) regional air quality management
- (g) water resources management on a basin-wide scale

Responsibility for project implementation rests with MOE, which has created a Project Implementation Unit. An inter-ministerial Project Steering Committee with local government representatives advises MOE. Project components at the field level are managed by new Local Implementation Units, except for the water resources component which is overseen by the Water Management Council for the Upper Vistula River Basin. The implementation units are expected to continue operation after project completion. To reinforce this, their funds are obtained from regular budgets.

This type of project requires a high level of supervision, especially at the outset, to ensure that objectives and implementation arrangements are clearly understood. The Bank has prepared a supervision plan, agreed to by the borrower, which shows the schedule for Bank supervisory inputs, the specialties required for technical review, the project elements requiring special attention from the Bank during supervision, and the monitoring, reporting and other supervisory responsibilities of the government of Poland.

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#### ANNEX 5-1 Common Institutional Problems

##### Human Resources

- . limited facilities and resources for education and training of professional and technical personnel
- . low status accorded to employment in certain positions (e.g., wastewater treatment plants, local government)
- . inadequate salary scales, benefits and incentives
- . lack of career paths for technical and professional staff
- . lack of support in terms of equipment, technical information, and continuing education
- . civil service hiring restrictions included in economic reform program
- . inadequate operating budgets
- . informal processes that allow circumvention of formal requirements in EA and development decision-making
- . "hands off" public administrators, lacking in local knowledge
- . lack of commitment to environmental laws and policies
- . weak leadership in institutions, caused by lack of autonomy and accountability

##### Environmental Policy, Laws, and Regulations

- . absence of environmental concerns in national policy formulation
- . lack of clear environmental policies and/or commitment to them
- . lack of legal authority for EA as part of resource development decision-making
- . weak or nonexistent environmental laws regarding resource use, resource protection, environmental quality, pollutant discharge, waste disposal, facility siting, occupational safety and health
- . lack of legal authority for community involvement in development decisions
- . absence of regulations to implement the laws that exist
- . unrealistic regulations that are unenforceable
- . weak enforcement of laws and regulations
- . lack of incentives for compliance
- . existence of legal and financial disincentives for sustainable use of natural resources
- . local regulatory agencies unable to enforce compliance by large, government-owned industrial operations

##### Organizational Structure

- . lack of entities to perform one or more key functions
- . vertical or horizontal fragmentation of environmental responsibility and authority
- . environmental agency(ies) isolated, not integrated into economic development planning and decision-making
- . national environmental agency limited in authority to influence resource development decisions by individual line agencies or to resolve conflicts among them

- . structure not conducive to intersectoral coordination
- . implementing agencies without EA capabilities
- . implementing agencies not well-staffed for operation, maintenance and monitoring over life of project .
- inadequate provision for collection, analysis and utilization of monitoring data
- . local governments not prepared or equipped to cope with burdens imposed directly or indirectly by development projects
- . centralized decision-making and political interference restrict authority of regional and local agency managers

#### Environmental Assessment and Environmental Management Procedures

- . lack of procedures for project screening, EA preparation and review
- . lack of effective monitoring programs to provide baseline data for EA
- . lack of national and international information exchange . low public confidence in EA process and development planning process
- . lack of interagency coordination in project planning, EA, and project implementation
- . no procedure to identify and resolve intersectoral issues or pursue integrated planning across sectors or within regions
- . weak follow-up or supervision of projects, especially mitigating measures, during implementation and subsequent operation
- . no feedback of results of monitoring and supervision to agencies responsible for taking remedial action or to those who could use the information to improve future projects
- . failure of environmental projects or project components because of inadequate operation and maintenance
- . deficient planning processes
- . inconsistent enforcement procedures
- . no procedures to take into account in project planning and design the needs of or impacts on affected local governments
- . no procedures for involvement of affected groups and NGOs
- . procurement processes insufficient to meet needs for spare parts, equipment, supplies to sustain environmental management components
- . no comprehensive environmental education programs

#### Financial Issues

- . lack of funding for the EA process and for follow-up functions (supervision, monitoring, measurement of impacts, feedback)
- . environment not given priority in economic planning and budgets
- . unreliable or ineffective cost recovery systems for public infrastructure and service projects
- . inadequate provision for project operating and maintenance costs in planning and budgeting processes