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9.4 Tools: Legal and Regulatory

Governments can and do use legal tools to manage environmental and social impacts. Most importantly, from a perspective of sustainability, is to use them to anticipate impacts and take action to minimize or avoid the potential impacts well in advance. It is increasingly common to see social and environmental protection policies, together with related procedures, instruments, compliance standards, and assignment of responsibilities, spelled out in laws and regulations as opposed to contracts or agreements. Where this is done, the laws and regulations will typically stipulate: the process by which the various data, impact assessments, and management plans, will be reviewed and by whom; the process by which any needed corrections and improvements will be made; and the process and criteria for approvals to be given and by whom.

The array of legal and regulatory instruments which governments will typically have at their disposal to manage impacts and ensure compliance with policy on extractives is wide. In determining whether a project will facilitate long-term sustainable development or not, the following four tools will have a particular importance.

9.4.1 Tools: Environmental and Social Impact Assessments (EIAs)

Environmental and social impact assessments (ESIAs) have become standard pre-project planning tools to assist in anticipating impacts, planning actions for their management and mitigation, and for monitoring compliance. They are routinely required of project sponsors by means of domestic legislation and/or contract. However, they are often also tied in to programs of corporate social responsibility. Their findings can shape or even prevent a project from going ahead.

The primary intention of the ESIA is to analyse short-term and long-term impacts and risks, including: (1) direct impacts (the project site and neighbouring communities, infrastructure such as ports, pipelines, pumping stations, roads and railways, as well as, all plant, equipment, landfills and other facilities at the site); (2) indirect impacts; (3) cumulative impacts; (4) transboundary impacts; (such as from air emissions) and (5) global impacts (such as from greenhouse gas emissions). These impacts are identified through all stages of the planned EI sector project (pre-development, development, production, abandonment, or closure and post-closure). Alternative ways of carrying out the project would typically be included.

Assessment of potential social impacts might include local communities and local land use, resettlement, and issues affecting women, youth and the elderly. Assessment of environmental impacts would typically include air and soil resources, marine resources, water and wetlands, and biological and biodiversity resources. Legislation usually requires that ESIAs be prepared by qualified experts in accordance with international good practice standards,[1] and that the documents are made public allowing sufficient time for review and comment before the EI sector project commences. They can also identify and highlight *positive* impacts, such as eradication of invasive species, and the protection of specific species of fauna and flora.

The manner in which the ESIA is carried out is important. Independence is essential. A public participation component is essential. Sometimes, a government will require the company to carry it out, such as in Mongolia, "in accordance with the Law on Environmental Impact Assessment prepared by a competent, independent, professional firm"[2].

A criticism of these tools is that they tend to justify decisions and protect investments already made. The benefit is that they will assist in mitigating negative impacts, highlight environmental and social risks to be managed and also offer suggestions about ways in which the layout, design and implementation of projects can be improved[3]. This can end up narrowing the scope of environmental and social considerations in relation to a project[4].

9.4.2 Operational Planning

The project sponsor's environmental and social management plan (ESMP) is also a standard feature of modern EI sector regulation. Based on the ESIA, it is focused more on management and compliance rather than on design, and incorporates information from the assessment stage. The relationship between the two is explained well in the Afghanistan Qara Zaghan agreement of 2011 for a gold mining project. It is a

> "…plan proposed by [the company], and which must be accepted by [the Ministry of Mines], which details the measures to be taken to minimize or alleviate the Environmental and Social factors applicable to the Qara Zaghan Gold Project which are identified and detailed in the Environmental and Social Impact Assessment".

[1] The World Bank, the IFC, and institutions subscribing to the Equator Principles have all published requirements for the

[2] Oyu-Tolgoi (2009) Agreement.

[3] Hobbs and Kumah (2015).

[4] A commonly used tool to counter this is the Strategic Environmental Assessment (SEA). This tool "assists decision makers to think through, with other stakeholders, how economic, social and environmental considerations can fit together, suggesting trade-offs should they be necessary. It provides a framework for more inclusive, transparent and better-informed decision-making and is, therefore, an important contribution to good governance": Hobbs and Kumah (2015); OECD (2006), Applying Strategic Environmental Assessment – Good Practice Guidance for Development Cooperation.

The ESMP consists of operational policies, procedures, and practices designed to comply with applicable laws and regulations and reduce the risk of adverse impacts during each phase of a project. It too, should reflect international good practice standards, of which there are several examples available (see one example in **Table 9.1** below). Generally, it will also include an in-migration management plan and resettlement and compensation plan. The sponsor is expected to amend and update the ESMP as necessary to reflect changes in circumstances or applicable standards. Importantly, ESMPs are required to include emergency preparedness and response measures designed to address both unforeseen and foreseeable accidents and events. As with the ESIA, ESMPs are meant to be disclosed to affected stakeholders for comment and feedback.

Table 9.1: World Bank Group Social and Environmental Standards

Policy	Requirements	Consultation
Environmental Assessment	Screen early for impacts. Select instruments to assess, minimize and mitigate adverse impacts.	Affected groups and NGOs as early as possible
Natural Habitats	No support to projects that degrade critical habitats. Support to projects that affect non-critical habitats only if no alternatives are available and mitigation measures are in place.	Consult local people in planning, designing and monitoring projects
Indigenous Peoples	Ascertain presence of indigenous peoples. Design policies based on expected impact and reflective of indigenous peoples cultural preferences.	Conduct informed prior consultation and obtain broad community support
Involuntary resettlement	Avoid where feasible. Assist those displaced in improving or restoring their living standards, Displaced persons should share in project benefits.	Re-settlers and expected host community. Incorporate views in resettlement plans
Disputed areas	Ensure that claimants to disputed area have no objection	No public consultation. Claimants informed

Source: *World Bank* website www.worldbank.org/safeguards (last accessed 13 December 2014.

9.4.3 Compliance Standards

Many countries set compliance standards for environmental impacts. International institutions also set these for environment and social aspects of projects[5]. In addition to the World Bank's Safeguard Policies, directed at the identification and mitigation of potentially adverse environmental and social consequences of projects supported by the Bank, the IFC has a set of Policy and Performance Standards on social and environmental sustainability. These have become the global benchmark for managing environmental and social risk by financial institutions. There has also been uptake of these standards by private banks through the Equator Principles, a risk management framework for determining, assessing and managing environmental and social risk in projects[6]. Its aim is to provide a minimum standard for due diligence to support responsible risk decision-making. Further, there is a series of International Standards Organization (ISO) standards on Environmental Management, with a highly influential standard, ISO 14,001 on Environmental Management Systems. These standards have been widely adopted by national standards organizations. Although voluntary they can serve as a reference point for the definition of good practice in oil, gas and mining activities[7].

Standards are most effective when they are achievable and set in line with good international practice. If they are unrealistically strict, the risk is that they will become meaningless given the institutional capacity limitations of most developing countries. Equally, if they are too lax, good enforcement will not accomplish very much. The best results are achieved when compliance standards are well set and the capacity to implement them is put in place.

9.4.4 Human Rights Frameworks

Protection of human rights has become an important matter for international legal frameworks[8], both in the sense of hard legal rules such as the International Covenant on Civil and Political Rights and the International covenant on Economic, Social and Cultural Rights, and International Labour Organisation Conventions. More recently, the development of standards that are expressly targeted at the conduct of business by extractives

[5] For example, the World Bank has Environmental Assessment as one of its ten environmental, social and legal Safeguards Policies. It is used in the World Bank to identify, avoid and mitigate the potential negative environmental impacts associated with Bank lending operations: http://web.worldbank.org/WBSITE/EXTERNAL/PROJECTS/EXTPOLICIES/EXTSAFEPOL/0,,contentMDK:20543912~menuPK:1286357~pagePK:64168445~piPK:64168309~theSitePK:584435,00.html (last visited 11 May 2016)

[6] http://www.equator-principles.com (last visited 11 May 2016)

[7] J Wagner and K Armstrong, Managing Environmental and Social Risks in International Oil and Gas Projects, Journal of World Energy Law & Business (2010) 3 (2), 140-165.

[8] There is a wide body of human rights law at global, regional and national levels. There have also been authoritative interpretations of treaties over the years.

companies. In this area, the most important event in recent years is the development and adoption of the United Nations Protect, Respect and Remedy Framework (the Framework) in 2008[9], which seeks to provide principles to guide states and businesses in protecting and respecting human rights.

The Framework establishes three pillars:

- The state's duty to protect against human rights abuses by third parties;
- the corporate responsibility to respect human rights; and
- greater access by victims of human rights abuses to effective judicial and non-judicial remedies.

Although this is a generic framework applicable to business, it has attracted particular interest in the extractive industries. It invites governments to view human rights protection against abuses by business as a responsibility that goes beyond the environmental protection, approval and monitoring of projects. Instead, they could reinforce legal obligations and foster a culture of respect for human rights among public institutions as well as businesses, imposing reporting obligations on them for example.

With respect to contract provisions, the IFC and the UN Special Representative for Human Rights John Ruggie carried out a study of stabilization clauses that might constrain a government's ability to protect human rights[10]. It found that the extractive industries were likely to include the most constraining clauses. In 2011 the UN Human Rights Council considered a proposal for 10 Principles that would integrate human rights risks into state-investor contract negotiations. One of the goals of the proposal was to reduce the risks of incoherence in the policies and actions of the host state.

Since the Framework was adopted, companies have both individually and collectively begun to implement them. One example is the Global Business Initiative, a company-led initiative of 14 multinational companies from the global North and South, aiming at implementing them internally. A group of international banks has publicly committed to working together to understand what the Framework means to them and to publish a best practice guide on this. Documentaries on the resolution of disputes between communities and major investment projects have been produced by the Harvard Kennedy School of Government and J Ruggie[11]. The UN Office of the High Commissioner has also published further guidance for business, as has the LSE[12].

[9] The Special Representative's Reports to the UN Human Rights Council are available at: www.business-humanrights.org/SpecialRepPortal/Home/ReportstoUNHumanRightsCouncil (last visited 11 May 2016)
[10] A Shemberg, Stabilization Clauses and Human Rights (2008)
[11] http://vimeo.com/25199195 (last visited 11 May 2016)
[12] LSE Investment and Human Rights Learning Hub: http://blogs.lse.ac.uk/investment-and-human-rights/ (last visited 11 May 2016)

In 2015 new interactive platforms were launched for business and government by the Business and Human Rights Resource Centre[13], an international NGO that tracks the human rights impacts of more than 6000 companies in over 180 countries. The responses from many companies and governments on human rights commitments and practice is presented in online form so that users can view individual responses, compare responses across regions and sectors and search for specific issues or actions. It noted that there is momentum among governments to develop National Action Plans on business and human rights.

It should be emphasised that extractives companies themselves often initiate a human rights policy. Mining companies in particular have done so for several years. For example, Rio Tinto produces detailed 'human rights guidance' for its business units. This covers local level human rights considerations in dealing with communities, employees and security. In a section entitled 'difficult issues', it considers the company's role and tactics in situations where it may have less control, such as where there is a risk of abuses being committed by the government or third parties[14]. Newmont, another mining company, underpins its commitment to the Universal Declaration of Human Rights with a policy of 19 management standards and 14 discipline-specific standards, several of which are relevant to human rights. A 'human rights primer' and a 'human rights training guide' are available to sites to support their knowledge building on these subjects. BHP Billiton, Xstrata and Goldfields are other examples of internationally operating mining groups that have explicit, formal commitments to human rights in their operations[15].

9.4.5 A Summary of Common Tools

A modern environmental and social protection regime will include the following instruments prepared for each operation and submitted to the environmental authority for approval:

1. baseline environmental and social data;
2. sector strategic environmental and social assessment (SESA);
3. environmental and social impact assessments (ESIA);
4. environmental and social management plan (ESMP);
5. management plans for health and safety impacts;
6. hazardous material handling, transport and storage management plan;
7. community development plan (CDA); and
8. decommissioning and closure management plan (including post-closure monitoring if needed).

[13] http://business-humanrights.org/ (last visited 11 May 2016)
[14] ICMM, Human Rights in the Mining & Metals Industry, Overview, Management Approach and Issues, May 2009, p.8.
[15] Ibid.

The various baseline data, impact assessments, and management plans need to be prepared not only for the core EI sector operation itself but also for: (1) associated water storage; (2) product, fuel and materials transport, handing and storage facilities; and (3) processing plants and infrastructure associated with the operation including roads, and railway routes, waterways, and ports along which hazardous materials may be transported and locations where they are stored.

For mining, waste dumps and tailings impoundments will also be included. Environmental audits may also be required in situations where there has not been strong enforcement of environmental requirements or where there are community or other stakeholder concerns about environmental performance and practice.[16]

Baseline Studies. Almost all social and environmental legislation today would require that, before any EI sector activity begins, baseline social and environmental data be collected and reported. Baseline data should include year round measurement of environmental conditions during different seasons of the year, information on vegetation and animal life, and identification of established legal and customary community residents and users and their assets, crops, and livelihoods at the earliest stage practical so that they can be identified separately from any newcomers who might arrive as news of a potential development spreads. This might be paralleled by an initial scoping study indicating the likely social and environmental impacts and providing a basis for initiation of consultations with affected communities.[17]

Environmental Permits. Environmental permits should be required for all EI sector operations to manage and mitigate key environmental impacts such as: (1) water use and wastewater discharge quality; (2) atmospheric emissions; (3) noise; and (4) for mining project-related waste such as tailings storage and disposal. Processing these permits according to a common timetable can enable investors and operators to be able to plan construction and operation in an orderly manner. Environmental and social regulations can be used to provide clear guidelines and specify requirements for the preparation of baseline data, assessments, and management plans.

Penalties. The law and regulations should clearly present the penalties for violations of environmental requirements and compliance standards. These should range from fines for minor violations to suspension of permits and licenses for the most serious violations. In the most extreme case, licenses would be subject to termination. Companies should pay penalties commensurate with the violation, and where other parties are harmed, they should provide compensation commensurate with the harm.

[16] International Organization of Supreme Audit Institutions (INTOSAI) Working Group on Environmental Auditing (WGEA) (2010). *Auditing Mining: Guidance for Supreme Audit Institutions.* Vienna: INTOSAI WGEA.

17 Liebenthal, supra note 61, at pp. 15-16.

9.4.6 Environment

9.4.6.1 Oil and Gas

Two areas of environmental concern are worthy of note since they arise when operations go wrong or where they approach closure for commercial or resource exhaustion reasons. In each case there is a body of legal rules and good practice, sometimes not particularly cohesive, but always relevant to policy-makers in designing tools for prevention, avoidance and mitigation. These cases are examined below.

Cleaning Up Many oil and gas jurisdictions have begun a review of contractual exclusion clauses, liabilities and indemnities, definitions of 'gross negligence' and wilful misconduct, as well as other contractual terms such as those relating to insurance, choice of law and jurisdiction[18]. A major problem is the lack of any consistent national legislation in this field or an international convention that would guide or even require Operators to adhere to the established industry practice. Further, there is a question as to which regulations imposing fines and penalties apply exclusively to Operators or to Contractors as well. The result is that Contractors could be heavily and perhaps fatally exposed in a situation for which they have no ability to fully mitigate the risk and over which they have not enjoyed full operational control and decision-making powers.

For governments in *Source Book* target countries, there are likely to be three important considerations.

First of all, the existence of NOCs in most countries and the use of PSC and service contract arrangements have implications for the allocation of liability. It is far from clear that NOCs would accept the kind of liability which BP has in the event of even a more modest oil spill than the Macondo one. Essentially, NOCs are very different from internationally operating companies and their accountability for oil spills of this nature has yet to be tested. Their bargaining power vis-a-vis Contractors in certain countries is such that they may assume they can impose whatever conditions they wish. Moreover, in some countries such as Russia and China there are service contractors that are part of vertically integrated NOCs, in contrast to IOCs elsewhere which do not usually have a service affiliate. This underlines the fact that there are different kinds of Operators: some are international oil companies and others are national companies; some are large companies, some medium and others small. The capacity of Operators to pay for catastrophic risk will therefore vary.

18 In the US, there is a growing body of academic commentary on the issues in relation to federal and state law. Some of the notable contributions include: Vincent J Foley, Post Deep Water Horizon: The Changing Landscape of Liability for Oil Pollution in the United States (Albany Law Review Vol.74.1 2010/2011); Ronan Perry, Deep Water Horizon Spill and the Limits of Civil Liability (86 Washington Law Review 1 2011); Robert Force et al, Deep water Horizon: Removal costs, civil damages, crimes, civil penalties and state remedies in oil spill cases. (85 Tul. L. Review 889 2010-2011).

Second, local law requirements are such that exclusions of liability are unlikely to be upheld. In some regimes, such as Brazil or Indonesia, local law will not allow the enforcement of indemnity provisions such as the ones currently used in the industry. Contractors would, therefore, be liable under local law in the event of negligence. Similar conditions can be expected in countries such as Russia and Argentina.

Finally, an important problem in many cases is a lack of capacity in ministries that will have responsibility for oil spill prevention and response. Ghana, for example, has a National Oil Spill Contingency Plan (and already has had an oil spill offshore), but the country's legal regime does not clearly define the roles and responsibilities of the various stakeholders; it lacks the relevant bodies to complement the activities of the environmental authorities in addressing oil pollution; it is vague in its requirements on the funding of equipment to combat oil spills, and has only general plans on the training of personnel.

Cleaning Up Rules: Europe There is a regional, NW European convention which may offer some guidance to countries seeking to adopt a regional approach. The Offshore Pollution Liability Agreement (OPOL) was set up in 1975 as a short-term measure and an alternative to a 1976 international convention that never came into effect.

OPOL requires each Operator to accept strict liability, with a few exceptions, for pollution damage, and for the cost of remedial measures incurred from a spill from its offshore facilities up to a maximum of US$250 million per incident. It requires that all claims have to be lodged against the Operator who has caused the pollution and that the Operator is solely responsible for meeting these claims. In the event that an Operator defaults, OPOL provides for a mutual guarantee from all its other members that claims up to US$250 million will be settled. It applies to offshore Operators only, the majority of which are UK based. Although European in focus, it does not apply to the Baltic or Mediterranean seas, in which deep-water drilling is a prospect. Moreover, the scale of the costs arising from Macondo raises the question of whether the limit of US$250 million is anywhere near sufficient to address a catastrophic oil spill.

OPOL applies to all offshore facilities from which there is a risk of a discharge causing pollution damage. It is not a fund nor is it a limitation of liability regime. The Operator may be liable for losses which exceed the maximum recoverable under OPOL, or those that go beyond the scope of OPOL. OPOL acts as a back-up to the individual company's own insurance provision if that proves insufficient to address compensation claims arising from offshore pollution incidents from E&P facilities. The scheme involves strict liability compensation with no need for proof of fault. Payment is to be rapid and there is no need for legal action. It is also secure: members must provide evidence of financial responsibility plus OPOL members give mutual guarantee of each other's obligations. There are two categories of claims: reimbursement of public authorities for remedial measures and compensation to third parties for pollution damage.

Cleaning Up Rules: The US Approach In the US regime, the principal national rules are contained in the OPA. There is no need to show fault; strict liability applies. It authorized the use of money and collection of revenue for the Oil Spill Liability Trust Fund, designed to ensure a rapid and effective response to oil spills. The OPA rules on compensation and liability cover the loss of natural resources, removal and clean-up costs, property damage, loss of profits/earning capacity, loss of government revenue or increased public services costs. It includes liability caps that vary according to the type of spill and type of damage caused.

In addition, each State has its own environmental legislation with provision for damages. Tort claims may be made under state and federal law. The Clean Water Act permits a government to seek fines on a per barrel basis which can increase if a judge finds that the company has been grossly negligent in allowing the pollution to occur. In BP's case, this may lead to billions of dollars of liability.

Insurance Most JOAs require the Operator to take out insurance for joint operations. Partners can join in the Operator's insurance or take out their own. Some larger oil companies do not insure with the market. Usually, an Operator will maintain various insurances relevant to blowout including third party legal liability and control of wells, re-drill and clean-up of sudden and accidental pollution from a well out of control. For Contractors, nearly all contractual liability insurance excludes blowout or sub-surface pollution or below wellhead risk[19].

Decommissioning The framework of public international law obligations for the removal and disposal of offshore installations and structures is linked to the UN Law of the Sea Convention 1982. For states which have ratified the Convention, Article 60(3) refers to "generally accepted international standards established in this regard by the competent international organization". These were set out by the International Maritime Organization (IMO) in "Guidelines and Standards for the Removal of Offshore Installations and Structures on the Continental Shelf and in the Exclusive Economic Zone"[20]. This is a legally non-binding document, like a recommendation. It sets minimum standards for removal and disposal and recommends a general removal principle on coastal states requiring that all disused installations and structures should be entirely removed, except when special circumstances consistent with the Guidelines and Standards can be shown to apply. It allows for the

[19] The only insurance that is available for blowout is Operators' Extra Expense (OEE) insurance which, as the name suggests, is designed for Operators. The only time a drilling Contractor would procure OEE is when drilling is carried out on a turnkey basis. For non-drilling Contractors (cementing/logging/drilling fluids/casing etc.), OEE is not available as it is designed for drilling and priced per foot drilled. This is not taken out by most Contractors as the premiums are prohibitive and only low insured limits are available, the maximum capacity post Macondo being in the region of $500m and that would have to cover control of well, redrill and pollution clean-up. Obviously, this limit is woefully inadequate in a Macondo-type scenario or any major blowout spill in any case.

[20] Resolution A.672 (16), adopted 19 October 1989. There are no international guidelines on the removal of disused pipelines.

possibility of partial instead of total removal. A case-by-case approach is required to determine whether special circumstances permit a coastal state to do this.

This is a dynamic area, however, in which perceptions of appropriate action to protect the environment may change in the direction of increasing strictness. One step down from the global level, regional conventions also play a role, although the level of development of these varies a great deal from one region to the next, influenced by the degree of cooperation the states can achieve.

In 1995 an attempted decommissioning in the North Sea area led to a review of the regional requirements and had global repercussions. The proposed decommissioning was for a floating oil storage and off-loading facility called the Brent Spar, and located originally in the Brent field in the UK North Sea in 140 metres of water. It commenced operations in 1976 and was decommissioned in 1991. Shell carried out the requirements for disposal under the then domestic legislation and a licence for dumping was issued. Following extensive protests by environmental groups, these plans were shelved, and the structure was eventually taken away for disposal elsewhere. The process underlined the importance of having public participation in the design of a decommissioning plan.

Subsequently, the regional convention for North Sea states, the OSPAR Convention (1992)[21] also covering the North Atlantic, was revised in 1998 to require all installations to be brought onshore for decommissioning and to make it much harder for installations or structures to be exempted from total removal. Exceptions remained for fixed steel jackets over 10,000 tonnes and concrete jackets. However, with advances in technology and contractor capabilities it can be expected that future applications for exemptions (derogations) will be scrutinized more and more carefully.

Who Pays? International law (and that includes regional conventions) does not specify who pays for decommissioning. This will be determined by: the national regime; the JOA or unit operating agreement; the terms of any decommissioning agreement and the security provided for costs. A key feature of international law and especially OSPAR Decision 98/3 is that it makes the Government a decommissioner of last resort for disused installations and the ultimate payer if a company or companies default on their obligations[22].

In this light, and in line with rising environmental standards, some governments have taken action to introduce new legislative provisions addressing the problem or overhauling

[21] The Oslo and Paris Convention for the Protection of the Marine Environment of the North East Atlantic (1992). Norway is also a member.

22 OSPAR 98/3 entered into force on 9 February 1999 and prohibits the dumping and leaving wholly or partly in place of offshore installations. The UK is a party to the OSPAR, a regional Convention covering the North Atlantic and North Sea. Derogations are possible but are tightly drawn. The existence of this Decision is a principal reason why interest in decommissioning by non-governmental organizations has been muted in recent years, in sharp contrast to the days of the Brent Spar incident. A further Decision was adopted in 2006 to address the management of drill cuttings piles.

existing legislation to ensure that the problem is addressed properly. The `minimum content' of national legislation on this would include the following:

- Inclusion of an Outline Decommissioning Plan at the stage of submission of a Development Plan for the Field;
- Submission of a Full Decommissioning Plan (covering costs, time and instruments) at a specific date in advance of decommissioning work commencing;
- Submission of a Revised Decommissioning Plan at a specific date (say 6 months) prior to decommissioning work commencing;
- Provision for Government review and approval at the above stages;
- Initiative to be taken by company to submit all Plans and to include the preparation of options for removal to be reviewed by Government.
- Joint and several liability of the owners/joint venture partners;
- Security provided for performance of the obligations;
- Fixing of liability for decommissioning: on the licensee or contract holder, but also the operator and/or owner of the installation, the parties to the JOA if different from the rights-holders under the host government agreement, persons who may own interests in the installation such as banks, former rights-holders and respective parent and associated companies; and
- Penalties for failure to do the work: the government could do the work directly or sub-contract it and charge the companies for costs. Penalties will also apply where there is a failure in certain areas, such as to provide financial information or to comply with notices requiring remedial action to carry out a decommissioning plan.

On the final point about liability, the joint and several liability of each company to bear the costs of decommissioning even if they do not have a continuing interest in a field, means that any transfer of interests requires the incoming company to provide an acceptable financial security for its decommissioning liabilities. At a post-decommissioning date, damage may be caused by remains exposed above the sea-surface, remains called 'footings', drill cuttings or debris. Ownership of residues left after the main installations have been decommissioned will typically remain with the owners and any liability remain with them in perpetuity.

How? On the contractual side, it would appear that any problems are likely to arise from the design of appropriate instruments for funding mechanisms rather than from the type of state contract. This seems still to be quite embryonic. There are merits of trust funds, which provide a level of security for both the state and the Oil Company or consortium but leave open the question of how to ensure fairness between the state and its partner. Such funds can be established by the Contractor in a bank of its own choice in an interest bearing US dollar account denominated as say 'the Decommissioning Fund', with funds being paid in from time to time to meet the expected costs of implementing an approved Decommissioning Plan. Such payments should be treated as cost recoverable. Any

payment should be considered as an operating expense for the purpose of any industrial taxes. However, funds remaining in such a Fund after the approved Decommissioning Plan is implemented, should be treated as income for tax purposes and as Profit Oil in the case of a PSC. The remaining balance could be shared out. However, there are merits too of opening escrow accounts, especially in countries which have fairly undeveloped legal and financial systems.

Planning Ahead The role of environmental impact assessments and other forms of forward planning seems likely to increase prior to commencing development. This will play an important role in predicting what sort of abandonment will be satisfactory and what forms of structure should be designed to facilitate decommissioning.

Governments may seek security to be provided from the *start* of an oil and gas project if necessary (that is, the development stage). For industry there is a clear additional cost in providing guarantees at such an early stage, whether in the form of letters of credit, cash or fund provision. There are also difficulties in engaging in such preparations when the actual timing of decommissioning cannot be predicted with any certainty (and can often be postponed).

Warranties in the Decommissioning Plan may also be required for completion of abandonment or closure work in accordance with government requirements and with respect to liability for persistent post-closure risks. Governments should obtain both closure-related warranties (that the closure will be completed subject to government requirements and approval) and post-closure warranties that the company will remain legally responsible for any environmental risk that persists (such as acid mine drainage in the case of mining) or emerge (such as slope stability of impoundments for mining) and will be corrected by the company even after the license is handed back.

9.4.6.2 Mining

Closure of mines has been occurring for hundreds of years. Experience is therefore very much more advanced than with the decommissioning of oil and gas structures and installations. Toolkits are available on this topic[23].

Initial plans and cost estimates for rehabilitation of the site will typically be required (see **Box 9.7**). Some contracts will require additional financial guarantees.

[23] The World Bank, Towards Sustainable Decommissioning and Closure of Oil Fields and Mines: A Toolkit to Assist Government Agencies, Version 3.0 (March 2010).

Provisions in a mine closure plan include: decommissioning and removal of plant and equipment; land reclamation and restoration to an alternative use; decommissioning and closure plans should also address the handover of potentially useful social assets such as buildings (for example, health or educational facilities and possibly even repair shops for small road vehicles) and equipment (for example, working vehicles) that can remain to be used by the community after the mine is closed.

If any such buildings and assets are identified early in the project life, towards the end of the project they can be handed over progressively and operated and maintained by the community agency or organization that will eventually receive and use them, so that that this group is well-equipped to own and operate them once the operation closes and the company has departed; but buildings that are not suitable to be handed over, such as laboratory or office buildings or workshops for large mining trucks and shovels, should be closed and removed. In situations where there may be legacy issues from past operations, environmental audits and surveys of the legacy sites should be undertaken on a regular basis to identify any environmental risks, set action priorities, and mobilize needed funding according to the severity of the risks.[24]

The mining agreement can be used to require the mining company to provide for funding of rehabilitation and mine closure. In the Model Mineral Development Agreement in Liberia (2008), it is stated, for example, that:

> "The closure management plan must also set forth the means by which the Company proposes to ensure the availability of funds to finance its environmental restoration and remediation obligations under Sections 8.2 and 8.3 of the Mining Law so that the cost of closure will be borne by the Company and not the public or the Government. If the Company does not agree in writing with the Government to a 'pay-as-you-go' funding scheme, then a funding guarantee reasonably satisfactory to the Minister of Finance from a third party financial institution with a long-term credit rating of at least A (or its equivalent) from at least two internationally recognized credit-rating agencies with provision reasonably acceptable to the Minister of Finance and the Minister for redetermination of estimated closures costs at least triennially and adjustments in the amount of the funding guarantee will normally be acceptable"[25].

[24] See World Bank, supra note 177, at Tools 2 and 4.

[25] http://www.sdsg.org/wp-content/uploads/2011/06/liberiadevelopmentagreementtemplate.pdf, page 22 (last visited 11 May 2011)

9.4.6.3 Social

While not all social impacts are amenable to regulation, requirements related to the process designed to mitigate social risks such as community notification, information dissemination, community consultation, land acquisition, compensation, and involuntary resettlement should be included in laws and regulations to ensure that they are implemented in an orderly and responsive manner.[26]

Hydrocarbons Oil and gas companies have undertaken social investment programmes in many of the countries they are operating in. These are voluntary contributions to the communities and broader societies in which they operate to benefit stakeholders, usually by means of transferring skills or resources[27]. Initial experience of this has indicated that an approach limited to donations and infrastructural programmes will not be effective, and is likely to lead to merely short-term positive public relations in the local area. Indeed, day-to-day stakeholder management appears to be crucial and not substituted by programmes of social investment. The way in which a social investment programme operates can in practice create or feed into divisions between groups and even lead to community violence[28]. Some companies have adopted a regional rather than a local strategy to counter this. Among the ways of addressing this, companies have found that partnering with NGOs, government agencies and universities is a useful way of obtaining the necessary expertise (that they lack). Boosting the capacities of local authorities is also appreciated as a worthwhile goal. It can increase transparency and improve the authorities' ability to respond to demands and requests from their own citizens.

Evidence of evolving practices however is evident in the *Oil and Gas Industry Guidance on Voluntary Sustainability Reporting*, published in 2015 by three associations, the IPIECA, the API and the IOGP[29]. It incorporates feedback from public consultations and improvements in reporting practices. A key change is an alignment of the social and economic issues with the United Nations Guiding Principles on business and Human Rights. It also includes a new issue area on water, with comprehensive updates to two water indicators, and a new indicator covering planning and execution of decommissioning activities. Similarly, where companies have concerns about labour practices and environmental issues, such as child labour and young workers, forced labour and human trafficking, health and safety and environmental responsibility, a supply chain library of questions and resources has been prepared to assist procurement officers to identify and manage human rights and environmental risks in the supply chain[30].

[26] See for example, the experience of the Bolivia-Brazil Gas Pipeline. Id., at p. 77.
[27] IPIECA (2011), Creating Successful, Sustainable Social Investment: Guidance Document for the Oil and Gas Industry.
[28] Ibid, p.13.
[29] http://www.ipieca.org/news/20150909/third-edition-sustainability-reporting-guidance-oil-and-gas-industry (last visited 11 May 2016)
[30] IPIECA, Annual Review 2015, p. 15.

Mining Alongside the economic opportunities it brings, the opening of a mine in or near a community may lead to economic and social disruption. So, the mining company may be required in its contract to provide some social services to the affected communities, or even financial compensation. This is an area of great sensitivity for a mining project and guidance on actions is available in various forms: the ICMM has toolkits; the IFC has principles and standards; the IBA has a Community Toolkit; and there is guidance from Source Book partner institution, the University of Queensland's Centre for Social Responsibility in Mining.

A further step in providing this kind of social engagement with a legal basis is the requirement that the company conclude a dedicated agreement on cooperation (see **Box 9.10**). For example, the Mongolian agreement for the Oyu Tolgoi mine (2009) states:

> "The Investor shall establish cooperation agreements with local administrative organizations in accordance with Article 42 of the Minerals Law and these agreements may include the establishment of local development and participation funds, local participation committees and local environmental monitoring committees".

A Community Development Agreement (CDA) is used to formalize agreements relating to the improvement of economic development at the local community level. This can be done through a variety of measures, processes, and structures as vehicles for delivering development benefits to communities[31]. CDAs can include: the preparation and implementation of community economic development plans, incorporating or supported by building local planning capacity, job skills training programs, micro-finance schemes, provision for community-controlled trusts and development funds, undertakings with respect to local employment and local procurement, and sourcing of goods and services. The CDA is normally concluded between the local community and the project sponsors, and is a vehicle for building up mutual trust and understanding.

[31] For a discussion of CDAs, see: D Brereton, J Owen and J Kim (2011), Good Practice Note: Community Development Agreements: http://www.eisourcebook.org/cms/files/csrm_good_practice_notes_on_cdas_document_final_260911.pdf (last visited 11 May 2016); and Mining Community Development Agreements: Source Book (2012), The World Bank, Washington DC.

The CDA practice reflects the growing importance assigned by investors to close and regular consultation and communication with affected communities on EI sector projects, and their social and environmental impacts. This is not always done well, and can act as a catalyst to further effort. To do this properly requires building local capacity (of both government and community) to both plan well, and implement effectively, the mining project with good accountability. It also requires checks and balances and capacity regarding local expenditure control systems – a substantial task – and the avoidance of 'elite capture' of the processes and economic benefits.

Box 9.7: Challenges associated with ASM

Access to suitable deposits and security of tenure: Whereas small-holder farmers can gain recognized communal rights to land, small-scale miners must conform to the same principle established for industrial mining operations. This principle, often enshrined in national law, confers sole ownership rights to the state of all mineral endowments found within its given territory. The state then has the right to lease prospective mining areas to third parties capable of extracting these resources. Given the potential contribution such endowments can make to national development—whether through export earnings, taxes or to a lesser extent, employment and subsidiary business development—it is natural that the state should wish to effectively control extractive activities. However, it can lead to a situation in which permit areas are prioritized for industrial mining. This leaves artisanal and small-scale miners with few suitable areas to work, forcing encroachment onto industrial concessions, or worse, into protected areas such as national parks and reserves. When artisanal zones or areas are established, they often constitute an "after-thought" and prove to have few valuable resources suitable for small-scale development.

Enforcement of mining codes and legislation: Whilst governments have taken significant strides in integrating ASM into legal instruments such as mining codes and legislation, there is still abundant work needed to enforce these instruments and to make people aware of the rights and opportunities conferred upon them by such legislation. Furthermore, there is continued need to strengthen the government institutions responsible with promoting ASM through the types of capacity building programs mentioned above.

Adequate market conditions: this is a critical gap that leads to the undercapitalization of mineral assets. In the absence of robust financing options, many ASM operations rely on pre-financing arrangements with buyers that have both benefits and disadvantages.

***Access to finance**:* whether through small revolving loan facilities, self-savings groups, local banks, local finance markets, and mining federations—remains a significant policy challenge, requiring a much more robust, and coordinate effort with other national ministries and the private sector to widen options. Lessons from Rwnada's village banking system have proven to be a suitable starting point for providing Rwnada mining cooperatives with entry level capital that could serve as a replication model elsewhere (Perks, 2012). Environmental, social and labour standards: the lack of enforced standards in most ASM areas remains one of the sub-sector's largest and most critical areas of criticism. Despite efforts by international agencies such as the International Labour Organisation (ILO) or the World Bank to develop mine site standards, few countries have sufficient mechanisms in place to enforce and monitor adherence. ASM marginalization explains further the lack of appropriate incentives and capacity to mine in a more environmentally and socially sensitive manner. Without effective formalization of the sector, adhering to industry standards remains economically unattractive for many operators.

Market linkages: the International Institute for Environment and Development (IIED) estimates that 15-20 per cent of global minerals and metals derive from ASM (IIED, 2013). Though globalization of mining processes is not new, it has led to new sourcing of raw materials in resource-rich but also more isolated areas of sub-Saharan Africa, Latin and South America, and South East Asia. This more pronounced penetration of mineral buyers and small investors into isolated regions of the world gives rise to further concerns over how ASM is both impacted by these markets demands, and accordingly responds. Piloted efforts to model clean supply chains, or fair trade minerals, are re-emerging as a means to diffuse the principle of responsibility across the supply chain—whether companies, manufacturers, smelters, buyers and traders, and national governments. It is yet however to be seen whether such initiatives will be capable of driving deep structural change needed to the sector, as noted in the formalization framework.

Natural resource management and biodiversity: The global rise in specific mineral prices, such as gold, has precipitated recent pockets of mining rushes worldwide. Some of these environments include previously untouched places that are ecologically-sensitive, including protected areas and critical ecosystems such as arctic landscapes (Greenland), tropical rainforests (Brazil and Gabon), and coral reefs (Philippines). Environmental impacts of mining methods—such as clear-cutting forests, river dredging, or use of toxic chemicals—are compounded by livelihood practices that support mining populations—gathering firewood, hunting for food or trade of goods. Furthermore, on a global scale, artisanal and small-scale forms of gold production remain the biggest environmental challenge due to mercury use. The recent UN Treaty to further limit and in some cases ban mercury use in-countries presents a renewed opportunity to tackle its use in ASM. However, the environmental agenda surrounding ASM must be integrated into broader governance discussions as often environmental degradation caused by ASM occurs within a vacuum of government regulation and presence

Representation Two critical aspects require further concerted efforts. First is overall representation for miners in the sector, and its dialogue capacity with national policy makers. Latin and South America are considerably more advanced in this regard than Africa with viable cooperatives, unions and federations in place that truly represent the interests of their members. Second is the representation of women. Though women make up at a minimum 30% of the ASM sector (Hinton,2003), and much more in certain materials such as coal and salt (Lahiri-Dutt, 2008), they continue to face a range of discriminations—some labour general that male counterparts face, though others gender specific to do with health and sexuality. Efforts to promote organizational representation through cooperatives, unions, federations, trade associations should remain a key policy focus moving forward.