Towards Sustainable Decommissioning and Closure of Oil Fields and Mines: A Toolkit to Assist Government Agencies

Version 3.0

March 2010

This Toolkit is a living document or tool designed to increase the level of awareness on decommissioning and closure issues. It serves as guidance to government authorities, institutions and regulatory agencies, in natural-resource rich, developing countries, seeking to establish or improve closure and decommissioning programs for the extractives sectors. This initial version of the Toolkit was prepared in 2009 in the context of the Petroleum and Governance Initiative (PGI) jointly launched by the World Bank and the Government of Norway in 2006 – and with input from a select and diverse group of stakeholders from private sector companies, industry organizations, non-governmental institutions, government authorities, experts and practitioners involved in different aspects of oil and gas and mining
ACKNOWLEDGMENTS

“Towards Sustainable Decommissioning and Closure of Oil Fields and Mines: A Toolkit to Assist Government Agencies” was designed and prepared in 2009 by the World Bank Oil, Gas and Mining Policy and Operations Unit (COCPO) with the support of Environmental Resources Management, Inc. (ERM).

Eleodoro Mayorga Alba and Christopher Sheldon led the project in close collaboration with ERM’s team of specialists managed by Agnieszka Rawa with support from Romina Aramburu, Ben Cattaneo, and Sabine Hoefnagel. The ERM team also included Fernando Rodriguez, Managing Director, HSE International LLC.; and Glenn Mills, Principal, GeoEngineers, Inc., both of whom provided technical input throughout the process.

During workshops in Washington D.C. (held in April 2009), London and Accra (both held in September 2009), valuable feedback was received from a select and diverse group of stakeholders including private sector oil and gas and mining companies, non-governmental organizations, government representatives, and World Bank as well as International Finance Corporation experts with special interests in decommissioning and closure.

Development of this initial version of the Toolkit was funded under the environmental pillar of the Petroleum & Governance Initiative (PGI), a collaborative effort between the World Bank and the Government of Norway. Additional information on the process followed to develop this first version of the Toolkit, participants in the consultation workshops, and interim materials, can be found on the COCPO Website at:

http://go.worldbank.org/5IVXTJV1Y0
FOREWORD

Globally, an increasing number of mines and hydrocarbon fields are nearing depletion, following decades of resource exploitation. These operations and the associated infrastructure will require complex and costly dismantling; technical and environmental restoration and rehabilitation measures; and socioeconomic investments to counteract retrenchment, post-closure economic downturns and other effects associated with the end of the project’s productive life. At the same time, new operations are being planned in more challenging socio-environmental contexts, many in resource-rich developing economies that will need to consider the availability of financial resources, technical approaches and cleanup standards as well as community wellbeing during the planning phase to avoid significant socio-environmental liabilities.

Consistent with its vision of more sustainable development, the Oil, Gas and Mining Policy and Operations Unit (COCPO) of the World Bank is interested in encouraging resource-rich countries, and particularly governments in developing economies, to implement earlier, more proactive, comprehensive and systematic management of all phases of development – including decommissioning and closure. In 2009, COCPO worked with representatives from the oil and gas and mining sectors, regulatory agencies, experts and other stakeholders to design the initial version of this document titled “Towards Sustainable Decommissioning and Closure of Oil Fields and Mines: A Toolkit to Assist Government Agencies.” Its main goal is to contribute to an increased level of awareness, understanding, and involvement in closure issues on the part of regulatory authorities in developing countries with significant mineral and hydrocarbon resources.

The approach taken was to conduct an assessment of key decommissioning and closure issues – at a level relevant to the interests of government authorities – and propose instead of a prescriptive document, a process framework and strategies based on the existing knowledge (in the form of guidelines, standards, best management practices and other tools and materials) of numerous organizations with practical experience and expertise.

The intent of this Toolkit is to serve as a resource to support the development of flexible but systematic regulatory approaches to key components of a sustainable decommissioning and closure planning and implementation process. We hope that this Toolkit can, over time, be improved with additional guidelines and details based on lessons learned from practical applications.

Eleodoro Mayorga Alba
Project Team Leader
COCPO, World Bank
YOUR COMMENTS AND FEEDBACK ARE IMPORTANT!

This initial version of the Toolkit “Towards Sustainable Decommissioning and Closure of Oil Fields and Mines: A Toolkit to Assist Government Agencies” was prepared with input from a select but diverse group of stakeholders including government authorities, practitioners and technical experts in the public sector, representatives of industry organizations, mining and oil and gas companies, non-governmental organizations, World Bank specialists, consultants and other experts. Input was collected during three different Workshops held in Washington, DC in April 2009; London, UK and Accra, Ghana in September 2009.

Over time, these materials can be improved with additional suggestions and input based on lessons learned from practical applications.

Your comments and feedback are important. If you have comments regarding this version of the Toolkit, please take the time to send them via the World Bank’s website at the following e-mail address:

Christopher Sheldon from the World Bank at csheldon@worldbank.org or Romina Aramburu from ERM at Romina.Aramburu@erm.com

The Toolkit will be revised periodically –initially every two years-, to assess and incorporate comments and improve its applicability. If necessary, additional workshops can be organized to further discuss the comments and current implementation of the Toolkit and its effectiveness.

This Toolkit is also available at:

http://go.worldbank.org/5IVXTJV1Y0
TOOLKIT ACRONYMS

Acronyms listed below pertain to terms used in all Toolkit modules.

ANZMEC  Australia New Zealand Mine and Energy Council
API      American Petroleum Institute
ARPEL   Regional Association of Oil and Gas Companies in Latin America and the Caribbean
BAT     Best Available Techniques
BBOP    Business and Biodiversity Offset Program
BEP     Best Environmental Practice
BMP     Best Management Practice
CELB    Center for Environmental Leadership in Business
CI      Conservation International
CZMA    Federal Coastal Zone Management Act
E3      Environmental Excellence in Exploration
EBRD    European Bank for Reconstruction and Development
EBI     Energy and Biodiversity Initiative
EGPC    Egyptian General Petroleum Corporation
EHS     Environmental, Health, and Safety
EIA     Environmental Impact Assessment
EIR     Extractive Industry Review
EITI    Extractive Industries Transparency Initiative
EMP     Environmental Management Plan
EMS     Environmental Management System
EPFI    Equator Principles Financial Institution
ESG     Environmental, Social and (Corporate) Governance
ESIA    Environmental and Social Impact Assessment
ESHS    Environmental, Social, Health and Safety
ESMP    Environmental and Social Management Plan
E&P     Exploration and Production
<table>
<thead>
<tr>
<th>Acronym</th>
<th>Full Form</th>
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<tr>
<td>GIPS</td>
<td>Global Investment Performance Standards</td>
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<td>GRI</td>
<td>Global Reporting Initiative</td>
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<tr>
<td>HSEC</td>
<td>Health, Safety, Environment, and Community</td>
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<tr>
<td>IBRD</td>
<td>International Bank for Reconstruction and Development</td>
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<tr>
<td>IFC</td>
<td>International Finance Corporation</td>
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<tr>
<td>ICMC</td>
<td>International Cyanide Management Code</td>
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<tr>
<td>ICME</td>
<td>International Council on Metals and the Environment</td>
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<td>ICMI</td>
<td>International Cyanide Management Institute</td>
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<td>ICMM</td>
<td>International Council on Mining and Metals</td>
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<td>IDRC</td>
<td>International Development Research Center</td>
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<td>IGWG</td>
<td>Intergovernmental Working Group</td>
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<td>IPIECA</td>
<td>International Petroleum Industry Environmental Conservation Association</td>
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<td>IMO</td>
<td>International Maritime Organization</td>
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<td>ISO</td>
<td>International Standards Organization</td>
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<td>JV</td>
<td>Joint Venture</td>
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<tr>
<td>MEM</td>
<td>Ministry of Energy and Mines (Peru)</td>
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<td>MMS</td>
<td>United States Department of the Interior, Minerals Management Service</td>
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<tr>
<td>MMSD</td>
<td>Mining, Minerals and Sustainable Development</td>
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<td>MRCP</td>
<td>Mine Reclamation and Closure Plan</td>
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<td>MWDF</td>
<td>Minerals and Waste Development Framework</td>
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<td>NATO</td>
<td>North Atlantic Treaty Organization</td>
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<td>NFEA</td>
<td>National Fishing Enhancement Act</td>
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<td>Non-Governmental Organization</td>
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<td>National Oil Companies</td>
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<td>NORAD</td>
<td>Norwegian Agency for Development Cooperation</td>
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<td>O&amp;G</td>
<td>Oil and Gas</td>
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<td>OCS</td>
<td>Outer Continental Shelf</td>
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<td>OCSLA</td>
<td>Outer Continental Shelf Lands Act</td>
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<tr>
<td>OECD</td>
<td>Organization for Economic Cooperation and Development</td>
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<td>OGP</td>
<td>Oil and Gas Producers</td>
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<td>OHS</td>
<td>Occupational Health &amp; Safety</td>
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<td>OSCE</td>
<td>Organization for Security and Co-operation in Europe</td>
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<td>OSPAR</td>
<td>Oslo and Paris Convention on the Protection of the Marine Environment in the Northeast Atlantic</td>
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<td>PDAC</td>
<td>Prospectors and Developers Association of Canada</td>
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<td>PGI</td>
<td>Petroleum Governance Initiative</td>
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<td>SEIA</td>
<td>Social and Environmental Impact Assessment</td>
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<td>SEMP</td>
<td>Social and Environmental Management Plan</td>
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<td>SEMS</td>
<td>Social and Environmental Management System</td>
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<td>SLC</td>
<td>California State Land Commission</td>
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<td>SRWG</td>
<td>Social Responsibility Working Group</td>
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<td>UK</td>
<td>United Kingdom</td>
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<td>UNECA</td>
<td>United Nations Economic Commission for Africa</td>
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<td>UNEP</td>
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<td>UNDES</td>
<td>United Nations Department of Economics and Social Affairs</td>
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<td>World Business Council on Sustainable Development</td>
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<td>Work Group 4</td>
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Your Comments and Feedback are Important!

Toolkit Acronyms

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GENERAL TOOLKIT GUIDANCE - TRENDS, CHALLENGES, ISSUES AND SETTING PRIORITIES

TOOL 1 - POLICY AND REGULATORY FRAMEWORK

TOOL 2 - ENVIRONMENTAL AND SOCIAL BEST PRACTICE AND MANAGEMENT SYSTEMS

TOOL 3 - FINANCIAL ASSURANCE MECHANISMS

TOOL 4 - MONITORING AND ENFORCEMENT

TOOL 5 - STAKEHOLDER ENGAGEMENT AND CONTINUOUS IMPROVEMENT
Towards Sustainable Decommissioning and Closure of Oil Fields and Mines: A Toolkit to Assist Government Agencies

Executive Summary

Version 3.0

March 2010

This Toolkit is a living document or tool designed to increase the level of awareness on decommissioning and closure issues. It serves as guidance to government authorities, institutions and regulatory agencies, in natural-resource rich, developing countries, seeking to establish or improve closure and decommissioning programs for the extractives sectors. This initial version of the Toolkit was prepared in 2009 in the context of the Petroleum and Governance Initiative (PGI) jointly launched by the World Bank and the Government of Norway in 2006 – and with input from a select and diverse group of stakeholders from private sector companies, industry organizations, non-governmental institutions, government authorities, experts and practitioners involved in different aspects of oil and gas and mining decommissioning and closure.
EXECUTIVE SUMMARY

Process and Background

Since early 2009, the World Bank has been leading a “Toward Sustainable Decommissioning of Oil Fields and Mines Initiative” (the “Initiative”) to assist governments in oil and gas and/or mining resource-rich, developing countries in the process of undertaking earlier, more systematic, comprehensive, and responsive planning of the decommissioning and closure phase of mining and oil and gas production operations. The Initiative falls under the environmental pillar of the Petroleum & Governance Initiative (PGI), a collaboration between the World Bank and the Government of Norway.

A First Workshop with “Project Stakeholders” was hosted by the World Bank on April 22, 2009 in Washington D.C. About 40 representatives of the extractives sectors, government representatives, non-governmental organizations, World Bank experts and other participants convened to provide input on the possible content and key issues to be addressed by the Toolkit. An Issues Paper outlining challenges and opportunities believed to be important to the process of decommissioning and closure was prepared and shared prior to this meeting.

Building on the outcomes of the First Workshop, a Draft Toolkit “Toward Sustainable Decommissioning of Oil Fields and Mines: A Toolkit to Assist Government Agencies“ covering the essential economic, social, environmental, regulatory and technical aspects of decommissioning was prepared and shared with stakeholders. Subsequently, a Second Workshop was held in London, UK, on September 4, 2009 to seek additional input and comments on the Draft Toolkit from stakeholders that were involved with the Initiative and knowledgeable of decommissioning issues in the mining and oil and gas industry, as well as NGO’s and government agencies. The draft was improved with expert’s input.

A Third Workshop, held in Accra, Ghana on September 9, 2009 was organized to outline the work and share outputs completed by the World Bank and its consultants, in context of the PGI Environmental Pillar. The target audience was practitioners and technical experts within the government authorities of countries in Sub Saharan Africa. Initial reactions and specific comments were received and opportunities for improvement of and future updates to the Toolkit were discussed.

This Toolkit is a living document or tool designed to increase the level of awareness on decommissioning and closure issues. It serves as guidance to government authorities, institutions and regulatory agencies, in oil and gas/ mining resource-rich, developing countries, seeking to establish or improve closure and decommissioning programs for the extractives sectors.

The Toolkit is available at the World Bank’s web page at http://go.worldbank.org/5IVXTJ1Y0.
Key Components of a Sustainable Decommissioning and Closure Program

This Toolkit is organized around what are believed to be core components of a practical approach that governments may adopt or adapt in the process of identifying and managing decommissioning and closure needs. The Toolkit structure is organized as follows:

- **Introduction and Overview**: sets the stage on the purpose and objectives of the Toolkit, intended audience or users, key components and toolkit structure, guideline sources and definitions.

- **General Toolkit Guidance**: document is designed to provide an overview of sector-specific trends and challenges related to decommissioning and closure. This is based on experts’ opinions on which issues are higher priority and may warrant additional attention on the part of governments.

- **Tool 1 Policy and Regulatory Framework**: aims to delineate the steps for an enhanced policy and regulatory framework, and provide a platform for the implementation of the remaining tools.

- **Tool 2 Environmental and Social Best Practice and Management Systems**: describes how governments can contribute to the implementation of socio-environmental best practices leading to more sustainable decommissioning and closure, and incorporates guidance on the development of a conceptual closure plan.

- **Tool 3 Financial Assurance Mechanisms**: provides a roadmap for establishing (or enhancing) sufficient and reliable financial assurance for the extractives sectors, and provides alternatives and templates for further guidance.

- **Tool 4 Enforcement and Monitoring**: emphasizes the importance for governments of monitoring compliance with regulations and requirements during the planning and implementation of decommissioning and closure activities.

- **Tool 5 Stakeholder Engagement and Continuous Improvement**: encourages governments and related agencies to use stakeholder engagement to better understand key community priorities and to contribute as partners in sustainable decommissioning and closure planning, while at the same time fine-tuning government’s role in this process.

It is crucial that these components be managed within a continuous improvement scheme, since collectively they foster effective and improved approaches to closure, the establishment of trust among stakeholders, and the achievement of a “social license to operate”. Government agencies need to be aware that upon company exit, their involvement and support to the communities will be expected to increase. Therefore, capacity building and training of their technical staff, practitioners and decision-makers should be promoted to ensure consistent implementation of best practice guidelines, as well as the allocation of adequate financial resources, and to prepare and plan ahead for taking on post-closure scenarios.
Towards Sustainable Decommissioning and Closure of Oil Fields and Mines: A Toolkit to Assist Government Agencies

Introduction and Overview

Version 3.0

March 2010

WORLD BANK MULTISTAKEHOLDER INITIATIVE

This Toolkit is a living document or tool designed to increase the level of awareness on decommissioning and closure issues. It serves as guidance to government authorities, institutions and regulatory agencies, in natural-resource rich, developing countries, seeking to establish or improve closure and decommissioning programs for the extractives sectors. This initial version of the Toolkit was prepared in 2009 in the context of the Petroleum and Governance Initiative (PGI) jointly launched by the World Bank and the Government of Norway in 2006 – and with input from a select and diverse group of stakeholders from private sector companies, industry organizations, non-governmental institutions, government authorities, experts and practitioners involved in different aspects of oil and gas and mining.
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INTRODUCTION AND OVERVIEW

Welcome to Users

Thank you for your interest in this “Towards Sustainable Decommissioning and Closure of Oil Fields and Mines: A Toolkit to Assist Government Agencies”! This summary contains an overview of the Toolkit contents, its target audience, specific objectives and structure. Let’s get started!

Importance of Government Involvement

By their very nature, resource extraction activities, in the oil and gas and mining sectors in particular, have the potential to generate negative environmental, social, health and safety (ESHS) impacts. Many of these impacts endure after the conclusion of commercial exploitation. If not properly addressed and mitigated, these impacts can result in significant legal and financial burdens to the operator(s), the local population, and the host countries once exploitation ends.

There is a legacy of mines and oil and gas fields that have already been abandoned without specific plans or provisions, or for which there are no clearly responsible parties or financial reserves for decommissioning and closure. In some cases, these legacies contribute to a negative opinion of the industry and cause communities to oppose government plans that involve new extractive industries, by the same or different operators.

Furthermore, an increasing number of producing oil and gas fields and mines will near depletion or the economic limits of extractability in the coming years. Thus, closure activities are expected to increase. Temporary shutdowns may also increase due to the cyclic nature of these industries, fluctuations in commodity prices and other changing conditions of the world economy. In some cases, the extension of the productive life of many oil and gas fields and mines, the successive handovers of exploitation rights (i.e., changes in operators), or the increasing exploitation of resources in areas with higher political or institutional risks, may further complicate issues of accountability for this phase of the project cycle.

Environmental, social, health and safety impacts associated with decommissioning and closure, when addressed during the early stages of the project life-cycle (i.e., design phase), can be significantly reduced (for example, siting of specific components, avoidance of sensitive areas, establishment of financial guarantees, etc.) at lower costs.

These are all reasons why governments across the globe are realizing that they – along with their private and public sector counterparts– must understand and proactively manage the
environmental, social and economic issues associated with the end of an extractive project’s life cycle as early as possible

**Toolkit Purpose and Objectives**

This Toolkit was developed to encourage resource-rich countries, and particularly governments in resource rich developing economies, to implement earlier, more proactive, comprehensive, and systematic management of all phases of development, including decommissioning and closure. The Toolkit was designed to assist in the establishment and enactment of a regulatory framework that results in sustainable decommissioning and closure practices in the mining and oil and gas sectors.

Specifically, the overall Toolkit objectives are to:

1. **Raise the level of awareness and contribute to capacity building** on sustainability issues associated with decommissioning and closure by providing an overview of mine and oil field decommissioning and closure trends, challenges, issues and background information on sustainable practices;

2. **Compile key existing resources** related to sustainable decommissioning and closure, including references, guidelines, and tools on policy and regulatory requirements, technical practices, and financial surety mechanisms designed to guarantee implementation of decommissioning and closure obligations; and

3. **Propose and disseminate a sustainable decommissioning and closure policy and process roadmap, promoting a proactive approach of “thinking with the end in mind,”** that may be of interest to government authorities seeking to strengthen decommissioning and closure programs, as well as to extractive sector companies operating in resource-rich countries.

**Who was the Toolkit Designed for?**

This Toolkit was principally designed for governments of resource-rich developing countries, specifically technical and decision-making staff with different levels of experience within the regulatory authorities, institutions and ministries that are responsible for: administering mineral resource and oil and gas extraction licenses and contracts; issuing environmental permits for exploration, exploitation, decommissioning and closure; and ensuring that adequate legal, financial and technical measures are in place to address temporary shutdowns as well as complete decommissioning and closure at the end of the productive life of oil and gas and mining operations.
The materials may also be used as references by private sector companies, non-governmental organizations or other institutions, where applicable. However, some of the Toolkit modules are specifically addressing issues that should be managed by government authorities.

This Toolkit is more relevant when applied from the earliest phases of a project’s life-cycle. However, it is recognized that many countries may have mines and oil fields nearing closure in the next several years. In such cases the approach and tools presented remain valid but much of the material relating to the earlier phases may not be directly applicable to late stage projects, and more effort may be required to meet the proposed guidance. Indeed, legacy issues of decommissioning and closure are not the main object of this guidance and are not dealt with in great detail, especially for the mining sector. These, and other issues, may be addressed later through the continuous improvement of this Toolkit or a future Toolkit.

This document does not also attempt to provide regulators with specific guidance for artisanal mining closure requirements, which are usually regulated differently and are not expected to operate with the infrastructure and management systems that large companies do. However, artisanal mining should still be expected to operate in a manner that minimizes environmental and socioeconomic impacts, and governments need to enforce their particular regulations in this regard.

**Links to Other World Bank Group Guidelines**

The process described in this Toolkit does not supersede existing guidelines and standards. Instead, it is meant to complement existing World Bank Group guidelines such as:

- International Finance Corporation (IFC) Performance Standards\(^1\), April 2006, which endorse planning and management of Environmental, Social, Health and Safety (ESHS) considerations as part of the entire project cycle (including decommissioning and closure);

- The IFC General and Project Specific Environmental, Health, and Safety (EHS) Standards\(^2\), April 2007, which provide general and sector specific considerations for enhanced EHS management;

- The Equator Principles\(^3\), not a World Bank Group guideline but with reference to the IFC Performance Standards; and

\(^1\) [http://www.ifc.org/ifcext/sustainability.nsf/Content/PerformanceStandards](http://www.ifc.org/ifcext/sustainability.nsf/Content/PerformanceStandards)


\(^3\) [www.equator-principles.com](http://www.equator-principles.com)
• The **IFC Stakeholder Engagement Good Practice Handbook for Companies Doing Business in Emerging Markets**⁴, May 2007, a tool that can be used by private sector companies and government authorities to plan and implement engagement strategies that support sustainable closure.

• Guidelines for Implementation of Financial Surety for Mine Closure, June 2009, a working paper by the Oil, Gas and Mining Policy Division of the World Bank that provides case studies and examples of financial surety instruments.

The applicability of the guidance provided in this Toolkit is neither prescriptive nor mandatory, nor does it imply any precedence over existing in-country laws or regulations. However, in the absence of other guidance, it can be used as a “roadmap” for the development of an effective general regulatory approach to sustainable decommissioning and closure.

The Toolkit has been prepared with the support of the industry associations (ICMM, OGP) discussing with them best practices that governments may consider for improving their regulatory frameworks.

### Key Components of a Sustainable Decommissioning and Closure Program

This Toolkit is organized around what are believed to be core components of a practical, effective and flexible approach that governments may adopt or adapt in the process of identifying and managing decommissioning and closure needs. The five components are shown on [Figure 1](#) and include:

1. A robust **policy, legal and regulatory framework** that specifically addresses decommissioning and closure (Tool 1);

2. A series of accepted good **practice guidelines on ESHS** aspects related to closure (Tool 2);

3. **Sufficient and reliable financial assurance** to enable implementation (Tool 3);

4. **Monitoring and enforcement** of established requirements (Tool 4); and

5. **Stakeholder consultation** and engagement (Tool 5)

It is crucial that these components be managed within a continuous improvement scheme, since collectively they foster effective and improved approaches to closure, the establishment of trust among stakeholders, and the achievement of a “social license to operate”.

⁴[http://www.ifc.org/ifcext/enviro.nsf/AttachmentsByTitle/p_StakeholderEngagement_Full/$FILE/IFC_StakeholderEngagement.pdf](http://www.ifc.org/ifcext/enviro.nsf/AttachmentsByTitle/p_StakeholderEngagement_Full/$FILE/IFC_StakeholderEngagement.pdf)
Oil and gas fields and mining operations, due to their non-renewable-resource nature, are finite. Government agencies need to be aware that upon company exit, their involvement and support to the communities will be expected to increase. Therefore, capacity building and training of their technical staff, practitioners and decision-makers should be promoted to ensure consistent implementation of best practice guidelines, as well as the allocation of adequate financial resources, and to prepare and plan ahead for taking on post-closure scenarios.

*Figure 1: Core Components of Decommissioning and Closure Program*
Getting Started and Toolkit Structure

This Toolkit is organized around the core components suggested for a Sustainable Decommissioning and Closure Program. *Figure 2* presents the overall Toolkit structure comprising the general introduction and five tools.

*Figure 2: Main Components and Toolkit Structure*

- **GENERAL GUIDANCE:** Increase Level of Awareness and Understanding
  - Definitions, Trends and Issues
  - Survey and Set Priorities

- **TOOL 1:** Incorporate into Policy and Regulatory Framework
  - Steps and Guidance
  - Tools or Templates
  - References and Examples

- **TOOL 2:** Endorse Environmental and Social Best Practices – and Management Systems
  - Steps and Guidance
  - Tools or Templates
  - References and Examples

- **TOOL 3:** Select and Establish Financial Assurance Mechanism
  - Steps and Guidance
  - Tools or Templates
  - References and Examples

- **TOOL 4:** Enforce and Monitor
  - Steps and Guidance
  - Tools or Templates
  - References

- **TOOL 5:** Embrace Stakeholder Engagement and Assure Continuous Improvement
  - Steps and Guidance
  - References and Other Tools

EARLIER, ENHANCED, MORE COMPREHENSIVE, PLANNED AND FLEXIBLE MANAGEMENT OF SOCIOENVIRONMENTAL DECOMMISSIONING PRACTICES
Please note that:

- **The General Guidance** document is designed to provide an overview of sector-specific trends and challenges related to decommissioning and closure. This is based on experts’ opinions on which issues are higher priority and may warrant additional attention on the part of governments.

- **Tool 1** aims to delineate the steps for an enhanced policy and regulatory framework, and provide a platform for the implementation of the remaining tools.

- **Tool 2** describes how governments can contribute to the implementation of socio-environmental best practices leading to more sustainable decommissioning and closure, and incorporates guidance on the development of a conceptual closure plan.

- **Tool 3** provides a roadmap for establishing (or enhancing) financial assurance for the extractives sectors, and provides alternatives and templates for further guidance.

- **Tool 4** emphasizes the importance for governments of monitoring compliance with regulations and requirements during the planning and implementation of decommissioning and closure activities.

- **Tool 5** encourages governments and related agencies to use stakeholder engagement to better understand key community priorities and to contribute as partners in sustainable decommissioning and closure planning, while at the same time fine-tuning government’s role in this process.

- There is intentional flexibility in the tool structure, as it is hoped that future inputs received from government authorities and other stakeholder users can contribute to improvements of each tool.

**Terms and Definitions**

- “Closure” in this Toolkit is principally referring to the end of commercial resource extraction and includes decommissioning and rehabilitation activities (including revegetation and restoration). Temporary shutdowns for economic or other reasons are not considered closure.

- “Decommissioning” is the process by which options for the final status of structures at the end of their working life are assessed for their dismantling, physical removal, disposal or modification (if beneficial usage of existing project infrastructure is a component of the
Also, leaving certain types of installations in situ can also be part of the decommissioning process as recognized in certain countries (e.g., UK, Norway).

- “Financial assurance mechanisms” are the various financial instruments or alternatives available to an operator, co-venturers, State and other duty-holders to assure that sufficient funds are reserved to return impacts of mining/oil and gas operations to an environmental and socially acceptable condition when activities cease and the project is no longer generating revenues.

- “Post-Closure” is the phase after decommissioning and closure where activities are reduced to monitoring and maintaining specific areas to ensure that environmental and health and safety risks are controlled and minimized. Specific post-closure requirements may include maintaining the integrity and effectiveness of final cover, leachate collection system, and groundwater monitoring.

- “Enhanced Regulatory Approach” involves some degree of government interactions with industry operators, or a body representing all or a sub-set of the industry. Regulatory requirements are enhanced by voluntary mechanisms. Unlike fully voluntary mechanisms, regulatory oversight remains.

- “Relinquishment” is when the operator gets formal approval from the applicable authority in meeting all the established requirements to release a portion or all of the concession or agreement for exploitation. Partial relinquishments of original contracted area or license area are specified in the contract of license through specific laws. Final relinquishment, however, takes place at the end of the duration of the license of contract.

- “Stakeholder” is defined as “any group or individual who can affect or is affected by the achievement of an organization’s objectives.”

- “Sustainable” in this context, means that the legacy of the operation, during the project life cycle, from and environmental, social (including health and safety) and economic perspective, is balanced and at least neutral or positive.

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5 Freeman, 1984; Strategic Management: A Stakeholder Approach; Pitman, Boston, MA.; quoted in Peck et al, 2005; Mining for Closure; UNEP, UNDP, OSCE, and NATO, 2005, p. 32.
**Box 1: Definitions used by Sector Institutions**

<table>
<thead>
<tr>
<th>ICMM’s Planning for Integrated Closure Toolkit</th>
<th>OGP’s Environmental, Social, Health Risk and Impact Management Process</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Glossary</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Closure Planning</strong> – A process that extends over the mine life cycle and that typically culminates in tenement relinquishment. It includes decommissioning and rehabilitation. The term closure alone is sometimes used to indicate the point at which operations cease, infrastructure is removed and management of the site is largely limited to monitoring.</td>
<td><strong>Decommissioning</strong> – The termination of oil and gas production operations.</td>
</tr>
<tr>
<td><strong>Decommissioning</strong> – The process that begins near or at the cessation of mineral production and ends with the removal of all unwanted infrastructure and services.</td>
<td><strong>Abandonment</strong> – The removal or disposal of surface (production) facilities, pipelines and terminals and loading facilities.</td>
</tr>
<tr>
<td><strong>Reclamation/Rehabilitation</strong> – Terms used interchangeably to mean the return of disturbed land to a stable and productive condition.</td>
<td><strong>Restoration</strong> – 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.</td>
</tr>
<tr>
<td><strong>[Final] Relinquishment</strong> – Formal approval by the relevant regulating authority indicating that the completion criteria for the mine have been met to the satisfaction of the authority.</td>
<td></td>
</tr>
</tbody>
</table>
Towards Sustainable Decommissioning and Closure of Oil Fields and Mines: A Toolkit to Assist Government Agencies

Toolkit General Guidance
Trends, Challenges and Issues – and Setting Priorities
Version 3.0
March 2010

This Toolkit is a living document or tool designed to increase the level of awareness on decommissioning and closure issues. It serves as guidance to government authorities, institutions and regulatory agencies, in natural-resource rich, developing countries, seeking to establish or improve closure and decommissioning programs for the extractives sectors. This initial version of the Toolkit was prepared in 2009 in the context of the Petroleum and Governance Initiative (PGI) jointly launched by the World Bank and the Government of Norway in 2006 – and with input from a select and diverse group of stakeholders from private sector companies, industry organizations, non-governmental institutions, government authorities, experts and practitioners involved in different aspects of oil and gas and mining decommissioning and closure.
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1.0 GENERAL GUIDANCE – TRENDS, CHALLENGES, AND ISSUES – AND SETTING PRIORITIES

This General Guidance document contains materials that can be used to contribute to an increased level of awareness of decommissioning trends, challenges and issues for both the mining and oil and gas sectors. This tool also encourages individual governments to assess decommissioning priorities specific to their countries extractives industries enabling a phased approach to decommissioning programs development and implementation.

Figure 1: Relationship to Other Tools
1.1 What is Sustainable Decommissioning and Closure?

“Sustainable” is understood as the consideration and inclusion of the various components that are dealt with during decommissioning and closure (i.e., economic, social, environmental, technical, financial, health and safety) and the need to balance the outcomes of these components during the project’s life-cycle.

“Decommissioning” is the process by which options for the physical removal, disposal (or modification, if beneficial usage of existing project infrastructure is a component of the closure scheme) of structures at the end of their working life are assessed, dismantled and removed.

“Closure” is defined as the period after the end of commercial resource extraction, usually following many years of revenue-generating exploitation. During this phase of the project, decommissioning and rehabilitation activities are conducted, sometimes over a period of several years. These activities can include removal or mitigation of environmental, health, and safety (EHS) hazards, revegetation, and restoration needed to cease operations and abandon an area in such a way that it does not represent a continuing environmental, social, health or safety (ESH) risk.

In many cases there are opportunities for “progressive closure” to occur while portions of the project are still operational. Closure schemes may also potentially include the conversion and/or turnover of various elements of project infrastructure for beneficial use by host nations or communities.

Temporary shutdowns for economic or other reasons are not considered closure, but it is important to consider such temporary or early shutdowns as an element of a well-designed decommissioning and closure plan. Similarly, demobilization and site restoration following the completion of exploration activities that do not lead to development (e.g., seismic or other geophysical studies, test pits, or drilling not yielding indications of economically viable reserves) is also not formal “closure” but should also be planned appropriately.
Box 1: General Types of Decommissioning and Closure Activities for Mines and Oil Fields

Mining operations tend to impact significant areas of land, and, in closure may require:

- The stabilization of open pit or underground workings; removal or conversion of infrastructure;
- Rehabilitation of waste rock stockpiles and tailings impoundments; management of surface and groundwater quality, and waste management;
- Post-closure monitoring to ensure that potential environmental issues are effectively managed;
- An integrated multi-disciplinary approach requiring expertise in worker and public health and safety, supply chain management, engineering alternatives and stakeholder engagement.

Generally, onshore and offshore upstream hydrocarbon operations result in a smaller footprint than that of most mining operations. Hence, the scale of land rehabilitation, re-vegetation and reclamation activities associated with mining does not typically apply to upstream hydrocarbon operations. Nevertheless, closure phases of oil and gas fields comprise numerous complex and costly activities:

- The physical dismantling and removal of structures used during resource exploitation;
- The implementation of remedial measures to manage ESHS issues remaining from operations or resulting from cessation of operations and closure activities;
- Restoration of the site to an agreed-upon use and quality in line with the expectations of government authorities, relevant stakeholders, and nearby communities; and
- A multi-disciplinary approach to manage the complexity of the operations various environmental, social and health and safety aspects as well as logistics, engineering and legal issues.

1.2 Mine Decommissioning and Closure

1.2.1 General Trends

As shown on Figure 2, during each phase of the mine cycle, mining companies conduct sequential studies or planning actions that establish the economic viability of the project, generate data that allow a project to be permitted (under regulatory and management structures imposed by host nations, lending institutions, and/or the company’s own corporate policies), and to provide management plans and procedures that govern the permitted project through construction, operation (including temporary shutdown), decommissioning and closure, and post-closure.
The last decade has seen profound changes in the manner in which governmental regulatory agencies around the globe and international mining companies have approached decommissioning and closure phase needs. Important general trends include:

- Until the beginning of the global recession in late 2008\(^1\), **record demand** for base and precious metals, industrial minerals, and energy had fueled intense, world-wide competition for increasingly scarce mineral resources.

- Exploration activities have focused not only on new deposits, but also on historically impacted areas with residual mineral values that had become economically significant because of the “boom” market, new technologies, or greater cost-effectiveness of extraction methods. This has caused a **number of mine-life projections to be extended**.

- **Sustainable mining practices have become strategic necessities**, as the support of host nation governments and nearby communities is increasingly critical to the ability of a mining company to acquire and maintain access to mineral resources, to manage

\(^1\) Although the mining industry has suffered as a result of a drop in commodity prices, many economists predict this sector to be among the first areas of economic endeavor to recover from the recession.
reputational risks and to acquire the ‘social license’ to operate. Mine operators generally see the value of investing in such practices².

- **More sustainable practices have also been applied to attract investment capital** needed by companies to finance new mines or expansions by Equator Principle Financial Institutions (EPFIs), the International Finance Corporation (IFC), and other multilateral or private lending institutions.

- Additionally, the **closure phase is increasingly understood as a sustainable development issue**, in which complex environmental concerns must be balanced with the socio-economic needs of the host nation governments and nearby communities.

- **To date, the marketplace rather than governmental regulations have driven behavioral and technological changes in mining operations**; closure funds are often set aside by mining companies regardless of whether or not they are required by regulation. For example, there are closure accounting and funding requirements or obligations for publicly traded companies reporting under International Financial Reporting Standards (IFRS) and US GAAP (FAS 143).

- Business concerns over the long-term viability of such closure reserves tend to drive **mining companies to increasingly engage host nation regulatory agencies as counterparts in seeking decommissioning and closure guidelines** – as well as agreements -- which are realistic and effective.

- **Major companies have started to make investments in developing a thorough technical understanding of their closure options** as part of mine design and/or property acquisitions, thereby improving their estimates of closure costs, and again, their competitive posture in the search for new deposits.

- Mining companies have undertaken **several voluntary initiatives** to improve their environmental and social performance, including aspects related to closure and decommissioning. Examples of these are shown in **Table 1**.

<table>
<thead>
<tr>
<th>Organization / Standard</th>
<th>General Description</th>
<th>Applicability to Decommissioning</th>
</tr>
</thead>
<tbody>
<tr>
<td>International Council on</td>
<td>Represents 17 of the world’s largest mining companies and 30 mining associations</td>
<td>ICMM Principles³ require members to “integrate sustainable development”</td>
</tr>
</tbody>
</table>

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² For example, mining companies are increasingly willing to undertake the remediation of historical impacts unrelated to the proponent’s operations as a condition of development, as well as to plan and budget for longer and more complex decommissioning and closure periods.

<table>
<thead>
<tr>
<th>Organization / Standard</th>
<th>General Description</th>
<th>Applicability to Decommissioning</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mining and Metals (ICMM)</strong></td>
<td>working to promote sustainable business practices. The ICMM established a sustainable development framework with principles, reporting, and independent assurance provisions.</td>
<td>considerations within corporate decision-making; integrate sustainability principles into policies and practices; [and] plan, design, operate, and close operations in a manner that enhances sustainable development.”</td>
</tr>
<tr>
<td><strong>Implementation of the Equator Principles and the IFC Performance Standards by Major Private Lending Institutions</strong></td>
<td>Developed in 2003 by 10 large private banks, the Equator Principles (EPs)&quot; are voluntary guidelines for addressing socio-environmental project risks during project financing. As of August 2009, there were 68 “Equator Principles Financial Institutions” (EPFIs). The EPs are based on World Bank Group/International Finance Corporation (IFC) safeguard policies and procedures, and are supported by the IFC’s Performance Standards on Social and Environmental Responsibility, Guidance Notes, and Industry-Specific Environmental, Health, and Safety (EHS) guidelines.</td>
<td>Updated EHS guidelines for mining were finalized in 2007. These guidelines address community health and safety considerations, and include guidance on mine closure/post-closure, development of Mine Reclamation and Closure Plans (MRCPs), and financial feasibility considerations based on realistic predications of the costs of closure. Mining operations funded by IFC (or, by extension, the EPFIs) may therefore be expected to demonstrate that they have a mechanism for funding closure and post-closure activities that is adequate for the scope of closure activities defined by the operation’s MRCP.</td>
</tr>
<tr>
<td><strong>The International Cyanide Management Code</strong></td>
<td>The International Cyanide Management Institute (ICMI) seeks to improve management of cyanide by gold mining operations, transporters, and producers, and minimize environmental and human health risks in the operational, decommissioning and closure, and post-closure phases of mines. The International Cyanide Management Code (ICMC) has been identified as a best management practice (BMP) for all mining operations that use cyanide in the IFC’s “EHS Guidelines for Mining.”</td>
<td>Principle 5 (“Decommissioning”) requires the company to “protect communities and the environment from cyanide through development and implementation of decommissioning plans for cyanide facilities.” Also, the ICMC notes that funding be available to decommission cyanide features so they no longer represent a significant risk. The ICMC provides specific guidelines to an independent auditor organization in the evaluation of this practice.</td>
</tr>
<tr>
<td><strong>Prospectors and Developers</strong></td>
<td>The PDAC is engaged in fostering high standards of technical, environmental,</td>
<td>PDAC publications and website materials contains specific BMPs for establishing</td>
</tr>
</tbody>
</table>

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6 See IFC, op. cit.


<table>
<thead>
<tr>
<th>Organization / Standard</th>
<th>General Description</th>
<th>Applicability to Decommissioning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Association of Canada (PDAC)</td>
<td>safety and social practices, in Canada and internationally. The PDAC has generated a number of useful publications and a well-designed website containing best practices for organizations involved in the early phases of mine exploration and development.</td>
<td>relations with local communities in the exploration phase that could form the basis for good communications practices during mine operation and closure; specific guidance is also provided in the decommissioning and closure of exploration sites.</td>
</tr>
<tr>
<td>Mining Association of Canada</td>
<td>The Mining Association of Canada (MAC) has undertaken a Towards Sustainable Mining (TSM) initiative, which is conceived as the means of measuring and improving the overall sustainability of the management practices of MAC members. A number of Canadian companies are beginning to apply these performance measurement tools to their overseas operations.</td>
<td>TAM activities have resulted in policy frameworks for aboriginal relations and mine closure that are directly applicable to the purposes of the Project.</td>
</tr>
<tr>
<td>Minerals Council of Australia</td>
<td>The Minerals Council of Australia (MCA) has developed an industry-focused framework for sustainable development, as well as a set of implementation guidelines. The framework document includes a “resources” kit that links MCA’s efforts with the ICMM Principles and Elements (as MCA is a signatory association of the ICMM). Endorsement of this framework is a condition for membership in the MCA; members include many major mining companies with projects in developing nations.</td>
<td>The MCA’s framework stresses a life-cycle approach to mining, in which the ESHS impacts of mining are assessed, continually monitored, and mitigation measures (including decommissioning and closure plans and financial reserves) systematically adjusted to reflect current conditions. It strongly encourages early communications with project stakeholders and a life-cycle-long process of stakeholder communications that is used to inform decommissioning and closure plan development and update.</td>
</tr>
</tbody>
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12 See [http://www.icmm.com/members/member-companies](http://www.icmm.com/members/member-companies)
1.2.2 Key Decommissioning and Closure Challenges

Key challenges that governments should be aware off and will need to progressively be addressed in mine decommissioning and closure include:

- **Financial Assurance Requirements**: Efforts to understand and plan for the true costs of temporary (and final) shutdowns and mine closure are necessary to provide assurance to governments that closure costs will be funded, to obtain project financing, to secure public and political acceptance, and to preserve options for the development of new ore deposits. Companies and other stakeholders are expecting regulatory entities to be knowledgeable and actively involved in proposing, selecting, establishing and maintain financial assurance mechanisms and guarantees. Also, the cost of closure must consider a realistic assessment of technical and environmental complexities and probable government or regional plans, stakeholder land use preferences, and changing socioeconomic contextual realities.

- **Fluctuating Commodity Prices and Temporary or Permanent Closure**: In a recession economy, prices for many minerals are likely to be depressed to a point that mining operations must stop. An operator with a healthier cash position, multiple sites, and/or multiple-mineral deposits may be able to weather a market downturn by delaying projects or putting less viable properties into temporary closure. Decommissioning and closure regulations that require unrealistically high financial assurance provisions (or that do not include regular assessment and adjustment of assurances to reflect current operational realities) may exacerbate the effects of a drop in commodity price.

- **Limited Credit or Tightening of Credit Markets**: The unavailability of credit is an extreme hardship for an operator with assets that are under development or just coming into production. It can lead to temporary closure, bankruptcy, and forced sales. Governments should be aware that regulatory approaches with unrealistically high financial assurance requirements may consume the financial resources that would have otherwise supported operational development and the generation of economic returns.

- **Mergers and Acquisitions**: Mining operations may be divested, forced into temporary shutdown, or left undeveloped. Because temporary or permanent closure actions may be triggered in an unpredictably short timeframe, closure plans and financial assurance provisions may be inadequate for site stabilization and/or closure needs. Governments should consider how new owners or operators assuming control of a project will address closure arrangements.

13 Smaller operators or operators with single-mineral operations are more susceptible, and declare bankruptcy, forced sale, or permanent closure because of an inability to fund mine development, operation, or expansion.
• **Temporary Shutdowns:** Fluctuations in commodity prices, depletion of economically recoverable reserves, or the effects of mergers and acquisitions may all result in temporary shutdown scenarios, at an increased rate which may not have been anticipated in mine closure design or the financial assurance estimate. The likelihood of one or several temporary shutdowns in the life of a mine, or the potential for early closure due to falling prices or a variety of factors, are all reasons for promoting a flexible approach to decommissioning and closure regulations.

• **Technical Challenges in Closure Planning:** Numerous technical challenges exist: For example, in many cases, passive/semi-passive biological treatment of mining-impacted water requires close monitoring and a significant level of post-closure maintenance and intervention. In fact, many operators have experienced limited success with these concepts and examples exist in which whole wastewater treatments treatment schemes have had to be abandoned even after years of testing. In other cases, natural minerals (e.g., mercury, selenium, other heavy metals) occurring in closed and revegetated waste rock dumps or deposited tailings may be mobilized and accumulated at unacceptable regulatory levels in surface water, groundwater or other media. Other typical closure challenges (e.g., residual cyanide reagent, acid rock drainage) have in some cases proven to be more difficult to resolve. Regulatory approaches must allow for appropriate testing and evaluation during the construction and operational phases of a mine to confirm the adequacy of planned closure schemes and adjust these options, if necessary.

• **Small Scale, Artisanal, and Illegal Mining:** In addition to regulation of large-scale mining operations, host country regulatory frameworks should address small and medium-scale mining operations, as well as artisanal mining in association with a permitted operation. The regulation of small-scale and artisanal mining is a very complex problem in many countries and should not be regulated in the same way as for large-scale mining. Also, illegal mining, by definition, would not be associated to permit operations.

• **Site Relinquishment:** Companies are looking for clear legal guidance and cleanup targets needed for site relinquishment (i.e., lawfully cease to be legally responsible for a closed site). This process can be complicated when dealing with multiple authorities, agencies, and landowners. There is a strong practical need for a single agency to assume a role of primacy; as an example, the ANZMEC Strategic Framework for Mine Closure recommends the designation of a responsible authority which could make the final decision to accept closure in consultation with other regulatory bodies and stakeholders prior to relinquishment.14

• **Socioeconomic Challenges Upon Company Exit**: A lack of economic alternatives following mine closure can result in socioeconomic impacts such as retrenchment and increase in violence, migration, and disintegration of community development programs, as well as in environmental impacts from overgrazing, tree harvesting, or other unsustainable agricultural pressures on restored lands, or the illegal mining of deposited tailings or waste rock. Closure planning needs to address these and other specific socioeconomic impacts to minimize the impacts on affected communities, including the transitioning phases leading to final relinquishment, which may take several years. Also, social impacts of decommissioning and closure can be underestimated and not accounted for in financial assurance mechanisms, or the fluctuating socioeconomic context may vary significantly and needs to be reassessed and accounted for to adequately estimate closure costs.

• **Integration in Context of Regional Development**: Integration of mining projects into wider regional development plan can be an effective way to reduce the dependency of a region on the mine and can set a better framework for delivery of social services such as health and education. These services are still often delivered by the mine rather than the government which creates sustainability and dependency issues, especial upon decommissioning and closure\(^\text{15}\).

• **Legacy Issues**: Another key challenge relates to how well governments together with the industry manage legacy issues resulting from past closure programs; from the development of facilities that were designed at a time when less stringent requirements were in place (and thus environmental and social liabilities can be expected to be more complex) – or where there is complete lack of such plans upon completion of exploitation.

• **Sustainability Issues**: Sustainability considerations will represent a growing challenge at the time of the abandonment and closure, as these are driven by environmental, economic and social considerations. Past experience shows that is very difficult to manage socioeconomic aspects related to closure (e.g. the “bust” that follows “booms” experienced during resource exploitation), including the transfer to the government with the community of oversight and management of social and community relations programs commonly funded by operators. There is an opportunity for governments to work in partnership with the operator during operations to ensure that a project region is ready for cessations of activities and that there is sufficient institutional capacity to manage these programs.

\(^{15}\) Ibid.
1.3 Oil & Gas Decommissioning and Closure

1.3.1 General Trends in the Decommissioning and Closure of Oil & Gas Fields

As with the mining sector, the oil and gas sector has made significant strides in its approach and commitment to managing ESHS aspects associated with the different stages of its operations (Figure 3), which are analogous to those of the mining life cycle (Figure 2). General trends are outlined below:

**Figure 3: Phases of the Exploration and Production Project Cycle**

- The oil and gas sector is voluntarily seeking to more systematically and comprehensively manage the full cycle of their operations, including the ESHS consequences of these activities and implied decommissioning and closure strategies, requirements and costs.

- To date, decommissioning has been comparatively infrequent, but an increase in decommissioning activity is expected over the next few decades as field and facilities which have been producing oil and gas for many years approach the end of their commercial or useful lives.

- Offshore infrastructure alone supporting world-wide oil and gas production consists of more than 7,000 installations located on the continental shelf of 53 countries.17 About 4,000 are in the Gulf of Mexico, 1,000 in Asia, 700 in the Middle East, 500 in Africa, 350 in South America, and 600 in Europe. It is expected that a large number of decommissioning cases will take place in the near future depending on reservoirs behavior, production costs and the oil and gas price.

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17 See [http://www.decomplatform.com/what/content.htm](http://www.decomplatform.com/what/content.htm)
• The extremely high cost of offshore decommissioning led to revisions in international and national regulations adopted about 40 years ago. Current thinking is that from the technical-economic perspective, the larger the structures and the deeper they are located (more than 100 m), the more appropriate it is to leave them totally or partially intact. In shallow waters, in contrast, total or partial structure removal is still advocated. This trend also considers the possibility of secondary use of abandoned offshore platforms for other purposes (e.g., artificial reefs).

• Nevertheless, under current practices and regulatory requirements it is estimated that over 90% of offshore structures will need to be completely removed from their marine sites and brought to shore for re-use, recycling or other disposal means. The rest, which comprises the larger and heavier steel or concrete facilities, will be looked at on an individual basis to assess whether it is technically feasible (or safe) to remove them.

• Because there were facilities in need of decommissioning, both the United Kingdom (UK) and Norway have developed guidelines and standards for removal of offshore facilities as they have the world's largest installations in some of the deepest waters. Requirements in other countries around the globe are more loosely defined, particularly in those countries where offshore operations are, to date, minimal or absent.

• The United States (US), UK, and Norway have adopted mandatory regulatory and fiscal requirements including financial mechanisms for the closure of exploration and production (E&P) facilities. This has forced resource managers to begin estimating the cost of reclamation and sought to establish an incentive for companies to fulfill their obligations in order to claim back their securities. In these countries bonding requirements depend on whether the E&P activity is onshore or offshore and are calculated on the basis of area, type of facility, number of wells or other considerations.

• Decommissioning trends in the US, UK and other areas of the world set precedents that provide opportunities for growing oil and gas regions and resource-rich countries to follow and improve.

• There are issues specific to countries with national oil companies (NOCs). Normally, in these countries during exploration, the investments risks are partially or completely assumed by outside oil companies rather than the state / owner of the resource. However, once hydrocarbons are identified in commercial amounts, development occurs under a different agreement (for example a “Production Sharing Agreement”) which usually attribute an important share of the production to the NOC. Upon cessation of production (or termination of the agreement), assets are also usually returned to the NOC, who is then responsible for subsequent operation and later for closure.

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• For a variety of reasons, **decommissioning is becoming an emerging issue among multilateral lenders like the World Bank as well as private sector lenders.** Drivers include but are not limited to the need to address this issue from a risk management perspective, the increasing number of fields to be decommissioned in a foreseeable future and an increasing number of financial assurance bonds or guarantees related to closure.

• **Decommissioning is also of increasing importance to country governments,** for example in 2009 the Ministry of Energy and Mines (MEM) in Peru released the draft Regulation of Environmental Liabilities of the Hydrocarbon Sector. ¹⁹ This regulation would require for any natural or legal person, private or public, who has generated environmental liabilities (poorly abandoned wells and facilities, contaminated soil, effluent, emissions, debris, or waste located anywhere in the country, including the marine base) to be responsible for environmental remediation. This process would also require the submittal of a plan (decommissioning) for approval by the MEM Directorate of Environmental Affairs Energy (La Dirección General de Asuntos Ambientales or DGAA).²⁰

• Individually, or as part of industry associations or in partnership with the public sector or non government organizations (NGOs), **companies contribute on a voluntary basis to improvements related to the global operations including some with direct or indirect bearing on closure** and post-closure (Table 2).

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²⁰ This draft regulation is published on the MEM website to enable consultation prior to approval. It will apply to environmental liabilities of the hydrocarbons sector within the national territory as a result of operations in the hydrocarbon sector, conducted by individuals or corporations that have ceased their activities in the area where the impacts occurred.
### Table 2: Examples of Initiatives Promoting Sustainable Decommissioning Practices, Oil and Gas

<table>
<thead>
<tr>
<th>Organization / Standard</th>
<th>General Description</th>
<th>Applicability to Decommissioning</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Energy and Biodiversity Initiative (EBI)</strong></td>
<td>In 2002, NGOs such as Conservation International, Flora and Fauna, the International Union for Conservation and Nature (IUCN) and the Smithsonian Institution partnered with BP, Chevron, Shell and Statoil to develop best management practices (BMPs).</td>
<td>• EBI created a set of practical guidelines and tools to minimize impacts to biodiversity and maximize contributions to conservation wherever oil and gas resources are developed. The guidelines address all stages of the project lifecycle—from pre-bid to decommissioning—and are designed to be integrated into existing company management systems.</td>
</tr>
<tr>
<td><strong>Extractives Industry Transparency Initiative (EITI)</strong></td>
<td>Established in 2006 to improve governance in resource-rich countries through the verification and full publication of company payments and government revenues from oil, gas and mining.</td>
<td>• The EITI promoted the establishment of a Petroleum Fund as a mechanism for making petroleum income more consistent and predictable from year to year, and for saving some of the revenue from petroleum for the time when the country’s oil and gas has been depleted or close and funds are needed for decommissioning.</td>
</tr>
<tr>
<td><strong>Equator Principles and the IFC Performance Standards by Major Private Lending Institutions</strong></td>
<td>See Table 1.</td>
<td>• Updated EHS guidelines for onshore and offshore oil and gas were finalized in 2007. These guidelines address environmental, health and safety considerations, and include guidance on oil and gas closure/post-closure,</td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>Organization / Standard</th>
<th>General Description</th>
<th>Applicability to Decommissioning</th>
</tr>
</thead>
<tbody>
<tr>
<td>IPIECA (International Petroleum Industry Environmental Conservation Association [IPIECA]).</td>
<td>IPIECA aims to develop and promote scientifically-sound, cost-effective, practical, socially and economically acceptable solutions to global environmental and social issues pertaining to the oil and gas industry. IPIECA has published several publications that raised the issue regarding decommissioning of Oil and Gas.</td>
<td>“Partnerships in the Oil and Gas Industry” This publication describes “sustainability” activities in the areas of human rights, health, capacity building, biodiversity, and climate change among others. “The oil and gas industry from Rio to Johannesburg and beyond. Contributing to sustainable development.” This report has been prepared by the International Petroleum Industry Environmental Conservation Association (IPIECA) and the International Association of Oil and Gas Producers (OGP) through a joint Task Force. 2002. It highlights the most visible—and occasionally controversial—aspect of waste management in the hydrocarbon industry is the question of what to do with facilities once they have reached the end of their useful lives. It also recognizes that on land, too, many industrial sites need rehabilitation. “IPIECA Guide to Social Impact Assessment in the Oil and Gas Industry, 2004.” It incorporates the need to address social investment and decommissioning as part of the life cycle of O&amp;G projects.</td>
</tr>
<tr>
<td>Oil &amp; Gas UK. Work Group 4</td>
<td>Oil &amp; Gas UK Work Group 4 (WG4) is the leading representative body for the UK offshore oil and gas industry. The WG4 is looking to understand the technical capability to execute decommissioning programs.</td>
<td>PILOT / Oil &amp; Gas UK Decommissioning WG4. As part of the Oil &amp; Gas UK decommissioning initiative WG4 held an “Effectiveness &amp; Efficiency” Workshop in May 2006. Other WG4 documents of interest: - WG4 Decommissioning Guidance Report: May 2008 - WG4 Technical Capability, Update Presentation: June 2007 - WG4 Proposed Plan Forward: June 2006 *WG4 Summary of Other Groups: October 2005</td>
</tr>
<tr>
<td>Regional Association of Oil and Natural Gas Companies in Latin America and the Caribbean (ARPEL)</td>
<td>ARPEL is focused in the promotion and facilitation of sustainability, including providing support to the industry in achieving its growth and development and contributing to the development and dissemination of best practices.</td>
<td>Decommissioning and Surface Land Reclamation at Petroleum Production and Refining Facilities – Guideline #6. 2005 Revised Version. ARPEL Workshop: Environmental and social aspects for the process of abandonment and closure of facilities. ARPEL April 2009 Conference “Sustainable Development. The role of the Oil and Gas Industry in Latin America and the Caribbean.”</td>
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<tr>
<td>U.S. Department of the Interior, Minerals Management Service (MMS)</td>
<td>The MMS is the U.S. Federal agency responsible for regulating oil and gas operations, including decommissioning, in offshore waters.</td>
<td>To facilitate the continuation of public involvement and participation in the decommissioning process, in 1997, the MMS and SLC sponsored a workshop to review recent and discuss future deepwater decommissioning challenges. The goals of this workshop were to disseminate information to the public on the results of recently completed projects, identify issues of concern, and elicit recommendations on future California decommissioning operations and associated technical, environmental, socioeconomic and disposition issues.</td>
</tr>
</tbody>
</table>

1.3.2 Decommissioning Challenges in the Oil & Gas sector

Key challenges are highlighted below:

- **Complexity and Comparatively Limited Experience Base**: Decommissioning is a process which raises complex issues, including the impact this phase may cause on the environment, on the health and safety of workers, the economic impact on communities, the costs involved and the technology required, particularly when removing large offshore structures. Although an increase in recent decommissioning activity has afforded the industry some experience, there is still much to learn and accomplish on a larger scale:

- **Absence of Regulations**: In most resource-rich countries, oil and gas sector projects are regulated throughout their life cycle (exploration and exploitation). Environmental requirements are imposed by country-specific environmental regulatory authorities (e.g., resource management agencies or ministries of environment); and involve completing an environmental and social impact assessment (ESIA) and an associated environmental and social management plan (ESMP) as well as obtaining an “environmental license” or “permit” for the exploration and exploitation phases of activities. However, there are often no regulations specific to decommissioning and closure.

- **Onshore vs. Offshore Decommissioning**: Upstream oil and gas facilities include both onshore (wells, production platforms, gathering lines, etc.) and off-shore structures (fixed steel platforms and large concrete gravity structures, floating production systems and subsea completions) which necessitate dismantling processes and financial resources upon termination of production. For onshore facilities, the nature of traditional (i.e., not “oil sands”) onshore upstream E&P hydrocarbon operations result in a footprint that is comparatively small compared to the scale of an open pit mine. Decommissioning
involves plugging and capping of wells, securing and dismantling of facilities, recycling steel material, closure of landfills and land rehabilitation using techniques which are similar to those used in the mining industry or civil infrastructure such as road construction (e.g., re-contouring, re-grading, and re-vegetation).

- **Larger Scale of Offshore Decommissioning**: Decommissioning is much more complex for offshore facilities, principally as a consequence of the risk, cost, and controversy related to the dismantling of offshore structures. Odin was the first (and ExxonMobil’s only so far) large fixed installation to be decommissioned on the North Sea in the 1980s. The process took five years and involved many technical challenges. There was extensive consultation with key stakeholders and in the end, more than 97% of the installation was recycled or reused. In general, given the variety of structures, their age and scale, decommissioning costs can range in the hundred of millions of US dollars.

- **No “One Size Fits All” Offshore Decommissioning**: Most facilities were designed to suit particular development and field conditions, including steel or concrete structures, fixed or floating production systems, offshore storage and loading installations, and under-water extraction systems. There is no single tried and tested method for decommissioning. Approximately 90% of installations are steel structures located in water depths less than 75m; however, some larger steel and concrete structures are an order of magnitude heavier and positioned in water depths of 450m. Technology is now allowing to start operations at deeper waters. In short, each facility presents its own decommissioning challenges in terms of water depth, configuration and size.

- **Changing Decommissioning Needs and Contract Service Capacity**: Due to the highly variable commercial factors, including price of oil, the oil and gas industry pursues ways to extend the productive life of existing reservoirs and facilities, to optimize recovery of the hydrocarbon resources. This makes the oil and gas business very dynamic and decommissioning plans highly susceptible to such changes; and, in turn, presents a challenge in so far as planning -- and the availability of contract service capacity.

- **Lack of Dismantling and Onshore Scrapping Facilities for Offshore Structures**: In many resources rich countries, facilities need to be developed prior to the onset of physical decommissioning of offshore installations. Although there may be some dismantling yards in the region, these may not accept particular offshore structures due to potential contamination issues, and complications related to import-export regulations (e.g. steel may have been imported under exempted country custom duty).

- **Legacy Issues**: Another key challenge relates to how well governments together with the industry manage legacy issues resulting from past decommissioning programs; from the decommissioning of facilities that were designed at a time when less stringent requirements were in place (and thus environmental and social liabilities can be expected to be more complex) – or where there is complete lack of such plans upon completion of exploitation.
• **Accountability:** The owners and operators may change numerous times over the life cycle of a particular field (merger, acquisitions, disposition etc.). Consequently, a key challenge of government authorities is defining clear and fair financial responsibilities related to decommissioning and closure – and ensuring that appropriate funding is available upon cessation of operations to begin closure activities.

• **Sustainability Issues:** Sustainability considerations will represent a growing challenge at the time of the abandonment and closure, as these are driven by environmental, economic and social considerations – and past experience shows that is very difficult to manage socioeconomic aspects related to closure (e.g. the “bust” that follows “booms” experienced during resource exploitation), including the transfer of oversight and management of social and community relations programs commonly funded by operators. There is an opportunity for governments to work in partnership with the operator during operations to ensure that a project region is ready for cessations of activities and that there is sufficient institutional capacity to manage these programs.

### 1.4 Perceived Priority of Decommissioning and Closure Issues

The trends, issues and challenges described in Section 1.2 (mining) and Section 1.3 (oil and gas) may apply differently from one country to another, and there are many issues specific to individual countries or regions. However, trends not currently noticed in one country could be relevant in other countries over the coming years as more operations require temporary or permanent shutdowns.

Sections 1.4.1, Section 1.4.2 and Sections 1.4.3 present the results of a limited survey\(^{22}\) conducted during workshops held in 2009, and provide a possible indication of the currently perceived urgency and priority of different issues. It is suggested that governments should complete a similar exercise (Section 1.5) to determine the issues that are considered most important from a regulatory perspective, in order to be better prepared to address these in the different components of their decommissioning and closure programs.

### 1.4.1 Issues and Priorities in the Mining Sector Decommissioning and Closure

For the mining sector the top most cited issues were “Financial Assurance Mechanisms” and “Legacy Impacts of Mining.”

\(^{22}\) Results of this survey are provided for illustration purposes only; the survey included a total of 20 participants representing a select group of private sector companies, nongovernment organizations, industry organizations, World Bank experts and other specialists.
In addition, the following issues may be gaining importance:

- With respect to “Legacy Impacts” and the potential interest of affected regulatory authorities, there should be **consideration for potential regional closure strategies**, i.e. how to plan for the closure of a mine adjacent to other operating mines, each of which may close at different dates, and are operated by a variety of companies;

- **Proper consideration of biodiversity/ecosystem service impacts** early in the planning stage as a necessary component for evaluation and selection of appropriate operational technology and remediation/rehabilitation/offset options.

- The need to provide guidance on how to achieve mutually agreed (regulator and operator) closure, rehabilitation, reclamation and relinquishment criteria.

### 1.4.2 Oil and Gas Sector Decommissioning and Closure Issue Priorities

According to the same survey the two most frequently sited priority issues for the oil and gas sector are: “Financial Assurance Mechanism” and the “Basic or Inexistent Regulatory Framework” relating to decommissioning and closure (**Figure 5**).
In addition, given considerable oil and gas asset trading, the following potential emerging issues may be gaining importance:

- The need to define and establish companies' ESHS obligations throughout the life of a field.

Efforts to tackle climate change and achieve greenhouse gas (GHG) emissions reduction targets is likely to drive requirements for "low-carbon footprint decommissioning" over the next few years.

1.4.3 Extractives Sector (Mining and Oil and Gas) Decommissioning and Closure Issues Priorities

As shown on Figure 6, top issues common to the extractives sector are perceived to be: “Dependence of Communities on Operational Phase Benefits,” and “Changes in Government / Regulations and Effect on Closure Commitments” followed very closely by “Lack of Technical Guidance on Social Closure Measures” and “Accountability and Responsibility.”
1.5 Assess Issues and Set Priorities – Survey Template

Government authorities seeking to establish decommissioning requirements will likely need to regularly do a survey to assess priorities of action. Figure 7 provides a template that can be adapted for this process.

The survey can be completed as part of the process to engage and raise awareness among internal stakeholders (staff within the regulatory agency) – or to engage other categories of stakeholders (e.g. other government agencies involved in decommissioning, private sector companies operating or planning to operate in-country or knowledgeable academic institutions as well as NGOs involved in community development or habitat conservation.

It should be noted that this sample survey provides a list of common priority issues relative to decommissioning and closure; however, this list should not be considered comprehensive or complete. Governments should use it as guidance and incorporate additional priority issues that might be more relevant to specific circumstances in each country.
**Figure 7: Template - Self Assessment of Priority Issues**

**TEMPLATE FOR SELF-ASSESSING PRIORITY ISSUES IN DECOMMISSIONING PROGRAM COMPONENTS - MODIFY AS NEEDED**

**Principal Focus (check one):**
- Mining
- Oil and Gas

**Type of Organization (check one):**
- Company
- Industry Organization
- Government
- Non Government Organization
- Other (specify)

**For your industry, check issues related to decommissioning and closure that you consider most critical to your projects, industry, organization, or agency:**

<table>
<thead>
<tr>
<th>Oil and Gas</th>
<th>Mining</th>
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</thead>
<tbody>
<tr>
<td>□ 1. Only Basic Regulatory Framework: Many countries possess only basic legal frameworks for decommissioning, leaving a great deal to be negotiated at a later date with the oil companies, and providing potential investors with little guidance in regards to government expectations.</td>
<td></td>
</tr>
<tr>
<td>□ 1. Challenges in Collaboration Between Resource Management and Protection Agencies: In many countries there is limited collaboration between government authorities responsible for resource extraction and development and those branches responsible for social welfare and natural resource protection, which complicates the development of a mine closure strategy that will also be sustainable.</td>
<td></td>
</tr>
<tr>
<td>□ 2. Insufficient Guidelines for Remediation of Residual Contamination: There are a lack of consistent guidelines specifying risk management objectives for contamination in soil and water in context of site restoration, decommissioning, closure and long term risk management.</td>
<td></td>
</tr>
<tr>
<td>□ 2. Inadequate Considerations of Closure During Planning: During the initial stages of mine planning, certain decisions are made that can significantly affect temporary shutdown or decommissioning options. Lack of a conceptual closure plan (including reasonably predictable environmental and social issues) can result in selection of suboptimal mine design elements and increase the costs and complexity of closure.</td>
<td></td>
</tr>
<tr>
<td>□ 3. Financial Assurance Mechanisms: Since the normal mechanism for recovery of costs included in most exploitation contracts or permits is from production revenue, the latter does not apply when the production ceases. Consequently, a financial assurance or performance bonding mechanism should be required to cover these costs.</td>
<td></td>
</tr>
<tr>
<td>□ 3. Financial Assurance Mechanisms and Funding of Social Aspects: There is debate over which mechanisms are most appropriate, particularly to manage social issues related to closure. Other financial tools (e.g., separate investment funds fed by a percentage of profits, untaxed focused charitable donations) will likely need to be considered.</td>
<td></td>
</tr>
<tr>
<td>□ 4. Insufficient Guidance on Estimating Funding for Social Aspects: Although financial assurance mechanisms and performance bonds are commonplace, and some guidelines are available to estimate environmental restoration/rehabilitation costs, there is very little guidance available on how to estimate the financial reserves necessary to address the social aspects of closure.</td>
<td></td>
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<tr>
<td>□ 4. Variability in Mine Site Characteristics: Although information on and closure technology is growing exponentially, each mine site has unique environmental and social characteristics that will need to be well understood and carefully addressed in closure. Methods that work well in a particular geographical and social setting may not always transfer well to other locations and circumstances.</td>
<td></td>
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</tbody>
</table>
### TEMPLATE FOR SELF-ASSESSING PRIORITY ISSUES IN DECOMMISSIONING PROGRAM COMPONENTS - MODIFY AS NEEDED

**Principal Focus** *(check one):*

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- [ ] Oil and Gas

**Type of Organization** *(check one):*

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<tbody>
<tr>
<td><strong>5. Orphaned / Abandoned Wells</strong></td>
<td>An ongoing issue is how to address the proper decommissioning of orphaned wells, namely abandoned oil and gas facilities that have no ownership but have persisting liability concerns and costs.</td>
<td><strong>5. Legacy Impacts of Mining</strong></td>
</tr>
<tr>
<td><strong>6. Improper Temporary Abandonment and Implications on Reactivation</strong></td>
<td>Improper abandonment, closure of a field can trigger many severe issues that may hamper the field to become commercial again, such as well damage, reservoir damage, clogging or malfunctioning of facilities and equipment, and potentially impacts to the environment.</td>
<td><strong>6. Practices and Potential Sterilization of Mineral Resources</strong></td>
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<td><strong>Other:</strong> (Please Specify)</td>
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<td>[ ] Other: (Please Specify):</td>
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**Template for Self-Assessing Priority Issues in Decommissioning Program Components - Modify as Needed**

**Principal Focus (check one):**
- [ ] Mining
- [ ] Oil and Gas

**Type of Organization (check one):**
- [ ] Company
- [ ] Industry Organization
- [ ] Government
- [ ] Non Government Organization
- [ ] Other (specify)

**For your industry, check issues related to decommissioning and closure that you consider most critical to your projects, industry, organization, or agency:**

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Check issues common to mining and oil and gas, that you consider most critical to your projects, industry, organization, or agency:

- [ ] 7. Governmental Agencies can Shift their Focus / Regulations and Effect on Closure Commitments: Governmental agencies can shift their focus in response to evolving regulatory frameworks or political changes; for these reasons, as well as the inevitability of unanticipated operational, economic, or environmental or social changes over a project’s life cycle, closure strategies and commitments are seldom permanent, and will need to be periodically and systematically revisited and renegotiated in response to project dynamics.

- [ ] 8. Industry Performance and Influence on Compliance Requirements: In many locations mining and oil and gas operations are highly visible; temporary shutdowns and decommissioning and closure at the end of productive life have become very controversial, politicized issues because of potentially poor past practices, direct impacts on economically dependent communities, potential residual impacts upon the environment, and other complex social, economic and environmental factors. Legislative requirements with which these operations are obliged to comply will need to consider stakeholder and public perception of the manner in which extractive industries address temporary shutdowns and decommissioning and closure.

- [ ] 9. Accountability and Responsibility: An ongoing issue is how responsibility for decommissioning is affected by transfer of title (e.g., to/from a contractor to a national oil company in the case of oil and gas), particularly where decommissioning and closure considerations are not explicitly addressed in the contract. Original project proponents may not be the same as the operators responsible for the end of the project life cycle, due to merger/ acquisition/divestiture activities or business failures; the resources and motivation of a new operator to carry forward the original negotiated approach to consider aspects related to decommissioning are highly variable.

- [ ] 10. Dependence of Communities on Operational Phase Benefits: Over the course of a multi-year or even multi-decade mining or oil field exploitation, communities, local and regional stakeholders become overly dependent on the operator for a wide range of basic services and infrastructure, direct and indirect employment, royalties, tax revenues, charitable contributions, and other benefits.

- [ ] 11. Gender Consideration: Gender (and its associated cultural setting) should be carefully considered when involving communities in planning decommissioning and closure strategies, as women may figure prominently in the sustainable development of local communities, and may have a very distinct set of concerns follows cessation of exploitation activities.
### Template for Self-Assessing Priority Issues in Decommissioning Program Components - Modify as Needed

**Principal Focus (check one):**
- [□] Mining
- [□] Oil and Gas

**Type of Organization (check one):**
- [□] Company
- [□] Industry Organization
- [□] Government
- [□] Non Government Organization
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**For your industry, check issues related to decommissioning and closure that you consider most critical to your projects, industry, organization, or agency:**

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<tr>
<td>□ 12: Lack of Technical Guidance on Social Closure Measures: Because of the economic dependencies associated with mining and oil and gas operations, the potential lack of other income generation options, and, in the case of mining, the enduring economic attractiveness of engaging in small-scale, artisanal, or illegal mining, the social aspects of closure may be highly complex and may limit the range of environmental closure options that would otherwise be viable. Technical guidance to inform the social aspects of closure is limited, as is the ability to meaningfully extrapolate such guidance to specific situations.</td>
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<tr>
<td>□ 13. Engagement of Knowledgeable Stakeholders: Sustainable decommissioning and closure strategies should not only consider the needs and expectations of directly impacted communities responsible regulators, but also the relevant experience and the potential contributions and lessons learned that may be available from other local communities and governments, lending institutions, insurers, industry organizations, NGOs, and other stakeholders involved with similar projects in similar social and environmental settings.</td>
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<tr>
<td>□ 14. Need to Coordinate With Other Active Operators: Impacted areas to be decommissioned and/or closed may overlap with other active project operations. Multiple operators may also share the use of certain facilities or infrastructure. These industry stakeholders will therefore also need to be engaged as part of temporary shutdown and decommissioning/closure planning processes.</td>
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<tbody>
<tr>
<td>□ 15. Increasing Interest of Lending Institutions and Insurance Providers: Mining and oil and gas projects are intrinsically capital-intensive business enterprises, and multilateral and private lending institutions as well as insurance providers are increasingly concerned with the ability of operators to manage all aspects of a project’s operational, environmental, and social risks that could affect economic performance, and by extension, the reputation of the lending institution or insurer.</td>
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</table>

□ Other: (Please Specify):
Towards Sustainable Decommissioning and Closure of Oil Fields and Mines: A Toolkit to Assist Government Agencies

Toolkit – Tool 1
Policy and Regulatory Framework
Version 3.0
March 2010

This Toolkit is a living document or tool designed to increase the level of awareness on decommissioning and closure issues. It serves as guidance to government authorities, institutions and regulatory agencies, in natural-resource rich, developing countries, seeking to establish or improve closure and decommissioning programs for the extractives sectors. This initial version of the Toolkit was prepared in 2009 in the context of the Petroleum and Governance Initiative (PGI) jointly launched by the World Bank and the Government of Norway in 2006 – and with input from a select and diverse group of stakeholders from private sector companies, industry organizations, non-government institutions, government authorities, experts and practitioners involved in different aspects of oil and gas and mining decommissioning and closure.
# TOOL 1 – POLICY AND REGULATORY FRAMEWORK

## 1.0 TOOL 1 – POLICY AND REGULATORY FRAMEWORK

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1.0 TOOL 1 – POLICY AND REGULATORY FRAMEWORK

As shown on Figure 1, this tool is designed to provide governments and related agencies a framework process and guidance to improve their governance related to the sustainable decommissioning and closure of mines and oil fields. This tool will:

- **Outline key steps** that governments should consider to proactively initiate a regulatory improvement process through a “gap analysis” and action planning exercise;

- **Provide guidance on and a template for the legislative policy and principles** related to decommissioning and closure;

- **Contribute to organizational awareness** by providing relevant background information and examples.

*Figure 1: Relationship to Other Tools*

---

**GENERAL GUIDANCE:** Increase Level of Awareness and Understanding
- Definitions, Trends and Issues
- Survey and Set Priorities

**TOOL 1:** Incorporate into Policy and Regulatory Framework
- Steps and Guidance
- Tools or Templates
- References and Examples

**TOOL 2:** Endorse Environmental and Social Best Practices – and Management Systems
- Steps and Guidance
- Tools or Templates
- References and Examples

**TOOL 3:** Select and Establish Financial Assurance Mechanism
- Steps and Guidance
- Tools or Templates
- References and Examples

**TOOL 4:** Enforce and Monitor
- Steps and Guidance
- Tools or Templates
- References

**TOOL 5:** Embrace Stakeholder Engagement and Assure Continuous Improvement
- Steps and Guidance
- References and Other Tools

EARLIER, ENHANCED, MORE COMPREHENSIVE, PLANNED AND FLEXIBLE MANAGEMENT OF SOCIOENVIRONMENTAL DECOMMISSIONING PRACTICES
1.1 Introduction

It may be observed that the degree to which governments have the strategic direction, policies, structures, and functions in place for addressing decommissioning and closure generally depends on the maturity of the extractives sector and the experience that they have had with closure. For example, the United States and Australia have experienced the cessation of numerous mining operations, and as a consequence have detailed closure requirements embedded in their legislation. Similarly, Norway, the United Kingdom and the United States have also had to decommission large scale offshore oil production operations, and have therefore developed provisions for decommissioning in their governing regulatory requirements.

More recently, countries like Romania and Poland have had to address closure issues involving major regional mining activities. The lessons learned contribute to the growing body of knowledge related to sustainable decommissioning and closure.

Provisions range from broad constitutional clauses to specific requirements for certain practices. Governments are advised to set clear regulatory requirements so that operators know what is expected from them and also to reduce the risk from unplanned closures.

1.2 Sub Tool 1.1 - Consider Steps Toward a Policy and Regulatory Framework

Figure 2 summarizes steps recommended to establish or enhance a country’s policy and regulatory framework relating to decommissioning and closure.

Note that:

- At this level, the process outlined applies to both the mining and oil and gas sectors.

- As sector-specific steps are completed, the outcomes will differ in the issues covered, outputs generated and stakeholders involved.

ACTION ➔ Without going into much detail, determine what steps in Figure 2 have been applied in whole or in part by your government to the extractives industries, and which may need to be further developed. The next tool, Sub-Tool 1.2, can support governments in a more detailed analysis.
Figure 2: Sub Tool 1.1 - Steps to Enhance Policy and Regulatory Framework

**COMPONENT 1 GOAL**: INCORPORATE TO POLICY AND REGULATORY FRAMEWORK

**STEP 1. Adopt Policy and Guiding Principles**
- Mineral/ Resource Management Authority/ Ministry
- Government
- Mineral Resource Management Authority
- Environmental/ Natural Resource Management Agency

**STEP 2. Define Roles and Responsibilities**
- Mineral Resource Management Authority
- Environmental/ Natural Resource Management Agency
- Industry Organizations
- Standard-Setting Organizations
- Non Government Organizations

**STEP 3. Reach Consensus to Adopt Guidelines and Cleanup Standards**
- Mineral Resource Management Authority
- Environmental/ Natural Resource Management Agency
- Industry Organizations
- Standard-Setting Organizations
- Non Government Organizations

**STEP 4. Establish Contractual Requirements**
- Mineral Resource Management Authority
- Mining or Oil and Gas Company
- Environmental/ Natural Resource Permitting or Management Agency
- Health, Labor, Planning Agencies
- Mining or Oil and Gas Company
- Lending Institutions

**STEP 5. Link to Applicable Permitting**

Lessons learned, input from stakeholders, or improved practices?

**KEY STAKEHOLDER(S) TO INVOLVE:**

- Government
- Mineral Resource Management Authority
- Environmental/ Natural Resource Management Agency
- Industry Organizations
- Standard-Setting Organizations
- Non Government Organizations
- Mineral Resource Management Authority
- Mining or Oil and Gas Company
- Environmental/ Natural Resource Permitting or Management Agency
- Health, Labor, Planning Agencies
- Mining or Oil and Gas Company
- Lending Institutions
1.3 Sub Tool 1.2 - Gap Analysis and Action Plan Development

*Table 1* is a template that can be used to help assess the degree to which a government has integrated decommissioning and closure provisions, mechanisms and processes in the search for sustainable outcomes – and to define specific actions that can be taken to close these gaps.

Note the following:

- The guidance that follows for each step may be used sequentially, or agencies may refer to the step(s) of most interest / priority.

- This sub-tool may be adapted or expanded with a focus one particular step.

- This tool can also be used as way to engage internal staff or other government agencies by completing the gap analysis as a group during a workshop that will result in increased understanding of the steps, exchange of ideas and generally raise the level of awareness on decommissioning and closure.

**ACTION ➔** Complete items 1 through 4 for each step.
### Table 1: Sub Tool 1.2 - Gap Analysis and Action Plan Development Template

<table>
<thead>
<tr>
<th>Process Step</th>
<th>1. Questions (Use these questions as guidance)</th>
<th>2. Self Assessment (describe where you are in the process)</th>
<th>3. Best Practice</th>
<th>4. Action Plan (Specify responsible party, resources, timeframe)</th>
</tr>
</thead>
</table>
| **Step 1 - Adopt Policy and Guiding Principles** | • Do you have a policy and principles related to decommissioning and closure?  
• Do the national laws, norms or decrees specifically reference decommissioning and closure?  
• Have decommissioning and closure principles been formally adopted?  
• Does the sector specific legislation include environmental and social requirements? | • (insert) | • There is a clear policy and principles based on the concept of sustainable development (see Section 1.5).  
• An enhanced regulatory approach is recommended (see Section 1.4.3) to promote flexibility and encourage partnership with operators through the decommissioning and closure process.  
• There is national and regional legislation (clear and transparent) that explicitly mentions decommissioning and closure.  
• There are sector specific codes including environmental – and social (e.g., consultation requirements) – legislation. | • (evaluate, discuss and insert) |
| **Step 2 - Define Roles and Responsibilities** | • Who is responsible for assessing national resources?  
• Who is responsible for negotiating contracts/licenses with operators?  
• Who ensures compliance with environmental regulations?  
• Who is responsible for compliance monitoring?  
• Are responsibilities for decommissioning and closure clearly laid out?  
• What is the role of regional authorities (if any) in decommissioning and closure? | • (insert) | • Good international practice includes: (1) a Ministerial Level Agency responsible for policies and coordinating with other agencies, organization, direction of activities– as well as principal liaison with operators; (2) The Department in charge of resource exploitation should negotiate and administer concession, monitor compliance and oversee small scale operations; (3) a Geological Survey in charge of assessing country resources, mapping and maintaining a database; and (4) an environmental entity responsible for overseeing environmental (and social) compliance by setting standards, monitoring and approving the EIA – including decommissioning and closure components – reporting to a separate entity in order to avoid conflict of interest.  
• Where there is significant decommissioning and closure activity, a specific division in charge of decommissioning and closure is warranted. | • (evaluate, discuss and insert) |
<table>
<thead>
<tr>
<th>Process Step</th>
<th>1. Questions (Use these questions as guidance)</th>
<th>2. Self Assessment (describe where you are in the process)</th>
<th>3. Best Practice</th>
<th>4. Action Plan (Specify responsible party, resources, timeframe)</th>
</tr>
</thead>
</table>
| **Step 3** - Agree on / Adopt Guidelines and Cleanup Standards | • Has the government formally defined the decommissioning and closure process?  
  • Does the government have specific cleanup standards relating to soil, surface water and ground water?  
  • Does the government endorse any specific international standards or guidelines?  
  • Is the country party to any international agreements of relevance to decommissioning and closure?  
  • What is the country’s commitment in relation to climate change? To sustainable development? | • (insert) | • The decommissioning and closure process is clearly defined, documented and known by companies (see Tool 2).  
  • Cleanup standards for key media and guidelines are in place and have been developed in a participatory way with input from relevant stakeholders (e.g., with industry organizations, academic or research institutions, labor organizations, affected communities, ethnic groups).  
  • Alternatively, suitable international standards risk-based approaches are identified and referenced.  
  • Sustainable (e.g., low carbon, low social and/or environmental impact, and cost-effective) decommissioning and closure alternatives are generally favored  
  • Other appropriate guidelines are endorsed (e.g., IFC General and Sector Specific EHS Standards). | • (evaluate, discuss and insert) |
| **Step 4** - Establish Contractual/License Requirements | • Is there reference to decommissioning and closure in the contractual agreement or license?  
  • Are there specific contractual or licensing requirements related to decommissioning and closure?  
  • Does the contract/license define roles and responsibilities for decommissioning and closure?  
  • Does the contract/license establish the need for financial assurance or the specific cleanup standards?  
  • Does the contract establish the | • (insert) | • Clear decommissioning and closure targets are included in the contract agreement (The Association of International Petroleum Negotiators (AIPN) provides model contract agreements [http://www.aipn.org/modelagreements/] for a small fee).  
  • Roles and responsibilities and liability are defined, and include provisions relating to early shutdowns, abandonment, mergers or acquisitions.  
  • Financial assurance for decommissioning and closure is defined – and incentives included for progressive decommissioning and closure.  
  • Tax incentives are given for participation in | • (evaluate, discuss and insert) |
### DECOMMISSIONING AND CLOSURE POLICY AND FRAMEWORK, GAP ANALYSIS TO DETERMINE AREAS OF IMPROVEMENT

<table>
<thead>
<tr>
<th>Process Step</th>
<th>1. Questions (Use these questions as guidance)</th>
<th>2. Self Assessment (describe where you are in the process)</th>
<th>3. Best Practice</th>
<th>4. Action Plan (Specify responsible party, resources, timeframe)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>need for offsets (e.g. biodiversity offsets)?</td>
<td>regional planning / investments focused on the post-closure phase.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Step 5</strong></td>
<td><strong>Link to Applicable Permitting</strong></td>
<td></td>
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<tr>
<td></td>
<td>• Are companies / operators explicitly required to assess the impact of decommissioning and closure activities?</td>
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<td></td>
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<tr>
<td></td>
<td>• Does the above assessment include potential impacts on the socioeconomic context?</td>
<td></td>
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<tr>
<td></td>
<td>• Does the government require (i) the submittal of a conceptual closure plan as part of an EIA or ESIA approval process and (ii) submittal and appraisal of a final closure plan as part of its contract/license requirements?</td>
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<td></td>
<td>• Does the environmental permitting require post-closure commitments?</td>
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<td></td>
<td>• (insert)</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>• Projects are assessed through comprehensive environmental, social, health and safety impact assessment that include the entire project life cycle, including decommissioning, closure, and, potentially, post-closure.</td>
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<tr>
<td></td>
<td>• Specific content requirements are established for the conceptual closure plan (see Tool 2).</td>
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</tr>
<tr>
<td></td>
<td>• See specific monitoring and enforcement requirements under Tool 4.</td>
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</tr>
<tr>
<td><strong>ALL STEPS ABOVE</strong></td>
<td>Training and Capacity Building</td>
<td>(evaluate, discuss and insert)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Do the national and/or regional government authorities receive training on decommissioning and closure requirements?</td>
<td></td>
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<tr>
<td></td>
<td>• Are there specific personnel – and resources – assigned the responsibility to oversee decommissioning and closure matters in each government organizations involved?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Are there personnel in the division / agency with sufficient competence (i.e., gained through training and/or experience) in decommissioning and closure?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• (insert)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Government officials are trained in sector-specific and environmental agencies in both technical and regulatory aspects specific to decommissioning and closure.</td>
<td></td>
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<tr>
<td></td>
<td>• Funding from other sources (e.g. technical assistance from multilateral) is leveraged to support capacity building.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• (evaluate, discuss and insert)</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Process Step</td>
<td>1. Questions (Use these questions as guidance)</td>
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<td>--------------</td>
<td>-------------------------------------------------</td>
<td>------------------------------------------------------</td>
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<td>-------------------------------------------------</td>
</tr>
</tbody>
</table>
| ALL STEPS ABOVE | • Do the different government entities (division responsible for assigning concessions, entity responsible for permitting and agency responsible for environmental management) coordinate their functions? How?  
• Have government officials visited projects undergoing decommissioning, closure, and post-closure monitoring activities?  
• Are there meetings to define opportunities for improvement and discuss lessons learned?  
• Are there opportunities to obtain and integrate input from other stakeholders (operators, NGOs, academic institutions, etc.)? | • (insert) | • Effective communication and cooperation occurs among government agencies involved in decommissioning and closure.  
• Gaps are bridged with contributions from multilaterals or other donor agencies.  
• Multi stakeholder forums, or government sponsored events / conferences are organized to exchanges ideas and strategies related to decommissioning and closure practices.  
• Government officials have personally observed BMPs in decommissioning and closure as part of their training or day-to-day responsibilities. | • (evaluate, discuss and insert) |
1.4 Guidance and Recommendations

1.4.1 Regulatory Framework: Important Considerations

Many traditional mechanisms for influencing decommissioning and closure practice reside wholly within a government’s sphere of control, but an increasing number of provisions may be placed within the “self-regulatory” sphere. When governments review and update their regulatory framework, the following should be considered:

- **Scope and nature of the current and future regulatory environment**: There needs to be a balance between “prescriptive” and “performance based” objectives within policy, legislation and regulations, and also between public or national regulation and self-regulation. This is important because:
  - There is a need for flexibility in the regulatory framework, as shown on Figure 1 and Figure 2, to evolve over time as the mining and oil and gas sectors mature or change in response to changing environmental, economic, and social conditions.
  - There are significant benefits to be gained from leveraging the lessons learned by the private sector with respect to the effectiveness of self-regulation. Good practice should be geared towards a collaborative, “partnership-based” relationship between the regulator(s) and the operator(s), and ideally coupled with reasonable external third party and public verification.
  - Prescriptive requirements stifle the development and application of improved approaches and techniques.

- **Existence of related policy and legislation (e.g., environmental protection laws)**: These ancillary laws, while not specifically designed for decommissioning and closure, may contribute to better performance.

- **Structure and Relative Importance of the Extractive Industry within the National Economy**: This may significantly influence how the policy, legal and regulatory landscape develops for each country. For example:
  - **Presence of state-owned or controlled enterprises**. In the oil and gas sector, the responsibility (and associated costs) for the decommissioning of installations have historically tended to revert fully to the national oil company when any partnering agreement or contract with an international oil company comes to an end.1 Unless the contract establishes clear decommissioning and closure responsibilities and accountability.

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- Presence of extractive industries that are of national strategic importance. This may make it more likely that sector-specific policy or legislation has or will be been devised.

- **Government structure (e.g., centralized or federal vs. decentralized) and the relationship between national and subordinate levels of government:** While a national government might set policy for decommissioning and closure, it may be the regional/state and/or local governments which undertake enforcement and monitoring activities (see Tool 4). This may, in turn, make it challenging to ensure a consistent and coordinated approach to decommissioning and closure across government, but may have advantages in relation to refinement of the decommissioning/ closure requirements to better meet the local social, environmental and/or economic priorities.

- **Existence of partially or fully voluntary mechanisms or agreements:** Any changes to the regulatory regime should be sensitive to potentially negative impacts on the functionality of existing voluntary or semi-voluntary mechanisms or agreements that companies are following.

- **Progressive legislation (new projects vs. grandfathered):** While projects in the planning phase can be required to meet new or revised legislation by incorporating this requirement in new contracts/licenses and permits, existing operations will needed to be treated on a case-by-case basis, working with the operator to develop a closure scheme that is optimum given the circumstances. Under this scenario, the “enhanced regulatory” approach, described in Figure 3, is also favorable.

- **Diversity of Situations leading to temporary shutdowns or closure:** Numerous situations lead companies in the extractives sector to temporary shutdown or permanent decommissioning and closure activities and should be considered in the provisions made for decommissioning and closure. These could include:
  - Low commodity prices;
  - Changes in demand, driven by technological forces;\(^2\)
  - Depletion of economically recoverable resources;
  - Changes in government;
  - Regulatory changes;
  - Revocations of exploitation permits;
  - Nationalization;
  - Social unrest;
  - Governmental corruption;

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\(^2\) For example, increased demand for lithium to support rising demand for hybrid vehicle batteries, platinum for catalytic converters, or thorium to support thorium-based nuclear reactor designs.
- Unanticipated operational problems, such as major breakdowns, geological fractures, etc;
- Unanticipated raises in transportation, power, or other operational costs;
- Labor disputes;
- Other stakeholder disputes;
- Unanticipated environmental or archaeological impacts; and/or
- Climatic changes (e.g., extended drought or loss of permafrost conditions).

1.4.2 Policy Goals and Objectives

In addition to the broad considerations outlined in Section 1.4.1, it is also possible to identify a number of overarching and common goals that a country would aim to achieve with the policy and regulatory regime it chooses to manage decommissioning and closure:

- Providing industry with a clear, stable, flexible, and suitable environment in which to operate with a reasonable level of certainty overshort/medium-term policy and regulatory conditions: It is important that policy evolve over time. It is also important to demonstrate that policy requirements are capable of being revised to respond to changing circumstances, and that any updates can be applied fairly and equally.3

- Ensuring that any introduced policy, legislation, or regulation:
  - Has a positive “net present value” impact, i.e., that the benefits that accrue to both the host nation and the project proponent justify costs over time;
  - Does not disproportionately impact small or medium-sized operators;
  - To the extent possible, incorporates BMPs that have been demonstrated to be effective in a variety of international jurisdictions;
  - Actively encourages, and to a certain extent requires, the adoption of certain voluntary practices (e.g., Global Reporting Initiative [GRI], establishment of continuous improvement-based ESHS management systems) that have been demonstrated to drive desired behaviors on the part of project proponents and serve to minimize regulatory enforcement costs;
  - Requires open and regular communication that engages the project proponent with regulatory authorities, affected communities, and other stakeholders;
  - Requires development, approval, and periodic updates of appropriately scoped temporary shutdown/decommissioning and closure plans as a condition of exploration and resource exploitation permits;

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Requires (through a credible variety of financial instrument options) reservation of appropriate financial resources to address potential temporary shutdown and final decommissioning and closure costs, with cost estimates linked specifically to the assumptions of the aforementioned closure plan, and updated on the same schedule; and

- Based on a transparent demonstration of the adequacy of closure actions in relation to realistic and appropriate expectations for environmental and social performance, permits project proponents to ultimately relinquish a closed site and terminate their legal obligation.

- Allowing for changes to the aforementioned: It is important to recognize that each extractives operation faces unique environmental, social, and technical challenges, and that some degree of flexibility will be required. For example, the principle of derogation considered in the OSPAR Convention that allows for leaving certain oil and gas installations in situ as part of decommissioning.

1.4.3 Conceptual Regulatory Framework and Attributes of Policy and Principles

In keeping with the process described on Figure 2, consideration and goals in Section 1.4.1 and Section 1.4.2, an “Enhanced regulatory” approach is recommended as shown on Figure 3 is recommended for decommissioning and closure. This will provide the necessary flexibility to adjust to the diverse country, sector, regulatory and situation-specific decommissioning and closure scenarios in resource-rich developing countries.

In addition, the policy should encourage:

- Governance (Tool 14): Inadequate governance will be perceived as a risk by investors and companies which resource-rich countries may be interested in attracting to help develop the extractives sector. Promoting the establishment of appropriate policy, legal and regulatory requirements will encourage sector growth.

- Effective Regulatory and Management Processes (Tools 2, 3, 4 and 5): Process effectiveness will be determined by the appropriateness of contracts and licensing requirements, the use of environmental and social best practices, flexibility of financial assurance tools and guarantees, and the consultation and engagement of relevant stakeholders. These aspects are also important to ensuring a positive and sustainable outcome for decommissioning and closure.

- Monitoring, Documentation and Continuous Improvement (Tools 2 and 4): decommissioning, closure, and post-closure phases may require specific types of

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4 Components 1 through 5 are described in Figure 1.
environmental or social monitoring as well as closure reviews, audits, the documentation of lessons learned and experience over the course of decommissioning and closure, and subsequent implementation corrective and preventive actions.
Figure 3: Conceptual Policy, Legal and Regulatory Framework for Decommissioning and Closure.

Good practice “Enhanced regulatory” approach, where some aspects (e.g., industry codes, voluntary initiatives) are undertaken by operator; others by the government (e.g., policy, legislation, treaties); and others are jointly conducted (e.g., concession requirements, remediation and restoration objectives).

Source: ERM 2009.
1.5 **Sub Tool 1.3 - Template for Legislative Policy and Principles**

Regardless of how government functions are organized (e.g., one extractives ministry or separate ones for mining and oil and gas; an environmental office within each sector ministry or division or one overarching one or a single autonomous entity), resource-rich countries should consider officially adopting some of the principles outlined on *Figure 4*.

*Figure 4: Sub Tool 1.3 Decommissioning and Closure Policy and Principles Template*

<table>
<thead>
<tr>
<th><strong>Policy</strong> (suggested text for consideration and modification):</th>
</tr>
</thead>
<tbody>
<tr>
<td>As the custodian of a country’s resources and wellbeing, it is in the government’s interest to drive and regulate the entire life cycle of development projects in an efficient and cost effective manner -- including decommissioning and closure -- and establish the regulatory bodies, structures, regulatory provisions and processes to become a knowledgeable, empowered and involved counterpart in sustainable development.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Principles</strong> (suggested text for consideration and modification):</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Planning for decommissioning should <strong>begin as early as possible</strong>, in fact, ideally, it should be considered in the decision whether to allocate a concession or authorize an operation and should therefore be linked to permitting;</td>
</tr>
<tr>
<td>• Due to the long timeframe involved (one or more generations), the legislative requirements <strong>need to enable the flexibility to accommodate changes</strong> in context, technological developments or stakeholder priorities that may require adjustments in the final closure program.</td>
</tr>
<tr>
<td>• Governments should promote the concept of <strong>comprehensive decommissioning and a “sustainable development” approach</strong> by requiring closure in its scope to consider physical/ infrastructure, environmental restoration, and the long term socioeconomic wellbeing.</td>
</tr>
<tr>
<td>• Except for situations in which there are abandoned fields / legacy sites without responsible parties, governments should <strong>require the operator to set aside funds</strong>, and if technically feasible, manage implementation of the closure plan progressively.</td>
</tr>
</tbody>
</table>
1.6 Relevant Sector-Specific Information and Select Examples, Mining

1.6.1 Regulatory Frameworks

Despite the increased awareness of many governments concerning their responsibilities in relation to mine closure, many have yet to develop and implement policy and legislation which comprehensively addresses the key challenges relating to closure, particularly from a sustainable development perspective. This is particularly true of governments in resource-rich nations: of 42 developing nations reviewed by in a study by Clark and Clark, only 11 had comprehensive policy and legislation, with the remainder frequently having only very general policy and legislation in place, if at all. A number of developed countries do show a trend towards an increasingly comprehensive approach, with industry also working to take a more active role in the development of guidelines for closure.

Several types of legal and regulatory approaches and “options” to managing environmental and social aspects related to decommissioning and closure are possible and are considered on Figure 5. These approaches are illustrative and may not include all possible options. For further examples and country case studies, please see: ‘Research on Mine Closure Policy’ or ‘ICMM Mine Closure Toolkit’.

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5 Bhutan, Bolivia, Burkina Faso, the Lao People’s Democratic Republic, Mali, Mongolia, Namibia, Peru, the Philippines, Vietnam and Zambia.

6 Clark and Clark present the following examples which at a national, provincial, territorial or state level have legislative provision for mine closure: Japan, Australia, Canada, Germany, Ireland, United Kingdom, and the United States.


**Figure 5: Benefits and Risks of Different Legal and Regulatory Approaches to Decommissioning and Closure**

<table>
<thead>
<tr>
<th>Benefits</th>
<th>Risks</th>
</tr>
</thead>
</table>
| Environmental Legislation: Many developing countries have environmental legislation which applies to the mining sector. Most often, the principal legislation mandates that an ESIA, Environmental Impact Study (EIS), or similar process (e.g., the SEIA process invoked by the IFC) be undertaken prior to mine construction, or any significant change to existing operations. Since an EIA or similar is normally a prerequisite for acquiring a mining license, the EIA is “de facto the most common means of ensuring comprehensive mine closure by the government.”
| • Likely to already exist. | • Relatively broad/generic environmental legislation may not provide enough guidance specific to closure and decommissioning. |
| • Does not require specific mining or closure legislation. | • Since undertaking an EIA or similar is driven by the need to obtain a permit, the latter focus mostly on “approval” of the activities and much less on monitoring and implementation. |
| • Social impacts considered within context of EIA/EIS. | • Closure is seen so far in the life cycle when ESIA’s are submitted (i.e., 40-50 years) and cost estimates and technologies may not be realistic by the time closure occurs. |
| • Often includes provisions for some form of stakeholder engagement though the quality and duration of such engagement may be highly variable. | |

Mining Laws: Mining laws may be devised to regulate any number of aspects of the mining sector, including reclamation and restoration of sites and disturbed areas. For example, a number of mining acts in Latin American countries contain references to the recovery of degraded areas, even though other regulations tend to address issues concerning environmental management and evaluation.

<table>
<thead>
<tr>
<th>Benefits</th>
<th>Risks</th>
</tr>
</thead>
<tbody>
<tr>
<td>• May be used as a tool to set a broad and industry wide approach to sustainable mining.</td>
<td>• Potential overlapping responsibilities between mining and environmental ministries.</td>
</tr>
<tr>
<td></td>
<td>• Potential for environmental and mining legislation to require different (and contradictory) actions and/or approaches.</td>
</tr>
</tbody>
</table>

Specific Mine Closure Laws: It seems probable that new mine closure laws or supporting regulations will be developed and implemented in the future, including: details of the processes and contents of mine closure plans, and better defined roles and responsibilities associated with enforcement. One of the associated outcomes of an independent mine closure law should be a single agency to implement the law, which helps to ensure business and the community receive a clear opinion on how operation, reclamation and closure success may be measured. Another benefit is that a single agency also enables the public and NGOs to focus on a single place for information on mining regulation. It is also suggested that the agency

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9 For example, an overall feasibility study or environmental mining plan.


## Benefits

- Clarifies processes and contents of mine closure plans.
- Clarifies roles and responsibilities for enforcement.

## Risks

- Potential overlap between responsibilities of mining and environmental ministries.

### Enhanced Regulatory Approaches

Enhanced regulatory approaches involve some degree of government negotiation with an individual operator, or a body representing all or a sub-set of the mining industry. Unlike fully voluntary mechanisms, some degree of regulatory oversight remains.

- Flexible
- No need to introduce new legislation – can apply immediately to new mine developments.

### Self-Regulatory Approaches

Regulatory bodies in a wide range of national jurisdictions have increasingly adopted voluntary performance standards and continuous improvement-based management schemes as potentially effective contexts within which a mine’s closure obligations may be sustainably implemented.

- May be highly flexible and allow companies to find cost-effective solutions within a particular context.
- May enhance ‘ownership’ of decommissioning and closure issues and be more likely to secure a high level of compliance.

- Risk of opaque and closed enforcement mechanisms, processes and outcomes.
- May promote a lack of public confidence in the sector (especially if only self-regulatory measures are pursued).

### 1.6.2 Contractual and License Mechanisms

A number of resource-rich countries (e.g. Botswana, Guyana, India, Kyrgyzstan, and Vanuatu) address mine closure as part of a broader contractual agreement or licensing arrangement that authorize mineral exploration and exploitation. These contracts/licenses vary from country to country in terms of level of detail, expectations for environmental or social performance, required documentation, and regulatory approval requirements. Some contracts/licenses (e.g., mining licenses, concession contracts, or mineral exploitation licenses or permits) include provisions for mine closure which can be negotiated on a case-by-case basis.

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**Figure 6: Benefits and Risks of Relying on Contractual Agreements for Decommissioning and Closure**

<table>
<thead>
<tr>
<th>Opportunities</th>
<th>Risks</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Flexible.</td>
<td>- Possible absence of coherent/structured approach.</td>
</tr>
<tr>
<td>- Does not require introduction of new legislation – can apply immediately to new mine developments.</td>
<td>- Risk of ‘race to the bottom’ and diminished standards.</td>
</tr>
<tr>
<td></td>
<td>- Agreements may differ significantly in quality and content. It may be difficult to revise old agreements.</td>
</tr>
</tbody>
</table>
Table 2: Overview of Typical Requirements of Contractual/ Licensing Agreements

<table>
<thead>
<tr>
<th>Contractual Mechanism</th>
<th>Description</th>
<th>Activities</th>
<th>Requirements</th>
</tr>
</thead>
</table>
| **Reconnaissance license / permit**                | Authorization to conduct aerial (magnetometry, radiometry) or surface-based geological surveys as appropriate to identify prospective features that warrant further investigation. | • Investigations limited to surface samples that can be readily acquired using limited field equipment and infrastructure  
• Reconnaissance-phase activities are sometimes permitted as part of a broader exploration license (below). | • Scoping documents or exploration plans.  
• Reports of survey results, with copies presented to the governing regulatory authority upon conclusion of the activity.  
• Authorizations include clauses that invoke penalties for spills or other potential harm to the environment; disturbance of wildlife, livestock, or cultural resources; or other access restrictions or precautions, and may identify any required interactions with local or regional authorities and other local stakeholders. |
| **Prospecting or exploration phase licenses or permits** | Based on promising results from reconnaissance level investigations; authorize more intensive field studies to identify and characterize specific resources (ore) that could potentially constitute a commercially viable mining project. | • Core drilling programs or test pits.  
• Use of limited types of industrial equipment.  
• Use of limited supporting infrastructure.  
• Potentially, limited use of explosives for geophysical (seismic) investigations. | • Exploration plan or ESMP, which may be required to address the restoration and rehabilitation of impacted areas (e.g., establishment of erosion controls, re-grading of test pits or roadways, re-vegetation, waste removal or disposal, removal of equipment and temporary structures, and abandonment).  
• Exploration results usually need to be documented in substantial detail as a pre-feasibility study.  
• Authorizations include clauses that invoke penalties for spills or other potential harm to the environment; disturbance of wildlife, livestock, or cultural resources; as well as consultation requirements. |
| **Mining licenses, concession contracts, or mineral exploitation licenses or permits** | Contractual authorizations to conduct mining over the long term - these are typically complex agreements which consider the needs of the host nation (e.g. exploitation programs, royalty scheme, and technical capacity building) and the capabilities and experience of the project proponent). | • Construction and installation of all primary mining infrastructure and associated facilities including roads, construction camps, water adduction, power generation and treatment facilities, waste management structures.  
• Extractives operations, processing and all other activities required during the operation of a mine. | • Updated (“bankable”) feasibility studies.  
• Environmental and social baseline studies.  
• Environmental (and potentially social) impact assessments to national and sometime international standards.  
• Mining/operational plans that present a conceptual model of the mining activities to be conducted, and the areal extent of land to be affected.  
• Management plans that address a wide array of topics, including mine decommissioning and closure.  
• Standards for allowable contaminants (effluents and other waste streams) may be invoked, in accordance with national or international requirements.  
• A mine decommissioning and closure plan, will typically be required to address the restoration and rehabilitation of all impacted areas to an environmentally and geotechnically stable condition and to return the land for future beneficial use as determined through continuing communication and negotiation with regulatory authorities and other project stakeholders. |
1.7 Relevant Sector-Specific Information and Examples, Oil and Gas

1.7.1 Regulatory Landscape

Overall, regulatory frameworks related to decommissioning and closures of oil fields appear less evolved in the oil and gas sector than in the mining sector in resource-rich countries. In a study of “Decommissioning of Oil and Gas Installations: A Comparative Approach to the Legal and Contractual Issues,” conducted in 2000, it was found that only a minority of countries have detailed provisions for decommissioning in place. A more recent (2008) World Bank-funded PGI initiative that surveyed over 20 oil producing countries indicates that insufficient attention is being paid by governments to assessing future liability and reclamation costs. In half the countries surveyed Governments have insufficient processes for managing the decommissioning and abandonment of oil and gas facilities and did not comply (or only partially complied) with processes that exist in countries selected as benchmarks for this study (Canada, Norway, Italy, Malaysia and Brazil), see Figure 7.

Figure 7: Insufficient Emphasis on Decommissioning and Closure in Surveyed Countries

![Graph showing the insufficient emphasis on decommissioning and closure in surveyed countries.](image)


Also, in the countries evaluated, there appear to also be no differences in the degree of sophistication and approaches to decommissioning and abandonment between offshore and onshore: Governments responded equally in stating that decommissioning and abandonment requirements apply to both onshore and offshore facilities, but despite the potentially more complex and costly nature of offshore decommissioning, there is no regulatory distinction in place for managing these aspects.

18 Cameron, P., 2000; “Decommissioning of Oil and Gas Installations: A Comparative Approach to the Legal and Contractual Issues”, CEPMLP.
While the process of environmental permitting/authorizations in most resource-rich countries does reference decommissioning and abandonment plans, there are no guidelines for what these include and limited structure within which governments can approve these plans.

Below are examples of instances where onshore and offshore oil decommissioning has been addressed partially or fully within the context of a public, co- or self-regulatory sphere.

**Legal and Regulatory Approaches – Onshore**

In most resource-rich countries, oil and gas sector projects are regulated throughout their exploration and exploitation life cycle. Onshore decommissioning falls under non-sector specific legislation: environmental requirements are imposed by country-specific environmental regulatory authorities (e.g., resource conservation agencies, ministries of environment or other institutions); and involve completing an EIA/ESIA and an associated ESMP as well as obtaining an ‘environmental license’ or ‘permit’ for the exploration and exploitation phases of activities. Emphasis is placed on approving the proposed development, to a lesser degree on enforcement and monitoring of performance during exploitation and even lesser importance is attributed to decommissioning.

While many countries do not have specific decommissioning procedures in place, over time an ‘organic’ process may evolve. This has occurred in Venezuela, whereby the procedure for decommissioning includes the following steps19:

1. **Evaluation of the environmental conditions** included in the permits (i.e., EIA, Resource Affectation) granted by the People’s Ministry of the Environment (*Ministerio del Poder Popular Para El Ambiente* or MPPA) to the operators to ensure that the Company has met its obligations relative to the conditions established in these authorizations.

2. **Evaluation of the set of mitigation measures** (i.e., in the “Hydrocarbon Exploitation Plan”) to ensure that the Company has met its obligations relative to the commitments made in the environmental management plans of the approved EIA;

3. **Coordination with the MPPA and the National Oil Company** (NOC) to inform and obtain consensus from these authorities on the steps that are being taken as part of the cessation of activities.

4. **Coordination with the MPPA in order to receive a letter confirming compliance** with all conditions, mitigation measures and satisfactory completion of closure activities, and if applicable, subsequent release of previous bonding.

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Table 3 illustrates the regulatory framework in place for onshore oil and gas development in the United Kingdom.

### Table 3: Example of Onshore Oil and Gas Development, United Kingdom

<table>
<thead>
<tr>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Land use planning, and onshore oil and gas development, is regulated at a local level, through Town and Country Planning legislation. The Town and Country Planning authorities are called Mineral Planning Authorities (MPAs) in the case of onshore oil and gas. No rules have been issued to regulate the sector at a national level.</td>
</tr>
</tbody>
</table>

In 2004 a new system of planning was introduced in England through the Planning and Compulsory Purchase Act 2004. With regard to minerals planning, MPAs are now required to produce a ‘Minerals and Waste Development Framework’ (MWDF), which shows how the MPA will plan for future provision of minerals and disposal of waste in their area. MPAs are in the process of developing Local Mineral Plans, which set procedures to follow when determining all planning applications for minerals development. The Local Minerals Plan adopted in Nottinghamshire in 2005 for instance, includes a chapter on environmental protection, in which it states that financial guarantees may be required to cover all environmental obligations if deemed necessary by the County Council, and another specific chapter on reclamation. The Local Minerals Plan is not focused on oil and gas but the rules apply to the sector.

The operators are also required to complete an EIA prior to any land use activity, including oil and gas development, following application of the European Union (EU) Strategic Environmental Assessment Directive 2001/42/EC, published in July 2001. The EU Directive is not as specific as to mention what should be included in the EIA.

### Legal and Regulatory Approaches – Offshore

The extremely high cost of offshore decommissioning and removal of offshore installations led to the revision of international and national regulations adopted about 40 years ago. Decommissioning became the subject of a number of international conventions and treaties, some of which are highlighted below. Two international conventions are particularly important:


2. International Maritime Organization (IMO), through its role as the generally accepted ‘competent’ international organization pertaining to the shipping of oil and gas and other offshore activities. IMO has developed guidelines for offshore decommissioning.


In context of these conventions and the Oslo and Paris Convention on the Protection of the Marine Environment in the Northeast Atlantic or OSPAR (see Table 4), individual countries are also required to protect the marine environment through the control of dumping of wastes.
This includes provisions for the decommissioning of offshore oil production platforms and facilities.

**Table 4: Key International Conventions and Regional Agreements, Decommissioning**

<table>
<thead>
<tr>
<th><strong>International Conventions</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>UNCLOS</strong></td>
<td></td>
</tr>
</tbody>
</table>
| • Article 5.5 of the United Nations Convention on the Continental Shelf 1958 states that: ‘Any installations which are abandoned or disused must be entirely removed.’
  • The above was revised by the requirement of Article 60(3) of UNCLOS 1982:
  • ‘Any installations or structures which are abandoned or disused shall be removed to ensure safety of navigation, taking into account any generally accepted international standards established in this regard by the competent international organization. Such removal shall also have due regard to fishing, the protection of the marine environment and the rights and duties of other States. Appropriate publicity shall be given to the depth, position and dimensions of any installations of structures not entirely removed.’
  • To date, 157 countries have joined the UNCLOS convention. |
| **IMO**                      |  |
| • The International Maritime Organization (IMO) is an agency within the United Nations. Its purpose is: ‘to provide machinery for cooperation among Governments in the field of governmental regulation and practices relating to technical matters of all kinds affecting shipping engaged in international trade; to encourage and facilitate the general adoption of the highest practicable standards in matters concerning maritime safety, efficiency of navigation and prevention and control of marine pollution from ships.’
  • In 1989, the IMO published guidelines and standards addressing the decommissioning of oil and gas facilities (excluding pipelines), which served to effectively establish the agency as the ‘competent international organization’ within the context of UNCLOS.
  • The guidelines cover a range of areas, including those associated with the removal of offshore installations, and the circumstances in which all or part of an installation may remain on the sea-bed.
  • It should be noted that while the 1989 guidelines are influential, they are non-binding legal principles unless otherwise given effect by member states in their national legislation, or through some other mechanism (e.g., regional conventions such as OSPAR). |


The US, UK, and Norway (among other developed countries), have adopted mandatory regulatory and fiscal requirements, including financial mechanisms, to ensure that closure of offshore exploration and production facilities occurs in a satisfactory way. This may be attributed to the fact that these countries, and the UK and Norway in particular, possess the world’s largest installations in some of the deepest waters. Compared to the guidelines and standards developed in these countries, requirements in other countries are more loosely defined, particularly in those countries where offshore operations are absent.

The national regulatory and statutory context for offshore decommissioning can potentially be highly complex – often comprising adjacent and overlapping roles and responsibilities of various agencies. For example, see Table 5 for the various federal and state policies, statutes, and regulations that apply to decommissioning of oil and gas platforms off the California coast.

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23 The ‘maritime area’ covered by the convention also includes some parts of the high seas.

24 The Convention has been signed and ratified by Belgium, Denmark, Finland, France, Germany, Iceland, Ireland, the Netherlands, Norway, Portugal, Spain, Sweden, the United Kingdom, Luxembourg and Switzerland, http://www.ospar.org/.
Table 5: Example of Decommissioning Legislation, California\textsuperscript{25}

<table>
<thead>
<tr>
<th>Policy, Statute or Regulation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>California Public Resources Code</td>
<td>Details the authority of the California State Lands Commission (SLC which manages about 4.5 million acres of land held in trust for the people of California, including a three-mile section of tidal and submerged land adjacent to the coast. Chapter 3 of SLC’s regulations defines its responsibilities related to Oil and Gas Mineral Leases, including provisions for the permitting, operation and surrender of oil and gas leases. There are currently four (4) oil and gas platforms, in addition to other facilities such as offshore islands, in state waters.</td>
</tr>
<tr>
<td>California Coastal Act</td>
<td>Requires review and permitting of activities within the coastal zone, including both water and land areas, pursuant to its adopted Coastal Resources Planning and Management Policies.</td>
</tr>
<tr>
<td>Federal Coastal Zone Management Act (CZMA)</td>
<td>The CZMA emphasizes the primacy of state decision-making regarding the coastal zone. Federal license or permit activities that have reasonably foreseeable coastal effects must be fully consistent with the enforceable policies of state coastal management programs. In California, the CZMA gives the California Coastal Commission control over all federal activities and federally licensed, permitted or assisted activities, including the outer continental shelf oil and gas leasing, exploration and production.</td>
</tr>
<tr>
<td>The Outer Continental Shelf Lands Act (OCSLA)</td>
<td>Provides the U.S. Minerals Management Service (MMS) with authority to manage the oil and gas leasing program on the outer continental shelf (OCS), including rulemaking and enforcement. There are 23 oil and gas platforms in federal waters off the California coast.</td>
</tr>
<tr>
<td>1984 National Fishing Enhancement Act (NFEA)</td>
<td>Recognizes the social and economic values of artificial reefs and establishes national standards for the development of artificial reefs.</td>
</tr>
<tr>
<td>The National Artificial Reef Plan</td>
<td>Written in 1985 pursuant to the NFEA, allows for the planning, siting, permitting, constructing, installing, monitoring, managing and maintenance of artificial reefs within and seaward of state jurisdictions. This includes conversion of decommissioned oil and gas platforms into reefs.</td>
</tr>
<tr>
<td>The Energy Policy Act of 2005</td>
<td>Provides for the MMS to authorize issuance of a lease, easement or right-of-way on the OCS for activities that: (i) produce or support production, transportation or transmission of energy from sources other than oil and gas; or (ii) use existing facilities on the OCS for energy-related or other marine-related purposes.</td>
</tr>
</tbody>
</table>

\textsuperscript{25} California Ocean Science Trust, 2008; “Request for Proposals: Study to Provide Information Related to Oil and Gas Platform Decommissioning Alternatives in California”, located at: http://www.calost.org/Oil_and_Gas_Platform_Decommissioning_Alternatives_Study.pdf
1.7.2 Contractual and Fiscal Tools

Several different types of international Exploration & Production (E&P) agreements exist between host governments or NOCs and operating companies in different regions of the world. The agreements vary in complexity ranging from technical services agreements, in which companies act in an advisory and consulting capacity, to joint ventures (JVs) in which they obtain partial ownership of the reserves. The most common contractual agreements include:

- **Production Sharing Agreements**: The government usually retains ownership and control over oil and gas reserves. Oil companies provide services and are reimbursed for costs out of “Cost Recovery Oil,” earning taxable profits from a share of the remaining production. Production facilities – and thereby the responsibility for their dismantling – remain with the government. The contract should define Cost Recovery Oil including the cost of financial guarantees, which should be accumulated through the life of the project for the dismantling, decommissioning and closure.

- **Service Contracts**: In these types of agreements, companies take on all of the risk and expense of exploring and developing production from a concession area or block, and in return the contractor is paid a stipulated fee per barrel produced. Generally, there is no ownership of the reserves by the operating company, and the contractor develops the reserves for and on behalf of the government (owner of the reserves). Companies usually recover expenses and costs from a portion of the production. Production facilities – and thereby the responsibility for their dismantling – also remain with the government. Similarly, the contract should define Cost Recovery Oil including the cost of financial guarantees, which should be accumulated through the life of the project for the dismantling, decommissioning and closure.

- **Buy-back Service Agreements**: In this type of agreement, which is a variation of the service contract (above), the contractor company finances the development, and it assumes responsibility for the design engineering, delineation, development and start-up of operations and field exploitation. Once production starts, the company receives part of the proceeds from the government in accordance with the terms of the agreement.

- **Joint Ventures**: The Company assumes all of the exploration risk until oil field discovery. If it is determined that the field has commercial value, the host government contributes its proportional share of the development costs. Reimbursement to the contractor for development costs and exploration expenditures are made by the host government from an agreed fraction of the share of production.

E&P petroleum programs in natural-resource rich nations require agreements that are fair to both the host country and the oil company. There are a number of ways to structure such agreements in order to achieve significant benefit for both parties:
• One option is for the host government to provide funds for decommissioning and closure out of its take of production. This option is particularly appropriate in those cases where the life of the field is expected to exceed the life of the contract.

• Another method is to set up a reserve fund for decommissioning and closure funded by a fraction of the revenue received for each barrel of oil produced. This would assure that each barrel of production provided its proportionate share of the decommissioning and closure cost. This option is applicable to most field production agreements since it would secure decommissioning and closure funding even when ownership changes occur during the life of the asset.

It is important that sufficient information is retained after cessation of production, and that documents are released once the license involved is relinquished, to enable other interested potential companies and operators to take a reasonably informed view about the potential for field redevelopment in the future.26

Additional references for contractual and fiscal tools can be found in the UK legislation (e.g., UK Petroleum Act (1998), The Energy Act (2008), and the DECC Decommissioning Guidelines (2009)).

26 Redevelopment may become feasible if, for example, new technology allows a significantly improved recovery factor that is commercially viable.
Towards Sustainable Decommissioning and Closure of Oil Fields and Mines: A Toolkit to Assist Government Agencies

Toolkit – Tool 2

Environmental and Social Best Practice and Management Systems

Version 3.0
March 2010

WORLD BANK MULTISTAKEHOLDER INITIATIVE

This Toolkit is a living document or tool designed to increase the level of awareness on decommissioning and closure issues. It serves as guidance to government authorities, institutions and regulatory agencies, in natural-resource rich, developing countries, seeking to establish or improve closure and decommissioning programs for the extractives sectors. This initial version of the Toolkit was prepared in 2009 in the context of the Petroleum and Governance Initiative (PGI) jointly launched by the World Bank and the Government of Norway in 2006 – and with input from a select and diverse group of stakeholders from private sector companies, industry organizations, non-governmental institutions, government authorities, experts and practitioners involved in different aspects of oil and gas and mining decommissioning and closure.
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2.0 TOOL 2 – ENVIRONMENTAL AND SOCIAL BEST PRACTICE AND MANAGEMENT SYSTEMS

As shown in Figure 1, this tool provides government agencies a framework and guidance for how they can require and contribute to the implementation of socio-environmental best practices leading to more sustainable decommissioning and closure of oil fields and mines. This tool will:

- Outline steps, distinct from those of operators, that governments - as crucial partners in this process -- can follow in the project cycle continuum to ensure progress towards comprehensive and viable decommissioning and closure schemes;
- Provide a tool to help governments evaluate operations using a diverse set of indicators;
- Contribute to government organizational awareness by providing relevant background, information, examples and sources of additional technical information.

Figure 1: Relationship to Other Tools
2.1 Introduction

Decommissioning and closure activities are perhaps best understood as a complex sustainability issue for which planning must begin during the early phases of the project life cycle - preferably the design phase - incorporating environmental concerns as well as health and safety issues and the socioeconomic needs of the nearby population. Decommissioning and closure activities must also be assessed at key transitions in the project cycle such as start up and end of construction, operations start up, etc. (see General Guidance, Figure 3 Phases of the Exploration and Production Project Cycle). Similarly, regulators should request to be informed of changes in field life and investment strategy as part of the closure plan. Disclosure around these strategic changes is important for regulators and other stakeholders.

Many multinational extractives sector companies have undertaken voluntary improvements of their environmental and social management practices to more comprehensively manage their business risks throughout the project life cycle, to manage reputational risk and to comply with the expanding mandate and vision of their own internal corporate social responsibility (CSR) or sustainable development policies and principles. These efforts have contributed to the development of integrated, sustainable approaches to the mitigation of environmental, social, health and safety (ESH) impacts caused by mining and oil and gas production, including anticipating effects expected from possible decommissioning and closure alternatives.

Nevertheless, as noted in Tool 5, the sustainable decommissioning and closure of oil fields and mines is not entirely within the control of the operator. It cannot occur without government involvement and participation in this multipartite process. This includes ensuring the implementation of ESH best practice during operations, minimizing potential environmental and social liabilities at closure, facilitating cross-industry collaboration particularly in areas relating to socio-economic development, and playing an active role in ensuring that tax revenues and royalties are invested strategically to prepare the future social, environmental, economic and institutional context for the post-closure phase.

2.2 Sub-Tool 2.1 - Steps for Enhanced Socio-Environmental Best Practices

Figure 2 lays out the steps that are important for the government to be participating or leading while the operator is planning and implementing closure best practice. Note that:

- These steps apply to both the mining and oil and gas sectors.

- As the steps are completed, the outcomes may differ in the specific issues covered and the scale or magnitude of expected effects.
**ACTION** → Determine what steps your government agency or division is already involved in and where there are opportunities for enhanced engagement and oversight in planning sustainable decommissioning and closure of oil fields and mines.

**Figure 2: Sub Tool 2.1 - Government Steps to Contribute to Socio-Environmental Best Practice**

**COMPONENT 2 GOAL: ENDORSE ENVIRONMENTAL AND SOCIAL BEST PRACTICES AND MANAGEMENT SYSTEMS**

- **NEW OPERATION?**
  - **NO**
  - **YES**

- **IS THERE A RESPONSIBLE PARTY?**
  - **NO**
  - **YES**

**STEP 1. RISK EVALUATION**

**STEP 2.** Require socio-environmental management system and conceptual Decommissioning and Closure (D&C) Plan during design process and ESIA

**STEP 3.** Promote Socio-environmental performance, institutional capacity building and regional sustainable development during operations

**STEP 4.** Evaluate and update socio-environmental measures throughout operational phase

**STEP 5.** Require Detailed D&C Plan

**STEP 6.** Oversee implementation of D&C Plan

**STEP 7.** Post Closure Monitoring, final clearance and relinquishment.

**INTEGRATED SUSTAINABLE CLOSURE PLAN:**
- Infrastructure securing, removal, or conversion and beneficial use
- Environmental restoration
- Waste stabilization / removal
- Biodiversity offsets
- Carbon neutral decommissioning
- Economic alternatives
- Safety
- Health
- Retrenchment / Retraining
- EMS development and finance
2.3 **Guidance on Steps to Contribute to Socio-Environmental Best Practice**

The steps depicted in Figure 2 can span a period of 25 or more years, or “one generation.” Regardless of the project’s life-time, there is a need for companies to strategically plan a comprehensive decommissioning and closure process, including the required strategic social measures needed to manage the increased economic activity resulting from a major development followed by an economic slowdown after closure and during the transition into a more diversified economy. No mining should start without the development of a conceptual decommissioning and closure plan, developed at the design, pre-feasibility and construction phases. The plan should become more detailed as the project moves into operations where there is a better understanding of closure issues, and is reviewed at pre-set intervals, typically every three years leading to define a final closure plan when ready to transition to the closure phase. Typically the development of a final closure plan takes several years and the preparation of scenarios depending on life of mine, pre-mining obligations, applicable laws, and stakeholders expectations. The cost estimate and closure assumptions should also be adjusted. Below are pointers for each of the steps of the process.

### New Project or Existing Operation:

- Regardless of whether the operation is new or existing, governments should require that the process of planning decommissioning and closure begin as soon as possible, preferably during the design phase when there is the biggest leverage for optimizing a development by (to the extent feasible) siting major project components, selecting scale / size of the operation and making key decisions on the technologies to be used.

- During the feasibility stage, governments should encourage operators to optimize the design, in part on the basis of the ease with which the latter can be decommissioned and closed in the future. For example, in the context of offshore oil developments, there may be a way to use more standardized and /or modular structures for which specialized “de-construction and decommissioning” machinery\(^1\) can be custom-tailored and re-used at other locations. Governments should encourage companies to consider these types of “standardized structures” on the basis of the comparative future use and potentially lowered cost of decommissioning and closure.

### Risk Evaluation (Step 1):

- If the operation is abandoned and there is no responsible party (i.e., a legacy or orphan property), the government will need to assess the priority that should be afforded to a

---

\(^1\) Decommissioning of offshore installations requires the selection of specialized contractors and equipment such as dedicated construction vessels, survey vessels, dredging vessels, underwater remote operated vehicles, anchor handling, tugs and supply vessels – with specifications that will depend on the type and design of the actual platform.
particular site compared to other abandoned operations. This should be completed on the basis of a multidisciplinary risk assessment, which can be completed by the environmental authority – or a contracted independent firm. Regardless of the type of operation, the risk assessments should focus on determining the degree to which the site has been properly secured so that it does not represent an immediate environmental or health risk.

- A risk assessment (above) may also be completed for operations where there is a known responsible party. However, this should be completed by the responsible party in order to better plan and focus the different stages of the decommissioning and closure process.

**ESIA, Socio-Environment Management System and Conceptual Decommissioning and Closure Plan: (Step 2):**

- Many governments require that environmental assessments, impact evaluations or other studies be completed for review and evaluation prior to issuing a license, which enables the beginning of exploration, construction and operation phases of extractives sector development projects. These evaluations should be comprehensive and integrate environmental, social, health and safety impact assessments, which are completed concurrent with the design phase so they can continue to optimize the design of the oil and gas or mining operations. Impact assessments should require that the project proponent consider the effects of each major phase of the development including exploration, construction, operation as well as decommissioning and closure.

- The above, if already in place, can be further enhanced by explicitly requiring that the project proponent include an effective environmental and social management system (ESMS) that controls, anticipates and manages risks, effects and opportunities (again, environmental, as well as social, health and safety) in an integrated way.

- Furthermore, government should specifically require that project developers prepare and include a conceptual closure plan along with the ESIA.

- With the above elements, governments are in a position to consider, at a conceptual level, the post-closure scenario and determine if, on balance, over the period of 25 or more years the project will contribute positively or adversely to the region on the basis of a comprehensive set of multidisciplinary sustainability criteria.

- It is also crucial that governments consider the collective opinion of other stakeholders in making their decision on whether or not to authorize the project (see Tool 5). A project may be viable from an economic, technical and environmental perspective, but if there are signs of serious conflict or opposition on the part of nearby communities and other stakeholders, then it may not achieve the social license needed for operations – or the risk of creating social liabilities may be high.


Promote Socio-Environmental Performance, Institutional Capacity Building and Sustainable Development (Step 3):

- This step coincides with operations and, unless there is an unexpected temporary or permanent shutdown, this step is the lengthiest and can last decades. During this time, governments should monitor and enforce (see Tool 4) best practices, standards and socio-environmental permit conditions of the approved ESIA and ESMS (above).

- Also as outlined in Tool 4, monitoring programs should be put in place so that governments or independent third parties conduct a periodic review of the project and its progress against key decommissioning and closure milestones.

- One crucial aspect is for governments to require that the decommissioning and closure plan (which is expected to evolve in complexity and detail during operations) include provisions for temporary shut down and/or early closure (Table 1). Governments should ensure that, to the extent feasible, operations are prepared for this contingency situation with critical activities – and resources - needed to secure infrastructure that may exist at the time and minimize risks to the environmental and social context.

**Table 1: Situations that can lead to temporary or early permanent shutdown**

- Mergers, acquisitions;
- Bankruptcy;
- Low commodity prices;
- Changes in demand, driven by technological changes;
- Earlier than expected depletion of economically recoverable resources;
- Changes in government;
- Regulatory changes;
- Revocations of exploitation permits;
- Nationalization;
- Social unrest;
- Governmental corruption;
- Unanticipated operational problems;
- Unanticipated increases in transportation, power, or other operational costs;
- Labor disputes;
- Other stakeholder disputes;
- Unanticipated environmental or archaeological impacts; and/or
- Climatic changes (e.g., extended drought or loss of permafrost conditions).

- Concurrent with monitoring socio-environmental performance and endorsing an approach of continuous improvement, governments should be working with regional authorities and other stakeholders to develop long-term land-use plans and development plans that optimize social and environmental goals for the region and the nation. This may involve setting aside certain regions for development, while conserving others that are known to
be socio-environmentally sensitive for conservation and legal protection (e.g., areas with high biodiversity, cultural heritage site and/or regions inhabited by vulnerable peoples such as indigenous communities).

- Governments should take the time during operations to enhance the regional institutional capacity through training and reform. The effective guidance and regulation of the decommissioning and closure phase of the mining and oil and gas projects depends on the ability of governments to carry out their roles. Capacity building involves training government regulatory staff on extractives sector issues and clarifying the roles of each agency that is involved in the oversight of the overall performance of the process and enforcement of regulatory and/or contractual requirements. This not only includes the ability of the environmental authority to monitor compliance, but also of the central government to manage and redistribute revenues – and of regional development authorities to invest these resources in accordance with the long term land-use and regional development plans with the awareness that the revenue stream will end during closure.

**Evaluate and Update Socio-Environmental Measures Throughout Operations (Step 4):**

- As previously noted, government agencies should periodically monitor environmental and social performance of mines and oil fields. The approach and rigor with which operators manage environmental and social aspects of their operations – as well as the degree to which they proactively seek continuous improvement and input from communities and other stakeholders – are suggestive of the approach that they will likely take to decommissioning and closure. Consequently, if there are deficiencies in how these aspects are managed during operations, government agencies should establish provisions for addressing similar types of issues during the closure phase.

- Governments should also periodically request to review decommissioning and closure updates to ensure that these reflect changing environmental and social conditions, stakeholder opinions, innovative technologies (e.g., new treatment methods) and costs.

- Finally, where there are portions of the mine or areas of a hydrocarbon production operation that are no longer in operation, governments should encourage progressive closure and restoration – and reward such actions with lowered financial assurance where applicable.

**Require Detailed Decommissioning and Closure Plan (Step 5):**

- As a mine or oil field depletes (within about 3 years towards the expected end of production), government agencies and other stakeholders should to actively review the detailed closure and decommissioning plan and ensure that it meets key criteria of a sustainable decommissioning and closure process. More guidance is provided on this point in Section 1.4 (Sub-Tool 2.2).
If there is a possibility that a portion of the mine may remain active (e.g., smaller company may still find an operation economically viable; small-scale artisanal mining or re-processing of tailings), governments should ensure that such activities are adequately planned for in the decommissioning and closure process.

**Implement Decommissioning and Closure Plan (Step 6):**

- Decommissioning and closure activities can take many years. Government authorities should continue to monitor progress with legislative requirements, established contractual commitments – and the detailed closure plan.

**Post-Closure Monitoring, Final Clearance and Relinquishment (Step 7):**

- Once the closure plan is implemented, decommissioned mines and oil fields may require long term post-closure care and monitoring (e.g., surface water, groundwater, socio-economic conditions) for several years after operations have ceased. Governments need to ensure that the measures taken in the decommissioning and closure plan are effective. Monitoring needs to be conducted for as long as necessary for parameters being monitored to reach acceptable levels that no longer pose a threat to the surrounding terrestrial (or aquatic) environment and nearby communities. A financial provision, such as a trust fund, could be established to secure financial assurance over time (see Tool 3).

- Governments should not release the operator – or other liable parties (e.g., former operators, joint venture partners, etc.) - from liabilities until closure plan objectives, targets and indicators have been met. In other words, final clearance and relinquishment depend on fulfillment of all closure plus any post-closure obligations.

- “The concept of relinquishing a company’s obligations on a closed mine is the subject of much debate, influenced by local laws as well as local community expectations. In general, the conditions of relinquishment should be clarified between the company and the regulating authority. Currently, the clarity of such conditions may vary widely between jurisdictions, and even between mines in a single jurisdiction. Clear, measurable and auditable conditions need to be agreed between companies and regulators that will allow relinquishment of obligations to be planned for and achieved”

**Stakeholder Involvement:**

- Last but not least, throughout each of the above steps, governments should gauge the degree to which communities and other knowledgeable stakeholders are being consulted, informed and involved in setting closure objectives and then achieving an acceptable and positive post-closure scenario. Effective consultation will include not only community

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leaders but also representatives of the most vulnerable groups including women and youth. This important subject is addressed in a separate tool (see Tool 5).

2.4 Sub-Tool 2.2 – Basic Contents of Decommissioning and Closure Plans

Decommissioning and closure plans will vary significantly based on the specific location (e.g., regulatory requirements, socio-environmental context, remoteness, etc.), operator (experience, internal policies, etc.), project (mining or oil field development, onshore versus offshore), resource specifications, processing requirements and a multitude of other factors.

The ICMM has developed a comprehensive Toolkit for Planning Integrated Mine Closure, which contains a Tool with typical content headings for a mine closure plan (available at http://www.icmm.com/library).

As described in ICMM’s Planning for Integrated Mine Closure: Toolkit (2008), closure planning begins with a conceptual closure plan, developed at the design, feasibility and construction phases. In this phase, the plan should communicate the outcomes and goals; some major sustainability decisions can be taken at this stage (i.e., siting of certain structures, avoiding sensitive areas, etc.) and should incorporate stakeholder’s opinions and concerns. The plan progressively becomes more detailed as operations start and there is a better understanding and detail of the specific goals, milestones, actions and costs. The detailed closure plan is used during operations and continuously updated based on evolving socioeconomic context, stakeholder expectations, technical outcomes, economic panorama or other changing circumstances. The more detailed plan will include milestones, methodologies, monitoring and validation processes. The final transition to closure should be supported by a final decommissioning and closure plan and its success will depend on establishing, reviewing and monitoring the goals and ensuring they are in line with the government’s requirements, company standards and stakeholder’s feedback.

A basic high level structure for a decommissioning plan of an onshore oil field with multiple associated components is provided in Figure 3. It is not a complete structure and should not be considered final, but can serve as a basis for reviewing or requiring a closure plan to specific projects or developments. It is also important to mention that some regulations may have a pre-established and expected closure plan contents and/or companies may use standard general closure plans.

Regulator agencies will need to be fully engaged to ensure the plan is being implemented accordingly and that the benefits to affected communities will be balanced with the effects of closure.
**Figure 3: Basic High Level Structure of a Decommissioning and Closure Plan, Oil Field**

1. Introduction and Background
2. Applicable Standards, Regulations and Policies
   a. National Economic Context and Trends
   b. National Standards, Regulations and Policies
   c. International Best Practice and Voluntary Mechanisms
3. Decommissioning Principles, Goals and Continuous Improvement
4. Existing Baseline Conditions and Aspects Requiring Protection / Enhancement
   a. Environmental
   b. Socioeconomic
   c. Regional Development Context and Land use
5. Measures Adopted During Construction Phase
   a. Environmental Measures
      i. Site Reclamation
      ii. Grading and Surface Reclamation
      iii. Re-vegetation
      iv. Etc.
   b. Socioeconomic Measures
      i. Community Health and Safety
      ii. Training and Capacity Building
      iii. Social Investment
      iv. Compensation
      v. Etc.
   c. Stakeholder Involvement
      i. Stakeholder Map
      ii. Strategic Engagement and Involvement
6. Measures Adopted During Operations Phase
   a. Integrated Post Closure Vision / Goals
   b. Oil Field Development Area
   c. Onshore Pipeline and Related Facilities
   d. Marine Terminal and Offshore Structures
   e. Infrastructure
   f. Socioeconomic Measures and Strategic Social Investment
   g. Stakeholder Participation and Involvement
7. Waste Management and Disposal
8. Post-Closure Monitoring and Site Relinquishment
9. Early Closure Contingency Plan
10. Roles and Responsibilities
11. Resources and Cost Estimate
12. Timeline
2.5 Sub-Tool 2.3 - Gap Analysis to Evaluate Sustainability of Closure Process

*Table 2* is a template that can be used to help assess the degree to which an operator has integrated comprehensive decommissioning and closure provisions, mechanisms and processes with a view towards a sustainable outcome – and to establish the degree of certainty relative to each item evaluated. Note the following:

- The assessment may be adapted or expanded in one particular area.

- This tool can also be used as a way to engage the operator by completing the gap analysis as a group during a planned monitoring program (see Tool 4), which can contribute to an exchange of ideas while also contributing to establishing trust and building a constructive relationship between the government and the operator.

- Generally, during the design phase when the conceptual decommissioning and closure process may be considered, it is expected that many of the assessment components will have a low or medium level of certainty. It is similarly expected that as operations progress and more detail is added to the closure plan, the level of uncertainty should decrease.

**ACTION** → For each operation, complete the general section and complete items 1 through 4 for each area assessed.
Table 2: Sub Tool 2.3 - Gap Analysis to Help Evaluate Sustainability of Evolving Closure Plan and Process

<table>
<thead>
<tr>
<th>Type of Operation (Check one):</th>
<th>Mining</th>
<th>Oil and Gas (Specify if onshore or offshore)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location (Insert):</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Name of Operator(s):</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Project Phase (Check all that apply):</td>
<td></td>
<td>Design and Planning (i.e. New Project)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Exploration</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Construction and Development</td>
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<tr>
<td></td>
<td></td>
<td>Expansion</td>
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<tr>
<td></td>
<td></td>
<td>Operations</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Closure</td>
</tr>
<tr>
<td>Expected Closure Date (Insert):</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other (additional relevant information):</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Area</th>
<th>1. Goal (Understand goal within the closure process)</th>
<th>2. Indicators of Best Practice (Consider some of the following indicators)</th>
<th>3. Gap Assessment (Comment on the closure plan and process of the assessed current or future operation)</th>
<th>4. Uncertainty (Select one. This generally decreases as operation nears closure)</th>
</tr>
</thead>
</table>
| A. Environmental Aspects and Natural Resources | Assess the degree to which there is a net environmental benefit/detriment to the natural environment on account of the project – assuming that closure and decommissioning and closure measures are implemented. | • Critical habitats and protected areas were avoided in siting different project components.  
• There is no immediate or future threat to the environment – or its ability to recover.  
• Ecological integrity/diversity is not impaired.  
• Potential impacts and benefits to the natural environment have been assessed via an integrated ESIA process that was documented and used to drive the decision making process.  
• Appropriate mitigation measures were or will be instituted.  
• Where a net loss of biodiversity or habitat is expected, there are provisions for biodiversity offsets.  
• Financial provisions for rehabilitation and restoration measures have been clearly identified. | • [Insert comments] | □ High  
□ Medium  
□ Low (i.e. high degree of certainty) |
<table>
<thead>
<tr>
<th>Area</th>
<th>1. Goal (Understand goal within the closure process)</th>
<th>2. Indicators of Best Practice (Consider some of the following indicators)</th>
<th>3. Gap Assessment (Comment on the closure plan and process of the assessed current or future operation)</th>
<th>4. Uncertainty (Select one. This generally decreases as operation nears closure)</th>
</tr>
</thead>
</table>
| B. Social Context           | Assess the degree to which the closure plan and process will minimize long-term adverse effects on the social environment – once closure measures are implemented. Ideally, there will even be a net positive effect on the communities in the context of the project and planned regional development. | • There is evidence of conditions/ options that enable the communities to maintain sustainable living conditions (e.g., livelihoods) post-closure.  
• Socio-cultural structures are and will be maintained or improved, with particular emphasis on vulnerable communities.  
• Public and occupational health and safety issues are being addressed (i.e. no risks remaining).  
• Provisions are made to transition infrastructure remaining after closure – and the latter remains adequate to provide for wellbeing of nearby communities including health, education, power supply, transport access, water supply and sanitation (if applicable).  
• Direct and secondary effects as well as cumulative impacts were or will be appropriately assessed as part of an integrated ESIA and ESMS specific to the closure phase – and are differentiated for vulnerable groups (if any) and by gender.  
• Mitigation measures are being put in place to avoid or minimize direct, indirect and cumulative impacts – or leverage potential benefits to the social context.  
• Financial provisions are made to manage key social issues during closure (e.g., economic slowdown, retrenchment, re-training, etc). | • [Insert comments]                                                                 | ☐ High  
☐ Medium  
☐ Low (i.e. high degree of certainty) |
| C. Economic Considerations  | Evaluate the degree to which the overall economic aspects of the project (including financial assurance for closure, financing agreements with lenders, revenue distribution and economic development) are considered. | • Financial project integrity is assured so that the project is economically viable.  
• Financial provisions including assurance for the closure phase are adequate and include environmental and social aspects.  
• Local and regional socioeconomic objectives are considered in the closure plan and are realistic.  
• Closure is aligned with the local, regional and national development context, which is being (or has been) planned by government in partnership with stakeholders. | • [Insert comments]                                                                 | ☐ High  
☐ Medium  
☐ Low (i.e. high degree of certainty) |
<table>
<thead>
<tr>
<th>Area</th>
<th>1. Goal (Understand goal within the closure process)</th>
<th>2. Indicators of Best Practice (Consider some of the following indicators)</th>
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<th>4. Uncertainty (Select one. This generally decreases as operation nears closure)</th>
</tr>
</thead>
</table>
| D. Cultural and Natural Heritage                                    | Verify that the project and closure provisions do not result in a net adverse effect on traditional knowledge, cultural resources and natural heritage. This is also related to items A and B above. | • Also see indicators for items A and B.  
• Ensure that the closure plan considers environmental and socioeconomic uses that are compatible with traditional activities, knowledge and values.  
• Traditional lifestyles are maintained and cultural and natural heritage is preserved. | [Insert comments]                                                                 | [ ] High  
[ ] Medium  
[ ] Low (i.e. high degree of certainty) |
| E. Government Institutional Capacity and Governance (Also see Tool 1) | Assess capacity at a local and regional level to ensure that institutions have the knowledge and resources to serve as counterparts during the closure process to meet best practice standards. | • There is an adequate legislative framework that is implemented at a regional and local level (Tool 1) and appropriate enforcement capacity (Tool 4) to provide the basis for good governance.  
• There are sufficient resources – or appropriate plans to develop them – over the duration of operations using funds generated by the project, for example royalties.  
• There is capacity for local, regional and national authorities to materially participate and contribute to the gradual and iterative process of developing the closure plan during operations.  
• Institutions and the operators are acting as partners and counterparts in the process, but the operator is not taking on the role of the government (i.e. health, education, potable water and other basic services). | [Insert comments] | [ ] High  
[ ] Medium  
[ ] Low (i.e. high degree of certainty) |
<table>
<thead>
<tr>
<th>Area</th>
<th>1. Goal (Understand goal within the closure process)</th>
<th>2. Indicators of Best Practice (Consider some of the following indicators)</th>
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<th>4. Uncertainty (Select one. This generally decreases as operation nears closure)</th>
</tr>
</thead>
</table>
| F. Stakeholder Engagement and Community Involvement        | Verify that there is a commitment to the timely involvement of different categories of stakeholders including communities to the process of developing the closure process. | • There is evidence of an understanding of the social context and concerns or opportunities afforded by the end of operations.  
• There are mechanisms in place to ensure that the information received from stakeholders is materially considered in the design of the environmental and social aspects of the closure plan.  
• There are vehicles for negotiation and dispute resolution.  
• There is evidence of availability of information, transparency and third party verification.  
• There is a team with resources dedicated to stakeholder engagement including aspects related to decommissioning and closure.  
• There is evidence of a productive relationship based on mutual trust between the operator and the communities and other stakeholders. | • [Insert comments] | ☐ High  
☐ Medium  
☐ Low (i.e. high degree of certainty) |

| OVERALL ASSESSMENT AND OPPORTUNITY FOR CONTINUOUS IMPROVEMENT | Evaluate the degree to which there are clear mechanisms for continuous improvement of each of the above items as they contribute to a more sustainable closure process and plan. | • There is evidence that new information, issues and opportunities in the above areas are being applied to the decision making process and specific components of the closure provisions.  
• The full range of options is assessed from the beginning of the project (i.e. design phase) as they relate to the future closure and post-closure scenario. | • [Insert comments] | ☐ High  
☐ Medium  
☐ Low (i.e. high degree of certainty) |
2.6 Relevant Information and Examples – Socio-Environmental Best Practice, Mining

2.6.1 Voluntary Continuous Improvement-Based Approaches

Mining operations can have significant environmental and social footprints hence, most major mining companies have undertaken systematic improvements of their environmental and social management practices and created integrated, sustainable approaches to mitigating mining-related ESHS impacts, including mine decommissioning and closure schemes.

In the mid 1990s, major mining companies were among the proponents of the continuous improvement-based management systems approach defined by ISO 14001\(^3\), its analog, OHSAS 18001:2007\(^4\) and similar standards. Many mining companies (e.g., BHP Billiton, Rio Tinto, Freeport McMoRan, Barrick, Kinross, Newmont, Goldcorp and AngloAmerican) have based their sustainable development initiatives and corporate EHS programs on these standards, and have in many cases pursued implementation of ISO 14001 and OHSAS 18001-based management systems at individual mine sites.

The overall experience that the international mining industry has with such continuous-improvement-based management systems offers a number of potential benefits that could support the development and implementation of sustainable decommissioning and closure practices. Furthermore, this approach is also consistent with IFC’s Performance Standard 1: “Social and Environmental Assessment and Management Systems,” which requires the establishment of a program of mitigation measures and performance improvements for the entire project life cycle, including closure and post-closure monitoring phases.

Whether or not an Equator Principles Financial Institution (EPFI) is engaged to finance a mining project, ISO 14001 and analogous management systems contain several structural features that can be adapted to the regular evaluation and update of a mine’s decommissioning and closure plan (see Table 3).


### Table 3: Elements of Management Systems Relevant to Environmental and Social Decommissioning and Closure

<table>
<thead>
<tr>
<th>EMS Element</th>
<th>Description and Relevance to Decommissioning and Closure</th>
</tr>
</thead>
</table>
| Monitoring and maintaining assurance of regulatory compliance | ISO 14001 and OHSAS 18001 both contain firm requirements for:  
- A commitment to achieving and maintaining compliance with all applicable regulatory requirements (usually done at a policy level);  
- Understanding and meeting all applicable requirements related to the content and schedule for monitoring, reporting, submittals of information or other actions;  
- Periodically assessing compliance with the applicable requirements; and  
- Resolving any non conformances via formal processes for corrective and preventive action.  
Such management systems would help ensure that all applicable regulatory requirements (including decommissioning and closure) are well understood, communicated for appropriate action and systematically updated over the entire life of the mining operation. |
| Identification of significant environmental and social impacts and occupational health and safety (OHS) risks associated with the operation | These impacts and risks may initially be identified in an environmental and social impact assessment process (ESIA), which is prepared at a pre-feasibility stage. As a permitted project enters the construction and operation phase, management system-based processes would be expected to be implemented with periodic reassessment of environmental and social impacts and OHS risks as more detailed engineering data becomes available. The determination of significance would typically trigger operational controls via plans, procedures, training and performance monitoring and specific mitigation actions. |
| Mitigation of impacts and risks via operational plans and procedures | The decommissioning and closure plan would be one of the operational plans developed to manage a mine’s significant impacts or risks. Review and update cycles of such plans would typically be governed by regulation, but a closure plan would undergo regular reviews and updates, more frequent (i.e., yearly) when approaching the closure phase. |
| Monitoring and responding to stakeholder communications | The referenced management system standards include requirements to ensure that:  
- Information pertaining to the mine’s environmental and social impacts and OHS risks is properly communicated to stakeholders;  
- Specific complaints or concerns are systematically documented and evaluated; and  
- Corrective and preventive actions are taken. |
| Monitoring compliance with decommissioning and closure requirements | Since the decommissioning and closure plan would be developed within the management system design, it would be supported by training and subcontractor and stakeholder communications, as well as performance monitoring and internal audits. Formal corrective and preventive actions in response to detected performance issues would also be initiated. |
| Establishment of a systematic and continuous improvement process | One of the key features of a continuous improvement-based management system is a process of identifying opportunities for improving environmental, social, and/or OHS performance, setting specific objectives and targets for performance improvement, and establishing and implementing action plans for achieving such performance goals. Such processes would apply during all phases of a project life, including decommissioning and closure. |
Many companies have already started incorporating closure and decommissioning considerations into their management systems and practices (see Table 4).

Table 4: Examples of ESHS Systems with Decommissioning and Closure Planning Requirements in Place

<table>
<thead>
<tr>
<th>Company / Description of Approach</th>
<th>Description and Relevance to Decommissioning and Closure</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>BHP Billiton:</strong></td>
<td>Management systems require periodic independent management assessments. These reviews typically involve the evaluation of a wide range of performance indicators. Management review is also an opportunity for adjustments in response to potentially significant operational disruptions (e.g., temporary shutdowns, mergers and acquisitions, divestitures, or major operational, process or infrastructure changes).</td>
</tr>
<tr>
<td><strong>Rio Tinto:</strong></td>
<td>Consideration of closure needs at the outset of project design; and Regular reviews and updates of closure strategies and planning documents; and</td>
</tr>
</tbody>
</table>

---


Company / Description of Approach

- Engagement with stakeholders throughout the project.

**Kinross Gold Corporation:**

Kinross Gold Corporation has developed a suite of corporate EHS standards based on ISO 14001 and OHSAS 18001, and conducts regular internal assessments of mine operations against such standards. All producing sites using cyanidation processes are listed to certify their operations to the ICMC, which, as previously mentioned, is designed to ensure that sufficient funding is available to decommission all cyanide-related features of a gold mining project. These typically include most major infrastructure elements such as tailings impoundments, solution pipelines, mills, storage tanks, leach tanks, heap leach pads and adsorption/desorption plants.

Kinross has also adopted the Global Reporting Initiative (GRI) guidelines and produces an annual Corporate Responsibility Report as a means of communicating their environmental, governance, social, and economic performance.

2.6.2 Closure Technology: Best Management Practice Resources

The establishment of continuous improvement-based EHS management systems as described in the preceding sub-section provides a process by which a mine operator’s decommissioning and closure schemes may be kept current in response to changes during the life-long project cycle. Some Best Management Practices (BMPs) have proved to be successful in prior mining closure applications. Many useful resources are available that address geographical regions with significant mineral resources and/or closure issues. Several important examples are described in Table 5.

In recent years, strong interest has developed on the part of mining companies to seek sustainable, low-cost technical solutions to environmental issues that may persist after closure is completed. The need to develop alternative low-cost solutions is enhanced when considering that some operations have no post-closure requirements while others have requirements for perpetual post-closure care, depending on site specific issues and concerns. Site conditions must be known and pilot tests conducted to show effectiveness, or lack thereof, of passive or semi-passive biological treatments, (e.g. wetlands). These treatments can be very effective when properly designed and maintained but are, by no means a universal solution. As mining often times occurs in remote areas, the decision to minimize maintenance and cost for long-term post closure care and maintenance activities is logical and should be allowed following a successful demonstration including site specific results and full technical analysis. If successfully implemented, low frequency monitoring can be implemented gradually. Efficiencies should be evaluated periodically and contingencies should be considered in cases of failures.

- In one notable example, after considerable testing and stakeholder negotiations, a total tailings removal option was selected over treatment. A tailings mass deposited in a diverted streambed was excavated, moved and the streambed was restored. This

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9 See http://www.globalreporting.org/ReportingFramework/G3Guidelines/

alternative required a very significant level of effort and expense and was selected after many years of attempting to establish a stable treatment approach. It is likely this situation could have been avoided by careful closure planning during development of a mine design that considered a permanent, sustainable closure conditions.

- As another example, closure schemes for re-vegetation in sensitive highland areas have sometimes failed because the native species used in restoration actually represented a potential cash crop or new grazing opportunity to local communities. The lack of other economic alternatives in these communities associated with the loss of mining-related employment therefore resulted in overgrazing, erosion damage and other unsustainable agricultural pressure on restored lands. Situations like this can be avoided by careful planning and selection of native re-vegetation species, and by carefully analyzing post-closure land uses.

Whatever technical methods are ultimately selected, it is increasingly clear that closure schemes will need to consider socioeconomic concerns, probable land-use preferences and compatibility at the time of closure and the need for more effective technologies that can be implemented by the mine operator and in some circumstances, by local communities or third party contractors.
### Table 5: Select BMP References, Socio-Environmental Management of Mine Decommissioning and Closure

<table>
<thead>
<tr>
<th>Reference</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANZMEC, 2000, “Strategic Framework for Mine Closure”</td>
<td>This reference is the result of a cooperative agreement between the Australian and New Zealand Minerals and Energy Council (comprised of various ministries with responsibility for minerals policy, including observers from Papua New Guinea) and an industry association, the Minerals Council of Australia. It is suggested as an interesting example of how cooperative efforts between governments and the mining industry can result in thoughtful, straightforward sustainability-focused policy objectives to guide the development of comprehensive and effective decommissioning and closure plans.</td>
</tr>
<tr>
<td>AUSTRALIAN GOVERNMENT, 2006 Leading Practice Sustainable Development Program, Handbooks</td>
<td>Mine Rehabilitation Handbook – Outlines the principles and practices of mine rehabilitation. Rehabilitation is the process used to repair the impacts of mining on the environment. Mine Closure and Completion Handbook – Examines planning for mine closure and completion after a mine has reached the end of its life. It describes the business case for planned, structured and systematic mine closure and completion of mines in the context of sustainable development.</td>
</tr>
<tr>
<td>CYTED/IMAAC-UNIDO, 2000, “Mine Closure in Iberoamerica”</td>
<td>This reference constitutes the proceedings of a major seminar on mine closure held in Andalusia, Spain. Participation was limited to academic and industry professionals from the Iberian peninsula and Latin America. The proceedings are noteworthy for the wide range of perspectives and viewpoints presented (i.e. environmental, regulatory/legal, social/community relations, technological, economic, financial and socio-political) in geographies with very significant mineral resources and challenging closure issues. It includes a section of very useful case studies in a wide range of challenging geographic and social settings.</td>
</tr>
<tr>
<td>European Commission - European Integrated Pollution Prevention and Control Bureau, 2004, “Reference Document of Best Available Techniques for Management of Tailings and Waste-Rock in Mining”</td>
<td>This major reference was developed primarily to identify BMPs for managing waste rock and tailings from metals mining operations likely to be conducted within the European Union, accession states, and Turkey. However, the usefulness of the technical information provided is not necessarily confined to a European Union context. Although somewhat limited in technical detail, the document is very broadly scoped and addresses major elements of design, operation and closure of tailings impoundments as well as tailings, waste rock, or ore-leaching heaps or stockpiles, in a manner that is highly accessible to non-technical users. BMPs for the management of acid rock drainage, residual cyanide and other...</td>
</tr>
</tbody>
</table>

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13 See [http://200.20.105.7/imaac/books.html#english](http://200.20.105.7/imaac/books.html#english)

<table>
<thead>
<tr>
<th>Reference</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICMM, 2008, Planning for Integrated Mine Closure: Toolkit</td>
<td>This document presents an Integrated Mine Closure Planning Toolkit for the mining and metals sector. The toolkit is intended to be used to promote a more disciplined approach to integrated closure planning and to increase the uniformity of good practices across the sector. The concepts apply equally well to both large and small companies. The document is not intended to be prescriptive; it provides a suite of tools that can be brought to bear in formulating well-considered decisions when planning for closure. It uses a risk and opportunity based process to guide the practitioner through the iterative process of preparing for planned closure.</td>
</tr>
<tr>
<td>IGWG, 2008, Aboriginal Engagement in the Mining and Energy Sectors: Case Studies and Lessons Learned</td>
<td>This document is focused specifically on the management of social impacts of mining (and oil and gas exploration and production) in aboriginal lands in Canada. Although brief, the case studies offer some excellent information and ideas on the development of successful community relations policies by regulators and project proponents, and provide links to governmental organizations able to provide further information. The lessons learned may be transferable to other locations with culturally similar aboriginal stakeholders.</td>
</tr>
<tr>
<td>MOEF/CME, 2003, “India Environmental Management Capacity Building Technical Assistance Project, Mining Sub-component: Best Management Practices Manual,” Volumes I and II</td>
<td>These volumes were part of a suite of major deliverables in a World Bank-funded institutional strengthening project focused on the non-coal sector of the Indian mining industry. Volume I of the manual presents technical details on over 60 different technical practices commonly applied to mine site rehabilitation and restoration. The general level of applicability of these BMPs is ranked with respect to mine size and type (i.e. opencast, contour or underground). Individual BMPs contain straightforward instructions on implementation or construction, with sketches and other visual aids provided as appropriate. Volume II of the document contains a number of case studies involving the implementation of successful closure strategies using BMPs similar to those presented in Volume I. These resources were intended as general references that could be used by national and state regulatory agencies and mine operators in establishing appropriate technical closure requirements for specific mining operations.</td>
</tr>
<tr>
<td>P.M. Heikkinen et al., 2008, “Environmental Techniques for the Extractive Industries: Mine Closure”</td>
<td>Comprehensive mine closure handbook including an overview of Finland’s statutory requirements for mine closure; description of the impact assessment and risk assessment process related to closure; field studies, analyses and modeling needed; strategies and monitoring requirements. Significant detail is presented for different types of mining.</td>
</tr>
</tbody>
</table>


17 This reference was produced by MWH Americas, Inc. as one of several major deliverables on the referenced project. Copies may be available through the Centre for Mining Environment in Dhanbad, India (the executing agency for the project) or the Indian Ministry of Environment and Forests (the recipient of the World Bank loan). Archived copies may potentially be available via the World Bank or, subject to World Bank authorization, MWH Americas Inc.

18 See [http://arkisto.gtk.fi/ej/ej74.pdf](http://arkisto.gtk.fi/ej/ej74.pdf)
<table>
<thead>
<tr>
<th>Reference</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Handbook. » 18</td>
<td>operations (open pit, subsurface, etc.).</td>
</tr>
<tr>
<td>UNECA, 2002, Compendium on Best Practices in Small Scale Mining in Africa 19</td>
<td>This reference identifies BMPs for consideration in the sustainable management of small-scale or artisanal mining operations in Africa. As the management of the environmental and social issues associated with artisanal or illegal mining is an increasingly difficult sustainable development and decommissioning and closure issue for many major mining operations, this may represent a particularly useful resource in Africa as well as areas of South America, India, Southeast Asia, and China with similar stakeholder issues and socio-economic pressures.</td>
</tr>
<tr>
<td>University of Western Australia, 2008, “Proceedings of the Third International Seminar on Mine Closure 14–17 October 2008, Johannesburg, South Africa”</td>
<td>Although proceedings are available only via purchase, 20 the 2008 Seminar (and the preceding seminars in 2007 and 2006, held in Santiago, Chile, and Perth, Australia, respectively) engaged a wide range of international participants representing industry, academia, regulatory agencies, NGOs and other stakeholders. These seminars are sponsored by the University of Western Australia, Australian Centre for Geomechanics and Centre for Land Rehabilitation. Case studies and technical papers are peer-reviewed and are representative of some of the best practices yet devised for sustainable mine closure. Proceedings will typically contain discussions on development and implementation of policies and regulations for mine closure; financial assurance for closure; closure planning, criteria, design and implementation; closure and post-closure monitoring; stabilization, reclamation and rehabilitation; management of legacy sites; and other relevant topics.</td>
</tr>
</tbody>
</table>


20 See http://www.acg.uwa.edu.au/publications
2.7 Relevant Information and Examples – Socio-Environmental Best Practice, Oil and Gas

Technical and environmental practices associated with the abandonment of dry exploratory wells and “temporary shutdowns” are generally well understood in the oil and gas sector. Many useful resources are available and some references are highlighted in Table 6.

In fact, the temporary shutdown of non-commercial wells and fields is very common operationally. A producing “field” or “concession” is either commercial or not, and once it is not commercial anymore (e.g., marginal fields), special precautions are needed for them to be decommissioned. If the state of economics (due to higher oil prices, lower production costs, new technologies, changed contractual terms, etc.) during a temporary shut down are such that additional exploitation becomes attractive again, then the field is commissioned and brought back into production operations. However, this may only be accomplished if the wells and fields have been properly abandoned. Improper abandonment of a field could trigger many severe issues that may prevent the field from becoming operational again, such as well damage, reservoir damage, clogging or malfunctioning of facilities and equipment and potential impacts to the environment.

Aspects related to the final decommissioning of wells at the end of the commercial life of an oil field (“closure”) requires additional and longer term planning. Prior to the time when commercial hydrocarbon extraction is not longer possible, a complete decommissioning and closure plan should be developed, consulted and reviewed with authorities, communities and other relevant stakeholders. Consistent with the overall framework steps presented in Figure 2, key steps of this process include:

1. In developing this plan, consultation should be made with local residents, communities, host government authorities and other relevant stakeholders. The social/community aspects should be taken into account in the decommissioning plan for the entire oil and gas field. Recipients of facilities or infrastructure left for other uses should be properly instructed in safe operating methods as well as appropriate care and maintenance. Abandonment procedures should be completed in accordance with industry standards.

2. A preliminary decommissioning and restoration plan should be developed that considers well abandonment, the removal of oil from flow lines and the removal of surface equipment and facilities. In the case of offshore oil and gas decommissioning, it may also include sub-sea pipelines, and where an offshore structure cannot merely be floated away, one generally considered sustainable solution is to cut the structure into smaller more manageable sections, lift them onto barges and subsequently bring them back to shore for re-use, recycling or disposal. However, in some specific cases, other disposal options (e.g., as an artificial reef) could be considered sustainable after due assessment.
3. The decommissioning plan should **identify disposal options for all equipment and materials**, including products used and wastes generated on site, surface pipeline decommissioning and reinstatement.

4. Through an **iterative process**, the plan should be further developed during field operations and fully defined in advance of the end of the field’s life, and should include details on the provisions for the implementation of decommissioning activities and arrangements for post-decommissioning monitoring and aftercare.

Technical aspects related to temporary or end of life upstream facility decommissioning and closure, including environmental mitigation, cleanup and restoration are comparatively well understood. A more critical challenge pertains to mitigating the socioeconomic consequences of decommissioning.

The socioeconomic impact of decommissioning or closure of an existing operation includes those impacts related to social programs commonly funded by the company. In many places around the world, companies have funded and implemented social investment programs as part of their strategy to obtain and maintain their social license to operate. Many times the efforts are not viable without ongoing company input, while other times such programs were often started with the assumption that the need for a company exit strategy was not urgent as the company would be there for a long time. In other places, operators have assumed the responsibility of local governments when authorities appeared unable or unwilling to provide and operate social services to local communities, and companies ended up substituting for government responsibilities for many years.

Socioeconomic investment should be planned early with decommissioning in mind. Ideally, as the operations phase moves towards maturity, the company would reduce its active involvement in social programs and investment activities and adopt a different role (e.g., monitoring role, advisor and enabler). In order to phase down its role in an orderly manner the company should encourage and support the development of local capacity that will eventually take over its role. Thus, model should be in place where communities are able to articulate their aspirations and governments have the capacity to assume their role in a post-closure phase.

As with the mining sector, numerous oil and gas companies are adopting voluntary performance-based approaches which are consistent with the above-noted best practice. In fact, the industry as a whole endorses comprehensive sustainable investment approaches that consider the entire project life cycle, including the need for third party involvement as operations near the decommissioning phase (see Figure 4). **Figure 5** depicts a company-specific approach to sustainability planning for the entire project life cycle.
Figure 4: Social Investment Planning and Decommissioning Considerations. IPIECA, 2008

<table>
<thead>
<tr>
<th>Phase</th>
<th>Purpose</th>
<th>Strategic goal</th>
<th>Programme</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Community coherence</td>
<td>Support institutional, community and government capacity</td>
<td>Soft skills training</td>
</tr>
<tr>
<td></td>
<td>Context analysis</td>
<td></td>
<td></td>
</tr>
<tr>
<td>II</td>
<td>Influx management</td>
<td>Support effective partnering</td>
<td>Infrastructure (tripartite only)</td>
</tr>
<tr>
<td></td>
<td>Risk mitigation</td>
<td></td>
<td>Business development</td>
</tr>
<tr>
<td>III</td>
<td>Additionality</td>
<td>Promote effective partnering</td>
<td>Income generation</td>
</tr>
<tr>
<td></td>
<td>Leverage</td>
<td></td>
<td>Sustainable social services</td>
</tr>
<tr>
<td>IV</td>
<td>Legacy</td>
<td>To become an observer</td>
<td>Handing over</td>
</tr>
</tbody>
</table>

---

Figure 5: Example of Voluntary Sustainability Planning\textsuperscript{22}.

\begin{quote}
\textbf{The Sustainable Development Framework}

To meet these complex challenges, in 2000 ConocoPhillips designed a sustainable development framework with input from communities and local, national and international stakeholders. The goals of the framework were to:

- establish and maintain a vision and principles for how ConocoPhillips implements oil and gas activities and investment programmes in the region;
- select, execute and monitor the investment programmes to ensure that they fit regional priorities and have tangible, near-term benefits for key stakeholders;
- establish, over the longer term, a common vision for development among stakeholders; and
- integrate feedback and continuously improve the overall framework.
\end{quote}

\textsuperscript{22} See http://www.ipieca.org/activities/partnerships/downloads/casestudies/actionoils spills.pdf
### Table 6: Select BMP References, Socio-Environmental Management, Closure and Decommissioning of Oil Fields

<table>
<thead>
<tr>
<th>Reference</th>
<th>Description</th>
</tr>
</thead>
</table>
| IFC (International Finance Corporation, World Bank Group) EHS Guidelines | • General EHS Guidelines: Section 4. Construction and Decommissioning, April 30, 2007. This section provides additional, specific guidance on prevention and control of community health and safety impacts that may occur at the end of the project life-cycle.  
  • Environmental, Health and Safety Guidelines for Onshore Oil and Gas Development, April 30, 2007. Provides general guidance in the use of best management practices for the decommissioning and abandonment of onshore oil and gas facilities.  
  • Environmental, Health and Safety Guidelines for Offshore Oil and Gas Development, April 30, 2007. Provides general guidance in the use of best management practices for the decommissioning and abandonment of offshore oil and gas facilities. |
| Alberta Soil and Water Quality Guidelines for Hydrocarbons at Upstream Oil and Gas Facilities | Volume 1: Protocol (Draft), Volume 2: Guideline Development (Draft) and Volume 3: User Guide (Draft). The hydrocarbon soil and groundwater quality guidelines presented here were developed to assist in environmental management and site closure of upstream oil and gas facilities in Alberta. |
| IPIECA (International Petroleum Industry Environmental Conservation Association) Social Responsibility Working Group (SRWG) | The SRWG develops tools and documents, which provide practical help for member companies and a wider industry audience, to understand and improve practices in existing and emerging social responsibility issues. IPIECA Social Responsibility Publications include:  
  • Guide to Successful, Sustainable Social Investment for the Oil & Gas Industry (2008)  
  • Guide to Operating in Areas of Conflict for the Oil & Gas Industry (2008)  
  • Human Rights and Ethics in the Oil and Gas Industry (2008)  
  • Human Rights Training Toolkit for the Oil and Gas Industry (2006)  
  • Key Questions in Managing Social Issues in Oil & Gas Projects (2002)  
  • The Oil Industry Experience: Technology Cooperation and Capacity Building (1996)  
  Note: Although IPIECA addresses downstream issues, best practice associated with industrial/processing/transport facilities common to down and up-stream components should be considered. |
<table>
<thead>
<tr>
<th>Reference</th>
<th>Description</th>
</tr>
</thead>
</table>
| American Petroleum Institute          | • RP 51: Onshore Oil and Gas Production Practices for Protection of the Environment. ‘Provides environmentally sound practices to promote protection of the environment in domestic onshore oil and gas production operations. Production facilities, including produced water handling facilities, are covered. Coverage begins with design and construction of access roads and well locations and carries through to abandonment and site restoration activities.’
|                                      | • Bull E3: Well Abandonment and Inactive Well Practices for U.S. Exploration and Production Operations, Environmental Guidance Document. ‘Addresses the environmental concerns related to well abandonment and inactive well practices. The primary environmental concerns are protection of freshwater aquifers from fluid migration and isolation of hydrocarbon production and water injection intervals. Additional issues in the document include protection of surface soils and surface waters, future end use and permanent documentation of plugged and abandoned wellbore locations and conditions.’ |

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Towards Sustainable Decommissioning and Closure of Oil Fields and Mines: A Toolkit to Assist Government Agencies

Toolkit – Tool 3

Financial Assurance and Guarantees

Version 3.0

March 2010

This Toolkit is a living document or tool designed to increase the level of awareness on decommissioning and closure issues. It serves as guidance to government authorities, institutions and regulatory agencies, in natural-resource rich, developing countries, seeking to establish or improve closure and decommissioning programs for the extractives sectors. This initial version of the Toolkit was prepared in 2009 in the context of the Petroleum and Governance Initiative (PGI) jointly launched by the World Bank and the Government of Norway in 2006 – and with input from a select and diverse group of stakeholders from private sector companies, industry organizations, non-governmental institutions, government authorities, experts and practitioners involved in different aspects of oil and gas and mining decommissioning and closure.
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3.0 TOOL 3 – FINANCIAL ASSURANCE

This tool is designed to increase the government’s level of understanding and awareness about the need to obtain financial assurance for decommissioning, closure, and post-closure and the mechanisms available to secure such financial sureties. Specifically, this financial assurance tool will:

- **Outline key steps** that governments should consider to encourage the cost of decommissioning and closure to be estimated early and factored into the economics of the project life cycle;

- **Provide guidance on incentives for optimal socio-environmental performance throughout the project life cycle**, which will reduce the complexity of issues remaining at closure; and

- **Assist governments in encouraging companies to fulfill their obligations in order to claim back their securities** or other incentives.

*Figure 1: Relationship to Other Tools*
3.1 Introduction and Purpose

Decommissioning and closure activities can entail significant levels of funding. Such activities can easily reach the tens of millions of US dollars, or even hundreds of millions for large scale oil and gas projects, and ensuring that such funding is available should be a key objective for governments. Financial assurance provides security to governments that funding will be available to conduct decommissioning and closure activities.

Financial assurance is considered the most effective ‘insurance’ mechanism to ensure the funding needed for proper decommissioning and closure activities by mining and oil and gas projects. This Tool provides governments with guidance on the types of assurance available, their advantages and disadvantages, what to look for and how to use proper financial assurance instruments. It aims to assist in answering the following:

- What financial assurance and guarantee instruments should be used in a given project?
- What type of process should be used?
- How can social aspects be incorporated in closure planning?
- What are some useful examples of good practice in financial assurance?
- Where can additional information be found?

3.2 Structure of the Sub-Tools and Outcome Tools

Due to the level at which governments are involved in the process of establishing financial assurance mechanisms, many of the aspects covered in this Tool are common to both the mining and oil and gas sectors. Nevertheless, there are some issues specific to each sector and for these, separate Sub-Tools are provided as in Figure 2.

Figure 2: Structure of Sub-Tools and Outcome Tools
The Tool is divided into three sets of input tools and outcome tools per the following topics:

- Criteria for choosing assurance instruments;
- Process; and
- Socioeconomic considerations.

This is outlined in Figure 3 below.

Figure 3: Inputs, Sub-Outcomes and Outputs Presented in the Tool

Section 3.3 below provides background information on the financial surety instruments commonly available. The proceeding sections present the Sub-Tools as explained in Figure 3.
3.3 **Types of Financial Surety Instruments**

Given the unique characteristics of each decommissioning and closure program, it is necessary to thoroughly understand the range of financial surety instruments available and propose, establish and agree with the industry operator the most appropriate mechanism on a case-by-case basis. The following overview of financial surety instruments has been taken from previous work done by the Oil, Gas, and Mining Policy Division of the World Bank\(^1\), and aims to provide guidance on the understanding of the instruments. It is recognized that most financial surety instruments come at significant cost to companies however it is very important Government has surety that financial resources will be available to cover the cost of decommissioning and closure and avoid situations that have to be paid from general taxpayer funds. The tax deductibility on these types of instruments varies by country but should be made clear to investors. *Table 1* summarizes some key advantages and disadvantages of the various instruments.

3.3.1 **Trust Fund**

A Trust Fund, which may also be known as a Mining Reclamation Trust, a Qualifying Environmental Trust or a Cash Trust Fund, is an agreement between a trust company and the proponent for the sole purpose of funding the rehabilitation or land reclamation of a site. In addition to a Trust Fund, there should be a signed agreement between the proponent and the government, administered by the trust company that stipulates the proponent’s responsibility with regard to the trust. This agreement should specify that a Trust Fund is to provide security for the rehabilitation or land reclamation costs for a particular site, the total amount required and an outline schedule of payments.

A Trust Fund should be maintained by a company that is licensed under the relevant legislation. The types of investment available to the fund manager should be decided by the proponent and the government, and specified in the agreement. If the payments are not continued to be made to a Trust Fund, and the proponent fails to provide an acceptable alternative form of surety, then the government has the option of drawing the full amount of the fund. The proponent should be responsible for all fees and charges associated with a Trust Fund.

Contributions to a Trust Fund would usually be structured as a series of payments over a specific time period. The management and performance of a Trust Fund should be subject to periodic review.

---

3.3.2 Insurance Policy

There are a wide range of insurance options but, until recently, none have been specifically designed to cover long-term rehabilitation costs. However, insurance providers such as AIG have sold reclamation policies that consider both immediate land reclamation and post-closure care by using a finite instrument that attaches an environmental insurance to a financial assurance package to support reclamation obligations issued on bonds. Box 1 depicts an example of insurance programs offered by American International Group, Inc. (AIG) that include environmental liabilities for closure and post-closure.

General forms of insurance, such as premium financing, commercial general liability and professional indemnity do not normally cover environmental liabilities. One major advantage of an Insurance Policy is that premiums paid into a policy are usually tax deductible. Also the payments into a fund are available for later reclamation work via the use of insurance claims.

**Box 1. AIG Risk Finance and AIG Environmental to Offer Environmental Insurance Programs for Long-Term Cleanup Costs**

NEW YORK, July 27, 1999 - American International Group, Inc. (AIG) has announced that AIG Risk Finance and AIG Environmental, divisions of the American International Companies, have combined their resources to offer Environmental Protection Programs (EPPs). EPPs utilize risk transfer and risk financing elements to manage current and future environmental liabilities related to the long-term cleanup of a contaminated site.

EPPs are designed to provide coverage for the payments associated with existing environmental liabilities in addition to the discovery of new environmental liabilities. The programs are based on finite, multi-year insurance policies, and incorporate a credit, based on good experience, that enables the insured to be rewarded for favorable loss experience. EPPs may also be used to satisfy financial assurance requirements of individual states and RCRA closure and post closure care and corrective action requirements.

EPPs can be used to insure environmental liabilities disclosed on Securities and Exchange Commission (SEC) filings; multiple party settlements of environmental liabilities, including Superfund settlements; and liabilities necessary to be quantified and capped for a merger or acquisition transaction. The programs can be designed to address environmental liabilities specific to certain cleanup situations, including closure, post-closure care and corrective action of landfills or waste treatment facilities; nuclear decommissioning; mine reclamation and utility restructuring.

Among the factors considered when developing an EPP program are the actual amount and type of contamination; the characteristics of the surrounding environment; the reliability of the selected cleanup plan; the possibility of discovering new contamination; and the willingness of the controlling government authorities to accept the cleanup as complete. In underwriting the EPPs, AIG Risk Finance and AIG Environmental will utilize the environmental engineering and consulting expertise of the Environmental Management Division of AIG Consultants, an AIG member company.

For more information on EPP programs, contact Ken Radigan of AIG Risk Finance at 212/770-7332 or kenneth.radigan@aig.com or contact www.aigriskfinance.com.


In the US, one insurance company set up a custom designed product that is a combination of three products; a conventional Surety Bond, accumulation of cash within the policy and insurance protection for overruns and changing requirements. The policy is based on the rehabilitation plans and projected costs, the credit worthiness of the proponent and the
market value of the mine assets. From the funds deposited the insurance company issues the required security bonds to the government and pays the actual rehabilitation costs. At the end of project life, if there is a surplus in the account, it goes back to the proponent. If there is a deficit due to additional regulatory reclamation changes that translate into an insurance claim the insurance company pays. For the placement of the insurance policy, the insurance company will conduct an exhaustive independent technical review covering permit obligations and land reclamation costs.

### 3.3.3 Third Party Guarantees

Third party guarantees, such as Surety Bonds, Insurance Bonds or Performance Bonds, are agreements between an insurance company and a proponent in order to provide funds to a third party under certain circumstances. In this instance, the third party is the relevant government department. A Surety Bond will include the terms and conditions of the agreement between the proponent and the government, with reference to the rehabilitation program, the agreed costs and the conditions for the release of the bond. Any changes to a Surety Bond require the consent of all parties involved.

A Surety Bond is issued by an insurance company that should be licensed under the relevant legislation. It is issued for a specific time period and can be renewed for further time periods, based on a credit review of the proponent. During this process the amount of a Surety Bond can be increased or decreased depending on the amendments to the rehabilitation program. If a Surety Bond is not renewed, and the proponent fails to provide an acceptable alternative form of surety, then the government has the option of drawing the full amount. The proponent should be responsible for all fees and charges associated with a Surety Bond.

### 3.3.4 Letter of Credit

An irrevocable Letter of Credit, also known as a Bank Guarantee, is an unconditional agreement between a bank and a proponent in order to provide funds to a third party on demand. In this instance, the third party is the relevant government department. A Letter of Credit includes the terms and conditions of the agreement between the proponent and the government, with reference to the rehabilitation program and the agreed costs. Any changes to the Letter of Credit require the consent of all parties involved.

To obtain a Letter of Credit, the proponent will have to demonstrate to the bank that provisions have been made for the rehabilitation of the site and that it has sufficient funds or liquidity to cover the costs. A Letter of Credit is usually issued for a year and renewed annually following a review of rehabilitation requirements and costs. If the bank, for any reasons, will not renew a Letter of Credit, and the proponent fails to provide an acceptable
alternative form of surety, then the government can request payment for the full outstanding amount of a Letter of Credit.

The government will usually specify from which banks it will accept a Letter of Credit. The annual cost of a Letter of Credit ranges from 0.5% to 9% of the guaranteed amount, depending on the proponent’s credit rating. The funds held in a Letter of Credit do not generate any interest.

3.3.5 Cash Deposit

A deposit can be made for a financial surety as Cash, a Bank Draft or a Certified Cheque. The funds should be placed in a special purpose account under the management of the financial institution with the government and company holding joint signatory powers. Alternatively, the cash can be used to purchase a certificate of deposit which can be pledged to the relevant government agency. Most commercial banks would charge nominal fees for setting up such accounts and the money would attract interest which would accrue to the fund.

3.3.6 “Other Options”

Several “Soft Options” include company guarantees, pledge of assets, and sinking funds. A Company Guarantee, which may also be called a Corporate Financial Test, a Balance Sheet Test or a Self Guarantee, is based on an evaluation of the assets and liabilities of the company and its ability to pay the total rehabilitation costs. A Company Guarantee requires a long history of financial stability, a credit rating from a specialized credit rating service and at least an annual financial statement prepared by an accredited accounting firm.

In some jurisdictions a Pledge of Assets is an acceptable form of financial surety. This takes the form of all surplus equipment and scrap metal that remains at mine site after operations have ceased. The surplus equipment includes all stationary equipment and buildings. The scrap metal includes all metal debris produced during site demolition and the clean up process.

If a Pledge of Assets is being used as a financial surety several factors should be taken into consideration. These include that the assets are free and clear of encumbrances, that the assets are fixed and not easily moved, that the assets are not contaminated and that there is a market demand for the assets. The value estimation must be carried out by a third party, should include the cost of retrieval and transportation from the site to the market place and be recalculated periodically. However, this is generally viewed as a high risk form of financial surety and is not accepted in many countries.
A sinking fund is a method of incremental payments into a Letter of Credit, Surety Bond or Cash financial surety. A schedule of payments is established at the time of setting up the financial surety. The proponent would then make payments into the fund until the full amount of the financial surety had been reached. In some jurisdictions it is required that the financial surety would be paid in full before the half life of the project. Signed financial assurance agreements should be included with a closure plan when the proponent provides financial assurance in the form of a sinking fund. The agreements include terms and conditions as to the amounts, form and timing of the payments.

### 3.4 Analysis of Financial Surety Instruments

*Figure 4* provides a brief analysis of the advantages and disadvantages of the financial surety instruments presented above. Governments are encouraged to assess and determine what the best options are for establishing financial assurance for oil and gas and mining projects. The instrument chosen will greatly depend on the regulations, agreements with companies, existing conditions and the perceived environmental and social context.

*Figure 4: Analysis of Financial Surety Instruments*

<table>
<thead>
<tr>
<th>Instrument</th>
<th>Advantages</th>
<th>Disadvantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trust Fund</td>
<td>• Tangible to government and public</td>
<td>• In some experiences, cumbersome administrative requirements</td>
</tr>
<tr>
<td></td>
<td>• Surplus funds remaining after completion of reclamation are returned to operator</td>
<td>• May contain insufficient funds in the event of premature closure</td>
</tr>
<tr>
<td></td>
<td>• Inexpensive (in some experiences) to establish</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Used for closure without bank fees</td>
<td></td>
</tr>
<tr>
<td>Insurance Policy</td>
<td>• Inexpensive to establish</td>
<td>• Validity depends on payment of annual premium</td>
</tr>
<tr>
<td></td>
<td>• Fewer administrative requirements</td>
<td>• Operator may not be able to pay if inactive</td>
</tr>
<tr>
<td></td>
<td>• Financial institutions consider the bond part of working capital, which may restrict other forms of credit.</td>
<td>• Not accepted in some jurisdictions</td>
</tr>
<tr>
<td>Third Party Guarantee</td>
<td>• Sometimes inexpensive to establish (1 to 1.5% of the guarantee amount)</td>
<td>• Financial institutions consider the bond part of working capital, which may reduce the availability of operating funds</td>
</tr>
<tr>
<td></td>
<td>• Backed by financial institution</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Transparent, flexible</td>
<td></td>
</tr>
<tr>
<td>Irrevocable Letter of Credit</td>
<td>• Inexpensive to establish</td>
<td>• Can be unilaterally withdrawn by lender</td>
</tr>
<tr>
<td></td>
<td>• Government has direct control over funds</td>
<td>• May restrict other forms of credit.</td>
</tr>
<tr>
<td></td>
<td>• Cash is returned to company upon completion of closure</td>
<td></td>
</tr>
<tr>
<td>Cash Deposit</td>
<td>• May not be acceptable for large operations</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Financial burden to operator</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Potential loss on deposited funds</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Regulators must have system to ensure deposited funds are segregated for intended</td>
<td></td>
</tr>
</tbody>
</table>

---

### 3.5 Criteria for Selecting Instruments

*Table 1* is a self-assessment Sub-Tool that can be used to assess the degree to which a government has integrated decommissioning and closure provisions, mechanisms and processes with a view towards the implementation of financial assurance instruments. It also provides considerations to be accounted for when doing the analysis.

Note that:

- This sub-tool has been designed to be implemented for both, the oil and gas and mining sector.

- This sub-tool can be used as a way to raise awareness when discussing contractual requirements and establishing agreements.

---

<table>
<thead>
<tr>
<th>Instrument</th>
<th>Advantages</th>
<th>Disadvantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soft Options</td>
<td>• No direct costs</td>
<td>• Does not provide the same level of security as other methods</td>
</tr>
<tr>
<td></td>
<td>• Relatively inexpensive for an operator to establish</td>
<td></td>
</tr>
</tbody>
</table>

---

*Table 1: Sub-Tool 3.1 - Legislation (see Tool 1 for more guidance)*

<table>
<thead>
<tr>
<th>Inputs</th>
<th>Y/N/NA/Uncertain</th>
<th>Outcomes/Considerations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Are Decommissioning and closure requirements found in environmental</td>
<td></td>
<td>• Ensure that the law around decommissioning is clear. Also see Tool 1.</td>
</tr>
<tr>
<td>law, oil and gas or mining law or both?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Which agency leads implementation of financial assurance and</td>
<td></td>
<td>• There should be clarity around who is responsible for assurance and guarantees as well as capacity. If not, a simple assurance framework is</td>
</tr>
<tr>
<td>guarantees? Does it have sufficient capacity?</td>
<td></td>
<td>recommended.</td>
</tr>
<tr>
<td>What is the role of the finance department or related departments?</td>
<td></td>
<td>• The finance ministry / department should be involved in the process, or at the very least care should be taken to avoid instruments that are</td>
</tr>
<tr>
<td></td>
<td></td>
<td>incompatible with existing financial regulations. Consider the tax treatment of the types of instruments.</td>
</tr>
<tr>
<td>Are the type and requirements for financial assurance mechanisms clear</td>
<td></td>
<td>• Some jurisdictions have very clear requirements around financial assurance. In cases where</td>
</tr>
</tbody>
</table>
3.5.1 Project Proponent Considerations

Table 2 and Table 3 provide a set of project proponent considerations that government agencies could use to assess the project proponent’s experience and ability to manage decommissioning and closure, which in turn would lower the environmental, social, health and safety and technical risks associated with decommissioning and closure and lessen the burden on the government to establish a financial assurance process.

Note that:

- Sub-Tool 3.2 has been designed for the oil and gas sector.

- The assessment questions will provide more certainty to the government of how the project proponent will be able to manage decommissioning issues and implement their closure plan.

Table 2: Sub-Tool 3.2 - Project Proponent Considerations for Oil and Gas Sector

<table>
<thead>
<tr>
<th>Inputs</th>
<th>Select</th>
<th>Outcomes/Considerations</th>
</tr>
</thead>
<tbody>
<tr>
<td>What is the company’s experience, track record and reputation with respect to decommissioning?</td>
<td>Significant / Moderate / Limited / None</td>
<td>* An O&amp;G operator that has a proven track record with decommissioning projects reduces the level of risk to government authorities.</td>
</tr>
<tr>
<td>What is the project management team’s experience with respect to decommissioning?</td>
<td>Significant / Moderate / Limited / None</td>
<td>* A project team with greater successful decommissioning experience will make the process associated with decommissioning easier and require less capacity.</td>
</tr>
<tr>
<td>What is the company’s credit rating?</td>
<td>Investment Grade / Sub-Investment Grade / Junk</td>
<td>* Credit or investment ratings can be assessed via a rating agency (S&amp;P, Moody’s, Fitch). A lower credit rating may require instruments</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Inputs</th>
<th>Select</th>
<th>Outcomes/Considerations</th>
</tr>
</thead>
<tbody>
<tr>
<td>What is the company’s profile?</td>
<td>Reputable and Well-Known / Moderately Known / Unknown / Known-Poor Reputation</td>
<td>• A multinational oil &amp; gas company is likely to have greater experience or capacity to manage decommissioning than a “junior” or a less experienced company or joint venture.</td>
</tr>
<tr>
<td>Is the company a member of an industry association (e.g., IPIECA, OGP, ARPEL, etc.)?</td>
<td>Yes / No / Don’t Know</td>
<td>• Membership is an indicator that the company has had exposure to core components of the decommissioning process (e.g. integration of social issues, financial assurance, etc).</td>
</tr>
<tr>
<td>Does the company have policies and procedures with respect to decommissioning? How do these work in practice? Are they tested or audited internally or externally?</td>
<td>Yes / No / Don’t Know</td>
<td>• Companies with such policies and procedures will likely lessen the burden on the government to establish a financial assurance process.</td>
</tr>
</tbody>
</table>

Note that:

- Sub-Tool 3.3 has been designed for the mining sector.
- The assessment questions will provide more certainty to the government of how will the project proponents be able to manage closure issues, implement their closure plan and manage post-closure while reducing the level of risk.

**Table 3: Sub-Tool 3.3 - Project Proponent Considerations for Mining Sector**

<table>
<thead>
<tr>
<th>Inputs</th>
<th>Select</th>
<th>Outcomes/Considerations</th>
</tr>
</thead>
<tbody>
<tr>
<td>What is the sponsoring company’s experience, track record and reputation with respect to decommissioning?</td>
<td>Significant / Moderate / Limited / None</td>
<td>• A mining company that has a track record of decommissioning and closing similar projects increases the level of assurance and reduces the degree of risk.</td>
</tr>
<tr>
<td>What is the project management team’s experience with respect to decommissioning?</td>
<td>Significant / Moderate / Limited / None</td>
<td>• A project team with greater successful decommissioning experience will make the process associated with decommissioning easier and require less capacity.</td>
</tr>
<tr>
<td>What is the company’s credit rating?</td>
<td>Investment Grade / Sub-Investment Grade / Junk</td>
<td>• Credit or investment ratings can be assessed via a rating agency (S&amp;P, Moody’s, Fitch). A lower credit rating may require instruments that provide more security.</td>
</tr>
<tr>
<td>What is the company’s profile?</td>
<td>Reputable Well-Known / Moderately Known / Unknown /</td>
<td>• A “major” (i.e. large integrated) company is likely to have more experience in decommissioning and closure while a “junior” one may not.</td>
</tr>
</tbody>
</table>

Sub-Tool 3.3 has been designed for the mining sector.

The assessment questions will provide more certainty to the government of how the project proponents be able to manage closure issues, implement their closure plan and manage post-closure while reducing the level of risk.
Inputs | Select | Outcomes/Considerations
--- | --- | ---
Known-Poor Reputation |  |  

**Is the company a member of an industry association (e.g. ICMM, Chamber of Mines)?**

| Yes | No | Don’t Know | • Membership in such organizations is likely to be an indicator that the organization has expertise or commitments to best practice and therefore makes the process more straightforward.
| | | |

**Does the company have policies and procedures that address decommissioning? Closure/post-closure? How do these work in practice? Are they tested or audited, internally or externally?**

| Yes | No | Don’t Know | • Companies with such policies and procedures will likely lessen the need for government to establish a financial assurance process.
| | | |

### 3.5.2 Project Closure Considerations

*Table 4* and *Table 5* provide a set of closure considerations that government agencies could use to assess the risks associated with funding for decommissioning and closure, including temporary closure or suspension of an operation. In general, more significant risks will add to the complexity and need for financial instruments, and considerations that are more foreseeable will tend to reduce the risk and thus require less stringent agreements.

Note that:

- Sub-Tool 3.4 has been designed for the oil and gas sector.

- There are significant differences in the decommissioning aspects of on shore and off shore projects and thus the results of implementing this sub-tool will greatly vary in regards to the assurance considerations.

#### Table 4: Sub-Tool 3.4 - Project Closure Considerations for the Oil and Gas Sector

<table>
<thead>
<tr>
<th>Inputs</th>
<th>Select</th>
<th>Outcomes/Considerations</th>
</tr>
</thead>
</table>
| How sensitive is the upstream oil and gas operation to oil price fluctuations? | Significant / Moderate / Limited / None | • A project that is more sensitive to commodity price fluctuations will be more sensitive to the risk of temporary closure or suspension of operations.
| | | |
| Is the project in the planning or exploratory phase or an existing operation? | Exploration / Existing Operation | • Closure activities resulting from the exploration are comparatively simple and standard industry practice. If the project is likely to proceed to operations, there is also more uncertainty.
| | | |
Inputs | Select | Outcomes/Considerations
--- | --- | ---
What are the project’s key environmental, social and health impacts? | Significant Impacts / Moderate Impacts / Limited Impacts | The environmental, social and health impact assessment (ESHIA) will provide this (Tool 2). More significant impacts will add to the complexity of needed financial instruments.

What is the degree of technical and infrastructural complexity associated with the project (e.g., unconventional oil, deep water, remote onshore)? | High Complexity / Medium Complexity / Minimal Complexity | A more complex project creates more uncertainty (see Sub-tool 3.6) that may require instruments with more security.

Is the project complex from a non-technical perspective (e.g., political, social, stakeholder, health, safety or environmental risk)? | High/Moderate/ Low complexity | Projects with greater exposure to non-technical risk will have more uncertainty and require more complexity around financial assurance. They will also be more exposed to risks of early closure.

Is there potential for re-use or alternative use of facilities and field | Significant / Moderate / Limited / None | Re-use or alternative use of facilities could reduce costs of decommissioning and closure and also yield unexpected benefits to the host country.

Note that:

- Sub-Tool 3.5 has been designed for the mining sector.

**Table 5: Sub-Tool 3.5 - Project Closure Considerations for the Mining Sector**

<table>
<thead>
<tr>
<th>Inputs</th>
<th>Select</th>
<th>Outcomes/Considerations</th>
</tr>
</thead>
</table>
| How sensitive is the mining operation to commodity price fluctuations? | Significant / Moderate / Limited / None | A project that is more sensitive to commodity price fluctuations will be more sensitive to the risk of temporary closure or suspension of operations.

<table>
<thead>
<tr>
<th>Inputs</th>
<th>Select</th>
<th>Outcomes/Considerations</th>
</tr>
</thead>
</table>
| Is the project in the exploratory phase or an existing operation? | Exploration / Existing Operation | The stage of exploration (and size of impact) will affect the decommissioning required at exploration stage. The company responsible for exploration may not be present during operations and have less commitment to decommissioning. There is also more uncertainty - but also more leverage to mitigate by design.\(^4\)

\(^4\) Mitigation by design involves reducing the level of anticipated impacts predicted during each phase of the project by changing / adjusting the design or the layout (e.g., different processing technology or moving project components). Mitigation by design is cost effective as it can eliminate certain issues from the closure and post-closure phases.
<table>
<thead>
<tr>
<th>Inputs</th>
<th>Select</th>
<th>Outcomes/Considerations</th>
</tr>
</thead>
<tbody>
<tr>
<td>What are the primary environmental, social and health impacts?</td>
<td>Significant Impacts / Moderate Impacts / Limited Impacts</td>
<td>• The environmental, social and health impact assessment (ESHIA) will provide this (Tool 2).&lt;br&gt;• More significant impacts will add to the complexity of needed financial instruments.&lt;br&gt;• Closure and reclamation plan.</td>
</tr>
<tr>
<td>What is the degree of technical and infrastructural complexity associated with the project (e.g., processing technology, mineralogy, waste/tailing management)?</td>
<td>High Complexity / Medium Complexity / Minimal Complexity</td>
<td>• A more complex project creates more uncertainty (see Sub-tool 3.6) that may require instruments with more security.</td>
</tr>
<tr>
<td>Is the project complex from a non-technical perspective (e.g., political, social, stakeholder, or environmental risk)?</td>
<td>High/Medium/Low Complexity</td>
<td>• Projects with greater exposure to non-technical risk will have more uncertainty and require more complexity around financial assurance. They will also be more exposed to risks of early closure.</td>
</tr>
</tbody>
</table>

3.5.3 Outcome Tool 1 - Guidance on Financial Surety Instruments

This **Outcome Tool 1** provides general guidance on the appropriateness of different financial assurance instruments to different decommissioning situations. The guidance provided here is a framework through which to evaluate the different options and it is not intended to be prescriptive. Please refer to **Figure 4** above for more details on the advantages and disadvantages of these instruments.
3.6 Process and Implementation

The guidelines provided in this section have been obtained from a previous work done by the Oil, Gas, and Mining Policy Division of the World Bank\textsuperscript{5}. The intent of including them in this Toolkit is to provide governments with a clear description of the process and implementation.

“A financial surety is essential to ensure that an exploration or mining project does not burden a government with a detrimental environmental or social legacy. However, it should do more than protect the regulatory authority from the risk of default; it should also work as an incentive for the proponent to keep the physical, environmental and socioeconomic impacts to a minimum and to carry out progressive rehabilitation. This incentive can be augmented by regular review and the release of the surety for work that has been completed. Site rehabilitation should be progressive so that, wherever possible, the rate of restoration is similar to the rate of exploration or exploitation.

Closure may not always occur as planned. The life span of an exploration project is dependent on the discoveries made, or not, and it is quite common for the life of a mine to be extended by the re-evaluation of existing reserves, changes in the commodity markets, new ore discoveries, etc. This type of change can be accommodated by revising the closure plan and reviewing and revising the financial surety. Alternatively, the life of an exploration or mining project may be curtailed unexpectedly because of falling metal prices, technical difficulties, or financial problems of the company. In these instances, if the company is not in a position financially to carry out any of the planned rehabilitation, it is essential that the regulatory authority has the funds available to commission the work themselves.

Before setting up a financial surety it is essential to establish the rehabilitation goals. These should involve restoring all affected areas, as far as is possible, to their most appropriate economic and social value. This does not always involve returning a site to its original state or use. The main aims of site rehabilitation are to reduce the risk of pollution, to restore the land and landscape, to improve the aesthetics of the area and to prevent further degradation. These goals should be discussed as part of the consultation process and the views and opinions of the land owners and local community, as well as the national and provincial government, should be taken into consideration.

Site closure, especially in the case of a mining operation, can be difficult to define as a discrete period as post closure monitoring and long term care may be required after the rehabilitation work has been completed. The regulatory authority must take the necessary steps to ensure there will be sufficient funds available to pay for post closure monitoring and maintenance and, when required, remedial action. These funds can form part of the financial surety or a separate, self perpetuating fund, can be established when the original financial surety is released.

It is critical that the financial surety is only used for the purpose it was designed, and not viewed as a general source of funds by any of the parties involved. For this reason, it is advisable for the management and control of the fund to be shared by the regulatory authority and the company, with a clause allowing for the release of the fund if the company defaults. It is also essential that the financial surety is quarantined from other company assets, so that it cannot be seized in the event of bankruptcy, and from government abuse. The financial surety must be returned to the company following the satisfactory completion of mine closure and the rehabilitation program. 6

3.6.1 Managing Uncertainty

Because of the long time horizons involved in mining and oil and gas projects, a number of events may arise throughout the life of a project that could significantly affect closure requirements. These uncertainties range in type from those associated with markets, project

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proponents, technical, safety, health environmental, political or social risks. It is important to understand these possibilities and put in place measures to mitigate them to ensure the sustainability of decommissioning and closure.

Table 7 provides guidance on the types of key uncertainties in existence and ways in which they might be mitigated.7

Table 7: Sub-Tool 3.6 - Managing Uncertainty

<table>
<thead>
<tr>
<th>Uncertainties and Implications</th>
<th>Mitigation</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Change of ownership</td>
<td>• Ensure transfer of ownership is accompanied by transfer of closure agreements. May need to revisit Sub-tool 3.4 or 3.5 (for oil and gas and mining, respectively).</td>
</tr>
<tr>
<td>• Change in market conditions / Temporary closure or shutdown</td>
<td>• Ensure flexibility of assurance instruments. Review closure plans regularly (for example, every 3 years) during operations and more often (for example annually or twice annually) within 3 to 5 years of planned closure.</td>
</tr>
<tr>
<td>• Natural disasters and major accidents/operational failures</td>
<td>• Reviews of disaster management plans</td>
</tr>
<tr>
<td>• Change in geological assessment resulting in need to alter closure and decommissioning plans</td>
<td>• Financial surety instruments</td>
</tr>
<tr>
<td>• Forcible closure or abandonment</td>
<td>• Regular reviews and updates of closure plans</td>
</tr>
<tr>
<td>• Change in physical or social conditions, making it harder or easier to operate</td>
<td>• Regular reviews of closure plans and instruments. Use sub-tools 3.2 and 3.4 for oil and gas or 3.3 and 3.5 for mining.</td>
</tr>
<tr>
<td>• Closure cost increases</td>
<td>• Regular reviews of closure plans.</td>
</tr>
<tr>
<td></td>
<td>• Flexible instruments that can adapt if closure costs increase</td>
</tr>
</tbody>
</table>

3.6.2 Review and Evaluation Criteria

Table 8 provides guidance on the process for review and evaluation of a company when agreeing on financial sureties.

Note that:

• Sub-Tool 3.7 can be applied for both the oil and gas and mining sector.

7 See also ICMM’s “Planning for Integrated Mine Closure: Toolkit,” which provides a risk assessment and management tool to assist in the management of risk and uncertainty.
• This review and evaluation criteria will be more valuable if applied at the earlier stages of the project; that is, at concession award or contract negotiation; and should be revised regularly.

Table 8: Sub-Tool 3.7 - Review and Evaluation Criteria

<table>
<thead>
<tr>
<th>Inputs</th>
<th>Select</th>
<th>Outcomes/Considerations</th>
</tr>
</thead>
<tbody>
<tr>
<td>If the project is a joint venture, is it clear which venture partner has, or partners have, responsibility for closure?</td>
<td>Yes / No / Uncertain</td>
<td>• Ensure clarity with respect to closure responsibilities on the part of venture partners.</td>
</tr>
<tr>
<td>What is the reputation and track record of the venture operator(s) around closure?</td>
<td>Excellent / Good / Moderate / Poor</td>
<td>• Less experienced operators may carry more risk or have a steeper learning curve regarding closure and decommissioning.</td>
</tr>
<tr>
<td>Are the operating agreements clear about roles and responsibilities for closure and decommissioning?</td>
<td>Yes / No / Uncertain</td>
<td>• There should be clarity around the role and responsibilities.</td>
</tr>
<tr>
<td>Are closure costs recoverable in the case of Production-Sharing contracts or service contracts? In the case of concession agreements, are they deducted from taxes?</td>
<td>Yes / No / Uncertain</td>
<td>• Lack of clarity may lead to an under-funding of instruments designed to reduce closure costs. Lack of recoverability or deductibility of costs may create a complex negotiating process.</td>
</tr>
<tr>
<td>How often will closure requirements be reviewed?</td>
<td>Annually / 3 years / No plan to review</td>
<td>• More complex projects will need to be reviewed more often, when getting closer to closure.</td>
</tr>
<tr>
<td>Is the termination of liabilities clear?</td>
<td>Yes / No / Uncertain</td>
<td>• A lack of clarity is likely to create a more complicated governance process.</td>
</tr>
</tbody>
</table>

3.6.3 Financial Liabilities for the Oil and Gas Sector

Table 9 presents guidelines for government authorities to assess the level of uncertainty related to financial liabilities, including abandoned wells, type of infrastructure and subcontractors. In general, there is more uncertainty during the earlier stages, and as decommissioning gets close, certainty increases.

Note that:

• Sub-Tool 3.8 has been designed for the oil and gas sector.
Table 9: Sub-Tool 3.8 - Financial Liabilities for the Oil and Gas Sector (Abandoned Wells, Infrastructure and Subcontractors)

<table>
<thead>
<tr>
<th>Inputs</th>
<th>Select</th>
</tr>
</thead>
<tbody>
<tr>
<td>Will there be abandoned wells?</td>
<td>Yes / No / Uncertain</td>
</tr>
<tr>
<td>If there are abandoned wells, are the liabilities around abandoned wells clear and have these been included in closure costs?</td>
<td>Yes / No / Uncertain</td>
</tr>
<tr>
<td>How many subcontractors / oil service companies are being used in the project?</td>
<td>Number / Uncertain</td>
</tr>
<tr>
<td>Are the liabilities and responsibilities of subcontractors with regard to decommissioning clear?</td>
<td>Yes / No / Uncertain</td>
</tr>
<tr>
<td>Is the termination of liabilities clear?</td>
<td>Yes / No / Uncertain</td>
</tr>
</tbody>
</table>

3.6.4 Outcome Tool 2: Process Considerations and Review

*Outcome Tool 2* utilizes the sub-tools presented above to facilitate periodic review of the financial surety mechanism and its suitability to the decommissioning and closure planning process.
Figure 5: Outcome Tool 2 - Process Considerations and Review

Outcome Tool 2: Process Considerations, Reviews

Does the project involve many or complex uncertainties (sub-Tool 3.6)?

- Yes: Conduct frequent project closure reviews (e.g., every 12 months)
  - Yes: Reassess risk of early or temporary closure
    - Yes: Ensure that closure liabilities are transferred. Use tool 3.2 or 3.3 again
      - Yes: Re-use Sub-tool 3.4 or 3.5
        - Yes: Implement incentives for proactive closure planning
          - Yes: Document

  - No: Conduct less frequent project closure reviews (e.g., every 2 to 3 years)
    - Yes: Have commodity prices changed significantly since the last review?
      - Yes: Has geological complexity or uncertainty increased?
        - Yes: Has there been a change in physical conditions (e.g., weather or seismic event)?
          - Yes: Is early closure a possibility?
            - Yes: Has proactive closure planning occurred?
              - Yes: Document

- No: Continue with current price assumptions
  - No: Continue with current plans
    - Yes: Has ownership changed?
      - Yes: Ensure that closure liabilities are transferred. Use tool 3.2 or 3.3 again
        - Yes: Re-use Sub-tool 3.4 or 3.5
          - Yes: Implement incentives for proactive closure planning
            - Yes: Document

- No: Continue with current assurance structures
  - No: Continue as previously defined
    - Yes: Re-assess risk of early or temporary closure
      - Yes: Ensure that closure liabilities are transferred. Use tool 3.2 or 3.3 again
        - Yes: Re-use Sub-tool 3.4 or 3.5
          - Yes: Implement incentives for proactive closure planning
            - Yes: Document

- No: Continue as previously defined
  - No: Continue as previously defined
    - Yes: Re-assess risk of early or temporary closure
      - Yes: Ensure that closure liabilities are transferred. Use tool 3.2 or 3.3 again
        - Yes: Re-use Sub-tool 3.4 or 3.5
          - Yes: Implement incentives for proactive closure planning
            - Yes: Document

- No: Continue as previously defined
  - No: Continue as previously defined
    - Yes: Re-assess risk of early or temporary closure
      - Yes: Ensure that closure liabilities are transferred. Use tool 3.2 or 3.3 again
        - Yes: Re-use Sub-tool 3.4 or 3.5
          - Yes: Implement incentives for proactive closure planning
            - Yes: Document

- No: Continue as previously defined
  - No: Continue as previously defined
    - Yes: Re-assess risk of early or temporary closure
      - Yes: Ensure that closure liabilities are transferred. Use tool 3.2 or 3.3 again
        - Yes: Re-use Sub-tool 3.4 or 3.5
          - Yes: Implement incentives for proactive closure planning
            - Yes: Document

- No: Continue as previously defined
  - No: Continue as previously defined
    - Yes: Re-assess risk of early or temporary closure
      - Yes: Ensure that closure liabilities are transferred. Use tool 3.2 or 3.3 again
        - Yes: Re-use Sub-tool 3.4 or 3.5
          - Yes: Implement incentives for proactive closure planning
            - Yes: Document

- No: Continue as previously defined
  - No: Continue as previously defined
    - Yes: Re-assess risk of early or temporary closure
      - Yes: Ensure that closure liabilities are transferred. Use tool 3.2 or 3.3 again
        - Yes: Re-use Sub-tool 3.4 or 3.5
          - Yes: Implement incentives for proactive closure planning
            - Yes: Document

- No: Continue as previously defined
  - No: Continue as previously defined
    - Yes: Re-assess risk of early or temporary closure
      - Yes: Ensure that closure liabilities are transferred. Use tool 3.2 or 3.3 again
        - Yes: Re-use Sub-tool 3.4 or 3.5
          - Yes: Implement incentives for proactive closure planning
            - Yes: Document

- No: Continue as previously defined
  - No: Continue as previously defined
    - Yes: Re-assess risk of early or temporary closure
      - Yes: Ensure that closure liabilities are transferred. Use tool 3.2 or 3.3 again
        - Yes: Re-use Sub-tool 3.4 or 3.5
          - Yes: Implement incentives for proactive closure planning
            - Yes: Document

- No: Continue as previously defined
  - No: Continue as previously defined
    - Yes: Re-assess risk of early or temporary closure
      - Yes: Ensure that closure liabilities are transferred. Use tool 3.2 or 3.3 again
        - Yes: Re-use Sub-tool 3.4 or 3.5
          - Yes: Implement incentives for proactive closure planning
            - Yes: Document

- No: Continue as previously defined
  - No: Continue as previously defined
    - Yes: Re-assess risk of early or temporary closure
      - Yes: Ensure that closure liabilities are transferred. Use tool 3.2 or 3.3 again
        - Yes: Re-use Sub-tool 3.4 or 3.5
          - Yes: Implement incentives for proactive closure planning
            - Yes: Document

- No: Continue as previously defined
  - No: Continue as previously defined
    - Yes: Re-assess risk of early or temporary closure
      - Yes: Ensure that closure liabilities are transferred. Use tool 3.2 or 3.3 again
        - Yes: Re-use Sub-tool 3.4 or 3.5
          - Yes: Implement incentives for proactive closure planning
            - Yes: Document
3.7 Socioeconomic Considerations

Social legacies are often not captured in financial assurance tools and planning. However, because they can have significant effects (positive or adverse) on communities and societies and on the reputation of companies, integrating social considerations into closure planning is crucial to sustainable decommissioning and closure.

The following Sub-Tools deal with the social issues related to decommissioning and closure process, and are intended to allow governments to understand and include social issues in the planning of financial surety instruments.

3.7.1 Common Social Impacts and Legacies

Table 10: Sub-Tool 3.7 Common Social Impacts and Legacies for the Oil and Gas Sector

<table>
<thead>
<tr>
<th>Social Impact / Legacy</th>
<th>Description</th>
<th>Financial Assurance Considerations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Local Procurement, Services and Businesses</td>
<td>Loss of direct or indirect local business and work opportunities due to end of the mining or oil and gas operations can lead to increased unemployment and secondary negative economic impacts.</td>
<td>• Re-training or economic development activities could be considered as part of closure costs and tax deductible / recoverable company expenditures.</td>
</tr>
<tr>
<td>Social / Sustainable Development Projects</td>
<td>Loss of benefits from social investment projects sponsored by the company (e.g., capacity building, community development, conservation programs, etc.).</td>
<td>• Ensure social investment plans have exit strategies and are appropriately considered in closure costs and recoverable expenditures.</td>
</tr>
<tr>
<td>Worker Demobilization and Retrenchment</td>
<td>Demobilization from project site / area (especially if brought from outside the locality) can increase the number of formerly unemployed workers in an area, which in turn could increase crime rates or insecurity.</td>
<td>• Re-training and worker demobilization programs should be considered as part of closure costs and tax deductible / recoverable expenditure.</td>
</tr>
<tr>
<td>Infrastructure Maintenance</td>
<td>Local infrastructure built and used by the operation may fall into disrepair if used locally after closure.</td>
<td>• Consider converting associated infrastructure into alternative uses (e.g., air strips to local airports, water supply for agricultural irrigation) – and include costs of maintenance and effective transfer to local governments.</td>
</tr>
<tr>
<td>Local Partnerships</td>
<td>Partnerships and initiatives with various local stakeholders on any of the above activities may be abandoned following closure.</td>
<td>• Build in and cost exit strategies to partnerships so that the benefits and programs may be maintained following the closure of facilities.</td>
</tr>
<tr>
<td>Resettlement</td>
<td>If resettlement was completed as part of a project, programs may not have been appropriately phased out.</td>
<td>• Plan and budget for handover of any remaining resettlement monitoring actions that need follow up.</td>
</tr>
</tbody>
</table>
### 3.7.2 Outcome Tool 3 - Social Factors and Planning

**ACTION ➔** For each social issue typically important to closure planning (left column), check or provide information on the mechanism by which this is addressed as part of the decommissioning and closure process.

**Table 11: Outcome Tool 3 – Social Factors and Planning**

<table>
<thead>
<tr>
<th>Loss of Local Procurement / Local Businesses</th>
<th>Training</th>
<th>Inclusion in Closure Costs</th>
<th>Conversion of Assets into Other Uses</th>
<th>Maintenance Costs into Closure Planning</th>
<th>Exit Strategy Costs into Closure Planning</th>
</tr>
</thead>
<tbody>
<tr>
<td>End to Social Investment Projects</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Retrenchment</td>
<td></td>
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<td></td>
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<tr>
<td>Lack of Infrastructure Maintenance</td>
<td></td>
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<tr>
<td>Failure to Maintain Local Partnerships</td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Resettlement</td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>
3.8 Examples

The following table provides examples of financial assurance provisions in different countries around the world. Only select countries were included, but this does not imply the absence of such measures in other countries. In cases where information could not be identified, this is noted as “unknown.”

3.8.1 Examples and Case Studies of Legislation with Financial Assurance Provisions - Mining Sector

<table>
<thead>
<tr>
<th>Table 12: Examples and Case Studies of Legislation with Financial Assurance Provisions - Mining Sector</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Country/State</strong></td>
</tr>
<tr>
<td><strong>Chile</strong></td>
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<tr>
<td><strong>Ghana</strong></td>
</tr>
<tr>
<td>Country/State</td>
</tr>
<tr>
<td>--------------</td>
</tr>
<tr>
<td>Nevada*</td>
</tr>
<tr>
<td>Country/ State</td>
</tr>
<tr>
<td>----------------</td>
</tr>
<tr>
<td>Ontario*</td>
</tr>
<tr>
<td>Country/State</td>
</tr>
<tr>
<td>--------------</td>
</tr>
</tbody>
</table>
  • Resolution Ministerial N. 515-2006-MEM/DM.  
  • Reglamento para garantizar los planes de cierre de minas con fideicomiso de inversión forestal (Regulation to guarantee mine closure plans with trust funds for the forestry investment) dated November 3, 2006.  
  • General Direction of Mining (DGA) of the Ministry of Energy and Mines.  
  • Department of Promotion of Mining (within DGA).  
  • General Direction of Environmental Affairs (DGAA) of the Ministry of Energy and Mines.  
  • Cash or credit deposits.  
  • Properties.  
  • Capital goods.  
  • Amount, type and terms of financial guarantee must be included in closure plan.  
  • Financial assurance must cover the costs of implementation of the mine closure and post-closure, expenses and the value of pre-existent guarantees.  
  • Cost for progressive closure are not included.  
  • None.  
  • A specific regulation to establish clear procedures for bonding requirements, with more specifics on the financial aspects.  
  • The law and its regulations establish a monitoring mechanism by which the value of resources in guarantees will be verified periodically by the Department of Promotion of Mining. If guarantees are insufficient, legislation foresees sanctions; in case of major non-compliance, the operating license may be revoked. | • General Direction of Mining (DGA) of the Ministry of Energy and Mines.  
  • Department of Promotion of Mining (within DGA).  
  • General Direction of Environmental Affairs (DGAA) of the Ministry of Energy and Mines.  
  • Trust fund  
  • Bank guarantee (letter of credit)  
  • Cash deposit  
  • Any other method determined by the Director general of the DME  
  • Obligation to submit an environmental management plan or program and to rehabilitate the affected environment and to make financial  
  • Financial surety is assessed by DME, using the guideline document for the evaluation of the quantum of closure-related financial  
  • A master unit rate is determined depending on the risk class and area of sensitivity.  
  • The evaluation guidelines include a detailed breakdown of the closure costs, | | |

### South Africa*  
| Minerals and petroleum Resources Development  
| Director General of the Ministry of Minerals and Energy (DME)  
| Department of Environmental Affairs and Tourism (DEAT)  
| Trust fund  
| Bank guarantee (letter of credit)  
| Cash deposit  
| Any other method determined by the Director general of the DME  
| Obligation to submit an environmental management plan or program and to rehabilitate the affected environment and to make financial  
| Financial surety is assessed by DME, using the guideline document for the evaluation of the quantum of closure-related financial  
| A master unit rate is determined depending on the risk class and area of sensitivity.  
| The evaluation guidelines include a detailed breakdown of the closure costs,  
| None  
| Rehabilitation work is carried out by a third-party employed by the DME.  
<p>| The Minister is responsible for assessing the |</p>
<table>
<thead>
<tr>
<th>Country/State</th>
<th>Regulations/Standards</th>
<th>Lead Agencies</th>
<th>Acceptable Types of Financial Guarantees</th>
<th>Permitting/Closure Criteria</th>
<th>How Assurance is Calculated</th>
<th>Additional Provision/Practices</th>
<th>Pending Legislative Changes</th>
<th>Implementatio/ Monitoring</th>
</tr>
</thead>
<tbody>
<tr>
<td>regulations 2004.</td>
<td>National Environmental Management Act 1998 (NEMA)</td>
<td>provisions for rehabilitation or management of negative environmental impacts.</td>
<td>provisions provided by a mine (2005).</td>
<td>Essential closure components include: removal of infrastructure, sealing of voids, rehabilitation, water management and post-closure maintenance and aftercare.</td>
<td>Calculations based on third-party costs and include 12.5% for preliminary and general management and administration and 10% for contingencies.</td>
<td>Includes 14% VAT. Contributions to a trust fund are tax deductible as running costs. Trust funds are exempt provided they are used for rehabilitation after decommissioning.</td>
<td>with a master rate for each component and a multiplication factor depending on the risk class and area of sensitivity.</td>
<td>Master rates are updated annually.</td>
</tr>
</tbody>
</table>

### 3.8.2 Examples and Case Studies of Legislation with Financial Assurance Provisions - Oil and Gas

**Table 13: Examples and Case Studies of Legislation with Financial Assurance Provisions - Oil and Gas**

<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td><strong>Brazil (onshore and offshore)</strong></td>
<td>No specific requirements for bonding for decommissioning</td>
<td>No specific guidance identified</td>
<td>Brazilian Institute of Environment and Renewable Resources (IBAMA)</td>
<td>Civil Responsibilities insurance that covers Environmental Pollution damage (expenses remediation, containment of contamination, environmental liabilities and pre-existing damages)</td>
<td>Report to be provided by the concessionaire 60 days before closure in case of partial or complete abandonment of wells.</td>
<td>The amount of the insurance is based on the risk evaluation completed by the operator (usually 2.5% of the amount estimated in the risk evaluation).</td>
<td>The Federal Environmental Crimes regulation (lei de Crimes Ambientais, Lei Federal No. 9.650/98) establishes penalties that vary from R$50,000 to R$50 million, in case of non-compliance with environmental permits, and depending on the damage incurred.</td>
<td>Unknown</td>
<td>Unknown</td>
</tr>
<tr>
<td><strong>Egypt (onshore and offshore)</strong></td>
<td>No laws and regulations regarding decommissioning</td>
<td>No specific guidance identified</td>
<td>Egyptian Environment Affairs Agency (EEAA)</td>
<td>Unknown</td>
<td>Upon contract termination, assets return to the EGPC, who is responsible for continued operation, re-used or decommissioning.</td>
<td>Unknown</td>
<td>Unknown</td>
<td>Law 4/1994 on the Environment is currently being modified and will include and article on remediation. However, this is not specific to the oil and gas sector.</td>
<td>Unknown</td>
</tr>
<tr>
<td><strong>Spain (onshore and offshore)</strong></td>
<td>Ley de Hidrocarburos (Hydrocarbon Law, 1998). Ley de Responsabilidad</td>
<td>Unknown</td>
<td>Ministry of Energy</td>
<td>Insurance for the operational phase of the project, which includes pollution insurance. A general bond for</td>
<td>The operator has to present an Exploration Application to the Ministry of Energy, which includes and</td>
<td>To cover costs of decommissioning.</td>
<td>Unknown.</td>
<td>Unknown.</td>
<td>None of the current operations in Spain have field a bond with</td>
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</tr>
<tr>
<td><strong>Venezuela (onshore and offshore)</strong></td>
<td>National Organic Law of the Environment (Ley Organica del Ambiente, December 2006). EIA decree.</td>
<td>Unknown</td>
<td>Ministry of Popular Power for the Environment (Ministerio de Poder Popular para el Ambiente, MPPA)</td>
<td>Several types of mechanisms (not specific to decommissioning). Deposits. Guarantees. Civil and indemnification insurance policies. “Special fund”.</td>
<td>The operator needs to submit a request for a permit (permit to affect natural resources). The latter is issued on the basis of an EIA. The EIA’s EMP includes mitigation measures, including those which might be applicable during the cessation of operations and decommissioning.</td>
<td>Sufficient to cover the cost of implementing appropriate mitigation measures of approved activity.</td>
<td>Ongoing changes and increased power to state oil and gas company. Since the national oil company is the majority owner of most current operations, it will be responsible for decommissioning.</td>
<td>None identified during this study, but several contractual agreements with foreign oil and gas companies have been curtailed.</td>
<td>No information specific to decommissioning monitoring. However, every permitted activity requires a monitoring and supervision plan.</td>
</tr>
<tr>
<td><strong>Norway - Offshore</strong></td>
<td>Petroleum Act 1996. OPSAR decision 98/3.</td>
<td>Unknown</td>
<td>Ministry of Petroleum and Energy (MPE). Norwegian Petroleum Directorate (NPD).</td>
<td>Insurance to cover all petroleum activities.</td>
<td>The decommissioning plan is evaluated by the MPE and the Ministry of Labor and Social Inclusion. (Safety). Based on MPE’s report, a decision</td>
<td>All cost related to decommissioning activities are tax deductible within the petroleum tax system. Petroleum activities to be insured by the</td>
<td>All parties shall be liable for financial obligations, unless otherwise decided by the Ministry. It may be agreed between the licensees, the Owners and the State that future maintenance,</td>
<td>Potential law to require operators to provide financial guarantees for decommissioning and also impose</td>
<td>No specific stipulations relating to bonding; however, generally strong enforcement capacity.</td>
</tr>
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<td>relating to disposal is made by either the “king in Council” or the Parliament.</td>
<td>And impact assessment is required as part of the plan. The plan for development and operation of petroleum deposits shall contain information as to how a facility may be decommissioned and disposed of when the petroleum activities have ceased.</td>
<td>licensee all the times. The insurance shall at least cover; a) Damage to facilities; b) Pollution damage and other liability towards third parties; c) Wreck removal and cleanup as a result of accidents; and d) Insurance of the licensee’s own employees who are engaged in the activities.</td>
<td>responsibility and liability shall be taken over by the state. Liability includes compensation for financial losses incurred by Norwegian fishermen (from petroleum activities in fishing areas or pollution and waste, or as a result of damage caused by a facility).</td>
<td>financial liability on those operators or lessees even in the case of transfer.</td>
<td>• Norway has also been supporting other countries (technical assistance, cooperation and funds). It provides expertise on environmental issues to the Ministry of Foreign Affairs and NORAD.</td>
</tr>
<tr>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

Norway has also been supporting other countries (technical assistance, cooperation and funds). It provides expertise on environmental issues to the Ministry of Foreign Affairs and NORAD.
3.9 For More Information


Towards Sustainable Decommissioning and Closure of Oil Fields and Mines: A Toolkit to Assist Government Agencies

Toolkit – Tool 4

Monitoring and Enforcement

Version 3.0

March 2010

WORLD BANK MULTISTAKEHOLDER INITIATIVE

This Toolkit is a living document or tool designed to increase the level of awareness on decommissioning and closure issues. It serves as guidance to government authorities, institutions, and regulatory agencies, in natural-resource rich, developing countries, seeking to establish or improve closure and decommissioning programs for the extractive sectors. This initial version of the Toolkit was prepared in 2009 in the context of the Petroleum and Governance Initiative (PGI) jointly launched by the World Bank and the Government of Norway in 2006 – and with input from a select and diverse group of stakeholders from private sector companies, industry organizations, non-governmental institutions, government authorities, experts, and practitioners involved in different aspects of oil and gas and mining decommissioning and closure.
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Table 1: Common Challenges in Monitoring and Enforcement of Decommissioning and Closure Policies .......... 4
4.0 **TOOL 4 – MONITORING AND ENFORCEMENT**

As shown in *Figure 1*, this tool is a fundamental component of the Toolkit as it emphasizes the importance for governments to monitor compliance with regulations and requirements during the planning and implementation of decommissioning and closure activities for mines and oil fields. This tool will:

- **Emphasize the importance of government-led performance monitoring and enforcement mechanisms;**

- **Outline key steps**, which governments or responsible authorities can use to guide the development or enhancement of monitoring and enforcement of decommissioning and closure goals;

- **Provide relevant background, guidance** and sources of additional information.

*Figure 1: Relationship to Other Tools*
4.1 **Introduction**

This toolkit is designed to assist governments of nations with significant mineral and oil and gas resources enact clear, flexible and effective regulations (Tool 1), promote best practices and standards (Tool 2), and require financial assurance (Tool 3). However, without a consistent and credible approach to regulatory enforcement, these measures may be largely ineffective. Nevertheless, this is the component that is often deficient or lacking in developing nations with substantial extractives sector activity.

4.2 **Sub-Tool 4.1 - Steps to Enhance Monitoring and Enforcement**

*Figure 2* outlines key steps that should be considered in establishing or improving monitoring and enforcement of regulations, standards, and other requirements related to decommissioning and closure.

Note that:

- These steps apply to both the mining and oil and gas sectors. However, the specific regulations, standards and requirements for which enforcement will be sought and monitoring will be conducted will differ.

- Monitoring and enforcement capacity may need to be expanded, as the implied iterative process of improving the individual components of the decommissioning and closure program results in new legislation and standards.

**ACTION** → Determine which steps outlined in Sub-Tool 4.1 – or similar to those – are already being conducted in order to ensure compliance with existing decommissioning and closure requirements. Which may need to be improved? Which should be expanded or adapted as additional requirements are enacted?
Figure 2: Sub Tool 4.1 - Steps to Enhance Monitoring and Enforcement

TOOL 4 GOAL: ACHIEVE COMPLIANCE WITH LEGISLATION AND STANDARDS

STEP 1. Establish Regular Monitoring of Compliance with Decommissioning and Closure Regulations (Tool 1)
- Responsibility and periodicity
- Scope and requirements
- Inclusion of social aspects
- Compliance with adopted standards
- Possibility of Third Party Audits
- Define provisions for relinquishment audit

STEP 2. Verify Performance vis-à-vis Expected Milestones and Outputs.
- Existence of evolving and comprehensive (i.e. environmental and social closure plan)
- Financial assurance in place
- Strategic stakeholder engagement process in place.
- Contractual commitments met.

STEP 3. Assure Systematic Enforcement of Regulations.
- Violations criminalized
- Performance incentivized (e.g. lowered financial assurance)
- Competent third party, independent entity to enforce sanctions

STEP 5. Design System Process so that Communities Have Recourse to Legal Action in Case of Violations
- Autonomous entity representing people’s rights
- Ability to identify and address potential violations citizen rights
- Capacity to verify that government is fulfilling its role

INOLVE PUBLIC, COMMUNITIES AND CIVIL SOCIETY

Increase staff, capacity, coordination and community
4.3 Sub-Tool 4.2 - Relevant Information and Guidance

4.3.1 Challenges

In recent years, multinational companies and large operators have made tremendous progress in adopting voluntary environmental, health, safety and social standards, including those related to the planning of decommissioning and closure. However, deficiencies (or absence) of government monitoring and enforcement capacity is still one of the most frequent problems facing the improvement of the extractives sector performance, particularly in resource-rich developing countries. *Table 1* presents the common challenges that exist with respect to monitoring and enforcement.

*Table 1: Common Challenges in Monitoring and Enforcement of Decommissioning and Closure Policies*

<table>
<thead>
<tr>
<th>Description</th>
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</table>
| • Need for an enforcement mechanism that is effective and can be fairly implemented over all operational scales (e.g., large, medium-sized, smaller scale, artisanal). Note that artisanal mining is usually regulated differently but still subject to monitoring and enforcement.  
• Identifying the most suitable regulatory body or bodies to oversee and undertake enforcement, in the country’s legal environment.  
• The level of technical skills and the complexity of tools required to effectively monitor and enforce decommissioning and closure performance.  
• The generality or lack of specific detail in many existing laws and regulations, which may limit the functional basis for enforcing compliance.  
• Legislative requirements that can be implemented with the country’s existing capacity and third party outsourced monitoring as needed (i.e., avoiding legislation that cannot be enforced).  
• Ensure qualifications, experience and appropriateness of independent third parties when outsourcing monitoring for individual projects; and agree on who and how the service will be paid for.  
• Need for enforcement approaches to recognize and capitalize on an increasing interest in effective self-regulation, as a means for project proponents to ensure continued access to resources. Proponents and industry associations are coming under pressure from stockholders, lending institutions, NGOs, insurers, and other stakeholders to monitor and report on environmental and social performance. |

Approaches to legislative enforcement can be positive or negative:

- **Positive enforcement mechanisms** encourage compliance by providing incentives.
- **Negative enforcement mechanisms** attempt to obtain compliance by threatening disincentives, such as fines or penalties.
While ‘enforcement’ is frequently associated with the latter approach, both have advantages and disadvantages – and both may be used simultaneously within the regulatory sphere. Importantly, where alternative approaches to enforcement are being tested, this is often put in practice as a pilot study while institutional strengthening is being sought to support conventional functions. When assessing the institutional frameworks in place to ensure compliance with decommissioning and closure-related regulation, the following issues also need to be considered:

- **Desired relationship between the regulator and the operator**: This has the potential to be confrontational or collaborative.

- **Availability of resources**: To be effective, a prescriptive ‘command-and-control’ system requires an appropriately trained and properly compensated enforcement team, regular monitoring of operations, analytical and data evaluation support, and an effective judicial system to administer and collect fines. In the potential absence of such resources, an alternative approach, such as an outsourced third party monitoring, may be more suitable (e.g. an independent scientific review panel or some independent technical specialists). In any case, definition is required as to who pays for evaluation and monitoring to ensure/safeguard the independence and integrity of the evaluation and monitoring activities.

- **Capacity and effectiveness of existing regulatory, monitoring and enforcement systems**: The ability of the responsible authority(ies) to actually implement new or revised legislation is an important driver of decommissioning and closure practice.

### 4.3.2 General Recommendations

- Government authorities may choose to invest in additional internal staff resource, capacity, and improved coordination. Alternatively, governments may choose to develop guidelines, and require that monitoring be conducted by outsourced independent third parties, which may be paid by operators. Governments need to set clear definitions as to who is responsible to pay for independent, third party monitoring and ensure the independence and integrity of monitoring results.

- If a government is also a joint venture partner, a clear separation of roles must be established so that there is no conflict of interest when authorities responsible for monitoring and enforcement need to report on the operations and resolve non-compliances.

- It is important to have a mechanism to communicate to authorities responsible for enforcement impacted communities, the general public, and other stakeholders, so that laws can be passed or refined with due consideration of the actual impacts experienced by society (see Tool 5).
• Monitoring and enforcement needs to be designed in compliance with applicable regulations (Tool 1) and consistent with the decommissioning and closure plan designed for the individual operation (Tool 2).

• A level field to treat equally all operations in the same basin or under similar operational conditions, whether privately or state-owned.

• Clear targets should be set to ensure that companies comply with their decommissioning, closure and post-closure obligations that should, in the best case scenario, lead to relinquishment of tenure.

4.3.3 Monitoring Pointers

• In general, monitoring is a shared responsibility between the regulator, the proponent, and if applicable, third parties operating on the regulator’s behalf. Generally, the proponent is in the best position to monitor performance and the greater the confidence the government regulator has in the proponent’s own monitoring abilities, the less active their own monitoring activities need to be. Governments can assign the burden of monitoring to the proponent, but need to evaluate the effectiveness of this process and verify and audit activities.

• In addition to monitoring during the operational phase, government authorities may visit future sites during the design phase. In order to better understand first hand potential decommissioning and closure complexities that may be included in the ESIA. This will put them in a better position to weigh in on monitoring frequency and/or scope if the need arises.

• Monitoring should involve periodic visits to operations as they approach decommissioning and closure, as well as during decommissioning, closure, and any post-closure period. Also, there needs to be “rules” defined as to what, how, and when monitoring results are published and if applicable, disclosed.

• The scope of monitoring should involve reviewing the effectiveness of policies and procedures (environmental and social) related to decommissioning, closure for continuous improvement and post-closure activities. It should also monitor compliance with the decommissioning and closure plan.

• The government should consider instituting a systematic, periodic and consistent external evaluation process (e.g., compliance, performance or systems audit), similar to those that many mining and oil and gas companies already undertake internally to identify areas of potential improvement and maintain compliance with environmental, social, health and safety (ESHS) standards.
• Representative and meaningful involvement of impacted community representatives or NGOs in periodic audits or oversight of proponent monitoring activities may increase the degree of credibility and transparency in the process.

• A specific protocol should be developed for a final site inspection, which will often take place during the post-closure phase prior to relinquishment. The latter should be led by government authorities and include a detailed physical examination of the site plus assessment against the ESIA-based decommissioning and closure plan and other commitments and/or agreements that may be held in the operating permit or contract.

4.3.4 Enforcement Pointers

• Enforcement of ESHS regulations should not be managed by the authority responsible for promoting the industry.

• Monitoring (see Section 1.3.1) must be followed up by sanctions for noncompliance as well as rewards for high performance these.

• Should be implemented fairly and consistently, and communicated openly to stakeholders.

• Violations can be criminalized. This liability can extend into closure, during which time authorities can have recourse to action if operators did not address particular socio-environmental risks.

• Since the government authority responsible for monitoring and/or enforcement is not necessarily present at the site, it should consider establish a feedback mechanism whereby citizens and communities can seek legal action (lawsuit or compliant followed by governmental response) where environmental or human rights violations are suspected.

4.4 For More Information


Towards Sustainable Decommissioning and Closure of Oil Fields and Mines: A Toolkit to Assist Government Agencies

Toolkit – Tool 5

Stakeholder Engagement and Continuous Improvement

Version 3.0

March 2009

This Toolkit is a living document or tool designed to increase the level of awareness on decommissioning and closure issues. It serves as guidance to government authorities, institutions and regulatory agencies, in natural-resource rich, developing countries, seeking to establish or improve closure and decommissioning programs for the extractives sectors. This initial version of the Toolkit was prepared in 2009 in the context of the Petroleum and Governance Initiative (PGI) jointly launched by the World Bank and the Government of Norway in 2006 – and with input from a select and diverse group of stakeholders from private sector companies, industry organizations, non-government institutions, government authorities, experts and practitioners involved in different aspects of oil and gas and mining decommissioning and closure.
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This tool outlines the role of government and related agencies in relation to stakeholder engagement around the decommissioning and closure of extractive sector operations. In particular, it considers the role of government as regulator, ensuring that stakeholders are involved in the way the decommissioning and closure impacts are addressed in their communities. It also considers the role of government as a partner in the stakeholder engagement process, as the institutional structure which will have to prepare for and deal with the legacy of the closure in the community for the long term. This legacy will range from providing a social safety net for unemployed workers in some cases to continuing to operate a grievance mechanism in relation to the project in others. These two distinct roles, and the contribution of stakeholder engagement to enhancing the effectiveness of those roles, will require fine tuning over time. The roles and responsibilities of governments and operators in regards to stakeholder engagement will differ on a case-by-case basis, but general guidance is provided to ensure that clear responsibilities are established at the early stages and fine-tuned throughout the process and project’s life-cycle.

Figure 1: Relationship to Other Tools
5.1 Introduction

Decommissioning and closure is increasingly viewed as a multipartite process -- and partnership -- involving several counterparts in a lengthy and iterative process designed to define and refine the optimal legal, technical, financial, environmental and social arrangements related to the end of a productive mine or oil and gas field’s life cycle (Figure 2), as well as the post-closure scenario. Host nation governments are key partners in this process. Governments have the responsibility to establish a flexible and effective framework (Tool 1), to promote best practices and standards for use by the operator (Tool 2), require financial assurance (Tool 3), and monitor performance (Tool 4). Governments also have to be prepared to take on the socio-economic consequences of closure once the operator exits.

Stakeholder engagement, dialogue and participatory engagement allows the community and other stakeholders, including government, to be involved in shaping how the decommissioning and closure takes place and what the post-closure scenario may look like.

Figure 2: Decommissioning and Closure is a Multipartite Process

Note: Central and Local Governments including agencies and regulatory bodies; Companies including operators, JV Partners, duty-holders; NGOs & Academic Institutions, also includes unions, business groups, associations, media and other opinion formers.
5.2 Principles Around Stakeholder Engagement

The following are some principles around stakeholder engagement:

- As the guardian of a country’s natural resources, its social and environmental wellbeing, and as the organization that has to deal with the consequences of the post-closure legacy, host nation governments need to take a proactive role as a key partner in the process of decommissioning and closure of mines and oil fields.

- Governments should begin inquiries related to decommissioning and closure early during the project’s design phase, conducting internal inter- and intra-ministry dialogue as well as with the operators and potentially impacted stakeholders.

- Government participation and oversight should continue with the degree of focus and intensity that is warranted during each phase of the project, and with a focus on those aspects, issues and opportunities that are likely to emerge during decommissioning and closure.

- Governments should embrace stakeholder engagement not only as a mechanism by which to enable the iterative improvement of the closure plan during operations, but also as a vehicle for identifying areas where its actions and legislation can be improved and fine-tuned for the future.

5.3 Sub Tool 5.1 - Steps to Enhanced Stakeholder Engagement

Figure 3 outlines key steps for stakeholder engagement in relation to decommissioning and closure of an operation.

Note that:

- These steps apply to both the mining and oil and gas sectors.

- Sub-tool 5.2 provides additional information to accompany Step 2 and facilitate a broad understanding of the stakeholder landscape.

- Sub-tool 5.4 provides additional information to accompany Step 5 and assess stakeholder engagement of the operator’s closure plan.

- Government involvement in and understanding of the stakeholder engagement process simultaneously ensures continuous improvement of government oversight and should help to ensure the sustainability of the results of the closure planning process (See Sub-tool 5.5).
• As the steps are completed, the outcomes may differ in terms of the stakeholders identified, issues and mechanisms for engagement.

**ACTION** ➔ Determine what steps your government agency or division is already involved in and where there are opportunities for enhanced engagement to improve either decommissioning and closure plans or the process by which the government (central / unitary or decentralized and regional) supports their implementation. If the operation has transboundary implications, ensure that stakeholder consultation extends across the border.
Figure 3: Sub Tool 5.1 - Steps to Enhance Stakeholder Engagement and Participation

**TOOL 5 GOALS:** PRACTICE STAKEHOLDER ENGAGEMENT AND ASSURE CONTINUOUS IMPROVEMENT

1. Coordinate with Other Government Authorities
2. Understand Broader Stakeholder Landscape
3. Engage Knowledgeable Parties
4. Partner with Regional Authorities on Regional Development Planning and Capacity Building

**STEP 5.** Is there broad and effective stakeholder/community engagement of the Operator's closure plan?

- NO
  - Continuous Improvement of Government Process
  - Improve Consultation Process of Core Decommissioning and Closure Regulations
- YES
  - Continuous Improvement of Closure Plan
  - Improve Government's Core Decommissioning and Closure Stakeholder Engagement Processes
  - Improve Consultation Process of Core Decommissioning and Closure Regulations

**STEP 6.** Approve Decommissioning and Closure Plan, Ensure Appropriate Disclosure, and Support Transitioning into this Phase.

**STEP 7.** Continue Stakeholder Engagement Post-Closure and/or Company Exit Until Relevant Issues Are Resolved

5.4 Guidance - Overview of Relevant Stakeholder Groups

The positions and interests of a wide variety of stakeholders should be considered in the development of sustainable approaches to decommissioning and closure. This section provides an overview of the relevant stakeholders in that process and provides background information which may be helpful to assess the specific roles and key issues for each stakeholder, as described in Sub-tool 5.2 (See Table 4).
5.4.1 Government Authorities

Oil and gas and mining and/or environmental agencies have an important role in regulating mine or oil field exploration, development, construction, operations and closure including setting temporary shutdown and/or decommissioning and closure policies. Host nations differ in the approaches that they take to regulating the extractives sector and the amount of authority that is reserved for or delegated to national, regional, or local governmental agencies.

Host nations may also have a direct ownership role in the actual oil field or mine exploitation through joint venture agreements or other arrangements. Consequently, the interests of government representatives or entities responsible for managing such ownership must also be considered.

Finally, host governments are the bodies which have to deal with the post-closure legacy. Thus, they have a major interest in ensuring that the decommissioning and closure process is as smooth as possible and that the legacy is as positive and sustainable from a socio-economic perspective as the circumstances allow. Full buy-in to that legacy by the relevant stakeholders, including participation in the design of that legacy, will go a long way towards ensuring a successful outcome to the process.

5.4.2 Extractive Company Operator(s)

The complexity of the issues around decommissioning and closure requires an integrated, multidisciplinary approach on the part of the operator. Developing a decommissioning and closure plan requires a cross-functional project team including engineering, health and safety, human resources, environment, finance, planning, logistics, procurement, public affairs/community relations and legal counsel/regulatory affairs. Engaging with stakeholders will help ensure that the risks of decommissioning and closure are systematically identified and managed.
5.4.3 Affected Communities

A sustainable decommissioning and closure process should encourage involvement and participation of communities in the decommissioning and closure process, in such a way that these local stakeholders will develop the capacity and ownership needed for them to convert benefits from the operations phase into lasting development opportunities for the post-closure phase and help determine the post mining land use that effects the closure design. Community members that should be involved, depending on the national jurisdiction, include:

- Mayors or members of potentially affected village, town or city councils;
- Representatives of labor organizations or unions that represent the workforce (including contract labor, service providers and non-skilled labor);
- Representatives of police or security forces with responsibilities in regions and locales likely to be impacted by extractive industry operations, or cessation thereof;
- Representatives of other citizens’ groups (e.g., women’s organizations, tribal councils, community elders, or civil defense organizations);
- Religious organizations (e.g., churches, religious orders, or other religious groups who may have taken on a community leadership role in resolving real or perceived environmental and social issues);
- Local health agencies/service providers whose medical practice or experience has involved communities or benefited from significant support from the operator;
- Members of vulnerable groups including women, elderly, youth, indigenous groups, disabled, other ethnic or religious minorities etc. (see section 1.7);
- Individual landowners or landowner associations and other land users;
- Local unions branches, local workers affected by decommissioning and closure, trade associations, local business groups (e.g. local Chamber of Commerce), etc.; and
- Any other community member not otherwise mentioned.

---

1 An example would be the “rondero” organizations in certain areas of Peru, which originated in response to the Sendero Luminoso (“Shining Path”) insurgency and have evolved into an important element of rural community leadership; see http://www.acap-peru.org/newsletter/2007-05/ronderos.html.
5.4.4 Lending and Development Financial Institutions

Many extractives sector projects are part financed by public sector lending institutions at some stage of the project life cycle. Some examples of lenders and development financial institutions include, but are not limited to:

- The World Bank;
- The International Finance Corporation (IFC);
- The Inter American Development Bank (IADB);
- The European Investment Bank (EIB);
- Norwegian Agency for Development Cooperation (NORAD);
- Export Development Canada (EDC);
- The Asian Development Bank (ADB);
- Corporación Andina de Fomento (CAF);
- The African Development Bank (AFDB);
- Equator Principle Financing Institution (EPFI’s, full list at http://www.equator-principles.com/index.shtml); and
- Other private lenders.

Operational risks include the financial liabilities that may be incurred in temporary shutdown scenarios or that may exist in the closure and post-closure period. Consequently, lending institutions have expended substantial effort in designing policies, standards and guidelines that help manage such risks.

For example, the IFC’s EHS guidelines for mining require careful consideration of social and environmental interests in the development of a Mine Reclamation and Closure Plan (MRCP) focused on beneficial land use, through “a multi-stakeholder process that includes regulatory agencies, local communities, traditional land users, adjacent leaseholders, and other impacted parties.”

Similarly, EPFIs have adopted rigorous standards of practice such as the Global Investment Performance Standards (GIPS) prepared by the CFA Institute Centre for Financial Market Integrity.\(^3\)

### 5.4.5 Insurance Providers

Insurance providers are also greatly concerned with an operation’s ability to assess and manage all aspects of operational risk, including liabilities that exist in closure and may persist in the post-closure period. Insurers may also be responsible for devising policies or products that serve as or support the actual financial assurance mechanism that provides the capital to conduct decommissioning and closure (see Tool 3). Insurance providers have a significant stake in the establishment of sustainable options for mine decommissioning and closure.

### 5.4.6 Industry Organizations

Many mining and oil and gas operators are members of organizations that are actively engaged in the development of decommissioning and closure approaches that fulfill voluntary, policy-level commitments to sustainable development. The experience held by such associations represents a substantial resource in addressing the decommissioning and closure concerns in a specific national or regional jurisdiction, and they represent potential partners in the process of establishing or refining regulations for sustainable temporary shutdown practices and final decommissioning and closure of oil and gas fields and mines.

For the mining sector, the ICMM and ICMI are probably the most active in terms of providing actual tools or incentives to operators on the subject of decommissioning and closure. Other national and regional mining associations involving operators in developing nations (e.g., the Mining Association of Canada, Minerals Council of Australia, South African Mining and Development Association, PDAC) have provided relevant policies and technical guidance documents\(^4\) as well as a variety of forums in which mine operators have been able to share practical approaches and solutions to sustainable decommissioning and closure needs.

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4 For examples, see the following:
   - [http://www.goodpracticemining.org/documents/jon/MCA_mineclospolicy.pdf](http://www.goodpracticemining.org/documents/jon/MCA_mineclospolicy.pdf),
   - [http://www.nma.org/issues/environment/sustainable_development.asp](http://www.nma.org/issues/environment/sustainable_development.asp),
   - [http://www.fedmin.com/html/csrdivision.htm](http://www.fedmin.com/html/csrdivision.htm), and
There are analogous organizations for the oil and gas sector, including the International Association of Oil and Gas Producers (OGP) in the United Kingdom, the Asociación Regional de Empresas de Petróleo y Gas Natural en Latinoamérica y el Caribe (ARPEL) in Latin America, and the American Petroleum Institute (API), amongst others. At a country level, there are individual oil and gas associations who have developed information and advice on decommissioning and closure (e.g., Oil and Gas UK (OGUK) in the UK; The Norwegian Oil Industry Association (OLF) in Norway; Netherlands Oil and Gas Exploration and Production Association (NOGEPAC) in The Netherlands; Brazilian Institute of Petroleum, Gas and Bio-fuels (IBP) in Brazil, among others).\(^5\)

Key mining and oil and gas sector industry organizations are shown in Table 1 and Table 2 respectively.

\(^5\) For examples, visit the following:
- [http://www.olf.no/](http://www.olf.no/)
- [http://www.nogepa.nl/](http://www.nogepa.nl/)
### Table 1: Examples of Industry Organizations, Mining

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
</table>
| **The International Council on Mining and Metals (ICMM)**           | • The ICMM was created as one of the enduring outcomes of the World Business Council on Sustainable Development’s (WBCSD's) Mining, Minerals and Sustainable Development (MMSD) project. The MMSD project began in 1999 and engaged the resources of most major mining companies in an initiative to examine key sustainability challenges of the mining sector, and to develop recommendations for instituting the principles of sustainable development.  
• The ICMM was created to further the industry’s commitment to sustainable development. It comprises 17 of the world’s largest mining companies, as well as 30 major international mining associations, most of which have aligned their organizational charters for consistency with the ICMM Principles (of Sustainability).  
• Among its other efforts, ICMM has produced a detailed planning “toolkit” for integrated mine closure.\(^6\)                                                                                          |
| **The International Cyanide Management Institute (ICMI)**            | • The "International Cyanide Management Code for the Manufacture, Transport and Use of Cyanide In the Production of Gold" (Cyanide Code) is promulgated by the ICMI, and constitutes a voluntary industry program for the gold mining industry to promote:  
(1) Responsible management of cyanide used in gold mining;  
(2) Enhance the protection of human health, and  
(3) Reduce the potential for environmental impacts.  
• Companies that become signatories to the Code must have their operations audited by an independent third party to demonstrate their compliance with the Code.  
• Audit results are made public on the IMCI web site ([www.cyanidecode.org](http://www.cyanidecode.org)) to inform stakeholders of the status of cyanide management practices at certified operations.  
• The ICMI recognized the importance of the decommissioning and closure phases of a mining project in fulfilling a mining company’s cyanide management obligations, since in major elements of mine infrastructure (e.g., tailings management facilities, tailings pipelines, heap leach pads, solution recovery/overflow ponds and pipelines, adsorption/desorption plants), cyanide may be present. Principle 5 of the ICMC, entitled “Decommissioning,” requires the signatory company to “protect communities and the environment from cyanide through development and implementation of decommissioning plans for cyanide facilities.” |
| **Mining Association of Canada (MAC)**                              | • The MAC, through its Towards Sustainable Mining (TSM) initiative, is engaged in measuring and improving the overall sustainability of the management practices of MAC members, which include junior and major mining companies with operations in developing countries. Several members are beginning to apply these performance measurement tools to their overseas operations.  
• The MAC has developed a practical field guide designed specifically to help companies with stakeholder outreach and communications processes. The document includes guidance for measuring success and identifying opportunities for improvement.  
• The MAC has also prepared tailings facility decommissioning and closure guidance that could serve as a model for a useful closure planning tool for the entire mining operation.                                                                                       |

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<table>
<thead>
<tr>
<th><strong>Name</strong></th>
<th><strong>Description</strong></th>
</tr>
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</table>
| Minerals Council of Australia (MCA) | • The Minerals Council of Australia (MCA) has developed an industry-focused framework for sustainable development, as well as a set of implementation guidelines. The framework document includes a “resources” kit that links MCA’s efforts with the ICMM Principles and Element.  
• Endorsement of the ICMM framework is a condition for membership in the MCA; members include many major mining companies with projects in developing nations. |
| Prospects and Developers Association of Canada (PDAC) | • The PDAC is an association developed in support of the Canadian mineral exploration and development industry. The association has over 950 corporate members, including senior, mid-size and “junior” mining companies and mineral industry service organizations.  
• The PDAC is chartered to support and maintain high standards of technical and ESHS practices at mine sites in Canada and international operations managed by Canadian companies.  
• The PDAC has generated a series of publications and a website containing best practices for organizations involved in the early phases of mine exploration and development, including decommissioning and closure of exploration sites and managing stakeholder interactions. |
| South African Mining and Development Association (SAMDA) | • The SAMDA is a non-profit organization focused on empowerment of small mining enterprises and empowerment of historically disadvantaged social groups. The association is primarily concerned with the development and maintenance of responsible and sustainable mining practices in the emerging “junior” sector of the South African mining industry. As such, SAMDA has an interest in how the decommissioning and closure plans for major mining operations might be adjusted to provide a certain level of infrastructure and other support for viable small-scale mining operations. |
### Table 2: Examples of Industry Organization Stakeholders, Oil and Gas

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
</table>
| **American Petroleum Institute (API)**                               | • The American Petroleum Institute (API) is a national trade association that represents the U.S. oil and natural gas industry. It comprises 400 corporate members, from the largest major oil company to the smallest of independents, from all segments of the industry (producers, refiners, suppliers, pipeline operators and marine transporters, as well as service and supply companies that support all segments of the industry).  
  • Although it is primarily U.S. focused, in recent years API’s work has expanded to include a growing international dimension. API has led the development of petroleum and petrochemical equipment and operating standards for over 75 years. These represent the industry’s collective best practice on everything from drill bits to environmental protection and proven, sound engineering and operating practices and safe, interchangeable equipment and materials. API maintains more than 500 standards and recommended practices. Many have been incorporated into U.S. state and federal regulations; increasingly, they’re also being adopted by the ISO.  
  • Many of API’s US-based members operate internationally, including: ConocoPhillips, ExxonMobil, Chevron, Occidental (Oxy) and Marathon. Petrobras, the state owned Brazilian Oil and Gas Company, is also a member of API. |
| **Asociación Regional de Empresas de Petróleo y Gas Natural en Latinoamérica y el Caribe (ARPEL)** | • Asociación Regional de Empresas de Petróleo y Gas Natural en Latinoamérica y el Caribe (ARPEL) is a regional association of oil and natural gas companies in Latin America and the Caribbean. Its 29 members are state and private oil and gas companies and institutions operating in the region, representing more than 90 percent of the Region’s upstream and downstream operations.  
  • The objectives of ARPEL are to generate knowledge and disseminate best practice for member companies through the sharing of information and experiences and the interaction with key international organizations. ARPEL has created an informative and interactive platform (guidelines, documents, Web portal, etc.), that centralizes the input of more than 7,400 experts, executives and governmental representatives over the 15 year existence of the Association. ARPEL issued an updated “Guideline for the Decommissioning and Surface Land Reclamation at Petroleum Production and Refining Facilities” in March 2005.  
  • In 2005, the members of the association signed a “Statement of Commitments,” which assigns importance to social responsibility, environmental responsibility, occupational health and safety, energy integration, communication and continuous improvement.  
  • Recently, ARPEL has begun addressing decommissioning as an important issue for its members. |
| **International Association of Oil and Gas Producers (OGP)**          | • The International Association of Oil and Gas Producers (OGP) encompasses most of the world’s publicly-traded, private and state-owned oil and gas companies, oil and gas associations and major upstream service companies. OGP members produce more than half the world’s oil and about one third of its gas.  
  • An essential part of OGP’s mission is to represent the interests of the upstream industry before international regulators and legislators. From its headquarters in London, OGP represents the industry in such United Nations bodies as the International Maritime Organization (IMO) and the Commission for Sustainable Development. OGP also works with the World Bank and with the ISO.  
  • OGP is also an exchange and dissemination forum on safety, health and environmental performance and in the engineering and operation of upstream ventures. |
5.4.7 Non-Governmental Organizations

There are a number of international Non-Governmental Organizations (NGOs) whose missions and activities can provide useful and valuable information -- and practical experience -- of relevance to environmental and social aspects of decommissioning, closure and post-closure. Table 3 provides information about several of these organizations.

Table 3: Examples of NGOs with Activities Relevant to Decommissioning and Closure

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
</table>
| Conservation International (CI), Center for Environmental Leadership in Business (CELB) | • Conservation International (CI) and Ford Motor Company established the Center for Environmental Leadership in Business (CELB) to engage the private sector worldwide in creating solutions to critical global environmental problems in which industry plays a defining role.
• An important ongoing initiative is the Business and Biodiversity Offset Program (BBOP), managed by Conservation International and Forest Trends. This is a partnership of companies, scientists, NGOs, government agencies and research institutions to explore biodiversity offsets (http://www.forest-trends.org/biodiversityoffsetprogram/).
• The BBOP represents an opportunity to address environmental issues related to the end of the project life cycle in such a way as to contribute positively to biodiversity. |
| Post Mining Alliance | • The Post-Mining Alliance is an independent not-for-profit organization with a mission to encourage and promote the regeneration of old mine sites for the sustainable benefit of the local community and natural environment.
• The approaches considered by the Post Mining Alliance represent an opportunity to address socioeconomic issues related to the end of the mining project life cycle. |
| Leadership for Environment and Development (LEAD) International | • LEAD is facilitating a program called 'Building Sustainable Futures with Communities' for Newmont's community relations and development personnel. Newmont hopes that this initiative will enable participants to more effectively manage community relations within their sphere of influence and thereby contribute to sustainable development in their local areas. |
| Zerofootprint | • The Zerofootprint group of companies empowers communities, businesses, and organizations to live ingeniously in a low carbon world. Zerofootprint has engaged companies like Kinross Gold. |
| International Union for Conservation of Nature (IUCN) | • IUCN helps the world find pragmatic solutions to our most pressing environment and development challenges. It supports scientific research, manages field projects all over the world and brings governments, non-government organizations, UN agencies, companies and local communities together to develop and implement policy, laws and best practice. |
5.5 Sub Tool 5.2 – Defining the Stakeholder Landscape, Roles and Key Issues

Table 4 is a template that can be used by government agencies to help understand the stakeholder landscape including other government authorities that need to be involved at a regional and/or local level in designing the decommissioning and closure process and post-closure scenario. Understanding the stakeholders’ specific role in a particular operation will enable the government to more strategically focus its efforts on those interest groups that can help achieve its objective of resource management concurrently with environmental and socioeconomic wellbeing.

Note that:

- Examples of desired roles are included for item 2 and likely issues (or opportunities) are also included for illustration.

- It is important to define the stakeholder “landscape” early on in a proposed project so that results can be used to focus on those stakeholders that are most relevant given the government’s objective and role, namely nearby potentially affected communities and regional government authorities.

- Best practice recommends that stakeholder engagement be a continuous process. Increasingly, multinational operators are establishing stakeholder management databases and commitment registers to support this process. Government authorities may be able to mirror this on a less frequent basis as a way to verify that the operator is being inclusive in their approach to decommissioning and closure, perhaps every 2-3 years to coincide with the process of updating the decommissioning and closure plan or more often if significant changes occur within the broad categories of stakeholders.

**ACTION** → Complete columns 1 through 3 in relation to each stakeholder group.
### Table 4: Sub Tool 5.2 – Template for Assessing the Stakeholder Landscape, Roles and Key Issues

<table>
<thead>
<tr>
<th>Category of Stakeholder</th>
<th>1. Specific Stakeholders (List Specific Stakeholders)</th>
<th>2. Desired Roles in Decommissioning and Closure (Describe where you are in the process)</th>
<th>3. Issues / Opportunities</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>AUTHORITIES</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Central Government</strong></td>
<td>* [insert names of involved national government authorities]</td>
<td>* Provide a suitable legal and regulatory framework (see Tool 1) for closure.</td>
<td>* Clarity of policy, principles, process and requirements related to decommissioning and closure.</td>
</tr>
<tr>
<td>Relevant departments and ministries (e.g., environment, natural resources, finance, health, infrastructure, industry, etc.)</td>
<td></td>
<td>* Monitor completion of closure planning, progress and completion.</td>
<td>* Importance of coordination with other government authorities.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>* Invest royalties and revenues in a way that leads to planned and sustainable regional development and growth.</td>
<td>* [insert additional]</td>
</tr>
<tr>
<td></td>
<td></td>
<td>* [insert additional]</td>
<td></td>
</tr>
<tr>
<td><strong>Provincial / Regional Government</strong></td>
<td>* [insert names of relevant central government authorities]</td>
<td>* Contribute to revenue management and investment.</td>
<td>* Coordination with central government.</td>
</tr>
<tr>
<td>Provincial governments, departments and ministries, district offices</td>
<td></td>
<td>* Prepare post-closure period.</td>
<td>* Clarity of sustainable regional development focus and priorities.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>* Participate in regional development planning and economic diversification.</td>
<td>* Institutional capacity.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>* End land use options</td>
<td>* [insert additional]</td>
</tr>
<tr>
<td></td>
<td></td>
<td>* [insert additional]</td>
<td></td>
</tr>
<tr>
<td><strong>Local Government</strong></td>
<td>* [insert names of involved local government authorities]</td>
<td>* Similar to regional government (above) at local level.</td>
<td>* Institutional capacity.</td>
</tr>
<tr>
<td>Local councils, municipalities, village councils, traditional authorities, etc.</td>
<td></td>
<td>* Ensure that the post-closure legacy at the local level is as smooth and manageable as possible from a socio-economic point of view.</td>
<td>* Capacity for sustainable investment of revenues.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>* Partner with company to achieve the above.</td>
<td>* [insert additional]</td>
</tr>
<tr>
<td></td>
<td></td>
<td>* End land use options</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>* [insert additional]</td>
<td></td>
</tr>
</tbody>
</table>
## Template for Assessing Stakeholder Landscape, Roles and Responsibilities and Issue or Opportunities (adapt and use)

<table>
<thead>
<tr>
<th>Category of Stakeholder</th>
<th>1. Specific Stakeholders (List Specific Stakeholders)</th>
<th>2. Desired Roles in Decommissioning and Closure (Describe where you are in the process)</th>
<th>3. Issues / Opportunities</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>RESPONSIBLE PARTIES</strong></td>
<td><strong>Company, Joint Venture, or Operator</strong>&lt;br&gt;It is also possible for the government to be responsible for decommissioning and closure, where no liable party is identified or the resource is developed by a government entity.</td>
<td><strong>[insert names of entity, company or joint venture liable and responsible for decommissioning and closure. Note: include any previously liable operators]</strong></td>
<td><strong>The relationship between different operators in the same region; and how closure of one operation may affect a neighboring asset.</strong>&lt;br&gt;<strong>Preparedness for early exit.</strong>&lt;br&gt;<strong>Creation of excessive dependencies.</strong>&lt;br&gt;<strong>Promote sustainable development.</strong>&lt;br&gt;<strong>Cumulative impacts from other decommissioning projects.</strong>&lt;br&gt;<strong>Cross-border international issues (e.g. labor, contracts, waste export/import, standards).</strong>&lt;br&gt;<strong>Developing new business/employment opportunities and skills and resources’ development (local/national)</strong>&lt;br&gt;<strong>New supply chain opportunities (local/national).</strong>&lt;br&gt;<strong>[insert additional]</strong></td>
</tr>
</tbody>
</table>
### Template for Assessing Stakeholder Landscape, Roles and Responsibilities and Issue or Opportunities (adapt and use)

<table>
<thead>
<tr>
<th>Category of Stakeholder</th>
<th>1. Specific Stakeholders (List Specific Stakeholders)</th>
<th>2. Desired Roles in Decommissioning and Closure (Describe where you are in the process)</th>
<th>3. Issues / Opportunities</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>POTENTIALLY AFFECTES PARTIES</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Communities</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• [Describe local community or communities closest to operations, if any]</td>
<td>• Cope with loss of employment and income as operation winds down, production ceases and closure takes place.</td>
<td>• Dependence on operator for services, employment and other benefits.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Participate in and take responsibility as equal partner in design and development of post-closure options.</td>
<td>• Safety and physical security of closure and decommissioning and closure arrangements.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Work with company and government to take advantage of development opportunities for long term sustainable growth or sustainable alternatives as defined by community.</td>
<td>• Environmental impacts of closure arrangements.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• End land use options</td>
<td>• Loss of employment or social investment programs.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• [insert additional]</td>
<td>• Increase in crime, social breakdown.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Lack of capability and know how</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Monitoring and associated communications activities</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• [insert additional]</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employees / Workers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Direct employees, subcontractor employees, skilled and unskilled labor.</td>
<td>• [Describe size and nature of workforce potentially affected by retrenchment]</td>
<td>• If external to community, avoid negatively affecting community.</td>
<td>• Loss of employment and benefits, loss of income and potential social consequences.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• If local, same as above.</td>
<td>• Lack of alternative economic opportunity.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Active engagement in determining post-closure options</td>
<td>• [insert additional]</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• [insert additional]</td>
<td></td>
</tr>
<tr>
<td>Local Businesses</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Particularly supply chain or services affected by closure.</td>
<td>• [Describe local businesses potentially affected positively / adversely by closure]</td>
<td>• Avoid dependency on operator.</td>
<td>• Dependence on operator.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Actively consider and partner where possible to develop post-closure options.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• [insert additional]</td>
<td></td>
</tr>
<tr>
<td>Category of Stakeholder</td>
<td>1. Specific Stakeholders (List Specific Stakeholders)</td>
<td>2. Desired Roles in Decommissioning and Closure (Describe where you are in the process)</td>
<td>3. Issues / Opportunities</td>
</tr>
<tr>
<td>------------------------------------------------</td>
<td>------------------------------------------------------</td>
<td>----------------------------------------------------------------------------------------</td>
<td>---------------------------</td>
</tr>
<tr>
<td><strong>INTERESTED PARTIES</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Lenders / Development Agencies</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>See section 1.4.3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• [Insert name of lender, if any, involved in financing]</td>
<td>* Support government and operators in establishing clear requirements.</td>
<td>• Adapting to local realities.</td>
<td></td>
</tr>
<tr>
<td>• Finance costs of closure.</td>
<td>* Finance costs of closure.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Require inclusion of socioeconomic issues in decommissioning and closure.</td>
<td>* Require inclusion of socioeconomic issues in decommissioning and closure.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Active involvement in revenue management planning to help ensure long-term sustainability of economy.</td>
<td>* Active involvement in revenue management planning to help ensure long-term sustainability of economy.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• [insert additional]</td>
<td>* [insert additional]</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Decommissioning Subcontractors</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Specialized contractor, sector specific</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• [Insert name of specialized contractor(s) needed for decommissioning. For example, for offshore platform decommissioning or specialized site reclamation]</td>
<td>* Implement best practice approach.</td>
<td>• May not be directly liable.</td>
<td></td>
</tr>
<tr>
<td>• Implement best practice approach.</td>
<td>* Fulfill all decommissioning and closure requirements.</td>
<td>* Generally less experience in the project area.</td>
<td></td>
</tr>
<tr>
<td>• Anticipate any potential issues not covered in the plan.</td>
<td>* Anticipate any potential issues not covered in the plan.</td>
<td>* No formal long term interests.</td>
<td></td>
</tr>
<tr>
<td>• Work with multi-partite group to help maximize local benefits of decommissioning process.</td>
<td>* Work with multi-partite group to help maximize local benefits of decommissioning process.</td>
<td>* Developing new business/ employment opportunities and skills and resources’ development (local/ national)</td>
<td></td>
</tr>
<tr>
<td>• [insert additional]</td>
<td>* [insert additional]</td>
<td>* insert additional]</td>
<td></td>
</tr>
<tr>
<td><strong>Industry Organizations</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sector and region-specific organizations. See section 1.4.5.</td>
<td>* [Insert relevant organizations]</td>
<td>* Adapting to local realities.</td>
<td></td>
</tr>
<tr>
<td>• Coordinate development of industry standards and practices related to decommissioning and closure.</td>
<td>* Coordinate development of industry standards and practices related to decommissioning and closure.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• [insert additional]</td>
<td>* [insert additional]</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Insurance / Bond / Third Party Guarantee Providers</strong></td>
<td>* [Insert relevant organizations]</td>
<td>* Industry business drivers.</td>
<td></td>
</tr>
<tr>
<td>• Assure liquidity of funds needed for decommissioning and closure.</td>
<td>* Assure liquidity of funds needed for decommissioning and closure.</td>
<td>* Timeframe involved since design.</td>
<td></td>
</tr>
<tr>
<td>• Tie to socio-economic risk management as incentive to sustainable management.</td>
<td>* Tie to socio-economic risk management as incentive to sustainable management.</td>
<td>* Sufficiency of resources.</td>
<td></td>
</tr>
<tr>
<td>• [insert additional]</td>
<td>* [insert additional]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Category of Stakeholder</td>
<td>1. Specific Stakeholders (List Specific Stakeholders)</td>
<td>2. Desired Roles in Decommissioning and Closure (Describe where you are in the process)</td>
<td>3. Issues / Opportunities</td>
</tr>
<tr>
<td>-------------------------</td>
<td>-------------------------------------------------</td>
<td>---------------------------------------------------------------------------------</td>
<td>--------------------------</td>
</tr>
</tbody>
</table>
| **Civil Society / NGOs** | [Insert relevant organizations] | • Partner with communities to maximize benefits of operation.  
• Support specialized process for capacity building, training or resource protection.  
• Monitor compliance with requirements.  
• [insert additional] | • Business context.  
• Self-interest.  
• Participation in Impact Assessment studies  
• Involved in monitoring activities  
• [insert additional] |
| **Other** (E.g., indigenous community organizations, religious groups, etc.) | [Insert relevant organizations] | [Insert] | [Insert] |
5.6 Sub-Tool 5.3 – Risk-Based Prioritization

The stakeholder engagement process should highlight the risks and opportunities presented by decommissioning and closure which will need to be managed by the government, in partnership with or on behalf of other stakeholders, as the process goes forward. These risks will need to be prioritized to ensure that the time and resources available are allocated to maximizing their effectiveness in ensuring the long term sustainability of the local communities. Issues falling within the responsibility of government might include:

- Ensuring the institutional capacity of regional and local government authorities to provide basic services (e.g., health, education and infrastructure) to communities and to prevent them from becoming overly dependent on the presence of the operator during the operations.

- Developing a sustainable regional development planning process that pursues economic diversification options during the life of the project to ensure that the community has options beyond the extractives operations once they cease to exist.

- Ensuring that the appropriate levels of government have the capacity to fairly redistribute and responsibly invest royalties and taxes during the lifetime of the project to maximize the opportunities for sustainable investment in the communities most impacted by the project and its future closure.

- Regulating the extractives operators to ensure implementation of environmental and social best practices to reduce the risk of environmental and social liabilities upon decommissioning and closure.

- Supporting the communities most impacted by the future closure process to build their social, environmental and financial capital to enable them to withstand the economic transition into the post-closure phase with a measure of sustainability.

- Supporting the workers, unions, worker organizations and their employment and retraining services, in order to enable the workforce to weather employment reductions, and seek other employment following closure.

Table 5 is a template that can be used to prioritize issues and identify optimal government focus, both of which can inform the strategy to pursue by a government vis-à-vis a particular operation undergoing decommissioning and closure. The issues provided in the table are examples and may not necessarily reflect the realities of a specific project.

**ACTION** → Follow directions 1 through 3 to fill out the table and identify recommended focus of government action. Note: This tool is best used in a workshop setting with representatives of different government authorities and preferably also other stakeholders.
### Table 5: Sub Tool 5.3 – Template for Risk-Based Issue Evaluation – and Government Focus

<table>
<thead>
<tr>
<th>Priority of Issue During Closure Phase</th>
<th>Significance / Consequence of Issue</th>
<th>Key</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>Low</td>
<td>●</td>
</tr>
<tr>
<td>Medium</td>
<td>Medium</td>
<td>○</td>
</tr>
<tr>
<td>High</td>
<td>High</td>
<td>●</td>
</tr>
</tbody>
</table>

1. Insert issues based on their priority during decommissioning and significance.
2. Insert government’s ability to positively influence each issue.
3. Focus government’s efforts on those issues that are of high priority – and within government’s partial or full control.

- Departure of operator personnel
- Retrenchment
- Regional development plan
- Use of best practices during operational phase
- Economic diversification
- End of sponsored social programs
- Compliance with closure plan
- [insert additional issues]
- Availability of resources for closure
- [insert additional issues]
- End of revenue generation
- [insert additional issues]
- Contractor performance / practices
- [insert additional issues]
- Transitioning of project infrastructure
- Contamination - potential or existing
- Early exit
- [insert additional issues]
- Synergy with other operators
- Number of past operators
- [insert additional issues]
- Conservation of natural resources
- Biodiversity offsets
- [insert additional issues]

**Key:** ● = government has no control; ○ = government has some control usually in partnership with others; ● = government responsibility.
5.7 Engagement Mechanisms

There are numerous mechanisms by which stakeholders can be engaged on issues that are determined to be of most relevance to the process of decommissioning and closure (see Section 1.6). The Government’s role is to ensure, through sign off on the closure plans, that these types of processes are being employed as appropriate during the engagement process for closure planning. Table 6 provides a brief analysis of some of the most common engagement mechanisms.

Table 6: Advantages and Disadvantages of Different Stakeholder Engagement Mechanisms

<table>
<thead>
<tr>
<th>Mechanism</th>
<th>Advantages</th>
<th>Disadvantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>One-on-One Meetings</td>
<td>• Identifies issues and opportunities specific to each stakeholder.</td>
<td>• Time and resource intensive.</td>
</tr>
<tr>
<td></td>
<td>• Allows for stakeholders to provide their views confidentially.</td>
<td>• Individual views may not represent those of broader stakeholders.</td>
</tr>
<tr>
<td></td>
<td>• Builds trust.</td>
<td></td>
</tr>
<tr>
<td>Grievance Mechanism</td>
<td>• Permanently accessible.</td>
<td>• Requires allocation of resources.</td>
</tr>
<tr>
<td></td>
<td>• Provides two-way communication channel.</td>
<td>• Can be overused.</td>
</tr>
<tr>
<td></td>
<td>• Built in improvement system.</td>
<td>• May emphasize only negative aspects.</td>
</tr>
<tr>
<td>Focus Groups / Forums</td>
<td>• Provides opportunity to build trust with specific stakeholders.</td>
<td>• Participation limited to small number of people – works best for specific issues or populations.</td>
</tr>
<tr>
<td></td>
<td>• Efficient way of obtaining specific concerns.</td>
<td>• Participants’ views may not represent those of the wider stakeholder group.</td>
</tr>
<tr>
<td></td>
<td>• Allows testing of existing views obtained.</td>
<td></td>
</tr>
<tr>
<td>Workshops / Work Sessions</td>
<td>• Promotes “co-responsibility” and ownership.</td>
<td>• Participants’ views may not represent those of the wider stakeholder group.</td>
</tr>
<tr>
<td></td>
<td>• Works well to build participation and trust with a specific stakeholder group on specific closure concerns or actions.</td>
<td>• Requires careful planning, information-gathering and individual consultations prior to setting up and running a workshop.</td>
</tr>
<tr>
<td></td>
<td>• Helps to build relationships with leaders / representatives of stakeholder groups.</td>
<td>• There is an expectation that outputs will be implemented.</td>
</tr>
<tr>
<td>Public Meetings</td>
<td>• Inexpensive and comparatively rapid.</td>
<td>• Some stakeholders and individuals may not be comfortable disclosing views in a non-confidential and open manner.</td>
</tr>
<tr>
<td></td>
<td>• Allows for consultation with large number of people.</td>
<td>• There is a risk that vocal groups may dominate proceedings to the detriment of other stakeholders.</td>
</tr>
<tr>
<td></td>
<td>• Provides opportunity to obtain a wide range of representative views.</td>
<td>• Can be emotive / politicized.</td>
</tr>
<tr>
<td>Websites</td>
<td>• Can reach an increasing number of people.</td>
<td>• May not reach many stakeholders.</td>
</tr>
<tr>
<td></td>
<td>• Once set up, it requires little time.</td>
<td>• Impersonal.</td>
</tr>
<tr>
<td></td>
<td>• Can be updated with information.</td>
<td>• Does not contribute to building trust.</td>
</tr>
<tr>
<td></td>
<td>• Can be used for interactive debate.</td>
<td></td>
</tr>
</tbody>
</table>
Thus it is the government’s role to ensure that these types of processes are appropriately utilized during the engagement process. This will include, for example, ensuring that communities with low levels of literacy are provided with materials in verbal or suitable visual format, so that they are able to fully understand and internalize what will take place; that the latest version of the MRCP are made available to all affected and interested parties; that companies prepare and distribute a record of consultations in a timely manner providing a note of the most important issues raised, and the company’s response. Furthermore, it is the government’s role to ensure that all consultation is being conducted in a manner which is inclusive, gender sensitive, involves vulnerable groups and that their voices and concerns are taken into full consideration in the approaches developed (See Box 1).

Box 1: Guidance Note on the Importance of an Inclusive Approach*

What is an Inclusive Approach?

An Inclusive Approach is an approach that explicitly considers the needs and views of women and other vulnerable groups regarding the decommissioning and closure of oil and gas fields and mines.

Why is an Inclusive Approach to Decommissioning and Closure Important?

- Women and men, for example, often have different approaches to community issues, with women tending to be more focused on services to meet the health and educational needs of families and communities. Thus, explicitly taking into account the concerns and views of women as part of the Decommissioning and Closure Plan may identify interventions which would have a greater positive effect on families, communities, and sustainable development.

- Oil, gas and mining have a gender bias** whereby most of the benefits (employment and income) accrue to men whereas many adverse effects (which include social, health environmental and cultural risks) fall upon women and the families they care for. Extractives sector projects can worsen the gender situation in rural communities because the monetary earnings of men reduce the value and importance of women’s traditional roles, while men’s income and employment gives them more say over household and community affairs.

What Makes an Inclusive Approach to Decommissioning and Closure Distinct?

- Separate Consultations with Women and other vulnerable groups. It is not sufficient simply to include women in the general consultation process.

- Appropriate Information Sharing – Women and other vulnerable groups should have access to relevant information in a format that is understandable to them. While the closure plan and any supporting studies should be made available as a matter of course, for groups in remote communities with high rates of illiteracy it is most important that presentations are verbal and that question and answer sessions are supported by simple written materials in the local language.

- Important Issues – Women and vulnerable groups are likely to want to be informed about the implications of closure for clean water supply, educational facilities, health services, local food supply and food security, power supply, infrastructure, commercial life of the community, potential emigration from the community, and the management of community development funds.

* This Guidance Note was provided with input from John Strongman, Consultant to the World Bank COCPO, issued on August 4, 2009 for comment. Comments may be sent to: jstrongman@worldbank.org.

** Work by the World Bank Oil, Gas and Mining Division (COCPO) (for example see the World Bank EI and Gender website for work in Papua New Guinea, Poland and Tanzania: publications such as Women and Extractive Industries Fact Sheet and presentations such as Sustainability Worldwide: the Gender Link).
5.8 **Sub-Tool 5.4 – Assessing the Extent of Stakeholder Engagement in Decommissioning and Closure**

Government’s role is (i) to use stakeholder engagement as a mechanism to continuously improve the framework, processes and standards relative to decommissioning and closure for the extractives sector, (ii) to ensure community and broader stakeholder involvement of the proposed closure plan, and “empowerment” of communities to influence the planning of the decommissioning and closure process as counterparts and partners in this transitional phase, and (iii) to ensure, from a regional planning perspective, that the government’s counterpart responsibility *vis a vis* the community are fulfilled in terms of government, infrastructure, social support networks and regional development planning.

*Table 7* is a template that can be used to assess the degree to which mining or oil and gas operators have meaningfully involved communities and the broader stakeholders in planning decommissioning and closure – and how prepared they are to manage community relations during closure.

Note that

- Best practice, in progress practice, and deficient practice examples are illustrative and not prescriptive or comprehensive. Nevertheless, they do identify key assessment, process, engagement, resource availability and effectiveness categories that contribute to meaningful stakeholder involvement.

- The specific indicators can be adapted and modified to the context in which the decommissioning and closure is taking place.

**ACTION ➔** Review the different attributes provided to illustrate best practice, in progress practice and deficient practice for “assessment,” “process,” “engagement,” “resource availability,” and “effectiveness” categories and select the one that most closely resembles the operation undergoing decommissioning and closure.
<table>
<thead>
<tr>
<th>Area</th>
<th>Select and Comment</th>
<th>Deficient</th>
<th>In Progress</th>
<th>Best Practice</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assessment of Effects of Decommissioning and Closure</td>
<td>Best practice</td>
<td>• No ESIA for closure activities was completed.</td>
<td>• Adequate “picture” of directly affected resources and stakeholders.</td>
<td>• Comprehensive environmental – and social – impact assessment (ESIA), with clear definition of area of influence and impacts (and opportunities) of closure.</td>
</tr>
<tr>
<td></td>
<td>In Progress</td>
<td>• No closure plan or deficient in many areas.</td>
<td>• Closure plan exists, but deficient in a few key areas (Tool 2).</td>
<td>• Closure plan in place.</td>
</tr>
<tr>
<td></td>
<td>Deficient</td>
<td>• Good ESIA but not leveraged by operator to drive engagement relative to decommissioning.</td>
<td>• Good ESIA but not leveraged by operator to drive engagement relative to decommissioning.</td>
<td>• Comprehensive stakeholder engagement which is gender-sensitive and includes vulnerable groups.</td>
</tr>
<tr>
<td>Comments:</td>
<td></td>
<td></td>
<td>• Adequate system for directly affected people including grievance mechanism.</td>
<td>• A process in place to manage transition from operation to decommissioning.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Company conceives community relations as temporary activity to mitigate immediate problems arising during decommissioning.</td>
<td>• Explicit linkage between ESIA, area of influence and engagement strategy.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Absence of plan for transition between the corporate responsibility teams during operations and decommissioning.</td>
<td>• Committee is in place for community relations with representation from company and decommissioning contractor(s).</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Grievance mechanism in place.</td>
<td>• Grievance mechanism in place.</td>
</tr>
<tr>
<td>Management Planning of Engagement during Decommissioning and Closure</td>
<td>Best practice</td>
<td>• There appears to be no plan for how community relations will transition into decommissioning.</td>
<td>• Adequate system for directly affected people including grievance mechanism.</td>
<td>• A process in place to manage transition from operation to decommissioning.</td>
</tr>
<tr>
<td></td>
<td>In Progress</td>
<td></td>
<td>• Company conceives community relations as temporary activity to mitigate immediate problems arising during decommissioning.</td>
<td>• Explicit linkage between ESIA, area of influence and engagement strategy.</td>
</tr>
<tr>
<td></td>
<td>Deficient</td>
<td></td>
<td>• Absence of plan for transition between the corporate responsibility teams during operations and decommissioning.</td>
<td>• Committee is in place for community relations with representation from company and decommissioning contractor(s).</td>
</tr>
<tr>
<td>Comments:</td>
<td></td>
<td></td>
<td>• Grievance mechanism in place.</td>
<td>• Grievance mechanism in place.</td>
</tr>
<tr>
<td>Sub-Tool 5.4 – Assessing Extent of Community Engagement in Decommissioning and Closure</td>
<td></td>
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</tr>
<tr>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Area</strong></td>
<td><strong>Select and Comment</strong></td>
<td><strong>Deficient</strong></td>
<td><strong>In Progress</strong></td>
<td><strong>Best Practice</strong></td>
</tr>
<tr>
<td><strong>Consultation and Engagement Relative to Decommissioning and Closure</strong></td>
<td>Best practice</td>
<td>□</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>In Progress</td>
<td>□</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Deficient</td>
<td>□</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Comments:</td>
<td></td>
<td>• Information about decommissioning and closure may or may not be disseminated to communities and other stakeholders.</td>
<td>• Immediately affected groups (e.g., workers or nearby communities) may have had the opportunity to provide input on select aspects of decommissioning plan.</td>
<td>• The closure plan was completed over several iterations during operations with community and other stakeholder input.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Broader input was not received or leveraged.</td>
<td>• Engagement strategy encourages community to form “representative structures” (e.g., village committees) around decommissioning process.</td>
<td>• Transparency of process and honest information exchange and “negotiation.”</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Evidence of benefit sharing from the operational phase.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Resources for Engagement during Decommissioning and Closure</strong></td>
<td>Best practice</td>
<td>□</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>In Progress</td>
<td>□</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Deficient</td>
<td>□</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Comments:</td>
<td></td>
<td>• There are no dedicated resources for community relations and stakeholder engagement during decommissioning and closure.</td>
<td>• There is a team for community relations focusing only on immediately affected groups.</td>
<td>• Company has a policy on community engagement.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Company may also have outsourced community relations to others (e.g., consultants or temporary employees).</td>
<td></td>
<td>• There is a dedicated group for community relations during this phase.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Organization understands importance of engagement (i.e., has a “culture of engagement”).</td>
</tr>
<tr>
<td><strong>Stakeholder Support and Acceptance of Decommissioning and Closure Plan</strong></td>
<td>Best practice</td>
<td>□</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>In Progress</td>
<td>□</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Deficient</td>
<td>□</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Comments:</td>
<td></td>
<td>• Communities do not participate, support or do not know about the plan for decommissioning and closure.</td>
<td>• Community structures or forums are created ad hoc – and engage with the company usually in context of negotiations or complaints.</td>
<td>• Existence of permanent community groups (e.g., Village Committees) that participate in closure planning and activities.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Process and structures are considered legitimate by the stakeholders.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Community monitoring of closure.</td>
</tr>
</tbody>
</table>
### Sub-Tool 5.4 – Assessing Extent of Community Engagement in Decommissioning and Closure

<table>
<thead>
<tr>
<th>Area</th>
<th>Select and Comment</th>
<th>Deficient</th>
<th>In Progress</th>
<th>Best Practice</th>
</tr>
</thead>
</table>
| Indicators of Successful Community Engagement on Decommissioning and Closure | Best practice | • There is evidence that nearby communities will experience significant impacts.  
• There is serious animosity between the community and the operator regarding the end of operations. | • There are unresolved issues related to the operator’s departure from the area.  
• There are some complaints or significant uncertainty about how the operator is managing the end of operations. | • Stakeholders understand the nature of decommissioning and closure, how it will affect them and know how and when to contribute to its planning.  
• Communities and other stakeholders are empowered in the process and understand their options during post-closure.  
• Grievance mechanism is responding to expressed concerns – and stakeholders know how to access it.  
• Evidence that the community would welcome this company again (i.e., the company still has a “social license to operate”). |
| Comments: | Deficient | | | |

Where does the company rank on the scale?  
Are they closer to Best Practice, In Progress or Deficient?
5.9 **Sub-Tool 5.5 – Action Plan and Continuous Improvement**

As shown in *Figure 3*, an important benefit of stakeholder engagement is the ability to assess performance through the consideration of different opinions and perspectives, thereby making it possible to improve plans, processes and frameworks.

Host nation governments should contribute to the iterative improvement of:

- Defining legislation and a regulatory framework which requires the companies to develop decommissioning and closure plans that includes extensive stakeholder engagement both at the design and the planning stage for actual decommissioning and closure.

- Agreeing and approving the decommissioning and closure plan, including review of the adequacy and appropriateness of the stakeholder engagement processes conducted. It needs to be adequate to ensure smooth decommissioning and closure from a socio-economic perspective in the specific project context (national or regional government responsibility, according to the national administrative context).

- Partnering with the company, as a stakeholder, through the multi-partite process in the design of the decommissioning and closure process, to ensure:
  - Integration of the relevant issues into the regional/ local development planning process;
  - Effective management of the government's fiscal planning process in relation to the management of impacts of closure;
  - Effective understanding of the needs of the community in relation to government roles and responsibilities, to ensure advance preparedness for change.

*Table 8* provides a simple action plan template that can be adapted.

**ACTION** Use the outputs of the various sub-tools presented thus far to define key actions that need to be completed to improve specific components of the decommissioning process (e.g., regulatory framework, best practices, financial assurance and monitoring) or specific decommissioning and closure plans. Complete columns 2 through 6 as illustrated.
### Table 8: Sub-Tool 5.5 - Action Plan Template

|--------------------------------------|--------------------|------------------------------------|--------------------------|--------------------|-------------|
| [Insert. For example, Toolkit Component 1: If Social component is consistently not addressed] | • [Insert. For example, establish minimum requirements relative to social measures to be covered in closure plan] | • Ministry of Mining or Energy | • Mining or oil and gas division  
• Industry organizations  
• Other interested parties | Internal staff and time from involved stakeholders to provide opinion to draft requirements | About 1 year |
| [Insert. For example, Toolkit Component 2: Lack of soil and water cleanup standards] | • [Insert. For example, establish a working committee in partnership with industry organizations and knowledgeable academic institutions to reach consensus on “how clean is clean”] | • Ministry of Environment | • Ministry of Environment  
• Relevant industry organization  
• Operators  
• Academic institutions  
• Experts | Periodic workshop involving 1-2 representatives from each category of involved stakeholders | About 1 year |
| [Insert. For example, Toolkit Component 3: Socioeconomic consideration are not factored in when establishing financial assurance] | • [Insert. For example, consider costs of retrenchment and retraining] | • Regional Government | • Regional Government  
• Industry organizations  
• Operators  
• Community  
• Others | Regional planning to include alternative economic activities for the unemployed | About a year |
5.10 For More Information

There are numerous useful references describing the importance of, and mechanisms related to, stakeholder engagement. Below are several selected references, which can be used to access additional information:


- Environmental Excellence in Exploration (E3), the Prospectors and Developers Association of Canada, Stakeholder Engagement Toolkit, 2007 ([http://pdac.ca/e3plus/index.html](http://pdac.ca/e3plus/index.html))