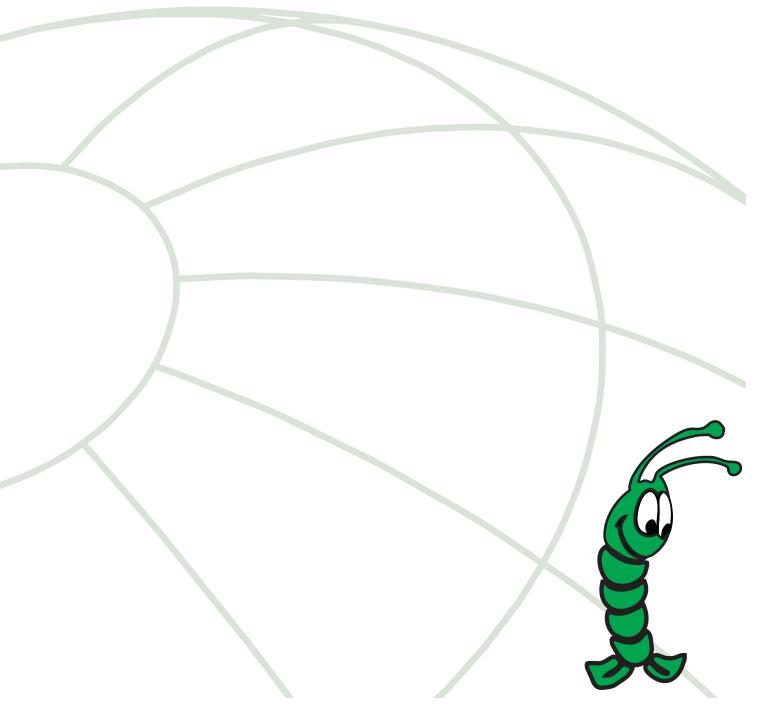
OGP

Environmental-Social-Health Risk and Impact Management Process

Report No. 389 April 2007



International Association of Oil & Gas Producers



Global experience

The International Association of Oil & Gas Producers has access to a wealth of technical knowledge and experience with its members operating around the world in many different terrains. We collate and distil this valuable knowledge for the industry to use as guidelines for good practice by individual members.

Consistent high quality database and guidelines

Our overall aim is to ensure a consistent approach to training, management and best practice throughout the world.

The oil and gas exploration and production industry recognises the need to develop consistent databases and records in certain fields. The OGP's members are encouraged to use the guidelines as a starting point for their operations or to supplement their own policies and regulations which may apply locally.

Internationally recognised source of industry information

Many of our guidelines have been recognised and used by international authorities and safety and environmental bodies. Requests come from governments and non-government organisations around the world as well as from non-member companies.

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Environmental-Social-Health Risk and Impact Management Process

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Preface

E-SHRIMP is a method which has been developed to assist OGP Member and Associate Member companies in their evolving efforts to identify and manage the environmental, social and health impacts associated with oil and gas projects. It has not been developed in response to any specific law, regulation or treaty, nor does this process constitute an industry standard. Given differing corporate views and a wide range of regulatory approaches to identifying and managing these impacts, E-SHRIMP can be regarded as a generic method that gives companies flexibility to address their needs in a way that is appropriate to their specific situation. The extent to which companies incorporate E-SHRIMP into their project design and execution procedures or business practices will vary considerably and is always at the discretion of the company.

Overview

Vision

To deliver additional value in oil & gas projects through enhanced quality, consistency and industry alignment and by integrating social, environmental and health good practice into the HSE (Health, Safety and Environmental) management system and the overall project decision-making process.

Purpose and value

The goal of this initiative is to assist OGP Member and Associate Member companies to deliver oil & gas projects that are integrated with the Environmental, Social and Health (ESH) appraisal process of identifying and mitigating environmental, social and health impacts.

The Environmental, Social and Health Risk Impact Management Process (E-SHRIMP) builds on best practice and shared learning of a number of OGP member companies. As such, OGP hopes that it will enable not only its member companies but also other oil and gas companies to benefit from the experience of its member companies.

E-SHRIMP is a flexible approach for the industry to assess and manage ESH impacts in all its project activities throughout the full field development lifecycle. The process is built on early appraisal and offers the potential to inform the decision-making processes around project approval and sanction. Environmental and Social Impact Assessment (ESIA) and impact management are only fully effective when closely integrated into project design and planning. E-SHRIMP may unlock business value through:

- Early identification of project risks or opportunities;
- Linking ESIA with project decision-making;
- A consistent process to aid delivery on time and on budget;
- A structured framework for contract awards;
- Enhancing corporate memory by the application of experience and learning; and
- Establishing shareholder confidence.

E-SHRIMP is intended to facilitate planning, scheduling and implementation of ESH requirements at a level that is appropriately suited to the specific project environment. It is anticipated that use of E-SHRIMP will help OGP members to achieve consistent and enhanced performance, leading to improved reputation for individual companies and the industry as a whole and potentially significant quality and cost benefits.

E-SHRIMP has been aligned to be consistent with previous OGP studies on impact assessment as well as projects addressed jointly with International Petroleum Industry Environmental Conservation

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Association (IPIECA) Social Impact Assessment Working group, the OGP-IPIECA Biodiversity working group and the OGP-IPIECA Health Impact Assessment working group.

In addition, this process can be adapted to all E&P projects. E-SHRIMP provides practical tools that enable the supply of key deliverables. For example, information is provided on when to work with external stakeholders and how this input might be integrated into the decision-making process.

Likely users or recipients

OGP member companies and the wider upstream industry can now share a common set of tools that can be custom fit to the user's specific project. The approach will establish a valuable platform to define the requirements for Contractors (including consultants). It should also assist groups in the external community, including financial institutions, investors and other stakeholders (NGOs and other interest groups) in their engagement with projects.

E-SHRIMP Toolbox

E-SHRIMP is designed to assist E&P project managers and HSE professionals in designing and planning work programmes for projects. While every effort has been made to make E-SHRIMP as comprehensive as possible, there may be situations, where additional or more detailed consideration is necessary.

An integral component of the toolbox is impact assessment. This identifies risks and opportunities, evaluates mitigation and proposes management options for the key stages in a project. These key phases are:

- 1) Business Case Evaluation;
- 2) Identify and Appraise;
- 3) Select;
- 4) Define FEED;
- 5) Define Detailed Design;
- 6) Execute;
- 7) Operate; and
- 8) Retire.

These are explained in more detail in Annex 1

For each project, we have defined four major management activities within the ESH appraisal process. These are:

- 1) Stakeholder participation;
- 2) Risks, opportunities and assessment;
- 3) Environmental Management Planning; and
- 4) Implementation and Follow-up.

Other activities that may require attention throughout the project lifecycle include: Staff/competence; lessons learnt; management; and applying new knowledge. Throughout the ESH appraisal process tasks are defined and a checklist is provided. Key deliverables for each stage are stated.

E-SHRIMP presents the tasks for each ESH appraisal activity at each stage of the project. The user selects the tasks appropriate to the stage of the project.

A key objective of the toolbox is to inform and advise for the project decision-gateways. This is achieved by creating a "deliverables register" that highlights tasks to be completed and ensures that the outcomes are fed forward to the decision-gateway by tracking project progress, highlighting key personnel involved (corporate memory) and eventually providing an audit trail for decisions made.

E-SHRIMP provides a flexible "shopping list" for the ESH appraisal process that can be applied to any project. This is an important feature as every ESIA system is distinctive to a degree and will reflect the regulatory regime and policy of a country, as well as policies of individual companies or Joint Ventures. Three examples of different ESIA legal policy systems are provided in the following section to highlight the large variations in which E-SHRIMP may operate.

Description of ESIA systems

Model I

A host government conducts a basin-wide Strategic Environmental Assessment (SEA) to cover all potential and existing uses of the area. The government will also determine the mitigation measures that might be required for particular oil and gas operations. When an operator wishes to begin an operation, the operator would analyse its projected operations in light of the SEA and develop documentation showing that the planned operations are consistent with the objectives of the SEA. If the government regulator agrees with this assessment, permission to proceed is granted. This model has the advantages of preventing repetitive data sets, providing general guidelines for operational requirements pre-project, fully addressing cumulative effects, and the operator has a much simpler task to perform.

Model 2

The operator develops the ESIA based on pre-Front End Engineering Design (FEED) information. The government regulatory agencies issue a permit on the basis of this assessment. Planning in the form of an environmental management plan (EMP) is undertaken based on general information about the planned operations and general knowledge of the environment. Conditional mitigation measures are defined, determined by the range of possible situations that may be encountered as project design evolves and as more detailed information about the environment becomes available. This process allows for adaptive management as detailed information about the project is defined. It calls for the EMP to be refined as necessary as more detailed design or environmental information becomes available.

Model 3

In many parts of the world and when international lenders are involved, detailed project design and environmental information are needed before the ESIA can be completed. In this model, the ESIA process is inefficient and requires a considerable number of iterations that have to be approved by the regulator (or lender). As design changes take place, provision of ESIA addenda adds to the overall expense, without necessarily adding value to the project. This model is the most complex and costly of the three models to implement.

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Using the E-SHRIMP Toolbox

- 1) Review the E-SHRIMP Overview document;
- 2) Select the type of project;
- 3) Refer to the E-SHRIMP Framework and select the appropriate project phase (from Preproject; Identify and Appraise; Select; Define FEED; Define Detailed; Execute; Operate; Retire);
- Identify the E-SHRIMP activity appropriate to the project phase (from Stakeholder engagement, analysis and communication; Issues identification and scoping; Integration and assessment; Implementation and monitoring;
- 5) Behind each cell of the E-SHRIMP Framework, specific Task Sheets are available. You will have the option to open a Task Sheet relevant to that activity and phase. Note that in some cases, more than one Task Sheet may be available, relating to each specific task;
- 6) The Task Sheet contains a description of the activity, a list of deliverables and a checklist to be used in the achievement of the deliverables. Where there are particularly significant links to other E-SHRIMP activities, these are identified.
- 7) In addition to providing a tool-box on ESH good practice and delivery at each project phase, the E-SHRIMP Framework provides a means to provide project assurance that all appropriate tasks have been completed. Thus the E-SHRIMP Framework can be used as a checklist in its own right.

Annex 1 – Definition of project phases & activities

Business case evaluation

The business case evaluation phase could include concession acquisition and country entry, and new operations in part of a country already established.

	Concession acquisition and country entry	New operations area entry
Definition	Company entry into a country, where it does not have established commercial or technical activities.	Company entry in a part of a country, in which it does not yet have established commercial or technical activities. This situation may occur when a company acquires a new concession away from its established area of operations in the country
Typical Activities	Concession acquisition and the establishment of a representative office.	The establishment of a local office and/or a new operations base in the new area.
Support Activities	 Road transport; Air transport; Procurement; Cleaning and catering; Waste disposal; or Security. 	 Road transport; Water transport; Air transport; Procurement; Cleaning and catering; Waste disposal; or Security.
Construction activities		Dredging or earthmoving;Road construction; orCamp erection
Business activities		Determining business case prior to signing PSA.

2 Identify and appraise

This phase could include project proposals and also conducting a feasibility study.

Project proposal

 A company proposal to acquire a concession, to carry out activities, establish new facilities or expand or modify existing activities, operations or facilities.

Business activities/facilities

- Seismic or other geological survey
- Drilling;
- Field development;
- Development drilling;

- [Surface] production facilities;
- Pipelines;
- Terminals and loading facilities; or
- Marine transport, both export and supply

Exploration activity	Exploration survey/exploration drilling/development drilling	Surface production facilities;
Support activities	Road transport; Water transport; Air transport; Procurement; Materials handling and waste, Cleaning and catering; or Security.	 Road transport; Water transport; Air transport; Procurement; Materials handling and waste, Cleaning and catering; or Security.
Construction activities	 Dredging or earthmoving; Road construction; or Camp erection 	 Dredging or earthmoving; Road construction; Camp erection; Pipeline construction; Facilities construction; Camp construction; or Installation offshore.

3

Feasibility study

A company study to evaluate the commercial and financial, technical feasibility of a proposed project. Typically, this would include technical aspects of health, safety and environment and social aspects, such as socio-economics, social development and community health.

Considerations

- Any off-site activities or operations, such as infrastructure (roads, power, telecommunications, waste) or off-site construction.
- The expected project duration and the possible consequences of its conclusion, such as decommissioning and abandonment.

3 Select phase

This phase could include location selection and conceptual design and basic design.

	Location selection	Conceptual design/planning:	Basic design/planning:
Definition	A company study of the suitability of a location or possible alternative locations to carry out a project;	 The conceptual design for field development (including development drilling, surface production and processing facilities, pipelines, terminals and loading facilities and marine transport if required); or The conceptual planning of an exploration survey, an exploration drilling campaign, and a development drilling campaign. 	 The basic design basis of design, field development plan) for field development (including development drilling, surface production and processing facilities, pipelines, terminals and loading facilities and marine transport if required); or The basic planning of an exploration survey, an exploration drilling campaign, and a development drilling campaign.
Considerations	Any off-site activities or operations, such as infrastructure (roads, power, waste, telecommunications), or off-site construction.	 Any off-site activities or operations, such as infrastructure (roads, power, waste, telecommunications), or off-site construction. Decommissioning, abandonment and removal or disposal of facilities. 	 Any off-site activities or operations, such as infrastructure (roads, power, waste, telecommunications), or off-site construction. Decommissioning, abandonment and removal or disposal of facilities.

4 Define phase (FEED and detailed design)

This phase could include detailed design and procurement and mobilisation, construction or execution, and commissioning and demobilisation.

FEED, Detailed design/planning

- The detailed design (or full field development plan) for field development (including development drilling, surface production and processing facilities, pipelines, terminals and loading facilities and marine transport if required); or
- The detailed planning of an exploration survey, an exploration drilling campaign, and/or a development drilling campaign.
- Detailed design of facilities may be part of an Engineering, Procurement and Construction (EPC) contract for project realisation.

Considerations

- Any off-site activities or operations, such as infrastructure (roads, power, waste, water, telecommunications), and off-site construction.
- Decommissioning, abandonment and removal or disposal of facilities.

Procurement and mobilisation

- The procurement of all materials for project construction or execution;
- The mobilisation of the construction contractor or survey or drilling contractor for the project.

Considerations

- Contractors' HSE policy
- Local content

• Competence of staff and need for training

5 **Execute phase**

Construction or execution

- The execution of an exploration survey or a drilling campaign; or
- The construction work for field development (including development drilling, surface production and processing facilities, pipelines, terminals and loading facilities).

	Exploration survey/exploration drilling/ development drilling:	Construction of surface production facilities; pipelines; terminals and loading facilities;
Support activities	 Road transport; Water transport; Air transport; Procurement; Materials handling and waste; Cleaning and catering; or Security. 	 Road transport; Water transport; Air transport; Procurement; Materials handling and waste; Cleaning and catering; or Security.
Construction or execution activities	 Dredging or earthmoving; Forest clearing; Road construction; or Camp erection Drilling the well Conducting the seismic survey 	 Dredging or earthmoving; Forest clearing; Road construction; Camp erection; Pipeline construction; Facilities construction; Camp construction; or Installation offshore.

Commissioning & demobilisation

- The testing of the constructed facilities against the design specifications and their readiness for operation, their transfer from the construction contractor to the company and the start-up of operations; and
- The demobilisation of the construction, survey or drilling contractors.

Considerations

Waste management

• Competence of staff and need for training

Operate phase

This phase could include operation and maintenance and expansion or modification

Operation and maintenance

- Normal oil and gas production and shipping operations;
- Major (periodic) maintenance of production facilities, terminals and loading facilities.

Considerations

- Environmental management plans
- ISO 14000
- · Competence of staff and need for training

Expansion or modification

• Significant changes to subsurface and surface facilities to expand or modify oil and gas production.

Considerations

• Regulatory approval

- Competence of staff and need for training
- Environmental management plans
- ISO 14000

7 Retire phase

This phase could include decommissioning, abandonment and restoration activities.

Decommissioning	The termination of oil and gas production operations
Abandonment	The removal or disposal of surface (production) facilities, pipelines and terminals and loading facilities.
Restoration	The restoration of sites (of camps, wells, surface production facilities, pipeline rights of way, terminals and loading facilities, offices) to their original condition or to a condition for future use

Annex 2 – Definition of E-SHRIMP activities

Stakeholder Participation

- The engagement of stakeholders (could include: any internal or external party which has a direct or indirect interest in the project, parties which may be affected by it or parties which may wish to influence it);
- The analysis of stakeholder interests and influence with regard to the project and project development;
- Communication with stakeholders with regard to all aspects of the ESIA process.

Comprises

- information dissemination,
- consultation (soliciting and discussing people's views on proposed actions) and
- participation (a voluntary process in which stakeholders and the company come together to share,

Risks, opportunities and assessments

- The identification of subjects and issues to be addressed as part of the ESIA;
- The determination of the scope (terms of reference and extent) of the ESIA with regard to identified subjects and issues.

Comprises

- subjects and issues,
- potential impacts and benefits, including those based on the perceptions of stakeholders;
- Issue identification and scoping may provide baseline information needs.

Assessment

- The collection of qualitative and quantitative information on the existing environmental, social (including public, community health and socio-economic) conditions in and in the vicinity of the location(s), where the project will take place;
- Note that baseline information needs may be available from issue identification and scoping activities;
- The interpretation of this information in terms of the impact assessment;
- The identification and appraisal of the risk of potential negative impacts on and benefits for the environment and for social development as a result of the project;
- The identification of measures to mitigate (avoid, reduce, remedy, compensate) the risk of such negative impacts and maximise benefits;
- The documentation of these negative impacts and benefits and of mitigation and optimisation measures agreed in an impact
 assessment report and an environmental, social (including public and community health and socio-economic) management plan.

Comprises

- locations of on-site, nearby and off-site activities or operations, such as infrastructure (roads, power, telecommunications), and
- construction
- Baseline information should include information and data on other existing or planned developments in, and in the vicinity of, the location(s), where the project will take place.

Environmental Management Plan

- The compilation of plans to mitigate identified negative impacts and to optimise potential benefits in the project design and planning process; and
- Documentation of processes for environmental and social (including public, community health and socio-economic) management during project progression.

Comprises

• Specific steps to address each impact or significant risk of the proposed project

Implementation and Follow-up

 Monitoring, audit and review of the implementation of the environmental, social (including public, community health and socioeconomic) management plan and of environmental and social (including public, community health and socio-economic) management.

Comprises

- Monitoring;
- Evaluating the effectiveness of implemented mitigation measures;
- Updating of EMPs.

Annex 3 – History of the OGP E-SHRIMP initiative

The potential of impact assessment in unlocking value in E&P projects and the need for an enhanced tool-box for the industry has been discussed within the OGP for several years. This initiative was originated at the 2002 Society of Petroleum Engineers (SPE) HSE Conference and selected by the OGP Environmental Quality Committee for its 2003-5 work programme.

Early public consultation was identified to be essential for an efficient process and in order to garner public support for a project. Previous OGP work to develop a list of questions for Social Impact Assessment has served to help practitioners and project managers consider key questions, which typically needed to be answered for Social aspects of a project. This initiative is complementary to that and provides practical tools to aid the HSE professional and project manager throughout the project lifecycle.

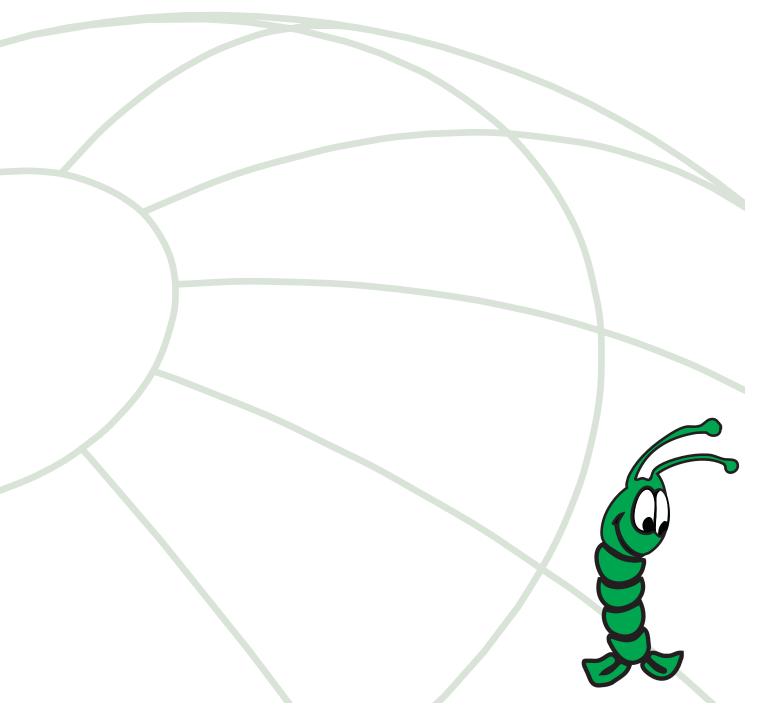
Twelve companies have actively supported the work programme, which in 2003 identified themes and sub-themes associated with the ESIA process and shared learning and best-practice around case studies at a Workshop in Semmering in November 2003. This was attended by over 50 delegates from over 20 companies including multinational and regional oil companies and service providers.

The following key challenges were identified:

- Establishing impact assessment within the context of a lifecycle environmental and social management process;
- Starting the impact assessment early in the project cycle to aid informed decision-making;
- Effective integration of impact assessment and mitigation into the engineering design process; and,
- The implementation of ESIA, with delivery of commitments.

In 2006, this led to the delivery of this version of E-Shrimp which covers the project lifecycle and which maps project activities against ESIA activities with close reference to the project business approval process. E-Shrimp is a toolbox, through which an appropriate level of environmental and social assessment and management can be delivered from the earliest appraisal phases of a project, through operations to field facility abandonment and restoration.

e-SHRIMP Deliverables Register





e-SHRIMP - OGP Environmental Social & Health Risk & Impact Management Process

e-SHRIMP Deliverables Register

