



Netherlands Commission for
Environmental Assessment

Meta Study of ESIA's for Port Development



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1. Introduction: request and context

In 2014 a multi-stakeholder dialogue¹ was initiated by the Ministry of Foreign Affairs to determine how to effectively contribute to the improvement of land governance in emerging and developing countries. The dialogue was initiated since land rights of indigenous peoples are often violated during the implementation phase of large-scale agricultural, infrastructural or residential projects. The MSD LG aims to identify and share lessons learned and best practices supporting pro-poor land governance.

The MSD LG primarily focussed on land governance in the context of building of infrastructure, starting with a pilot on port infrastructure as this kind of projects may affect large surface areas and thus large numbers of people. The Netherlands Commission for Environmental Assessment (NCEA) was asked to contribute to the goals of the MSDLG by providing a meta study of environmental and social impacts assessments (ESIAs) for harbours and ports with, if possible, Dutch interest, as an example of large-scale infrastructural developments. **The overall objective of the study is to identify possible measures to enhance the quality of ESIAs for Dutch port development in emerging and developing countries.** Attention not only had to be given to the quality of the information but also to aspects such as transparency of the process and communication and participation of affected parties. The output of the study should contribute to improved land governance and respect for land rights.

The overall objective has been broken down as follows:

- determination of a benchmark for good practice ESIAs for port development to be used in this study;
- identification of the key environmental and social problems/effects as mentioned in the ESIAs examined;
- identification of common weaknesses in the ESIAs examined;
- identification of good practice examples for specific aspects;
- formulation of recommendations on ESIA good practice for port development, with special focus on land governance.

¹ Abbreviated as MSDLG in this report.

2. Approach

2.1 The process in brief

A precondition for the study is the availability of sufficient, recent ESIA's for port development in emerging and developing countries with, if possible, Dutch interest. This is why the project started with an inception phase to make an inventory of ESIA's and to discuss, if needed, a further scoping of the research questions. Next a subset of ESIA's was selected which was found suitable to answer these questions. A group of six experts (see Annex 1) was asked to define evaluation criteria for this study (the benchmark; see §2.4 of this report and Annex 2) and to assess the selection of ESIA's. Both the technical characteristics of a project, its environmental impacts and its social and economic effects were studied.

2.2 Sampling criteria and sources

For the selection of the ESIA's suitable for this study the following criteria have been used:

- date of publication of the ESIA: 2004 or later;
- publicly and readily available, in either English, French or Spanish (in light of the short timeframe for this study);
- port developments in Africa, Asia or Central and South America;
- ports mainly aimed at receiving ocean-going commercial vessels such as freighters and cruise ships.

The ESIA's were mainly taken from public databases of international development banks: World Bank/International Finance Corporation, European Bank for Reconstruction and Development, Inter-American Development Bank and African Development Bank Group. Some were based on the project databases of e.g. companies or consultancies such as Boskalis or Witteveen+Bos, on phone or mail contact with among others RHDHV and on searching the world-wide web for ESIA's for port development. This action resulted in a set of approximately 35 ESIA's.

This number of ESIA's was cut down to create a workload that was considered manageable within the available timeframe. For this, the following additional selection criteria have been used:

- date of publication of the ESIA: 2008 or later;
- new onshore activities (because of their relevance for land governance);
- spread over different countries;
- ESIA's making reference to internationally accepted guidance/reference documents for good practice ESIA.

The last criterion was chosen to enhance the probability of finding illustrations of good practice ESIA, which is one of the deliverables of the study.

2.3 Sample characteristics

Eleven ESIA's were finally selected, the most important characteristics of which are summarized in Annex 3 of this report. The majority of ESIA's is on ports extended or constructed on the coast, to be used for transshipment of containers or bulk materials and which are realised through financial and technical support of international development banks.

2.4 Benchmark

The NCEA analysed various guidelines ranging from the dedicated guidelines for port development drafted by the Indian government² to the general guidelines of international (development banks), such as World Bank, IFC, European bank for Reconstruction and Development, Organization for Economic Co-operation and Development, International Fund for Agricultural Development, Equator Principles Association and Asian Infrastructure Investment Bank. For the purpose of this study the NCEA was looking for a benchmark that would combine the important standards in all of these guidelines, in the most condensed way. On this basis the Equator Principles³ were selected as starting point for the benchmark, then added with a number of criteria that were felt important for good practice ESIA for port development: 1) issues listed in the EHS-guidelines of IFC on ports, harbours and terminals⁴ and 2) aspects derived from the OECD guidelines, viz. on fair competition, taxation and corruption. The overall list of criteria can be found in Annex 2 of this report.

3. Limitations to this study

Some ESIA's make reference to other (previous) assessments for part of the information⁵. Since these reports were either unavailable or not consulted because of the limited time frame of this study, the quality and completeness of that information could not be evaluated. A good quality ESIA, however, should at least summarize to which extent environmental and social impacts played a role in preceding steps of the decision-making process.

Questionnaires used for survey of socio-economic issues and details on the set-up of survey are regularly not appended, which then hampered the appreciation of the outcome of the survey.

The NCEA did not check the correctness of baseline information, the accuracy of figures or the outcome of model estimates. Focus of the study was on the structure, transparency and completeness of the analysis and on the logic and validity of the argumentation. Finally general recommendations on enhancing the quality of the assessment (process) or on how to proceed when shortcomings are found, are beyond the scope of this study.

² Environmental Impact Assessment Guidance Manual for ports & harbors. Ministry of Environment & Forests, Government of India, New Delhi, February 2010.

³ http://www.equator-principles.com/resources/equator_principles_III.pdf, June 2013. Exhibit II has been used in combination with a condensed inventory of the general principles (such as consultation and participation of affected parties in the design, review and implementation of a project).

⁴ "Environmental, Health, and Safety Guidelines for Ports, Harbors, and Terminals", IFC, April 2007

⁵ E.g. on the assessment of alternatives for the location of the project.

4. Key environmental & social issues

In general, key environmental and social issues mentioned in the studied ESIA's are:

- effects of dredging and breakwaters on coastal currents, coastal erosion or accretion;
- effects of coastal dredging and dredge spoil disposal (either at sea or on land) on turbidity and on the marine ecosystem (movement of species, changes in plankton distribution, etc.) and/or fisheries;
- encroachment upon existing human settlements (permanent or temporary loss of land or livelihood and/or access to it resulting in re-settlement and changes in land use), the landscape and/or the physical and biological environment (e.g. removal of vegetation), in the case of projects occupying relatively large surface areas;
- impacts on ecosystems, fauna and flora. Coastal features such as coral reefs and mangrove forests or rare, endemic or endangered species, such as sea turtles or manatees can be severely affected and thus will be part of in depth studies;
- (temporary) loss of income for communities depending on fishing, agriculture and/or tourism;
- impacts on water quality from wastewater, discharges from ships, runoff from coal stacks, etc.;
- treatment of hazardous materials, oil spills and (solid) waste (e.g. sludge from wastewater treatment);
- increased traffic flows (and accident frequencies) and noise;
- air pollution will be an issue in case of storage and handling of bulk materials, such as ore;
- community and worker health and safety;
- employment opportunities for skilled and unskilled labour;
- increased economic activity;
- occasionally an impact on the local culture and on cultural and religious heritage is explicitly mentioned and considered a point of special interest.

Please note that the relative importance of the above-mentioned issues will vary as a port development project is often unparalleled in its combination of size, activities, environmental, social and legal setting, relations with its hinterland, etc. Finally, a number of issues which, according to the NCEA, are pertinent for projects on port infrastructure and which figure on the benchmark do not show up in the ESIA's. They are dealt with hereafter, in chapter 5.

5. Common weaknesses⁶, good practice and recommendations

5.1 Introduction

The process of environmental and social impact assessment is meant to:

- identify and evaluate the potential risks and impacts of a project;
- develop a mitigation strategy to avoid or minimize these impacts, to compensate for residual impacts and to improve the social, environmental and financial outcome of the project (optimized sustainability);
- effectively engage local stakeholders in the development of the project through consultation and disclosure of project-related information.

The ESIA report has to transparently reflect all of these aspects. It thus not only has to be complete in the description of impacts and their mitigation, but it should also deal with decision-making⁷ and on project management. The findings and recommendations of the NCEA bear upon the content of the assessment as well as on the quality of the decision-making and management process. They are subdivided into findings related to general ESIA requirements — such as the analysis of alternatives and the elaboration of a structured environmental and social management plan (ESMP) — and findings related to specific, regularly occurring impacts — such as impacts on and/or of climate change or changes in land use.

Each of the subsequent paragraphs deals with one regularly observed weakness. Each of these paragraphs continues with a good practice from the set of ESIA studied, when available, and closes with a pertinent recommendation of the NCEA.

Examples of good practice have been derived from the following ESIA:

- A. Ghana Oil Services Terminal Environmental and Social Impact Assessment. Final ESIA Report and Environmental Impact Statement. Volumes I & II. Prepared by Environmental Resources Management for Lonrho Ghana Ports Ltd, April 2014;
- B. Etude d'Impact Environnemental et Social pour la construction et l'exploitation d'un terminal à conteneurs au Port Autonome de Lomé. Prepared by Inros Lackner AG / Bioconsult / University of Lomé for Lome Container Terminal SA, September 2010;
- C. Comprehensive EIA for Vizhinjam international deepwater multipurpose seaport. Prepared by L&T-Rambøll Consulting Engineers Ltd, ECE, RH-DHV, IFC for Vizhinjam International Sea port limited (VISL), August 2013;
- D. ESIA for proposed coal, clinker & cement terminal at port Qasim. Prepared by Environmental Management Consultants for Pakistan International Bulk Terminal Ltd., July 2011;
- E. Estudio de Impacto Ambiental de la Terminal de Contenedores de Buenaventura. Prepared by Corporación Bioparque for Sociedad Portuaria TCBuen S.A., November 2012;

⁶ To protect commercial interests of the private sector parties involved only examples of good practices are explicitly mentioned.

⁷ E.g. on site selection and project design.

5.2 General requirements

5.2.1 Financial justification of the project

Weakness

Most ESIA's provide very little economic justification for the project envisaged (the 'business case' or 'viability'). Usually a project business case will be documented (and reported) separately. The ESIA has to make reference to this report and summarize its major outcomes in order to allow stakeholders to balance the advantages and disadvantages of the project and to identify alternatives to be studied. However, references to these documents could not be found in most ESIA's.

The economic justification particularly has to relate to possible long-term developments that could jeopardize the business case. A long term assessment is desirable, because the net social and environmental consequences can be huge when a port is no longer profitable.

The required extent and level of detail of the project justification in the ESIA will depend on the nature of the project: a greenfield development in a sensitive or populated environment will need more justification than a limited extension of an existing port.

Good practice

No good practice example of financial justification of the project has been found.

It is recommended to describe in an ESIA on a port development the long-term economic viability of the port based on a sound analysis of activities and plans of competing ports and on the demand of commodities ex- and imported via the port, as starting point for the identification of project alternatives.

5.2.2 Alternatives

Weakness

Most ESIA's describe the impacts and risks of one specific lay-out of a single project site and of one set of mitigating measures. However, optimization of a project from an environmental, social and economic point of view will be obtained by comparing the outcome of various alternatives which are defined on the basis of the goals of the project⁸. Three different 'levels' of alternatives can be distinguished: alternatives may relate to site selection (important in case of a greenfield development), lay-out of the project site (spatial planning) and selection of mitigating measures. In case of greenfield developments alternative locations may be studied in a separate, strategic impact assessment.⁹ Spatial planning

⁸ Such as: boosting long-range transport of goods, local employment or environmental quality.

⁹ Ideally a private company will respond to opportunities created by an authority. It is important that the allocation of functions to a given area takes social and environmental consequences into consideration, for example by means of a strategic environmental assessment..

alternatives may help to reduce effects on e.g. the coastline, land acquisition or displacement of people.

Those ESIA's considering alternatives for either the location, the site lay-out or mitigating measures, mostly do not make a full comparison of the impacts and risks of these alternatives. Most limit themselves to a description of the selection procedure in general terms. On occasion ESIA's make reference to an earlier (not readily available) study.

Good practice

An example of good practice of identification, analysis and assessment of alternatives has been found in ESIA [C] (India). Different port concepts based on technical feasibility studies are presented and for the final port site selection, 3 alternatives are considered. For each potential site alternative designs for port development (i.e. alternative breakwater designs, quay wall designs, etc.) and alternative methods for constructing the port (i.e. alternative piling techniques, alternative dredging plans, etc.) are considered. Next to the port, alternatives for ancillary infrastructure (including logistics) and quarry sites have been shortlisted and investigated at different levels and scales.

Based on Multi-criteria analysis, applying weighted scores on 6 criteria (Port Development, Operational & Navigational, Hinterland Connectivity, Environmental Aspect, Social Aspects and Cost) a final port site and lay-out was proposed. As the report states: 'Exploring alternatives is really a part of building mitigation into concepts'.

It is recommended to analyse and compare in an ESIA on port development the impacts and risks of alternative locations (for greenfield developments), lay-outs of the project site and combinations of measures and to substantiate how this comparison of impacts and risks determined the characteristics of the project.

5.2.3 Baseline conditions

Weakness

In general there is a lack of good and *relevant* baseline data in developing countries. Most ESIA's exhaustively list *available* environmental, social, demographic and economic characteristics of the project location and of its zone of influence. However, little attention is given to their relevance for the assessment of impacts, to relations between these baseline data¹⁰ and to baseline dynamics¹¹. Gaps in the data and risks related to these gaps often remain unnoticed.

Sometimes actual, local data have been collected based on field visits and interviews. These data, however, are not put into perspective with scientific references describing the suitability and carrying capacity of a system or compared with standards¹² or regional/national data to phrase the relative importance of an issue. All too often seasonal variations are not studied.

¹⁰ E.g. the dependence of local communities on ecosystems services.

¹¹ E.g. sediment dynamics, local cultural and economic dynamics or seasonal changes in ecosystems.

¹² The ESIA's are based on national and international regulations (IFC, EQ, WHO, US EPA, ILO), conventions (CBD, RAMSAR, Bern Convention, etc.) and assessments (e.g. IUCN Red List). Often standards are clearly presented in tables but these data are not used to put measured (or estimated) values into perspective or to justify the selection of countermeasures.

Good practice

A good social baseline has been made in ESIA [A] (Ghana), including an analysis of current livelihood practices, community lifestyles, etcetera. This baseline goes much further than just making a 'photo' of current demographic and economic characteristics as it is based on data collected throughout time. Also cultural, social, political and economic developments/ dynamics and concerns among local communities have been analysed. It gives a good description of current land tenure, including the fact that official ownership is not always clear, and of the institutional context and the role of traditional chiefs.

In ESIA [C] (India) a comprehensive social baseline study was carried out by a team including a social expert. A clear methodology is used for the data collection: household surveys, focus group discussions and use of secondary sources. The analysis is clear and provides a good link with identified issues. The respondents were selected using a statistical sample method based on distance to the project site.

ESIA [B] (Togo) is one of the better studies with respect to the description of the environmental baseline because of its clear maps, figures and basic data on the construction of the new terminal. However, a paragraph with a clear-cut discussion on the limitations of the data was greatly missed.

It is recommended to base an ESIA on port development on scientific references to describe potential, autonomous developments and on data collected during field visits and research in different seasons. The baseline has to include gender issues, vulnerable groups, religious, cultural and social aspects, land tenure (formalized and customary) and livelihoods of affected communities.

In the absence of data the ESIA should clearly describe the limitations of data used in the assessment and take these limitations into account in an ESMP to address unforeseen impacts.

5.2.4 Cumulative impacts

Weakness

Cumulative impacts may relate to:

- developments which are not (funded as) part of the project, but which are directly associated with it and/or would not exist without the project, such as: an industrial zone, access roads, power lines or a power station;
- other (planned) projects that will add to expected impacts — especially projects affecting sediment dynamics and coastal erosion.

An ESIA should at least deal with cumulative impacts generally recognized as important on the basis of scientific concerns and/or concerns from the affected communities. Incremental contributions of other projects to sediment load, traffic and thus air pollution and noise levels are typical impacts to be studied in port development projects. None of ESIA's studied provides a good and complete description and assessment of cumulative impacts. This may be explained by a lack of knowledge of anticipated developments and by limited government capacity and (strategic) planning schemes.

Good practice

ESIA [A] (Ghana) makes an interesting methodological distinction between possible cumulative impacts. A distinction is made between: (1) accumulative impacts (overall effect of different types of impacts at the same location), (2) interactive impacts (interaction of two different kinds of impact creating a new impact) and (3) additive impacts ((impacts from the primary activity are added to impacts from third parties). Most relevant for the project are cumulative socio-economic impacts related to a gas processing plant north of the project area (additive impact). The analysis of cumulative environmental impacts, however, is incomplete.

It is recommended to describe and assess in an ESIA on port development the potential cumulative impacts as to large, long-term, widespread, likely and/or irreversible consequences.

5.2.5 Indirect impacts

Weakness

Most ESIA's are too limited in the description, quantification and assessment of indirect impacts. These impacts, however may be large. Examples of indirect impacts are: the effect of waste (water) management on drinking water quality, the pressure on wildlife through pollution, (unsustainable) use of resources such as building materials (see par. 5.3.5 of this report), the effects of displacement of people and of the influx of workers as to population density and distribution and on the carrying capacity of the system. The description of the latter impact mostly remains limited to an estimation of the number of future employees. The following effects stay mostly untreated: effects of workers and their accompanying families on housing, social structures and local prices, and the pressure on basic infrastructure, services and local government capacity, availability of agricultural land, hunting, fisheries and poaching.

Good practice

In ESIA [A] (Ghana) the analysis of potential direct and indirect social impacts and associated mitigating measures is of high quality. It describes most but not all¹³ indirect impacts and makes a clear distinction between impacts during the construction phase and the operational phase. It contains an excellent analysis of socio-economic, health and cultural risks related to the influx of foreigners and new economic dynamics during the operational phase of the project. Special attention has been given to vulnerable groups such as women, elderly and children. It resulted in an Influx Management Plan with concrete mitigating measures added to the ESIA. It furthermore describes possible risks of increasing local prices and risks of increased pressure on basic infrastructure, services and local government capacity.

ESIA [E] (Colombia) identifies both direct and indirect impact areas by using biophysical indicators and socio-economic indicators (communities making use of the project affected areas). It clusters and describes indirect impacts at the water-basin level (all who use water from the affected area) and at municipality and department level (administrative level). In

¹³ Socio-economic issues related to procurement and production of construction materials (e.g. cement, sand, steel and timber) are not dealt with. However, the quantities required are made explicit.

addition this ESIA clearly distinguishes impacts during the construction of the project and its operation.

ESIA [B] (Togo) properly describes indirect impacts of coastal erosion on ecosystems and species. Compensation of lost areas is proposed in order to create new favourable habitats.

It is recommended to describe and assess in an ESIA on port development indirect project impacts e.g. on local communities, on biodiversity or on ecosystem services upon which livelihoods of affected communities are dependent.

5.2.6 Structured and accountable ESMP

Weakness

A S.M.A.R.T. and thus confidence-building description of mitigating measures is missing in a significant fraction of the ESIA, which has different causes, e.g.:

- the structure of the plan is not based on a hierarchy of impacts;
- mitigating measures are not linked to the corresponding impact(s);
- the effectiveness of measures is unclear, e.g. because (changes in) quantifiable impacts¹⁴ are not made measurable;
- no distinction is made between measures which CAN be taken and those which WILL be taken;
- measures are vague with respect to accountability, enforceability, scheduling and reporting.

When aiming at an S.M.A.R.T. ESMP, flaws in the capacities of (local) institutions and other actors will show up and can be properly taken into account. Sometimes the ESIA makes reference to management plans which are in progress and/or which are not appended.

Good practice

Chapter 9 of ESIA [A] (Ghana) contains a clear overview for the design of Environmental and Social Management Measures. It is mandatory by Ghanaian law and has to be submitted to Ghana EPA within 18 months of approval of the ESIA. In the ESMP separate tables highlight impacts during the design, construction and operational phase (tables 7.1 – 7.3) and relates them to mitigating measures and their desired outcome, though only qualitatively.

Furthermore performance indicators are given, sources for documentation and monitoring, timing/frequency and the party responsible for execution of a measure. The executive summary — which can serve as a standard for ESIA summaries in general — contains a recap table (table 2) qualifying the magnitude of the impacts before and after (residual) mitigation.

ESIA [F] (Costa Rica), provides another good example of a structured ESMP. By confronting 17 sources of impact (dredging, ship movement, illumination, etc.) with 25 environmental receptors (air, corals, fish, etc.) 425 'interactions'/potential impacts are identified. In total 116 of these are rated important, based on criteria like extent, duration, probability of occurrence, reversibility, magnitude and intensity of the impact. For each of the 'important' impacts a number of mitigating measures is identified. And for each of these measures the moment/period of implementation, the intended effect and an indicator for its effectiveness

¹⁴ Such as impacts on transport frequencies, air quality, turbidity or noise levels.

are given, as well as its cost and the agency responsible for the implementation. The effectiveness of measures will be assessed in the monitoring programme.

It is recommended to include in an ESIA on port development an Environmental and Social Management Plan, using a comprehensive table which links potential impacts to mitigating measures and residual impacts, and which gives S.M.A.R.T. performance indicators for these measures.

5.2.7 Consultation and grievance mechanism

Weakness

All ESIA describe the institutional and legal setting, but most of them do not describe the decision-making and stakeholder engagement process which was followed while preparing the ESIA/decision (e.g. involvement of vulnerable groups) and which will be followed during realisation and exploitation. The role of relevant institutions in the decision-making process often remains unclear. The grievance mechanism, rule of law (or absence thereof)¹⁵ and the strained relation which may occur between national legislation and traditional laws are often not described.

Transparent and regular stakeholder involvement is needed to guarantee an accountable realisation of the project and its countermeasures.

Good practice

An example of good practice has been found in ESIA [A] (Ghana). The document describes in detail stakeholder processes that have been applied for the development of the ESIA. In addition, involvement of stakeholders in the decision-making process is specified¹⁶. A stakeholder engagement plan was prepared (Annex A of the ESIA) and all kinds of stakeholders have been involved, including local organizations. Special efforts were made to involve vulnerable groups, such as women and the elderly, using e.g. posters in local languages and special women's meetings. During scoping, a total of 25 meetings were held with 28 stakeholder groups. The ESIA also provides in a clear grievance mechanism including quality standards for such system and the establishment of a Stakeholder Participation Platform.

ESIA [D] (Pakistan) is another example of a transparent system of consultation with a transparent grievance mechanism. Based on a Community Engagement Plan early engagement of stakeholders was sought. A meeting was organized in the early stages of the ESIA to discuss and define the scope of the study, to schedule the collection of baseline data, to obtain information on location and technology alternatives and to collect views, comments and concerns of different stakeholders on the project. The consultation process following IFC performance standards was carried out by a skilled team with environmental and social experts. Public consultations and focus group discussions were held with primary (affected persons such as fishing communities) and secondary stakeholders (intermediaries in process, NGOs, local government etc.). A community liaison officer was appointed to facilitate

¹⁵ Such as corruption, fair competition and tax avoidance, which are addressed in OECD guidelines.

¹⁶ Public disclosure through website publication and public review meetings.

communication with the local community and an extensive public outreach programme¹⁷ tailored to each project phase was designed and executed. The final ESIA was made available to the public through a public hearing process as well as on a website. A grievance redress mechanism to receive, document and process comments and claims from external stakeholders was put in place. The consultation process will continue until issues pertaining to all phases have been settled to reasonable satisfaction of stakeholders, especially local communities.

It is recommended to explicitly demonstrate in an ESIA on port development:

- how various groups of affected people are defined;
- the involvement of vulnerable groups (women, elderly, indigenous people, disabled people, young people).
- stakeholder participation for the analysis of economic and cultural dynamics, and for the identification of possible concerns/wishes and of effective mitigating measures;

The ESIA should include summaries on the consultation and grievance mechanism process (including follow-up).

The ESIA should explain how information about resettlement packages, consultations and the ESIA in general has been shared with stakeholders and how they were involved in the decision making process (free, prior and informed consent).

Finally it should describe the rule of law in order to put the project governance into perspective.

5.2.8 Check on completeness

Most ESIA's refer to the IFC guidelines and/or the Equator Principles. The preceding paragraphs, however, clearly demonstrate that the comprehensiveness, quality and clarity of the sample of ESIA's vary significantly. Reference to a broadly accepted guidance for impact assessment in itself thus seems to be no guarantee for its completeness and for the quality of the process.

It is recommended to explicitly demonstrate in an ESIA on port development compliance with the guidelines it makes reference to. This can for example be made clear by using a table which links each issue of a guideline to relevant chapters or paragraphs of the ESIA. This approach helps identification of gaps in the analysis.

5.3 Specific requirements

5.3.1 Land governance

Weakness

In all ESIA's current land use is described, but seasonal access and user rights often are not (e.g. grazing, hunting, fisheries, collection of water, firewood and building materials). The variety in tenure rights, both formalized and customary, are sometimes described in general terms.¹⁸ Indigenous rights did not occur in the ESIA's investigated. Traditional rights were

¹⁷ Dissemination of information using media, leaflets, etc., consultation meetings and focus group discussions,

¹⁸ It does not specify whom (how many people) owns what (how much land).

often not described. Tenure rights and governance is closely associated with rule of law (see par. 5.2.7).

In general, various critical issues are not part of the ESIA report and process itself, such as: communication on and consequences of restrictions on various forms of land use or on access to natural resources. The ESIA often refers for explanation on the acquisition of tenure rights to a resettlement and compensation plan. These plans, however, are either still in progress or, when completed, are not appended.

Good practice

An example of good practice has been found in ESIA [A] Ghana which gives a good description of current land tenure, including the fact that official ownership is not always clear. It furthermore describes both national law and traditional rights (chapter 2, par. 5.4, par. 6.7.2). Specific attention is paid to possible compensation of customary land tenure rights. Measures are elaborated on in a separate Livelihood Restoration Plan, which is added to the ESIA (p.6, 100).

ESIA [C] (India) reports on a resettlement and rehabilitation action plan. Different impact categories are defined for project affected people and project displaced people (land title holders, non- title holders/users, staff of resorts, fishermen and women in fishing communities) and the type of loss is defined (permanent loss or temporary loss of livelihood). The compensation depends on the impact category and type of loss and is often a combination of one or more of the following aspects: replacement fee, hardship allowance, one time livelihood compensation, skills training or a boat with outboard engine and net for 5 families. Squatters who were living on land that disappears will also receive compensation. The summaries of meetings on the plan were translated in the local language and shared with village heads.

It is recommended to include in an ESIA on port development an exploration of alternatives that may limit displacement of people (see par. 5.2.2) and, if needed, an adequate resettlement and livelihood restoration plan. Furthermore it is recommended to involve affected people in the development of this plan and to report on the stakeholder involvement process (see par. 5.2.7)

5.3.2 Climate change: mitigation and/or adaptation

Weakness

One of the major present-day environmental and social management challenges is climate change. Neither the potential effects of climate change nor the need for mitigation or adaptation are seriously dealt with in the sample of ESIA's studied. This finding is surprising given the fact that port infrastructure may be sensitive to sea level rise and to changes in the gravity and frequency of extreme weather conditions.

As far as *mitigation* is concerned, none of the ESIA's makes clear on what technology the calculations of emissions of greenhouse gases are based. Some consider efficient equipment as a mitigation measure without any further explanation. None of the ESIA's considers renewable energy options for electricity generation.

The effects of climate change and *adaptation* measures are not considered in any of the ESIA.

Good practice

No good practice example of mitigation of, or adaptation to climate change has been found.

It is recommended to identify and evaluate in an ESIA on port development the impacts on/of climate change as well as mitigation¹⁹ of and adaptation²⁰ to climate change, given the very long life span of most ports and since they are susceptible to sea level rise and are energy consuming activities.

5.3.3 Quantified sediment dynamics

Weakness

Most ESIA's provide too limited information on changes in sediment dynamics, one of the key impacts of a port development. They often provide no appropriate quantification or numerical modelling of the impacts. Changed dynamics may heavily affect coastal erosion or accretion and thus other socio-economic developments. Changed dynamics will also change ecosystems, habitats and the abundance and diversity of species.

Good practice

ESIA [B] (Togo) provides a clear description of the coastal currents, sediment load, erosion and accretion dynamics and its effects (par 5.1.4, 5.1.5, 6.2.1, 6.3.1.1).

In ESIA [F] (Costa Rica) the impact of the terminal on waves and currents in the project area is simulated with computer models. Resulting changes in sediment transport and ultimately the coastal morphology (erosion and accretion) are modelled as well. Changes in sediment concentrations (turbidity) as a result of dredging activities and dredge spoil disposal are discussed in qualitative terms but not quantified.

It is recommended to properly quantify in an ESIA on port development coastal sediment dynamics (deposition and erosion) as starting point for a structured analysis of impacts and mitigating measures.

5.3.4 Impacts to workers

Weakness

The description of the impacts of the project on workers (working conditions, housing, ...) is comparatively weak in all ESIA's. In general no risk assessments are made with regard to occupational health and safety and (fundamental) human rights.²¹ Only some ESIA's mention that the project will comply with local legislation or that an Employment and a Workforce Plan and an OHS Plan will be developed, but these are not based on a thorough risk assessment.

¹⁹ E.g. use of renewable or clean energy sources.

²⁰ Relates to site selection and spatial planning.

²¹ The weaknesses with respect to stakeholder involvement (especially of vulnerable groups), land governance and impacts on workers demonstrate the overall lack of attention to human rights.

Good practice

None of the ESIA adequately describes the consequences of the project for workers and working conditions.

It is recommended to identify and evaluate in an ESIA on port development risks and impacts to workers and to describe measures taken to reduce these impacts.

5.3.5 (Sustainable) use of resources

Weakness

Most projects claim 'efficient use' of resources but fail to explain how. Most projects refer to standard techniques and equipment. Concepts as Cradle-to-Cradle and circular economy are not considered in any of the projects. Sustainable management of resources should include consideration of renewable energy sources, efficient use and re-use of resources, avoidable effects by the influx of employees and their families which will add pressure to the surrounding ecosystems and land uses. Since land degradation and over-exploitation often already are an issue, limiting or even reducing pressure will be challenging.

Good practice

In ESIA [C] (India) the design of the port breakwater is optimized in terms of rock use and suitability of quarries in the hinterland. Quarry analysis is not only done on availability of suitable rock but also on road connection and transport safety.

ESIA [B] (Togo) describes the re-use of sediments and restoration of natural and agricultural areas.

It is recommended to identify and evaluate in an ESIA on port development measures to increase resource efficiency.

6. In conclusion

The analysis of a sample of eleven recent ESIA studies on port development showed that, on average, the assessment should give more attention to:

- the economic justification of the port based on an analysis of activities and plans of competing ports and on the demand of commodities ex- and imported, as starting point for the identification of project alternatives;
- the comparison of the impacts of alternative locations (for greenfield developments), layouts of the project site and combinations of measures;
- the collection of baseline data as to autonomous developments, seasonal differences, and vulnerable groups, and to the valuation of the limitations of these data;
- potential cumulative and indirect impacts;
- a comprehensive ESMP which links potential impacts to mitigating measures and residual impacts, and which gives S.M.A.R.T. performance indicators for these measures;
- stakeholder participation (especially vulnerable groups) for the analysis of economic and cultural dynamics, for the identification of possible concerns/wishes and of effective mitigating measures;
- reporting on the consultation and grievance mechanism process and on the rule of law;

- inclusion of a resettlement or livelihood restoration plan which has been developed with the involvement of affected people;
- identification and evaluation of the impacts on/of climate change as well as mitigation of and adaptation to climate change;
- quantification of coastal sediment dynamics as starting point for a structured analysis of impacts and mitigating measures;
- risks and impacts to workers and measures to reduce these impacts;
- measures to increase resource efficiency;
- demonstration of compliance with the guidelines the ESIA makes reference to.

Annex 1: Project information

Proposed activity:

The NCEA received a request from the Multi-stakeholder dialogue Land Governance under the Ministry of Foreign Affairs. The aim of this assignment is to carry out a desk study on E(S)IAs for port development.

In order to successfully complete this assignment, the NCEA composed a working group to contribute their specific expertise to :

- set a benchmark for good practice ESIA for the development of ports, harbours and terminals, in consultation with a working group (the working group meeting will be organized in Utrecht early in January);
- determine the quality of the EIAs according to the benchmark;
- identify the key environmental and social conditions;
- identify the major problems/effects and possible measures to mitigate these problems;
- identify suitable examples for the various aspects (good practice);
- identify and explain common defects (aspects scoring 'inadequate').

Project number: 7182

Progress: started on 16 November 201

Composition of the working group of the NCEA:

- Mr A.J. Blik, expert on hydraulics, dredging, waste water management
- Mr P.C. de Koning, expert on ecology and management of natural resources (in tropical countries)
- Mr V.P.A. de Lange, expert on demography, ethnicity, fisheries, community health
- Mr H. Ligteringen, expert on port planning and engineering
- Ms A. Beekmans, expert on social and cultural impacts with a focus on gender
- Mr M. Vis, expert on natural resource planning and management
- Mr J. Lembrechts, Technical Secretary

Annex 2: Bench–mark

Assessment & management of impacts

- a) assessment of the baseline environmental and social conditions
- b) consideration of feasible environmentally and socially preferable alternatives
- c) requirements under host country laws and regulations, applicable international treaties and agreements
- d) cumulative impacts of existing projects, the proposed project, and anticipated future projects
- e) positive and negative as well as direct and indirect impacts of successive phases of the project (site preparation, construction, use and decommissioning)
- f) protection and conservation of biodiversity (including endangered species and sensitive ecosystems in modified, natural and critical habitats) and identification of legally protected areas
- g) sustainable management, use of renewable natural resources, ecosystem services (including: sustainable resource management through appropriate independent certification systems)
- h) spatial planning (including land reclamation)
- i) use, transport and management of dangerous substances
- j) major (transport) hazards assessment and management
- k) Climate mitigation: efficient production, delivery and use of energy
- l) pollution prevention and controls (liquid effluents such as oil spills, air emissions and noise, contaminated land)
- m) minimisation of solid and chemical wastes and management of dredged materials
- n) Climate adaptation: viability of project operations in view of reasonably foreseeable changing weather patterns/climatic conditions, together with adaptation opportunities
- o) respect of human rights by acting with due diligence to prevent, mitigate and manage adverse human rights impacts
- p) labour issues (including the four core labour standards), and occupational health and safety
- q) management of socio–economic impacts (e.g. employment (direct), fishery, agriculture, tourism (indirect))
- r) impacts on affected communities, and disadvantaged or vulnerable groups
- s) gender and disproportionate gender impacts
- t) land acquisition and involuntary resettlement
- u) impacts on indigenous peoples, and their unique cultural systems and values
- v) protection of cultural property and heritage
- w) protection of community health (including disease prevention, water quality and availability, safety and security)

Project management & governance

- x) EIA process and decision–making (including: consultation and participation of affected parties in the design, review and implementation of the project and grievance mechanism for these parties)
- y) Rule of law: enforcement, corruption
- z) Accountability (organisation structure of project management) and transparency (including: independent review, monitoring and reporting)

Annex 3: Sample characteristics



