6 The Role of International Organisations and Development Banks in Pakistan's Environmental Impact Assessment Practices[4-5]

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International Organisations and Development Banks (IODBs) shared global experience which helped Pakistan in its adoption of environmental impact assessment (EIA) system. From a procedural standpoint, IODBs have been effective in complying with their internal policies and procedures on environmental assessment. While the substantive effectiveness of EIAs for opening up decision-making processes to public scrutiny has not been substantiated yet, selected EIAs have contributed to build environmental management capacity and enhance positive environmental impacts.

IODBs, particularly the Asian Development Bank, The Netherlands Government and the World Bank have been instrumental in promoting the use of policy strategic environmental assessments (SEA) at the sectoral, national, and regional levels. In Pakistan, policy SEAs have tended to be more widely influential than traditional EIAs in the last several years because of the extent of stakeholder participation to validate the process, ownership by Pakistani decision-makers, and strategic timing of analytical work and social learning process with respect to country actions and priorities.

6.1 Introduction

Environmental Impact Assessment (EIA) has become a widespread environmental management tool. The United States was the first country to adopt it as part of its legal framework in 1969 and this effort was emulated by both, developed and developing countries over the next few decades. In this chapter we argue that such growth in the number of developing countries with a formal EIA system was significantly spurred by international organisations

4 The findings, interpretations, and conclusions herein are those of the author and do not necessarily reflect the views of the International Bank for Reconstruction and Development/The World Bank and its affiliated organisations, or those of the Executive Directors of The World Bank or the governments they represent. The authors are grateful to Thomas Fischer and Herbert Acquay for their helpful comments to previous versions of this chapter.

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and development banks (IODBs). This may help to understand the common features in the design of EIA systems across regions and development gradients.

In many developing countries, EIAs have become the main environmental management tool, often used to replace command and control or market-based instruments to regulate air, water, soil or noise pollution. In the case of Pakistan, where specific environmental standards for ambient air and water quality are considered too stringent for national circumstances, the EIA largely endorses the conditions under which large scale projects may be developed and operated. However, as this chapter illustrates, because the institutional capacities of the country's environmental organisations still need significant strengthening, the completion of EIAs does not necessarily result in better environmental outcomes or improved decision-making. While EIA has made important contributions to enhance the sustainability of specific projects, available evidence, including the case studies reviewed during the preparation of this chapter, suggests that, in general, environmental assessments tend to be weak, lack serious public participation to inform project development, and tend to result in generic recommendations that are seldom monitored and enforced (Nadeem and Hameed, 2006 and 2008; Riffat and Khan, 2006; Nadeem and Fischer, 2011).

At the same time, other environmental assessment tools have proved effective in addressing the country's environmental challenges, while simultaneously strengthening the institutional capacity of national and sub-national authorities (Posas, and Sánchez-Triana, 2012; Sánchez-Triana *et al.* , 2013). In particular, Strategic Environmental Assessments (SEAs) that have been conducted at the policy level over the last decade have been effective in identifying environmental priorities and linking them to development and poverty reduction goals, engaging a broad range of stakeholders, and identifying the key governance and institutional capacity weaknesses that need to be addressed.

To support these arguments, this chapter begins by providing an overview in Section 2 about the origin of EIA in Pakistan and the role of IODBs in it. Section 3 continues with a review of the implementation of EIA in Pakistan. Section 4 assesses the effectiveness of three EIAs reviewed during the preparation of this chapter. Section 5 discusses the positive contributions of EIAs in Pakistan, particularly in terms of building institutional capacity and enhancing positive impacts, while Section 6 presents the insights of Pakistan's experiences with policy SEAs and the contributions of institution-centered SEAs relative to EIA-type SEAs. Section 7 presents the chapter's conclusions. This chapter's annex presents case studies of three EIAs that were conducted in Pakistan, with the support of IODBs, discussing how they met the main components of the EIA process required by national regulations, as well as by international organisations.

6.2 Role of International Organisations and Development Banks in the Design and Implementation of Pakistan's EIA System

The first EIA programme worldwide was established by the U.S. Congress in the National Environmental Policy Act (NEPA) of 1969 (Park, 2008). Section 102 (2) (c) of NEPA established the basis to require US federal agencies to prepare an environmental

impact statement for any project that would "significantly affect" the quality of human environment, by assessing environmental consequences in development projects, analysing alternatives and ordering a public disclosure of the report to affected groups (Jones and Stokes, 2003).

During the 1980s, international non-governmental organisations (NGOs), pressured International Financial Institutions (IFIs) and its shareholders, to make these organisations adopt environmental management policies (Nielson and Tierney, 2003; Wade, 1997; Keck and Sikkink, 1998). In 1989, the U.S. Congress passed the provision known as the "Pelosi Amendment," which, according to Bowles and Kormos (1999), played "an important role in the development of the World Bank's EIA policy." The amendment required the U.S. Executive Director to abstain from voting on proposed multilateral development bank loans with potentially "significant" environmental impacts, unless an EIA, including any relevant supporting documents such as environmental management plans, resettlement action plans etc., had been made available at least 120 days in advance and disseminated to the public (Wirth, 1998: 66).[6] Under the "Pelosi Amendment", U.S. representatives in the IFI's boards of directors had to promote the creation of "Environmental Departments" in all of the multilateral development banks (Hicks *et al.* , 2008). In October 1989, during the US Congressional debates over environmental impacts of projects funded by IFIs, the World Bank released its environmental assessment policy (Bowles and Kormos, 1999).

More specifically, the World Bank introduced an Operational Directive (OD 4.00) requesting "an environmental assessment for all projects that may have a significant negative impact on the environment" (Hironaka, 2002: 70). In 1991, the OD was amended as OD 4.01, "two years after its initial adoption and two months before the Pelosi directive took effect" (Bowles and Kormos, 1999). Following the 1992 Earth Summit in Rio de Janeiro,[7] some Bank shareholders became increasingly concerned about the institution's stance on environmental issues. In 1993 the World Bank's Inspection Panel was established in response to civil society and member states' demands to make the Bank more accountable for its actions (Park, 2010).

After the World Bank, other multilateral banks, such as the Asia Development Bank (ADB), the Inter-American Development Bank (IADB), and the African Development Bank (AfDB) adopted environmental assessment policies (IADB, 2009; ADB, 2009; AfDB, 2004). In the ADB, as an accountability mechanism, the Compliance Review Panel (CRP) conducts inspections of projects in response to alleged violations of the safeguard policies (Asian Development Bank - ADB, 2005b).

According to Rifat and Khan (2006), the Pakistan EIA system was adopted due to the efforts of donor agencies like the World Bank, ADB and different NGOs. The promulgation of the 1983 Environmental Protection Ordinance introduced the requirements of EIA in Pakistan (IUCN, 2005). However, EIA was not institutionalized until July, 1994 when the Government of Pakistan made it mandatory for infrastructure

6 This amendment applies exclusively to the action of the U.S. ED and does not preclude Board approval, but requires the U.S. ED to oppose or abstain.

7 The Earth Summit produced a document known as Rio Declaration, which stated that "the environmental impact assessment, as a national instrument, shall be undertaken for proposed activities that are likely to have a significant adverse impact on the environment and are subject to a decision of a competent national authority" (Principle 17).

investment projects. In December 1997, the Ordinance was repealed by the Pakistan Environmental Protection Act (PEPA), in order to provide a stronger legal basis for environmental protection (Nadeem and Hameed, 2006).

PEPA set forth the definition of EIA as "an environmental study comprising collection of data, prediction of qualitative and quantitative impacts, comparison of alternatives, evaluation of preventive, mitigatory and compensatory measures, formulation of environmental management and training plans and monitoring arrangements, and framing of recommendations and such other components as may be prescribed" (GoP, 1997).

In October and November 1997, before PEPA was enacted, the Pakistan Environmental Protection Agency (Pak-EPA) issued comprehensive guidelines known as the "EIA package," which included general and sectoral non-mandatory guidelines covering most aspects of EIA preparation. While the official stance is that these have been formulated keeping in view the local circumstances, they are primarily based on the guidelines of ADB and World Bank, as can be inferred from similarities in their perspectives and approaches, which are discussed in the following section (Nadeem and Hameed, 2010).

6.3 Implementing EIA in Pakistan - International Organisations and Development Banks' Perspectives and Practices

IODBs adopted their environmental impact assessment policies and practices in the mid-1990s, within the context described in the previous section. The main goal of these policies and practices was to mitigate the negative environmental impacts with the aim of ring-fencing IODB's financed projects. The environmental assessment policies adopted by IODBs are the basis of these organisations' safeguards systems. The safeguards systems were developed to address the general absence of corresponding client safeguard systems (legal frameworks and implementing institutions), a condition that produced instances of severe adverse outcomes for the environment and project-affected peoples in IODB's supported projects (Rich, 1995). At the time of their initial formulation, it could be said that the safeguards reflected primarily the values of the donor countries. Since that time, many governments, such as the Government of Pakistan, have adopted legally binding EIA regulations that are similar to IODB's EIA regulations, often with technical support from these organisations.

Several IODBs have labeled their safeguard policies as "do no harm" policies, as their aim was to protect people and the environment from all negative impacts (World Bank, 2009a). In addition, emphasis has been placed on managing reputational risk. According to the World Bank's Independent Evaluation Group (IEG), "the safeguards (do no harm) approach is basically focused on protecting the reputation of the Bank." (IEG, 2010: xxvi).

Many of the objectives and principles of the IODB's environmental assessment policies are also reflected in international conventions and legal instruments such as the Aarhus Convention on Access to Information, Public Participation and Access to Justice in Environmental Matters, and the Espoo Convention on Environmental Impact

Assessment in a Trans-boundary Context, conventions which many governments have ratified. The "do no harm" approach to many aspects of the EIA has been incorporated into best practice guidance notes, such as the MFI-Environment Working Group Common Approaches to EIA, and the principles set forth by the International Association for Impact Assessment.

The World Bank was the first IFI that developed an environmental and social safeguards system, using an approach that was emulated by other key IODBs. The Bank's Operational Policy 4.01 explains that Environmental Assessment (EA) "evaluates a project's potential environmental risks and impacts in its area of influence; 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".[8]

The World Bank begins with a screening process to determine the appropriate extent and type of EA. The Bank classifies the proposed project into one of four categories. Category A projects are those that are likely to have significant adverse environmental impacts that are sensitive, diverse, or unprecedented. Category B projects are those whose potential adverse environmental impacts on human populations or environmentally important areas are less adverse than those of Category A projects. These impacts are site-specific; few if any of them are irreversible; and in most cases mitigatory measures can be readily designed. Category C projects are those that are likely to have minimal or no adverse environmental impacts. Finally, Category FI applies to projects involving investment of Bank funds through a financial intermediary, in subprojects that may result in adverse environmental impacts.

The EA for Category A projects requires an analysis of alternatives and recommends any measures needed to prevent, minimise, mitigate, or compensate for adverse impacts and improve environmental performance. The borrower is responsible for carrying out the EA and must prepare a report, usually an EIA. Requirements of Category B projects are similar to those of Category A project, except that their scope tends to be narrower. For Category C projects, no action is required after screening.

OP 4.01 includes provisions for public consultations for all Category A and B proposed projects. The borrower country is required to consult project-affected groups and local non-governmental organisations (NGOs) about the project's environmental aspects and take their views into account. In the case of Category A projects, these groups must be consulted at least twice: (a) shortly after environmental screening and before the terms of reference for the EA are finalised; and (b) once a draft EA report is prepared. Further consultations are required throughout the implementation of the World Bank-supported project as needed to address EA-related issues that affect the mentioned groups.

The ADB introduced in 2009 a new Safeguard Policy Statement that integrated under a single policy its previous safeguard policies on the environment, involuntary

8 World Bank OP 4.01, available at: http://go.worldbank.org/K7F3DCUDD0

resettlement, and indigenous peoples. The policy's social dimensions include gender and labor aspects. The unification of this policy aimed to enhance the consistency and coherence of its procedures to address environmental and social impacts and risks.[9]

ADB uses the same environmental categorisation as the World Bank (*e.g.* categories A, B, C and FI). The assessment may comprise a full-scale environmental impact assessment for category A projects and an initial environmental examination (IEE) or equivalent process for category B projects. The borrower is required to prepare an environmental management plan (EMP) that addresses the potential impacts and risks identified by the environmental assessment. The EMP will include the proposed mitigation measures, environmental monitoring and reporting requirements, emergency response procedures, related institutional or organisational arrangements, capacity development and training measures, implementation schedule, cost estimates, and performance indicators. Also, where impacts and risks cannot be avoided or prevented, mitigation measures and actions will be identified so that the project is designed, constructed, and operated in compliance with applicable laws and regulations.

ADB's guidelines also discuss the requirements for meaningful participation with affected people and other stakeholders, requires that the borrower establish a grievance redress mechanism, and indicates the documents that will be disclosed in the Bank's website, such as the EIA. In addition, the borrower will monitor and measure progress in implementation of the EMP. For projects likely to have significant adverse environmental impacts, the borrower is required to retain qualified and experienced external experts or qualified NGOs to verify its monitoring information. The borrower must also document monitoring results, identify the necessary corrective actions, and reflect them in a corrective action plan that must be implemented.

The Japanese International Cooperation Agency (JICA) is another key development partner that provides grants, technical cooperation and loans to Pakistan. In April 2010, JICA adopted its new guidelines, which integrate environmental and social considerations.[10] The process established by the guidelines begins with a screening process, through which projects are classified into one of four categories based on the magnitude of their potential impacts. The categories are similar to the World Bank's: A (likely to have significant adverse impacts), B (potential impacts are less adverse than A), C (minimal or little impact), and FI (JICA provides funds to a financial intermediary of which sub-projects could not be identified prior to JICA's approval).[11]

In the next step, the Environmental Review, JICA confirms the possible environmental or social impacts along with the measures proposed by the project proponents. This is done through the examination of documents, including an environmental impact assessment (EIA) report and Environmental Checklist. After consulting stakeholders, JICA evaluates the adequacy of the proposed measures to avoid, minimise, mitigate, or compensate the adverse impacts, and to enhance the positive impacts of the proposed

9 ADB (2009), "Safeguard Policy Statement", available at: http://www.adb.org/documents/safeguard-policy-statement?ref=site/safeguards/publications

10 http://www.jica.go.jp/english/our_work/social_environmental/guideline/index.html

11 JICA (undated), "Guidelines for Environmental and Social Considerations", available at http://www.jica.go.jp/english/publications/reports/annual/2012/c8h0vm00002qe6vj-att/46.pdf

project on the environment and society. JICA promotes the transparency of the Environmental Review by disclosing relevant documents, including the EIA report on its website prior to the process.

Project proponents are responsible for monitoring the approved measures, but JICA oversees the results of this monitoring for a certain period of time that covers the implementation and post-completion stages. If JICA identifies or anticipates any issues as a result of these efforts, it will urge project proponents to devise appropriate counter-measures and or provide the necessary support.

These guidelines state that JICA's projects must not deviate significantly from the World Bank's Safeguard Policies, and that JICA should refer to the internationally recognised standards and good practices, including that of the international financial organisations, when appropriate.n To this end, JICA actively seeks harmonisation of its environmental and social procedures with procedures of developing partners, such as the World Bank and the ADB.

As the previous paragraphs indicate, environmental assessment practices are not uniform across IODBs. However, their approach to EIA is similar in many ways, particularly in its approach to ring-fencing internationally-funded projects by using a method that mainly aims to "do no harm". This is also PEPA's approach, as discussed in the following section, which focuses on the effectiveness of EIA in Pakistan, based on three case studies supported by IODBs that illustrate such similarities.

6.4 Examining EIA Effectiveness

Three case studies were completed during the preparation of this chapter, based on the EIAs prepared for the Pakistani railway development investment programme; the revival of Karachi Circular Railway; and the reconstruction of Berth 15-17A, including SRB's 1and2 on East Wharves at Karachi Port. These case studies, summarized in the annex, exemplify current EIA practice in Pakistan. While they cannot be offered as a representative sample of EIA in Pakistan, they do spotlight some of the key features of current practices in the country. All three projects underwent a screening process; however, in all cases the requirement for a full-fledged EIA was dictated by a fixed list of projects determined by regulations, rather than by a tailored analysis of the characteristics of each project and the specific site in which they would be developed. Similarly, scoping of the EIAs was based on a need to comply with legal requirements, not necessarily on a participatory process through which potentially affected groups could voice their concerns and influence the reach of the environmental impacts study. The three cases included an analysis of alternatives; yet, these seem to be a justification of a previously selected option.

In terms of the identification of project impacts and mitigation measures, the three EIAs recommend broad management practices or guidelines, *e.g.* "proper storage of waste" or "use of advanced construction techniques", and do not provide any specific or quantitative indicators of the environmental management practices that will be implemented. In none of these cases were impacts quantified or mitigation measures

developed to a level of detail that would support actual decisions related to the project design or operation. Similar lack of detail about impacts and mitigation measures was found in previous studies on EIA in Pakistan (Saeed *et al. ,* 2012; Nadeem and Hameed, 2006). While all case studies seemingly engaged the public, there is no information that indicates that their concerns were systematically incorporated into the analysis of impacts or development of mitigation options.[12] Thus, while the three EIAs met legal requirements and were approved by the competent authority, there is room to question their effectiveness in terms of the degree to which they influenced planning decisions.

The findings of the case studies are consistent with several academic papers that have discussed ways in which EIAs in Pakistan comply with procedures set forth in PEPA and other regulations (Nadeem and Hameed, 2006; 2008; 2010 Riffat and Khan, 2006; Saeed *et al. ,* 2012). However, there is much less certainty about the influence of EIA on Pakistan's environmental quality and the effectiveness and efficiency of EIA tools. There has been little comparative review of EIA practices across all sectors, relative to existing and proposed legislation and international EIA standards[13]. There has also been little comparative analysis of EIA effectiveness, particularly in regard to monitoring, follow-up and compliance with EIA commitments[14]. The case studies suggest that EIA in practice may focus on meeting pro forma legal requirements, without necessarily adding value or modifying a proposed project in a way that fundamentally addresses its environmental impacts. In order to address these gaps, this section discusses the strengths and limitations of EIAs of projects funded by IODBs.

IODB's approach to EIA is similar in many ways, particularly in its approach to ring-fencing internationally-funded projects by using a method that mainly aims to "do no harm", as discussed in Section 3 above. However, environmental assessment practices are not uniform across IODBs. A variety of policies among IODBs specify different types of EIA documents, terms of reference for EIA scope and content, timing for review and approval, and means of public consultation. In addition, EIA practices also differ among provinces and sectors, for example between water resources and defense. Similarly, EIA practice varies across sectors in Pakistan, where water resources and transport have developed some more advance practices. Notwithstanding these variations, the prevalent view by IODBs look at EIA as a tool aimed at designing environmental management plans based on detailed mitigation measures. According to this view, EIA is characterised by most IODBs as a compliance tool, to avoid harm to third parties, and as a risk management (safeguarding) framework. This definition incorporates the different objectives of EIA, including:

- To anticipate and avoid, minimise or offset the adverse significant biophysical, social and other relevant effects of development proposals; and

- To protect the capacity of natural systems and the ecological processes to maintain their functions.

12 Nadeem and Fischer (2011) also find weak influence of public participation on substantive quality of EIA and decision-making.

13 See Saeed *et al* (2012), Nizami *et al*., (2011), and Riffat and Khan (2006) for a comparison of EIA procedures and practice in Pakistan compared with international best practices.

14 See Nadeem and Hameed (2010) for a review of monitoring, follow up and compliance with EIA commitments.

According to the prevalent view, EIA goals associated with avoiding, minimising or mitigating environmental impacts to third parties are attained with the design and implementation of environmental and social management plans (ESMPs) that embody mitigation measures on: pollution control; conservation of biodiversity; management of forest, water and other natural resources; technical environmental specifications for sectoral environmental management; and in some cases, involuntary resettlement.

The analysis of the case studies discussed above suggests that the focus of environmental assessment is geared towards approval of the project EIA rather than toward ensuring long-term environmental management and sustainability (Table 6.1). Scoping of EIAs without thorough and comprehensive public participation correlates with the low quality of EIAs (Saeed *et al*., 2011). Scoping (from terms of reference that are not tailored to the conditions of Pakistan) sometimes leads to largely descriptive exercises with a focus on baseline data collection (Saeed *et al.*, 2011; Nadeem and Hameed, 2006). There is lesser emphasis given to the determination, prediction and analysis of project impacts. In many cases, the EIA practice does not include assessments of the cumulative effects of single projects (Nadeem and Hameed, 2010).

Table 6.1 Analysis of Case Studies compared to best international EIA procedural compliance

EIA Component	Case 1	Case 2	Case 3
Was EIA Scoping conducted?	Partial	No	No
Was public participation involved in EIA Scoping?	Partially	No	No
Was EIA screening conducted?	Yes	Yes	Yes
Was an analysis of alternatives conducted?	Partial	Partial	No
Was baseline data sufficient for prediction of environmental impacts?	Partial	Partial	Partial
Were data gaps identified?	No	No	No
Was a quantitative evaluation of project impacts conducted?	No	No	No
Was consideration given to the assessment of cumulative effects or indirect project impacts?	Yes	No	No
Was an environmental management plan developed based on assessed project impacts?	Yes	Yes	Yes
Was there implementation of the environmental management plan and development of an environmental management system?	Yes	Yes	Yes
Was public consultation started at the earliest stage of the project and continued throughout the life of the project?	Partially	No	Partially
Was there a feedback in the consultation process to involve project-affected stakeholders in the EIA process?	Partial	No	No
Were broad public hearings held?	Partial	No	No
Was an EIA monitoring and follow-up programme developed by the company to assess the effectiveness of environmental and social management activities?	Yes	Yes	Yes

Source: Authors. Note. Case studies are included in Annex 1 of this chapter.

According to the ADB (2008:ii) in Pakistan **"**The environment impact assessment (EIA) guidelines are not adequate to ensure effective appraisal of large infrastructure projects such as dams and mega water projects. A major challenge associated with the large infrastructure projects would be to address resettlement and compensation issues in the absence of a resettlement policy."

Public participation in the EIA process has been initiated in Pakistan and both formal and informal processes are in operation. By August of 2013, there was no standardised public consultation process among EIA practices of IODBs. Public participation, while initiated early in some cases, is only usually conducted at the time of the public hearing to discuss the draft EA report (Saeed *et al.* , 2011). Public participation in the EIA process in Pakistan is largely informative in nature: to apprise the public about coming projects and their legal rights, and to inform them about the project and its potential impacts and management. Formal public hearings are geared more towards dissemination of project information rather than providing a mechanism whereby public comment and input can enter the decision-making process and affect the outcome of approval decisions. The lack of consistency in the approach to and scope of public participation in Pakistan have made it difficult or impossible for the opinions of the most vulnerable groups of society.

As in most countries with EIA systems, in Pakistan, the EIA follow-up and monitoring process is poorly developed (Nadeem and Hameed, 2010; Morrison-Saunders *et al.*, 2007). The responsible authority at the provincial level grants the approval of the environmental impact assessment study. However, the responsible authority does not necessarily have budgetary resources or staff for the supervision and compliance of the project's environmental and social management plans. Financial constraints often impede the ability for effective compliance monitoring in the field. Finally, monitoring reports are not available to the public for review and the public has no role in the EIA follow-up process. Several IODBs have allocated staff and resources to strengthen ESMP enforcement and follow-up. However, progress reports and ex-post evaluations of these activities are not available, publicly.

Furthermore, at the time of EIA preparation, only preliminary engineering details are usually available. As underscored by the case studies reviewed in Annex 1 of this chapter, environmental management plans presented in EIA therefore are largely conceptual in nature and are intended to be a guideline as to how they will be implemented once detailed engineering design is finalised. The compliance monitoring entity is also directed by legal requirements that are more concerned with formal compliance than actual commitments made in the EIA. The overall result is a suboptimal EIA follow-up process (Nadeem and Hameed, 2010). Despite this situation, EIAs have made important contributions to Pakistan's sustainable development, as discussed in the following section.[15]

15 Nadeem and Hameed (2010) find that there are "some encouraging examples of public sector proponents who implemented many commitments made in the EMP of a Project". However, they also note that such examples are rare.

6.5. Enhancing Positive Impacts and Building Capacity through EIA

As discussed in the previous sections, IODBs have significantly helped in the development of EIA approaches and practice in Pakistan, which have often prioritised procedural over substantive compliance. However, selected IODB-funded-projects in Pakistan have used environmental assessments to design activities meant to improve positive environmental impacts, and build environmental management capacity. The intent in this regard is to seek cost-effective synergies for increasing sustainability by promoting the systematic integration of environmental considerations into projects. The "beyond safeguard compliance" examples in this chapter demonstrate that the IODBs' environmental assessment safeguards policies provide an entry point to promote the inclusion of components that go beyond the strict compliance of the safeguard policies and lead to positive environmental outcomes in projects and to strengthen client capacity.

Enhancing Positive Impacts

Some projects funded by IODBs have enhanced their positive environmental impacts and have developed environmental and social components instrumental in achieving project development objectives. Projects such as the World Bank-supported Sindh Education Sector Reform Programme, which addresses environmental impacts for a programme but on a school-by-school basis, provide evidence that the IODBs' environmental assessments have taken advantage of safeguards policies to incorporate positive environmental outcomes as goals into projects. The objective of this project is to increase school participation, reduce gender and rural-urban disparities, increase progression from primary to secondary school, and improve the measurement of student learning in Pakistan's Sindh Province. During the course of project preparation, a number of environmentally-related inadequacies in Sindh schools came to light, including health concerns associated with lack of adequate clean drinking water facilities; inadequate sanitation facilities; poor sunlight exposure in classrooms; groundwater contamination; and the risk of natural disasters as a result of the school's location and structural design. The results of the environmental assessment led the project to incorporate environmental goals such as: seismic resistant structural designs for schools, design typologies for schools that reduce vulnerability to floods and other natural disasters, toilets designed to meet girls' needs, energy-efficient architectural designs, and cost-effective interventions to remove arsenic and pathogens from water storage facilities (World Bank 2009).

Strengthening Client Capacity

Client capacity-building consists of supporting agencies that implement projects and policies, as well as NGOs, to strengthen their capacity for environmental management, including identifying key environmental issues, setting environmental priorities, designing and implementing environmental interventions, conducting environmental monitoring, evaluating studies, and enforcing environmental requirements (Margulis and Vetleseter, 1999).

Many IODBs projects necessarily include some client capacity strengthening, since even conducting an environmental assessment is initially beyond the capacity of many

implementing agencies. However, the IODB's emphasis on client capacity-building has room for improvement, as client capacity-building has been carried out on an *ad-hoc* basis. For example, the IFC's "Performance Standards on Environmental and Social Sustainability", which include environmental assessment and environmental management systems as instrumental tools, incorporate client capacity-building as part of their essential design. Most IFC projects entail environmental assessment and, if necessary, strengthening of the environmental management systems of their development partners (IFC, 2012).

Two case studies illustrate the use of EIAs to build environmental management capacity at the provincial level in the irrigation and education sectors. With support of the ADB and the World Bank, the Water and Power Development Authority (WAPDA) implemented one of the most successful programmes in institutional strengthening in the water resources sector at the end of the 2000s. The agency also established a strategy to strengthen its environmental management together with an organisational restructuring centered on an Environmental Section with staff highly qualified in engineering and environmental sciences. A multidisciplinary team was created with highly qualified specialists, including civil engineers, agronomists, biologists and geographers, whose principal duties relate to the mitigation of negative environmental impacts and enhancement of the positive effects of water resources projects. A key role of the Environmental Section is to support the national and provincial environmental protection agencies in the sustainable environmental management of water resources projects. The strategy identified two objectives: (a) to obtain and maintain leadership in the rational use and protection of national natural resources, such as conservation of the natural environment; and (b) to minimise negative impacts and maximise positive impacts of road projects on the environment and natural resources (Afzal and Hussain, 1996; World Bank, 1997).

In another case, the environmental assessment for the Punjab Irrigation Development Policy Loan led to include reforms aimed at strengthening the capacity of the Punjab's Irrigation Department for assessing and mitigating social and environmental risks associated with asset management activities. As a result, a Social and Environmental Management Unit was set up within that Department, which is fully staffed and functional even after Bank funding to this Department ended. Some of the landmarks achieved by the capacity-building programme include the development and implementation of guidelines for the identification of social and environmental risks associated with the maintenance and rehabilitation of irrigation infrastructure. These guidelines include a comprehensive capacity development programme for the technical staff in the Irrigation Department to increase its awareness on social and environmental issues. Implementation of guidelines is fully institutionalised and includes regular dissemination of environmental activities through a newsletter. In Pakistan, an ex-post evaluation found that, as an instrument, the DPL is a more powerful tool in introducing long-lasting and sustainable reforms than a standard investment loan, which has a more project-based approach (World Bank, 2010b).

While EIAs at the project level can produce significant achievements in terms of enhancing positive impacts and building institutional capacity, environmental

assessments at the policy level offer further opportunities, as discussed in the following section.

6.6 Insights from SEA Experience in Pakistan

This chapter has focused, up to this point, on the EIA of specific infrastructure projects. In this section, the discussion centers on strategic environmental assessments (SEA), an analytical and participatory decision-making process for integrating environmental and sustainability considerations into policies, plans, and programmes. Although SEA came into use primarily over the last two decades and was first popularized in developed countries, SEA's value and potential for Pakistan has been acknowledged since the early 1990s (World Bank, 1995; Afzal and Hussain, 1996; World Bank, 1997). The section characterises the evolution of SEA application and distinguishes between two main types of SEA, as applied by IODBs in Pakistan. The section also evaluates the relative degree of influence of policy SEAs from 2004 to 2014 and summarises their conclusions.

Even before the year 2001, when the European Union's SEA Directive[16] entered into force and when SEAs received a new impetus and validation through the World Bank's first Environment Strategy, there were important stirrings of SEA activity in Pakistan. Sectoral and regional environmental assessments had already been undertaken and completed in sectors such as irrigation and drainage (National Engineering Services Pakistan (PVT) Limited; Mott MacDonald International Limited. 1993, World Bank, 1995; Afzal and Hussain, 1996; World Bank, 1997). In this regard, Naim (2002) acknowledges "SEA look-alike" activities that had already occurred in relation to Pakistan's water and drainage programmes and the 1995 IUCN National Conservation Strategy.

This review identified seven World Bank-supported SEAs undertaken in Pakistan between 1993 and early 2012. A trend was seen in the use of different types of SEA instruments over time. In Pakistan, there has been a definite shift in the use of certain types of SEA instruments after 2004. Prior to 2004, only SEAs for programmes and large projects were done, with a few differences from EIAs. The post-2004 shift in SEA titling and greater use of policy SEA instruments may be explained by the World Bank's Environment Strategy, which acknowledged the need for upstream analysis of social and environmental conditions and risks and mentioned policy SEA and Country Environmental Analysis as tools to mainstream environmental considerations into public policies (World Bank, 2001; Dalal-Clayton and Sadler, 2005). Then, in 2005, the World Bank established a SEA Pilot Programme to test and promote institution-centered SEA approaches in policy and sector reform, providing grants and specialised assistance. Several of these pilots were carried out in Pakistan and are profiled in Table 6.2.

16 Formally titled Directive 2001/42/EC of the European Parliament and of the Council of 27 June 2001 on the assessment of the effects of certain plans and programmes on the environment.

Table 6.2. Selected SEAs Undertaken in Pakistan

SEA Title	Year*	Sector	Type
National Drainage Programme Project	1993	Agriculture	Sectoral EA
Highway Rehabilitation Project Sectoral Social and Environmental Assessment	2003	Transport	Sectoral SEA
Balochistan Small Scale Irrigation Project	2005	Agriculture	Cumulative EA
Pakistan Strategic Country Environmental Assessment	2006	Country	CEA
Pakistan Strategic Environmental, Poverty and Social Assessment of Freight Transport Sector Reforms	2011	Transport	Policy SEA
Mainstreaming Environmental Sustainability into Pakistan's Industrial Development	2012	Industry	Policy SEA
Strategic Sectoral Environmental and Social Assessment of Indus Basin (in progress)	In progress	Water	Policy SEA

Source: Authors. *Year of publication or disclosure. Acronyms: CEA-Country Environmental Analysis; EA-Environmental Assessment; SEA-Strategic Environmental Assessment.

EIA-like SEAs, centered mainly on the impacts of programmes, made up the bulk of SEA experience prior to 2004 and were undertaken to comply with "safeguard" policies of international development organisations. After 2004, policy SEAs have increasingly been used in Pakistan to mainstream environmental sustainability, social issues, and poverty alleviation into public policy design and implementation. Given that EIA-like SEAs use the same procedures and methods of EIAs, except for addressing cumulative and large-scale impacts of megaprojects, there are no significant differences between a comprehensive EIA and an EIA-like SEA in terms of methodols and arguably, also in terms of influencing decision-making (Tetlow and Hanusch, 2012). Policy SEA is defined as: "an analytical and participatory approach for incorporating environmental, social, and climate change considerations in sector reforms" (World Bank *et al.*, 2011). Institution-centered SEAs, formally piloted in the World Bank since 2005, focus on identifying environmental priorities, assessing institutions and governance systems and assessing alternative policy actions. Policy SEAs are acknowledged to require "a particular focus on the political, institutional, and governance context underlying decision-making processes" (World Bank *et al.*, 2011, p. 2).[17] The objective of policy SEAs is different from that of EIA-like-SEAs, particularly as it includes:

- Identifying environmental priorities for poverty alleviation and analysis of the capacity of natural resources and environmental services to support sector-wide economic activities and sector growth;
- Highlighting institutional and governance gaps or constraints affecting environmental and social sustainability;
- Promoting capacity-building and institutional, legal, and regulatory adjustments critical for environmental and social sustainability of sector reforms;
- Strengthening accountability on the management of environmental and social risks through increasing transparency and empowering weaker stakeholders; and
- Institutionalising social learning processes around the design and implementation of public policies (World Bank *et al.*, 2011).

17 A succinct presentation of insights and guidance on Policy SEA can be found in World Bank et al., 2011, et al. (2011).

Several policy SEAs developed in Pakistan after 2004 raised public awareness, promoted debate nationwide, and led to design environmentally sustainable public policies. Being among the most influential policy SEAs, the Pakistan Strategic Country Environmental Analysis; the Sindh Environmental and Climate Change Priorities SEA, the Strategic Environmental, Poverty and Social Assessment of Freight Transport Reforms (SEPSA), and the Mainstreaming Environmental Sustainability into Pakistan's Industrial Development SEA are highlighted here.

Mainstreaming Environmental Sustainability into Pakistan's Industrial Development SEA was initiated at the end of 2009 to mainstream sustainability into Pakistan's Industrial Competitiveness. The SEA was steered by a High Level Committee set up by the Ministry of Industries, representing the federal government, four provincial governments, academia, NGOs, the private sector and the World Bank. The SEA promoted a consensus building process that resulted in the formulation of a coherent and sustainable industrialisation strategy. The SEA stresses that industrial structural change, spatial transformation and improvements in infrastructure in industrial clusters are needed if Pakistan is to realise gains in economic efficiency and competitiveness, especially in export markets. This in turn requires a cross-sectoral approach that has been endorsed by the Planning Commission and the Ministry of Industries, which has requested programmematic lending support for the implementation of Pakistan's green industrial growth strategy (Sánchez-Triana, Ortolano and Afzal, 2012; Sánchez-Triana *et al.*, 2014).

Sindh Environmental and Climate Change Priorities SEA. At the request of the Government of Sindh (GoS) in 2010, the World Bank initiated a non-lending technical assistance (NLTA) on the Sindh Province with the objectives of: (i) creating a mechanism for ranking the province's environmental problems; (ii) assessing the efficiency and cost-effectiveness of alternative interventions to address priority environmental problems; and (iii) identifying the policy reforms, technical assistance, and investments that are needed to strengthen environmental sustainability in Sindh. As in the previous case, this SEA was steered by a high level committee integrated by representatives from the provincial government, business associations, environmental NGOs and other stakeholders. The SEA stressed that, currently, there is no priority setting mechanism in Sindh and the scarce available resources are not used to address the categories of environmental degradation that are causing the most significant effects. This SEA constituted the first formal assessment of the severity of environmental degradation in the province. It also provided a roadmap for carrying out investments, policy reforms and institutional strengthening activities that would result in better environmental conditions. The methods and approach adopted by the NLTA can be replicated in the future to evaluate progress in improving environmental conditions; identifying policy and intervention improvements; and determining the most efficient use of scarce resources (Sánchez-Triana *et al.*, forthcoming).

Strategic Environmental, Poverty and Social Assessment of Freight Transport Reforms (SEPSA). In order to ensure meaningful discussion among key stakeholders in the identification of specific sustainability criteria that would be incorporated into freight transport reforms, the GoP and the Bank held a series of workshops during 2009 to

scope out the studies that would be completed using methods developed for policy SEA and poverty and social impact analysis (PSIA). This gave rise to the Pakistan Strategic Environmental, Poverty and Social Assessment of Freight Transport Reforms (SEPSA). The environmental management component of SEPSA focused on the environmental aspects of investments and reforms in the trade and transport sector, particularly freight. The potential environmental effects of three strategic alternatives were analysed: (i) the "no reforms" alternative; (ii) policy reform and investment in the road freight sector; and, (iii) policy reform and investment in the rail freight sector. Each alternative was evaluated based on the set of priority issues identified jointly with stakeholders (climate change, air quality, transport of hazardous materials, road and railway safety, urban sprawl and accessibility, and environmental management systems) to assess their potential environmental and social implications.

The PSIA was prepared to identify potential social and distributional impacts of transport sector reforms on stakeholder groups, employing a computable general equilibrium (CGE) model that uses actual economic data to simulate how an economy might react to changes in policy or other external factors. The PSIA identified the main effects of proposed policy reforms and developed a menu of options to: mitigate negative impacts; incorporate poverty alleviation measures into the design of transport reforms and projects; enhance positive effects on poverty alleviation; and address environmental and social priorities. Strong governance and institutional capacity in sectoral and environmental agencies were highlighted as indispensable for the adoption of the options identified.

Findings from the Pakistan SEPSA include that a modal shift from road freight to rail freight transport for long hauls would have significant environmental and social benefits; that environmental issues should not be considered in isolation from social ones, particularly in situations in which policy reforms could increase the risk of social conflict; and, that understanding social patterns and conflicts illuminates the feasibility and weaknesses of potential solutions and needed mitigation measures. To stimulate economic growth, employment, and poverty reduction, reforms to promote industrial competitiveness need to be made along with significant investments in increasing road density to improve the connectivity of industrial clusters to domestic and international markets. Strengthening the infrastructure of urban centers to receive rural and inter-provincial migrants is also required (Sánchez-Triana, Afzal, Biller and Malik, 2013).

Pakistan Strategic Country Environmental Analysis (SCEA). Completed by the World Bank in 2007, the SCEA involved the identification of environment-poverty priorities, assessment of relevant environmental policies and institutions, and institutional analysis linked with identified themes and sectors (World Bank, 2007). The objective of the SCEA process centered on four principal tasks: identification of priority environmental concerns for sustainable, poverty-reducing development; analysis of the policies affecting the priority environmental concerns; assessment of environmental management capacity and performance in relation to the identified priorities; and development of a set of proposals to support improvements in the management of key environmental concerns. It involved an analysis of cost of environmental degradation analysis (COED). Identified priority problems included outdoor and indoor air pollution,

inadequate water supply, sanitation and hygiene, soil quality, and strengthening institutions for environmental management. As a result of the COED's quantification of economic losses from environmental degradation, other priorities for additional action and Bank support emerged, such as reducing the threat of air pollution to human health and the need to better control urban and industrial effluent in urban centers. The SCEA influenced the environmental content of the Poverty Reduction Strategy Paper (PRSP) and was meant to serve the donor community more widely as well as to guide World Bank environmental support to Pakistan (World Bank, 2007).

Pakistan Country Environmental Analysis (CEA). Prepared by the ADB in 2008, the CEA identified the following priority areas of investment: (i) access to basic sanitation and safe water for all; (ii) achieving energy efficiency; (iii) checking urban air pollution; (iv) improving agricultural productivity; and (v) establishing public-private partnerships for cleaner production and the treatment of industrial effluents. The CEA also proposed a series of reforms, technical assistance and investments to build the country's capacity to address identified priorities.

An analysis of the profiled policy SEAs identifies similar features: robust stakeholder participation, client ownership, and temporal coordination with the county's development priorities and processes. They also tend to be done in ways that are collaborative, evolving, and ongoing rather than as a safeguard clearance requirement which may receive heavier attention during project preparation than during project implementation (Slunge and Loayza, 2012).

A noteworthy strength of recent policy SEAs in Pakistan is an often explicit attention to social and poverty issues, particularly when linked to sectoral or environment-related reforms. This encompassing approach is consistent with the guidance of the OECD-DAC (2006, p. 42), which lists the first benefit of SEA as "safeguard[ing] the environmental assets and opportunities upon which all people depend, particularly the poor, and so promot[ing] sustainable poverty reduction and development." Through public consultations and outreach, policy SEAs were able to ensure that some of the follow-up actions focused on poverty alleviation and addressing citizen and stakeholder concerns. The importance of these actions cannot be overemphasised, particularly considering that EIAs were initially conceived as a tool to engage stakeholders and open up decision-making to public scrutiny, but as this chapter's previous sections indicate, have become environmental management tools in which the value of public participation and robust analysis of environmental impacts to inform decision-making has been sidelined in the interest of procedural compliance.

6.7 Conclusions

Results with EIAs conducted for projects financed by IODBs in Pakistan overall have been mixed in terms of procedural and substantive compliance. The EIAs for projects financed by IODBs tend to be done primarily to meet these organisations' clearance requirements and to minimise their "reputational risk[18]". The main indicator of procedural

18 Policies issued by IODBs do not define the concept of reputational risk. Furthermore, these organisations have not operationalized or measured reputational risk in terms of the IODBs' assets value.

compliance is given by the percentage of projects subject to investigations by CAO or Inspection Panel type of organisations. Overall, the number of cases subject to these investigations in agencies like the ADB, the International Financial Corporation or the World Bank, has been less than 1% of the projects supported. Procedural compliance with internal policies of international development agencies has been achieved to a large extent.

In terms of substantive compliance, there is little evidence to demonstrate the influence of EIA on decision-making. Most EIAs for IODB-supported projects are often initiated too late in project or programme preparation to be truly strategic and tend to be weak in their analysis of alternatives and cumulative effects. Most of these EIAs seldom enhance environmental planning or significantly open up decision-making to public scrutiny. On the positive side, there is evidence that environmental management plans provide value-added particularly in areas with lack of precise regulations such as biodiversity conservation or re-vegetation. The strengths and weaknesses of EIAs can be found in EIA-like-SEAs

Different from EIA-like-SEAs, the profiled policy SEAs generally led to significant influence by identifying environmental priorities associated with poverty alleviation, highlighting governance gaps or constraints, promoting capacity-building, strengthening accountability and transparency, and empowering weaker stakeholders.

Policy SEAs are a versatile instrument, proving their use in a range of contexts and sectors in Pakistan, including water resources, energy, transport, and regional development. Policy SEA and CEA benefits include: providing data, highlighting governance gaps or constraints, promoting capacity-building, strengthening accountability and transparency, and empowering weaker stakeholders. In Pakistan, because of the extent of stakeholder participation to validate the process, ownership by Pakistani decision-makers, and strategic timing of analytical work and social learning process with respect to country actions and priorities, policy SEAs, in the last several years, have tended to be more widely influential than traditional EIAs.

Recent policy and institution SEAs in Pakistan prioritise identifying and addressing environment-linked social and poverty issues, and this added understanding has proved valuable for: formulating mitigation measures to address vulnerabilities of various groups; reducing the cost of environmental degradation on human health; and greening growth. Awareness among Pakistan's decision makers of SEA's benefits is still limited and should be strengthened, particularly with respect to SEA's potential. Given SEA's proven value in Pakistan, greater attention needs to be paid to the ongoing financing for undertaking SEAs, since these have largely relied on trust funds and grants whose availability is rapidly diminishing in the current economic climate.

To conclude, SEA can play an active role in helping address pressing environmental and social issues so that Pakistan's growth becomes increasingly green, more competitive in regional and international markets, and conducive to improvement of living standards for urban and rural populations along the income spectrum. SEAs, particularly those that also unravel and illumine social issues and institutional bottlenecks, offer crucial insights

and information for addressing key priorities and challenges in the region. Most notably, Pakistan has strong partners in the analytical work and takes forward the findings and recommendations of its own initiative, oftentimes with new requests for development partner support or follow up. This is occurring not only with respect to environment ministries, but ministries of industry and other productive sectors. Policy SEA is proving itself as a tool to green sectors, regional development, and national development.

Annex: EIA process – Case Studies from International Organisations and Development Banks

In order to support the findings of this chapter, three EIAs from the transport sector were reviewed as case studies to assess the EIA preparation, review and approval process against established best international EIA practice (Tables A.1 - A.3 on the EIAs of the Pakistani railway development investment programme; the revival of Karachi Circular Railway and the reconstruction of Berth 15-17A including SRB's 1and2 on East Wharves at Karachi Port). The tables below summarize the information provided in each EIA report.[19]

Table A.1: Case 1. Environmental Impact Assessment - Pakistan: Railway Development Investment Programme (Project 1) (March, 2011).

EIA Report	Summary
Project Description	Proponent: Pakistan Railways (PR). Project objective: complete track renewal and rehabilitation of 132.34 km from Lahore to Lalamusa (in the Punjab province), including the rehabilitation of the Lahore, Shahdara and Wazirabad railway yards. Financed by the ADB.
Screening	The Pakistan Environmental Protection Agency (Review of IEE and EIA) Regulation 2000 requires an EIA for all railways projects.
Scoping	The report indicated that the overall results of the screening process identified that possible impacts are expected to be temporary and could be mitigated or reduced by implementing proper environmental management plans throughout the project cycle.
EIA Preparation	A detailed site visit was carried out for collecting primary and secondary data to identify and establish the Corridor of Impact and mitigation measures required to minimise the adverse impacts.
Analysis of Alternatives	According to the report, three different alternatives were evaluated: "No Project". This alternative was estimated to result in further worsening of the present safety and environmental conditions and increased disturbance to residents of the area and the surrounding road users. "Rehabilitation and Doubling of the Existing Alignment". This option was rejected because the traffic projections did not justify doubling the line.

19 This annex is based on a 2011 World Bank consulting report prepared by A. M. Salamanca

	"Rehabilitation of the Existing Alignment". This option was selected. While it helps to improve the operational conditions of the railway along the study corridor, it also helps accommodate future traffic growth through improvements that only entail impacts that can be mitigated and minimal environmental impacts.
Major Impacts	During construction: temporary effects caused by construction machinery, equipment and vehicles, as well as from workers' daily activities. These included impacts on air quality, water quality, noise and vibrations, soil, and generation of hazardous and solid wastes. Operational phase: impacts from the operation of trains and stations' daily activities. These included impacts on air quality, water quality, noise and vibrations, soil, generation of hazardous and solid wastes, and safety due to pedestrian and livestock crossing the tracks.
Authority responsible for EIA Evaluation and Decision	Punjab Environmental Protection Agency.
Mitigation Measures	During rehabilitation: adoption of good management practices, such as the use of appropriate equipment, adequate scheduling of operations, location of worker camps in areas away from water bodies and agricultural lands, and adoption of waste management plans. Operational phase: adequate management practices, such as maintenance of equipment and locomotives, instructions to locomotive operators, and proper handling of hazardous wastes. Erecting walls to serve as noise barriers and impede pedestrians and livestock from crossing in inadequate spots. Use of environmentally-friendly equipment like solar water heaters and water saving devices for stations.
EIA Follow-up	PR will be responsible for the development and implementation of the monitoring plan for the operational phase, in cooperation with the Environmental Protection Agency (National and Punjab). Provincial and local authorities would need to provide authorisations for water use, cutting trees, and ensuring that workers camps and plants met legal requirements.
Public Participation	Four public consultative meetings were held in Shahdara, Gujranwala, Wazirabad, and Lalamusa.
EIA Conclusions	The report concludes that "the EIA shows that no major negative environmental impacts are expected as a result of the rehabilitation. This has been mainly attributed to the nature of the works, which include rehabilitation works only as opposed to new construction".

Source: Authors based on Pakistan Railways (2011)[20]

20 Available at http://pakrail.com/tender_files/460_EIA%2004012011.pdf

Table A.2: Case 2. Environmental Impact Assessment- Revival of Karachi Circular Railway (KCR)- January, 2009.

EIA Report	Summary and Observations
Project Description	Project proponent: Karachi Urban Transport Corporation (KUTC). Project objective: doubling of KCR Loop (29 km) with 9.320 km elevated track and provision of two dedicated tracks along the main line from Karachi Cantt to Drigh Road (14 km) and connection of Jinnah International Airport (6.0 km extension) with either underground or elevated track. Financed by JICA.
Screening	The Pakistan Environmental Protection Agency (Review of IEE and EIA) Regulation 2000 requires an EIA for all railways projects.
Scoping	Based on meetings with KUTC officials; preliminary meetings with stakeholders on the KCR track; and a collection of maps and existing information.
EIA Preparation	The EIA was designed to address the regulatory requirements as well as to make it acceptable to KUTC, JICA, and EPA Sindh.
Analysis of Alternatives	Four alternatives were considered: “No project”. Rejected because traffic problems and associated environmental health problems would persist; “Revival of KCR”. The report finds this would be the preferred alternative to alleviate the transportation problems of Karachi provided the deficiencies in its past performance were removed and reforms in the management system were effectively introduced to strengthen the existing KCR infrastructure; “Horizontal alignment of KCR”. Alignment cannot be changed because the RoW of KCR land is fixed along the existing KCR and Main Railway track; and “An alternative power supply traction system”. This could be pursued through three options including DC 1, 500V, AC 25kV and AC2x 25kV for power supply to the traction system, each of which would need further elaboration.
Major impacts	During construction: temporary effects on air quality, noise and vibrations, water quality, soil contamination, generation of hazardous and solid wastes, and traffic congestion, caused by construction activities. During the operational phase: impacts from the operation of trains and daily activities of depots and stations, including both positive effects, such as air quality improvement due to electric train operation and improved traffic conditions on the road, negative impacts such as noise and waste generation.
Authority responsible for EIA Evaluation and Decision	Government of Sindh’s Environmental Protection Agency

Mitigation Measures	During construction: use of advanced railway construction techniques, development of a waste management programme and proper routing around site areas. During the operational phase: erect a sound barrier wall, which would also act as safety wall. A solid waste collection system would be provided and hazardous waste treatment would be required. Other mitigation measures consisted of treatment of waste-water and maintenance of infrastructure and equipment. The report stated that a "resettlement action will be prepared that includes monetary compensation, relocation, resettlement and rehabilitation."
EIA Follow-up	Pakistan Railways would be responsible for the overall management of KUTC.
Public Participation	Preliminary meetings were held with stakeholders on the KCR track to obtain their views on the construction of the road and on information to support the study.
EIA Conclusions	The report concluded "[t]he Revival of Karachi Circular Railway Project would vitalise Karachi, solve its traffic problems extensively and make a major contribution towards improving the living standard of the people of the city."

Source: Authors based on EMC (2009).[21]

21 Available at: http://www.kutckcr.com/files/KCR-EIA-Final-Report-_opt.pdf

Table A.3: Case 3: Environmental Impact Assessment of Reconstruction of Berth 15-17A including SRB's-1 and 2 on East Wharves at Karachi Port (May 2010)

EIA Report	Observations
Project Description	Project proponent: Karachi Port Trust (KPT). Project objective: undertake the reconstruction of berths 15-17 A and Ship Repair Berths (SRB) 1and 2 on East Wharves at the Karachi Port to eliminate waiting time for ships and yield savings in marine transport costs. Funded by IBRD and IFC.
Screening	Pakistan Environmental Protection Agency (Review of IEE and EIA) Regulation 2000 states that ports and harbour development for ships of 500 gross tons and above require an EIA.
Scoping	Scoping Each impact identified was evaluated against its significance in terms of its severity and the likelihood of its occurrence, considering its effects on the natural ecosystem. Impacts were classified based on project phases (pre-construction, construction and operation) and type (physical, biological and socio-economic).
EIA Preparation	The method included meeting with the KPT; collection of primary and secondary data; analysis of alternatives; public consultation; review of the legislative requirements; impact assessments; identification of mitigation measures; development of environmental management plan; and documentation of EIA report.
Analysis of Alternatives	Four alternatives were considered: (1) no project option, (2) relocation of berths to idle part of the harbor, (3) increase in cargo handling capacity of other operational berth to compensate for the loss due to unavailability of these berths and (4) deepening of harbour channel to accommodate more ships at the existing berths. The report did not include the analysis of these alternatives.
Major impacts	During construction: waste generation; air quality; soil contamination; water quality; dredging and reclamation; benthic flora and fauna; noise and vibration; public health and safety; and impacts on employment, as well as on historical, archeological and cultural property. During operation: air quality, noise, vibrations, accidental oil spills, waste generation and contamination of sea-water.
Authority responsible for EIA Evaluation and Decision	Pakistan Environmental Protection Agency, because the Karachi Port is located on Federal land.

Mitigation Measures	Design and pre-construction phase: adequate design and construction, cautionary signage, identification of noise sources, and safe transport of the demolition material through use of well-maintained vehicles and proper training of the drivers, among others. Construction phase: elaboration of a waste management plan, worker use of protective devices, provision of adequate facilities for workers, proper storage of hazardous materials, and adequate maintenance of equipment and vehicles, among others. Operational phase: adequate management practices and compliance with existing norms and regulations. These include ensuring compliance with noise emission standards, appropriate procedures for handling and storage of hazardous cargoes, and cleaning of spills of oil, toxic chemicals etc. as early as possible, among others.
EIA Follow-up	The report recommends engaging an Independent Monitoring Consultant to oversee the adoption of the mitigation measures. KPT would be responsible for implementing the EMP.
Public Participation	Meetings were held with the communities living in Baba, Bhit and Shams Pir Island, IUCN, WWF, an international contractor working in the harbour, shipping agents and Port Traffic and Safety Departments of the KPT to discuss the project, its components and its expected environmental and socio- economic impacts and proposed mitigation measures.
EIA Conclusions	The EIA established baseline data for air quality, sub-sea soil, noise and sea-water quality and recommends strengthening it by conducting monitoring during the pre-construction phase until the Pak EPA approves the project. It also recommends strengthening KPT's Pollution Control Department's capacity for environmental monitoring.

Source: Authors based on KTP (2010)[22]

22 http://documents.worldbank.org/curated/en/2010/05/12315319/pakistan-karachi-port-improvement-project-environmental-assessment-environmental-impact-assessment-reconstruction-berth-15-17a-including-srbs-1-2-east-wharves-karachi-port