Mining Regulation and Policy Course

Researcher: John Chandler
School/Centre: Centre for Mining, Energy and Natural Resources Law
University/Institution: University of Western Australia

Key theme: Governance and Regulation
Key countries: Africa
Completion: June 2013

Research aims:
This introductory 3-day course on mining regulation and policy was developed as part of a 2-stage initiative to provide IM4DC courses of interest to government and other stakeholders. The aim was to introduce the commercial and technical background against which mining projects are developed and the regulatory and policy solutions which are usually adopted to deal with them.

For further information on this action research:
Contact person: John Chandler  john.chandler@uwa.edu.au
Summary of Action Research Activity

Mining regulation and policy course

The materials developed for the introductory 3-day course on mining regulation and policy address the following key elements:

- The ownership of minerals and land open for mining
- A brief introduction to geology and modern mining operations
- Typical mineral policy frameworks
- Development of large projects
- Case study of negotiation of a mining concession
- Environmental and social issues
- Conditions of mining and their enforcement
- Administration of mining law

The target audience is government, non-government and industry practitioners, including non-lawyers as well as lawyers. The main course material does not contain material specific to any one country, but provision is made for incorporation of additional country-specific material.

The session titles, reflecting the key elements listed above, are:

1. Introduction to mining policy
2. Introduction to mining
3. Mineral rights and allocation
4. Allocation of mining rights – small group session
5. Environmental and social issues
6. Development of large projects
7. Case study and discussion problem on Negotiation of a mining concession
8. Administration of mining law
9. Problems in administration – small group session
The Centre for Mining, Energy and Natural Resources Law

Mining Regulation and Policy Course

MATERIALS
PROGRAMME

Note that these materials need to be supplemented with country specific material as indicated in the text.

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<tr>
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<td>Session 1</td>
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<tr>
<td>Session 3</td>
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<td>Mineral rights and allocation</td>
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<td>Session 4</td>
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<td>Small Group Session- allocation of mining rights</td>
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<td>Sessions 5 and 6 (continued)</td>
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<td>Session 7</td>
<td>1.30 - 3.00</td>
<td>Development of large projects- the mining concession</td>
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<td>3.00 - 3.30</td>
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<td>Small Group Session- negotiation of Mining Concession</td>
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<td>Sessions 8 and 9</td>
<td>9.00 - 10.30</td>
<td>The Mining Concession (continued)</td>
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<tr>
<td>Sessions 10 and 11</td>
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<tr>
<td>Sessions 10 and 11</td>
<td>11.00 - 12.30</td>
<td>Administration of Mining Law 1 (registration, taxation, expenditure and other conditions)</td>
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<td></td>
<td>12.30 - 1.30</td>
<td>Lunch</td>
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<tr>
<td>Sessions 10 and 11</td>
<td>1.30 - 3.00</td>
<td>Administration of Mining law 2 (Safety, Environment, Risk Assessment and styles of regulation)</td>
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<tr>
<td></td>
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The Centre for Mining, Energy and Natural Resources Law

Mining Regulation and Policy Course

SESSION 1

INTRODUCTION TO MINING POLICY
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Introduction to Mining Policy

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1.0 Introduction: minerals, land, law

Mining basics

[1] Mining, digging material from the earth for human use, occurs in most countries of the world. The earliest mining occurred in Swaziland over 40,000 years ago. Mining today involves various stages and activities, as shown by the following diagram. It is important to be familiar with these stages because they involve different laws and parties.

Stages of mining (Southalan 2012, 3-4)

Note: all the following are ‘averages’ only and the figures will vary considerably depending on the type and extent of mineral deposit and associated operations.

<table>
<thead>
<tr>
<th>STAGE</th>
<th>ACTIVITIES</th>
<th>TIME (yrs)</th>
<th>VALUE ($USm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ownership of mineral</td>
<td>Usually no activity involved. Law will specify who is the owner of minerals in the ground</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Reconnaissance²</td>
<td>Documentary research; review available geological data; initial field inspections; airborne surveys; possibly obtain (non-exclusive) reconnaissance rights; limited sampling and surveys</td>
<td>0-2</td>
<td>0.25-1.5</td>
</tr>
<tr>
<td>Preliminary exploration</td>
<td>Detailed mapping; limited drilling and analysis; obtaining exploration rights; potential contact with other land-users about land access and use; potential environmental assessment and planning (including baseline studies)</td>
<td>2-3</td>
<td>2.5-50</td>
</tr>
<tr>
<td>Detailed exploration</td>
<td>After initial find has been identified — obtain/ strengthen exploration rights; more detailed drilling and analysis; bulk sampling</td>
<td>2-3</td>
<td>2.5-50</td>
</tr>
<tr>
<td>Feasibility</td>
<td>Environmental baseline studies; mine planning and design (incl. the mine and all associated activities, eg infrastructure, accommodation, utilities); financial analysis</td>
<td>1-5</td>
<td>$0.5-15m³ or 0.5% of total mine capital⁴</td>
</tr>
<tr>
<td>Development</td>
<td>Obtain mining rights (usually involving access and compensation arrangements with other parties); finalise arrangements with other land-users about mining; further drilling to better identify deposit; project financing; construction of mine, processing plant and infrastructure; finalise environmental management arrangements, possibly including establishing environmental bonds</td>
<td>5-10</td>
<td>100-600⁹</td>
</tr>
<tr>
<td>Mining</td>
<td>Will likely include further ‘brownfields’ exploration to identify and delineate new stages of deposit before mining; removing ‘overburden’ (ie. soil that does not contain the desired mineral), extracting the rock that contains the ore, storage of waste rock; environmental and social impact management systems</td>
<td>3-30⁷</td>
<td>varied per mine life and amount of production</td>
</tr>
<tr>
<td>Primary</td>
<td>Crushing, initial stages to extract the mineral from the rock</td>
<td>per</td>
<td></td>
</tr>
</tbody>
</table>

1 Soper (1974)177; more recent research indicates the mining occurred much earlier – up to hundred 120,000 years ago: Vermeersch & others (1990)100.
2 There will be activities for the miner before ‘reconnaissance’, involving study of the potential mineral’s demand, supply and prices; exploration costs; budgeting etc (eg. Evans (1995)12).
3 This does not include the cost of building the mine, but is simply the cost of studies and research to determine whether the mine should be built. One commentary says ‘a feasibility study … can run into the tens of millions of dollars … and may take … decades to complete’. Johnson & Angell (2004)18-7.
5 New & others (2011). Harper reports on a seven-year study of 105 new mines and mine expansions, indicating the average capital cost of open pit mines as US$42 million (and $30 million for underground mines) plus an additional $26 million for every 1 million tonne capacity of production or treatment ($54 million per million tonne for underground mines): Harper (2008)60 (rates converted at US$0.8 = AU$1, which is average for 2008).
6 Brownfield exploration expenditure – exploration around existing or know deposits – has accounted for around 60 per cent of total mineral exploration expenditure over the past eight years: New & others (2011), 1. The type and extent of further exploration drilling once a deposit is being mined varies according to the mineral. Typically, coal deposits require little extra exploration to find more reserves, the further drilling is simply delineating the deposit: Runge (1998)9.
7 Mine life varies considerably according to the type of mineral and price; gold mines average eight years, copper mines around 30 years, and some diamond mines over 100: MJ (ud).
processing | removed from the ground | mine life
---|---|---
Transport* | Transporting partly processed product for further processing (depending on mineral, will be responsibility of miner or customer); may involve operating road, rail and shipping facilities | per mine life
Mine closure | Rehabilitation; bond release (which may occur progressively over mine life); establish any ongoing remediation required | —
Tenement relinquishment | Relinquish tenure to the government | —

[2] While this table describes the process in general, it can vary according to the type of mineral being mined. Mineral type (and therefore end use) also has significant implications on the interests of other parties. The following diagram shows a typical classification of minerals.

**Minerals and uses** (UNCTAD 2007, 84)

![Minerals and uses diagram](image)

[3] This course does not cover petroleum (eg. gas, oil) nor construction minerals (eg. rock, sand) because these have considerably different legal issues, and in most countries are regulated separately from the remaining minerals which are sometimes termed 'hard–rock minerals'. The production and sale of petroleum usually has much greater government involvement, with the typical legal structure of extraction being a 'production sharing agreement', and the extent of government returns much greater than hard-rock minerals.9 Construction minerals are usually owned and controlled by the person who owns the land. For 'hard-rock minerals', their ownership and extraction, is usually regulated by the jurisdiction's mining law.10 However many jurisdictions have a general ‘mining law’ but have exceptions for specific minerals which are considered important to the nation and are regulated differently with greater control over their mining and subsequent use – this is often the case with energy minerals (eg. uranium, coal) and precious metals & stones (eg. gold, gems).11

[4] The impacts of a mining operation, and its potential revenue and employment benefits, vary according to the particular mineral involved (and its associated end-use). The following table

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8 Other stages after this will likely involve smelting, refining and transport for further processing or sale (eg. Evans (1995)12) but these are not usually considered part of 'mining'.
9 Bryan & Hofmann (2008), 17.
10 On distinction between mining and petroleum, see Soutahan (2012)6.
11 Eg's include uranium regulation in Zambia (Mobbs (2012)) and diamond regulation in Namibia (Koep & van den Berg (2012)).
shows that the potential revenue produced by a mining operation varies considerably according to mineral type.

**Share of value-added at mining stage** (UNCTAD 2007, 85)

<table>
<thead>
<tr>
<th>Metal</th>
<th>Share of value added at the mining stage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gold</td>
<td>100</td>
</tr>
<tr>
<td>Platinum group metals</td>
<td>100</td>
</tr>
<tr>
<td>Tin</td>
<td>83</td>
</tr>
<tr>
<td>Copper</td>
<td>77</td>
</tr>
<tr>
<td>Lead</td>
<td>77</td>
</tr>
<tr>
<td>Nickel</td>
<td>70</td>
</tr>
<tr>
<td>Zinc</td>
<td>63</td>
</tr>
<tr>
<td>Cobalt</td>
<td>33</td>
</tr>
<tr>
<td>Bauxite/aluminium</td>
<td>9</td>
</tr>
</tbody>
</table>

This reinforces that, for example, if dealing with a bauxite mining operation then very little of the money generated through its end use will be provided by its initial mining (the value comes later, through processing). This is relevant to a government determining it approach to revenue raising and regulating the activity. The labour profile of different minerals is examined below in 4.3 Local Content.

[5] Many parties are involved in mining or affected by it. Later chapters examine some of these dynamics, and legal responses, in detail but for now the main point is to understand the basic actors.

a) **Government**

Usually the owner of minerals on behalf of "the state"/its citizens. It is the regulator of mining (and can sometimes have a direct role in mining itself through State Owned Entities or as part-owner of mining companies. Government invariably entails responsibilities across different levels (eg. national, local and sometimes levels between these as well) and different agencies (eg. different departments or ministries responsible for particular subjects such as mining, land, farming, housing, taxation, environment).

b) **Mining company**

There are broadly three general types of companies. The largest are 'majors' (about 150 worldwide,) mostly transnational and mine a range of minerals. The majors account for about 60% of the world's commercial mineral production. The next level down is known as 'nationals' or 'medium-sized companies', who frequently mine only one mineral although often in various locations, and these account for the remaining 40% of the world's commercial production. The third type of companies are called 'juniors' and these undertake most of the mineral exploration today. When they find a feasible deposit they either sell to, or partner

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12 Southalan (2012)6 (excluding coal). See also UNECA 2011, 29 ("Global mine supply is largely controlled by big, transnational companies. They are the ones with the financial and technical capacity to handle large mining investments, and the technology to operate big mines. ...The mining industry has seen much consolidation. More is foreseen with easy credit and the strength of large mining companies’ strong balance sheets. This bodes well for African mineral producers who need to strategically position themselves to attract mining investment." UNECA 2011, p29).
with, a larger company who then mines the product. There will also be many service companies who supply goods and services to be used in mining, even though they may not own the mining rights themselves. The concept of 'a mining company' becomes further complex where shareholders, who may have different interests to management.

c) **Artisanal miners**

Some mining is done by individuals/groups, frequently without any legal rights protection. In some countries the amount mined by artisanal miners exceeds what is mind legally by business who have obtained the rights from government. The issue of artisanal miners is addressed below in 3.4 Artisanal Mining, but the rest of this course focuses on mining conducted by law.

d) **Land owners/users**

This includes those parties with formal title to the property, but and also others who may have historical or traditional use of land even though that is not formally recorded in the country's written laws. The need for a legal system to regulate mining's interaction over land can also include land-users who are other businesses, eg. agricultural and even oil/gas operators.

e) **Workforce and dependents**

The workforce varies according to the stage of mining. During exploration, it is small and mobile (usually only travelling to the area for a short time). In construction or operation of a mine the workforce can reach thousands for larger operations and, together with their dependents, may require whole new urban areas to be created.

f) **Lenders / financiers**

Mining requires a lot of money. Large operations may require billions of dollars in exploration and construction before any mineral product is sold and starts producing income. There are various options for this money: private banks, international development agencies (eg. World Bank, African Development Bank and other regional development funds), financing through the stock market, and joining with other parties to fund the mine's construction and operation (often this will be the expected long-term customers of the mine's produce). The China-Africa Development Fund was established in 2007 to support Chinese enterprises investing in Africa, including mineral resource development, and the China Development Bank provided initial funding of $1 billion.

g) **Representative organisations**

There are many organisations who may not be directly involved in mining themselves but have significant input into policies and law reform about mining. Some of these organisations operate only within a country or particular area, while others operate internationally. Examples include:

- industry associations (eg. international – International Council on Mining and Metals, World Gold Council; and at a domestic level – South Africa's Chamber of Mines, the Prospectors & Developers Association of Canada, the Minerals Council of Australia);
- environmental and social groups (eg. international – International Institute for Environment and Development, Oxfam, International Institute for Sustainable Development, Amnesty International; domestic - there are many NGOs in every country which engage with social or environmental issues and );
- non-government organisations specifically examining the resources industry (e.g. Global Witness, Revenue Watch); and

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13 Artisanal a large factor in some African countries, bigger than TNCs 'In Sierra Leone and parts of the DRC, artisanal miners play a larger role than multinational corporations in the extraction of minerals.': Bryan & Hofmann (2008), 17.
14 UNECA 2011, 33.
- land-related organisations (typically aimed at protecting a particular use of land, eg. farming, tourism).

Intergovernmental organisations also be considered as a type of 'representative organisation', and significant ones involved in mining issues include the United Nations Economic Commission for Africa, the Economic Community Of West African States and the Intergovernmental Forum on Mining, Minerals, Metals and Sustainable Development.

[6] Mining is often understood, in economics, by reference to two main functions:
   a) exploration (usually measured in the amount spent on exploration); and
   b) production (covering the costs in establishing a mine, but often more attention is the dollar value of the minerals produced).

The following table shows the distribution of mine production around the world in 2010, with each circle representing the proportion of global production from that country and also what minerals contributed to that (the pie chart within each circle).

Global mining production, 2010 (UNECA 2011, 27)

This map provides a useful 'snapshot' of where mining is currently occurring and the types of minerals being extracted.

[7] While the map provides a general indication of current mineral production, it is only a rough guide because it depicts the value of production as at 2010. The dollar value of production, of course, depends on the price of the minerals produced which can vary significantly: up to 30% from one year to the next\(^{15}\) as shown in the following table.

\[^{15}\text{Schodde 2010, 3.}\]
The likely demand for various types of minerals in the future can be estimated from these price trends combined with expected demands from the end-use of various minerals. A 2010 analysis put different minerals into four categories of expected demand.

**Expected demand for future minerals (as at 2010)**

<table>
<thead>
<tr>
<th>Predicted highest demand</th>
<th>tin, uranium, coking coal, tungsten, copper, palladium, nickel</th>
</tr>
</thead>
<tbody>
<tr>
<td>Higher demand</td>
<td>steel, urea, aluminium, ammonia, gold, alumina, platinum</td>
</tr>
<tr>
<td>Lower demand</td>
<td>lead, molybdenum, bauxite</td>
</tr>
<tr>
<td>Predicted lowest demand</td>
<td>vanadium, phosphate, silver, sulphuric acid, cobalt, zinc, sulphur</td>
</tr>
</tbody>
</table>

These estimates and predictions influence the amount and types of mineral exploration. The following table indicates the amount spent on mineral exploration over a certain period, showing the massive amount of spending on gold exploration.

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16 Table from Schodde 2010, 12. 'CRU’s view is that, as the world’s economy recovers over the next two to three years, commodity prices will also rise – though some minerals will perform better than others. The following chart summarises CRU’s view on the future strength in demand (and prices) for the various minerals of major commercial importance (prepared on indicative forecast average 2012 prices versus February 2010 base)'. Schodde 2010, 12

17 There are other influences on exploration, including: geological factors, political and social factors, technological factors, and economic factors: AUS Gov (2012), 6.
Recent years have seen increased mineral exploration in African countries\textsuperscript{18} a substantial amount of which is due to Chinese demand for raw materials.\textsuperscript{19} This is starkly apparent in the following graph.

**Law basics**

It is useful to summarise some basic legal concepts and frameworks which arise in the subsequent explanation of mining regulation. There are three broad areas with laws and standards about mining: public international law, domestic law (‘host’ and ‘home’ country) and transnational law. These are summarised below in [12]-[19].

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\textsuperscript{18} MEG (2013), 1. ‘Africa experienced the second-largest increase in both percentage and dollar terms. With its share of worldwide exploration budgets rising to 17\%, it jumped from third to second place regionally in 2012. For the second time in the past three years, the Democratic Republic of Congo held top place for exploration spending in Africa. An increased focus on West Africa translated into gold receiving the largest dollar increase in 2012, although gold’s share of overall African budgets fell to 51\% from 53\% in 2011. Planned expenditures for other targets more than doubled, raising their share of overall budgets to 11\% from 6\%. Conversely, the percentage of total allocations devoted to diamonds fell for the sixth consecutive year to a record low of 6\% in 2012.’: MEG 2013, 1.

\textsuperscript{19} Schodde 2010, 9.
[12] 'Public international law' is largely about how nations relate to each other (e.g. in treaties) and has little content about mining which is considered a matter to be regulated by each nation in relation to mining within their country. Two exceptions are cross-border mining (one example is the Chile – Argentine mine subject to a treaty between these two countries) and mining in international areas (e.g. treaties addressing mining of the sea bed and Antarctic). There are, however, increasing international standards on subjects relevant to mining operations and regulation. Prime examples include human rights and environmental protection (both of which are detailed further in 3.5 below), investment protection, anti-corruption measures, business regulation (eg. the Harmonisation of Business Law in Africa20).

[13] Domestic law is the law made by a nation to regulate activities in its jurisdiction or by its nationals. Typical sources of law relevant to mining will be: the country's Constitution, parliamentary laws (eg. statutes, codes) and processes;21 subsidiary laws (eg. presidential decrees, ministerial orders, government regulation); and in some jurisdictions the rulings of courts and tribunal is also have relevance to the parties beyond those in dispute decided by the court. In various countries, there is still a formal role for traditional authorities in management of land and resources, eg. in Ghana, Sierra Leone and Botswana.22

[14] Most countries' domestic law has a Mining/Mineral Code or Law, which will be a parliamentary law outlining the basic rights and responsibilities for exploration and mining. However countries will also have many laws about other subjects which also may control aspects of mining all parties involved in it. Examples of this include laws about business regulation, workplace safety, land management, transport, use of dangerous products, planning & development, taxation, environmental protection, employment, foreign investment and heritage protection.23

[15] Domestic law relevant to mining can be categorised according to 'home' country or 'host' country. The terms 'host' and 'home' apply where the mining is undertaken in one country ('host') by a company which is from another country ('host'). These two domestic laws will likely regulate different aspects.

a) "Host" country laws. These typically include natural resource rights (eg. mining code or statute, and some countries also have some provisions about minerals in their national constitution), environmental protection, business laws (eg. taxation, investment promotion), governance law (eg. anti-bribery, anti-money laundering, freedom of information), and civil actions (eg. in some jurisdictions there will be possibility for proceedings to be taken by private citizens against a mining operation or operator eg. in negligence, nuisance, or injurious affection.

b) "Home" country laws. These typically include transnational business laws (eg. anti-bribery, anti-money laundering, stolen asset recovery), business law (eg. corporate disclosure requirements, reporting), and civil actions24. Home countries are being increasingly pressured to act in relation to their companies operating overseas. Two

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20 Treaty on Harmonisation of Business Law in Africa (1993)
21 Parliaments have a role beyond just making the law but also in 'overseeing the executive. In the management of natural resources, legislators bear responsibility for ensuring that policy and regulatory frameworks support their sustainable use and exploitation, and that government agencies appropriately allocate and account for revenues.': Bryan & Hofmann 2008, 8.
22 "In Ghana, Sierra Leone and Botswana, traditional authorities play an important role in the management of natural resources, either by exercising their authority over land use decisions (including the approval of concessions and licenses) or in the control and expenditure of revenues received.': Bryan & Hofmann 2008, 20
23 Eg. AUS Gov 2012, 14.
24 Note that one of the main areas of extraterritorial reach, the US Alien Tort Claims Act has recently been substantially lessened in the US Supreme Court decision in Kiobel -v- Royal Dutch Petroleum 2013, see Jenkins 2013.
examples include US laws concerning reporting about conflict minerals\textsuperscript{25} from DRC; and human rights obligations requiring extra-territorial action.\textsuperscript{26} The latter is addressed further in 3.3 Human Rights.

\[16\] It has been observed that, unlike many former colonial powers, African countries laws were not the typical 'host' state laws: 'African countries inherited legal systems that were geared more towards centralising resource control in the hands of the state as a means to open up resources for outside investors than towards protecting the land rights of local people.'\textsuperscript{27}

\[17\] **Transnational laws** are standards which operate beyond a state but are not 'international law' between nations. These have growing significance in mining regulation. There are many examples, including the following.

\begin{enumerate}
\item Controls imposed through lenders (e.g. *World Bank Operational Guidelines* on projects receiving World Bank funding, the *Equator Principles* are similar but applied by private lenders);
\item Rules about the processing and sale of conflict minerals (e.g. *Kimberley Certification* process, standards on conflict minerals by the UN and Great Lakes countries in Africa, and moves by the Rwandan Government to implement a certification scheme for domestically produced tantalum, tin, and tungsten\textsuperscript{28});
\item Standards about the management of mineral revenues (e.g. *Extractive Industry Transparency Initiative*, and the NGO initiative *Publish What You Pay*);
\item Standards about reporting of mineral deposits (e.g. there is ongoing development of a standard code through the *Committee for Mineral Reserves International Reporting Standards*, but until that is finalised various national codes are applied across many countries);
\item Standards for international companies (e.g. *OECD Guidelines for Multinational Enterprises*);
\item Standards on radioactive or dangerous substances (e.g. *International Cyanide Management Code*, or the IAEA *International Safety Standards* re uranium mining).
\end{enumerate}

\[18\] Transnational standards can apply through a variety of means. Sometimes they can be referenced and applied by domestic law, and some have their own system of review and enforcement (eg. *World Bank's Ombudsman*;\textsuperscript{29} *OECD's National Contact Points*;\textsuperscript{30} EITI's validation process;\textsuperscript{31} and the Kimberley process Certification Scheme\textsuperscript{32}).

\begin{itemize}
\item \textsuperscript{25} 'C[ompanies registered with the U.S. Securities and Exchange commission (SEc) that sell products containing cassiterite, columbite-tantalite, gold, or wolframite are required to disclose whether these minerals originated from Congo (Kinshasa) or adjoining countries. [Companies selling products containing such minerals] are required to submit annual reports to the SEc describing the due diligence measures taken, the smelters that processed the minerals, and the companies' efforts to determine the mine of origin. The reports also are required to describe products that contain conflict minerals and to be published on the companies' Web sites': Yager& others (2010)\textsuperscript{1.2}.
\item \textsuperscript{26} '[T]he international legal obligations of home states, such as Australia and Canada, require them to regulate the actions of their companies abroad, ensuring the protection of human rights': ESCR Net 2013, 4-5.
\item \textsuperscript{27} Cotula (2012), 83; see also Lahiri-Dutt (2010), 4.
\item \textsuperscript{28} '[The] Government of Rwanda signed an agreement with the International Tin Research Institute of the United Kingdom to implement a certification scheme for domestically produced tantalum, tin, and tungsten to meet end users' requirements of the [USA] Dodd-Frank Wall Street reform and Consumer Protection Act.': Yager& others (2010)\textsuperscript{1.2}.
\item \textsuperscript{29} CAO (2007)
\item \textsuperscript{30} OECD (2011), pt II.
\item \textsuperscript{31} Scanteam (2011), 44-45; see also Ospanova& others (2013).
\item \textsuperscript{32} Kimberley Process (2002); see also Kimberley (2006).
\end{itemize}
Commentary on this area sees an increasing role for transnational law, in a ‘generalised process through which areas of national public legal responsibility are systematically privatised and up-loaded to the transnational sphere. Economic globalisation has triggered new local demands for the social regulation of private sector development’. But this is not a static, nor a given, structure. The growing role of transnational law is part of an ongoing relationship (or fight!) between domestic regulation and multi-lateral and transnational forms. And there are many disagreements between different interests at the transnational level, and also about what transnational law should address and what should be solely the realm of domestic regulation (examples include the Extractives Industry Review and response from the World Bank Group; initiatives with industry or NGO involvement; and questions about development and mining initiatives).

Transnational law should not be seen as the 'pro-industry' option with domestic and international law supposedly the protector of the people. A recent report by the NSI in 2013 summarised a ‘new voluntary, regional and transnational initiatives, driven by a host of heterogeneous actors… constitute …mining codes and natural resource governance practices which place primary emphasis on transparency and accountability by both mining companies and host governments’. Attention is needed just as much on governments as it is on companies: 'The Angolan government threatened to withdraw the British Petroleum and Shell concessions when those companies attempted to disclose information on payments made to the government'.

**Policy basics**

The conceptual framework of most minerals analysis and policy is that mining is an activity which must be conducted by private industry for profit. This should not be assumed nor accepted in every case, but it is a very dominant paradigm and so is important to understand. The only government role which such analysis will countenance is government being an independent regulator to referee the competing businesses and to balance/ameliorate the mining’s impacts on some people with mining's benefits to more people. The government is not seen to have a legitimate role in being directly involved in mining itself. This is apparent in a 2008 report on regulation of mining in African countries which stated:

> 'Accountable governments face two principal challenges in determining the policy framework for the exploitation of oil and minerals in their countries. First, they must create a business climate that attracts private investment, a necessary precondition to the development of the extractive industries. Second, they must address relevant domestic policy issues, such as the environmental impact on communities affected by extraction activities, and ensure the equitable distribution of profits from the industry.'

33 Szablowski 2007, 290.
34 Campbell (2009), 4-5.
38 Besada & Martin 2013, 1. For a more critical role of international partnerships and initiatives in mining, see ESCR Net 2013, 2-4.
40 See discussion in Southalan 2012, [1.17] and Campbell (2009), 245.
41 eg. see Parsons (2010), 7-9 (outlining arguments 'for' and 'against' government participation in mining and concluding 'for these reasons, the global trend has been away from government equity participation'); see also discussion in Southalan (2012), 7. Sometimes the position is stated more explicitly, eg. 'mines are poorly suited to State ownership'. Keeton & Beer (2011).
Such a framework overlooks, or perhaps deliberately ignores, that the State is directly involved in mining in various 'successful' mining jurisdictions such as Codelco in Chile and Soquem in Canada, and LKAB in Sweden. The following table shows that in many countries the State has ownership or involvement in mining.

State share of global metal mine output ($) 2008 (UNECA 2011, 33)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>China</td>
<td>14.8</td>
<td>14.8</td>
<td>100</td>
<td>100</td>
<td>1</td>
</tr>
<tr>
<td>Chile</td>
<td>7.7</td>
<td>2.0</td>
<td>26</td>
<td>32</td>
<td>2</td>
</tr>
<tr>
<td>India</td>
<td>5.7</td>
<td>1.6</td>
<td>28</td>
<td>39</td>
<td>4</td>
</tr>
<tr>
<td>Iran</td>
<td>0.9</td>
<td>0.9</td>
<td>100</td>
<td>100</td>
<td>5</td>
</tr>
<tr>
<td>Poland</td>
<td>0.8</td>
<td>0.8</td>
<td>100</td>
<td>100</td>
<td>3</td>
</tr>
<tr>
<td>Uzbekistan</td>
<td>0.7</td>
<td>0.7</td>
<td>100</td>
<td>100</td>
<td>6</td>
</tr>
<tr>
<td>Indonesia</td>
<td>2.1</td>
<td>0.6</td>
<td>20</td>
<td>16</td>
<td>7</td>
</tr>
<tr>
<td>Venezuela</td>
<td>0.6</td>
<td>0.5</td>
<td>87</td>
<td>80</td>
<td>8</td>
</tr>
<tr>
<td>Sweden</td>
<td>0.7</td>
<td>0.2</td>
<td>75</td>
<td>56</td>
<td>9</td>
</tr>
<tr>
<td>Mauritania</td>
<td>0.3</td>
<td>0.2</td>
<td>75</td>
<td>100</td>
<td>na</td>
</tr>
</tbody>
</table>

Note: The state share represents the total value of all metal produced at the mining stage. It varies with the produced volumes and with the relative value of the metals produced in each country.

It is unsurprising that private mining companies, and associations of these companies, are against State involvement in mining operations. There are examples which support their position: incidents where State expropriation of mining operations have breached international law and were followed by the subsequent demise of the mining. There are also current examples in some countries in Africa, and elsewhere, where governments may be overstepping the line in endeavouring to wrest ownership and control from private operators. Certainly much writing on the proposals in Zimbabwe indicates that is occurring. However,

[23] The involvement of State-owned entities (SOEs) in mining can take various forms.

**Government involvement in mining**

Mandatory joint venturing – where the only way for a private party to get mineral rights is in a joint venture with the government or a SOE; eg. in Angola, iron ore exploration and mining is exclusively the role of an Angolan SOE, although it is allowed to contract with private parties.

Mandatory contracting or participation – mining rights only come through contracting with the state (and may involve a percentage of state ownership); recent examples included Colombia, Indonesia, Papua New Guinea, Botswana and Guinea (some of these have changed with recent law amendments but the structure still continues in some jurisdictions).

Preferential competition – where the state or SOE have preferential rights to certain minerals or areas; eg. Namibia has proposed a new mining law where a SOE would mine strategic minerals (coal, copper, diamond, gold and uranium).

Non-preferential competition – where the state or SOE can be an operator in the sector, but on the same basis as any other miner. CODELCO Chile operates on this basis, and Mongolian mining law also allows this arrangement.

[24] It is unsurprising that private mining companies, and associations of these companies, are against State involvement in mining operations. There are examples which support their position: incidents where State expropriation of mining operations have breached international law and were followed by the subsequent demise of the mining. There are also current examples in some countries in Africa, and elsewhere, where governments may be overstepping the line in endeavouring to wrest ownership and control from private operators.

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43 Remy 2003, 18 (and, until recently, CVRD in Brazil, now privately owned as Vale).
44 Table from Southalan 2012, 98, with additions noted.
45 Pereira de Miranda & Afonso Fialho (2012)
46 Bermúdez-Lugo (2013)
47 eg. Mutenyo & Routman (2011); Chimhete & Makova (2012); Hawkins (2012); Economist (2012); Morgan (2011); Morgan (2013).
any analysis of the broader issue of State involvement is inadequate if it simply treats all state involvement as 'resource nationalism' on a par with Zimbabwe. More comprehensive study would reflect on the significantly different unemployment and socio-economic development contexts which exist in many African countries (as compared to Australia, Canada, US, Germany and other countries from where much of the industry analysis derives) and the different needs and objectives required to address these complexities.

[25] One of the main issues in government mining regulation is the management of revenues generated by mining (eg. royalties, income tax, rental payments). It is an area that, rightly, is receiving increased attention for three reasons. First, taxation is more challenging compared to other industries because of 'the complexity of multinational business negotiations and the time lapse before profits accrue'. 48 Second, transparency is often fraught: 'Depending on how revenues are collected, deposited and reported, extractive industry revenue management and oversight can be very difficult'. 49 Third, the lack of transparency and high revenues has implications not only for economics but also politics and society: 'oil and mining industries often create temptations for rent-seeking behavior and loss of fiscal discipline'. 50 It is beyond the scope of this course to examine these issues in any detail as they involve matters far broader than the law. This course focusses on the regulation of a mining operation. It is important to have some familiarity with economic and policy issues, particularly where these influence that regulation of mining, but for current purposes, the following summary gives a basic understanding and some of the materials in this area.

Development and resource curse

Conventional wisdom (before the 1990s) was that natural resources were good for developing countries: just like the United States, the United Kingdom and Australia, natural resources could help transition from underdevelopment to an industrial economy. 52 The problem is the (often large and volatile) revenue deriving from economic rent rather than production, and the effect this can have on other parts of the economy. 53 The 'resource curse', as this is known, is not inherent in mining itself but more a question of what the government does (and is able to do) with the revenue it obtains from the mining. There is considerable material elsewhere on these broader questions for those interested in these issues. 54 There are numerous examples, in Africa and elsewhere, where the ownership of natural resources does not always translate to development success at local level (eg. compare the different results in Angola, Botswana, DRC and Nigeria). 55 Although these issues are not expanded further here, an important point from the literature is that much (sometimes most) of the economic and social benefits to local communities arise from activities outside mining but surrounding the mine. 56 An additional caution is that considerable analysis is based on the idea of international competitiveness and the purported market fundamentals necessary to attract private investment; but such notions should not be accepted uncritically. 57

50 Bryan & Hofmann 2008, 16.
51 Most text is from Southalan 2012, 13, with some additional material included here
52 Rosser (2006), 557.
54 A comprehensive literature review of much of the writing on resource curse and use of mining revenues is provided in Rosser (2006). Other materials on the broader economic benefits or impediments from mining include (the first three specifically in relation to African countries): Manirakiza (2012); CSPR (2011); OSI (2009); ICMM (2011); ICMM (2010); Crowson (2008) chs 13, 14 & 18; Beland & Tiagi (2009); UNCTAD (2007) 94; Humphreys & others (2007), 4 & 16; and Auty (2001), 839.
55 Bryan & Hofmann 2008, 36 ("Despite its abundant natural resources, Angola ranks 161 out of 177 countries in 2006 Human Development Report. Oil revenues accruing to the MPLA government and diamond profits controlled by UNITA were enough to finance the long civil conflict."); 42 ("Botswana is the world’s leading diamond producer and generates approximately 35 percent of GDP and 50 percent of its tax revenues from the mining industry."); and 62 ("Investigations by a UN Panel of Experts demonstrate how the DRC’s neighbors, private companies and powerful individuals have profited from the unregulated trade and exploitation of the country’s mineral wealth.").
56 Remy (2003), 22.
A useful resource which collates considerable material relevant to this area is the *EI Source Book*, which seeks 'to provide developing states with technical understanding and practical options around oil, gas, and mining sector (EI sector) development issues'. The materials collated and prepared by the EI Source Book covers a range of topics: 'Transparency and Accountability', 'Policy, Legal and Contractual Framework', 'Fiscal Design and Administration' and 'Revenue Management and Distribution'.

**Sustainable development** has been a significant factor in mineral policy and regulation the last two decades. The core of sustainable development is "development that meets the needs of the present without compromising the ability of future generations to meet their own needs". The international legal foundation of sustainable development is the *Rio Declaration on Environment and Development* in 1992. From that time, sustainable development has had a significant impact on how mining occurs and is regulated. The focus is on transforming mineral wealth into other forms of productive wealth, and it is found in laws, government policies and the approach of the mining industry:

The [minerals] industry has recognised ... that corporate social responsibility is not an adjunct to our business, it is our business – our core function is to convert natural endowment to societal capital, and that can only be achieved sustainably when there are real mutually beneficial considerations of the environment, our host communities, and the rights and interests of Indigenous peoples ...

There is considerable writing elsewhere on the main concepts and implications of sustainable development, but for mining one of its key points is to reinforce the importance of an integrated approach: mining proposals, and responses to them, need to address all perspectives and interests (environmental, social and financial).

**Mining law**

The content of different jurisdictions' mining law varies considerably. In some countries it addresses simply how mineral rights are obtained and used, and little else. In other countries, the mining law/code covers much more, including: regulating mining's impacts, dispute resolution (between miners and also involving non-mining parties), environmental and fiscal matters. A World Bank study recommended that a country's mining law address five areas: Government authority; Conditions of land access; Exploration and mining rights and obligations; Fiscal terms; and Environmental protection. It is not readily apparent why all these issues must be located in one law and all other subjects must be quarantined from that law. Instead, what should be important is that the jurisdiction's laws clearly address the key elements and that these laws can be easily found. The approach of the *Economic Community of West African States* seems commendable in this regard. Following chapters on harmonising government approaches to mining, ECOWAS indicated the following should as important areas for mining law:

- minerals as state resources;
- protection of the environment;

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59 WCED (1987), Ch 2, [1].
60 Lange & Wright (2004), 486-487; Hitch (2006), 40; Lapalme (2003); see also Lahiri Dutt 2010, 3.
61 MCA (2007), 5 (a statement made by the Minerals Council of Australia supported by the Chamber of Minerals and Energy of Western Australia, New South Wales Minerals Council, Queensland Resources Council, Tasmanian Minerals Council, and the Victorian Division of the Minerals Council).
63 eg. see Harris (2005), 43; Cordes (2000)1–48.
64 eg. Southalan 2012, 27.
protection of national interest;
access to information;
human rights obligations and mining activities;
dispute resolution; and
institutional and implementation arrangements.66


Mineral exploitation has changed from the historic approach of an arrangement solely between the government and the mining company. Today there is more acceptance, and even expectation, that various interests be represented separately from the executive and that local affected communities are involved in government decisions about mining. Some contemporary regulation requires the miner to engage with regional governments and other parties affected by mining. There is also increased involvement of the international community in monitoring mining’s impact on local communities.67

Africa and mining

[31] A question often overlooked is the extent to which 'Africa' is an appropriate frame of analysis? Just because countries are geographically close does not mean their mining industry or regulation is so similar as to justify treating them as one homogenous group. For instance, there is no commentary which seeks to explain a North American Mining Law covering the United States, Canada, Mexico and various Caribbean states.68 There are many reasons why these countries have different mining sector development and regulation, and are never contemplated as a homogenous group.69 Analysis must always be cognisant of the differences legal and political contexts in each African country. However, there are similarities which allow analysis of broader trends and also description of standard approaches.

[B]eyond the specificities of each historical experience of these seemingly disparate development experiences, when contextualised and seen as part of a common historical process of reform, there is in fact far more reason to treat them side by side than might appear at first glance. They bring out and are illustrative of common traits in a process of reform, the importance of which to, and implications for, the countries concerned have to a large extent been overlooked.70

[32] Many African countries have cooperated in moving toward a more uniform approach, described as 'African states have also moved to take a “strength in numbers” approach to legislating mining codes'.71 This includes the Economic Community of West African States’ Draft ECOWAS Directive on the Harmonization of Guiding Principles and Policies in the Mining Sector which ‘seeks to create a common mining and extractives code of conduct in Western Africa, focused on a participatory approach, sustainable development, poverty reduction, environmental protection, good governance and defence of human rights’.72 Also,

66 The full details on each of these headings can be seen in the Harmonization Principles (2009).
67 Southalan 2012, 29.
68 Similarly there is no analysis of Mining of the Asia-Pacific which groups Papua New Guinea, Indonesia, Australia, New Zealand and Pacific States.
69 As noted by Thompson in 2010 “Political history, internal strife, cultural, economic and geographic reasons have influenced rates of growth. The pace of development of the mining sector in each country has been influenced by internal and external factors: 1. [internal] Economic development policy, industrial development strategy, lack of domestic capital and the availability of appropriate sector capacity in government and private society (i.e. qualified sector professionals). 2. [external] Eligibility for external financial assistance and the provision of practical, technical, legal and fiscal expertise to assist with the development of geological data and the mechanisms of governance.”: Thompson (2010), 2.
70 Campbell (2009), 10.
71 Besada & Martin (2013), 21
72 Besada & Martin (2013), 21.
the African Union's *African Mining Vision*, in 2009, 'advances a holistic framework for improving Africa’s mining regimes, focused on balancing the requirements of transparency and accountability with the need to integrate mining into Africa’s long-term development at the local, national and regional level'.

[33] It is justifiable, then, to examine mining law at an 'African' level (or at least in terms of regions within Africa) where that is the way in which the various African countries and populations wish to progress, as some of the examples above indicate. Where, however, particular countries do not have a mining regime structured in such a way, nor the intention of making their law similar to their neighbour's, it would be inappropriate to endeavour to present these as homogenous. While such homogeneity might be convenient for an international investor wanting to determine where to undertake mining and exploration in the African continent, it ignores some important realities.

[34] Much attention in mining today is on Africa; or, perhaps more appropriately, 'countries in Africa'. These countries contain significant mineral wealth: 'the continent is believed to contain roughly 30% of the world's mineral reserves, much of it unexplored'. Equally, however, the continent provides so many bad historical examples of mining which was solely aimed at providing resources to colonial powers and companies with negligible benefit deriving to the locals. Those colonial laws and structures were then often used by post-independence governments to maintain the status quo of little benefits going to the populace, with the only real change being the change from a colonial power and elite to a local government and business elite. A significant indicator of the problem is provided by a study of government disclosure in the management of oil, gas and minerals. The Revenue Watch Index ranks transparency in 41 countries among the world's top producers of petroleum, gold, copper and diamonds. The ranking is determined from an analysis of government information about revenues, contract terms and other key data. The ranking is reproduced below, with African countries shaded in red.

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73 Besada & Martin (2013), 17.
74 Besada & Martin (2013), 3.
75 eg. Manirakiza (2012), [3]-[8]; Besada & Martin (2013), 5; 'Large and unregulated inflows of funds into government accounts … [in the absence of transparency and other controls, [having resulted in] ruling cliques use resource profits to enrich themselves and consolidate power … while the general citizenry remains impoverished': Bryan & Hofmann (2008), 15; Lahiri-Dutt (2010), 3.
This data is sobering but it is worth recalling that this simply indicates the extent of transparency and is not necessarily indicative of failure to improve social development or other benefits from mining.

[35] The extent of state ownership of mining in African countries has changed over time, as has attitudes to that. From considerable state ownership and involvement in post-independence times,77 through extensive privatisation and free-market regimes which minimised or removed state ownership in the 1990s & 2000s.78 This attention to mining in Africa has seen extensive provision to mining laws in many countries, often at the instigation of international institutions requiring greater accommodation of the interests of international companies.79 The UN Economic Commission for Africa observed in a 2011 study:

For Africa, actual government shares of profits are much lower than these as unlike in Australia, for example, African mining countries have not imposed super profits taxes on mining operations, neither do they participate in mining operations (with a few exceptions eg diamonds in Botswana and Namibia), unlike in Latin America. It can safely be concluded, therefore, that the super profits have disproportionally accrued to mining companies and that profit sharing remains a major policy challenge for Africa.80

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77 Besada & Martin (2013), 5 to 6.  
80 UNECA 2011, 34
[36] More recently there is a greater acceptance of part state ownership in mining African countries, and while there is no expectation of broad expropriations many African jurisdictions mandate a level of state ownership - usually around 10% 'share in mining operations (free-carried interest)'. Additionally, 'observers have noted a growing trend towards “resource nationalism” across Africa, with at least eleven countries recently deciding to review their mining contracts in light of demands for social regulation of the private sector'. Whether that should be characterised by the negative term 'resource nationalism' or a positive term of 'increased transparency from government and business' will depend on one's perspectives. The table at the end of this chapter summarises the mining law from 25 African jurisdictions, showing the absence of restrictions on profit repatriation or foreign currencies; and these should be relevant to assessing the role and effect of government interest specified in various countries.

[37] Government is able to influence the mining industry and company priorities in ways other than direct legislation or enforced ownership. This is an area where many commentators see the possibility for local benefits to grow in African countries. For example moving beyond an industry that exports raw material, and increasing industrial diversification and infrastructure development. Rather than limiting assessment to expert-driven mining and its regulation, 'the entire mining sector be taken into consideration, as well as the promotion of resource diversification towards other minerals than those for export. This would include other useful substances and construction materials such as manganese, phosphates, zinc, granite and clay minerals, which are used in numerous areas such as construction, apiculture and ceramics.'

[38] The growing mineral demand, and its related potential for revenue, presents serious conundrums for countries in Africa. There is certainly increased attention to resources in Africa and as 'resource scarcity arises elsewhere' there is potential for more development and profits to come to Africa. Discussion of mineral 'scarcity' is not actually a global lack of minerals and resources but rather that the demand for them is uneven. Equally, however, the resource impacts in obtaining those minerals falls unequally. As a 2012 report grimly observes: 'The high level of consumption of natural resources in the global North cannot be delinked from hunger, water shortages, and energy insecurity in even the remotest corners of the global South.' It is sobering to note that much of the attention to mining (and governance of mining regulation) in Africa does not appear to have been driven by a paramount priority of endeavouring to assist resource scarcity and access in African countries, but rather ensuring a system for increased removal of resources for use by countries outside of Africa. The following map shows countries with high resource vulnerabilities in red (a needy population without the resources to address that because of environmental stressors, political instability or resource reserves). Most of these are in Africa, as shown in the following map, which plots the top 30 states in resource risk because of environmental stressors, political instability or insufficient resource reserves.

82 eg. UNECA 2011, 34.
83 Gajigo & others (2012),19; Angola’s new mineral code of non-fuel minerals (2011) no longer allows Government the majority share but permits retention 10% of state ownership: Bermúdez-Lugo (2013), 3.1; Guinea has a 15% free carried minimum with the option for the Government to purchase an additional 20%: Bermúdez-Lugo (2013), 21.1.
84 Besada & Martin (2013), 20
85 Campbell 2010, 246-247 (including a quote from Szablowski, 2007: 120).
86 Bryan & Hofmann 2008, 8,
87 Andrews-Speed & o'rs 2012, 4.
88 Andrews-Speed & o'rs 2012, 7.
89 eg. Campbell 2009, 2;
This reinforces the priorities which should inform attention to, and assistance for, improving the regulation of mining in African countries. The first priorities cannot, in good conscience, be structuring regimes which assist international investor profits or home-state resource stocks. The priority for mining regime reforms must be contributing to local development. Mining, by international mining companies, has an important and useful role role contribute to that.

Bibliography


90 Andrews-Speed& others (2012), 68 (the 'Countries at Relevant Risk' data at the bottom does not include the results from countries 12-30 in other continents).


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### Appendix 1: Mining law from various African countries

<table>
<thead>
<tr>
<th>Country</th>
<th>Mining Code/Law</th>
<th>Mining Lease term</th>
<th>Exploration Licence term</th>
<th>Profit repatriation barriers?</th>
<th>Foreign currency restrictions?</th>
<th>Free Carried Interest (min) for Govt</th>
</tr>
</thead>
<tbody>
<tr>
<td>Botswana</td>
<td>1999</td>
<td>25 years</td>
<td>n/a</td>
<td>No</td>
<td>No</td>
<td>15%</td>
</tr>
<tr>
<td>Burkina Faso</td>
<td>2003</td>
<td>20 years</td>
<td>3 years</td>
<td>No</td>
<td>No</td>
<td>12.50%</td>
</tr>
<tr>
<td>Cameroon</td>
<td>2001 (am. 2010)</td>
<td>25 years</td>
<td>4 years</td>
<td>No</td>
<td>No</td>
<td>10%</td>
</tr>
<tr>
<td>Cen. African Rep.</td>
<td>2010</td>
<td>25 years</td>
<td>3 years</td>
<td>No</td>
<td>No</td>
<td>15%</td>
</tr>
<tr>
<td>Chad</td>
<td>1995</td>
<td>25 years</td>
<td>5 years</td>
<td>No</td>
<td>No</td>
<td>?</td>
</tr>
<tr>
<td>Congo, Rep. of</td>
<td>2005</td>
<td>25 years</td>
<td>3 years</td>
<td>No</td>
<td>No</td>
<td>10%</td>
</tr>
<tr>
<td>DR Congo</td>
<td>2002</td>
<td>30 years</td>
<td>Years</td>
<td>No</td>
<td>No</td>
<td>10%</td>
</tr>
<tr>
<td>Ethiopia</td>
<td>1994</td>
<td>20 years</td>
<td>3 years</td>
<td>No</td>
<td>No</td>
<td>?</td>
</tr>
<tr>
<td>Gabon</td>
<td>2000</td>
<td>25 years</td>
<td>5 years</td>
<td>No</td>
<td>No</td>
<td>n/a</td>
</tr>
<tr>
<td>Ghana</td>
<td>2006 (am. 2010)</td>
<td>30 years</td>
<td>5 years</td>
<td>No</td>
<td>No</td>
<td>10%</td>
</tr>
<tr>
<td>Guinea</td>
<td>1995</td>
<td>10 years</td>
<td>n/a</td>
<td>No</td>
<td>No</td>
<td>15%</td>
</tr>
<tr>
<td>Ivory Coast</td>
<td>1995</td>
<td>20 years</td>
<td>3 years</td>
<td>No</td>
<td>No</td>
<td>10%</td>
</tr>
<tr>
<td>Liberia</td>
<td>2000</td>
<td>25 years</td>
<td>3 years</td>
<td>No</td>
<td>No</td>
<td>n/a</td>
</tr>
<tr>
<td>Mali</td>
<td>1999</td>
<td>30 years</td>
<td>n/a</td>
<td>No</td>
<td>No</td>
<td>10%</td>
</tr>
<tr>
<td>Mauritania</td>
<td>2008</td>
<td>n/a</td>
<td>3 years</td>
<td>No</td>
<td>No</td>
<td>10%</td>
</tr>
<tr>
<td>Morocco</td>
<td>2005</td>
<td>n/a</td>
<td>3 years</td>
<td>No</td>
<td>No</td>
<td>n/a</td>
</tr>
<tr>
<td>Namibia</td>
<td>2006</td>
<td>n/a</td>
<td>n/a</td>
<td>No</td>
<td>No</td>
<td>10%</td>
</tr>
<tr>
<td>Niger</td>
<td>2006</td>
<td>20 years</td>
<td>3 years</td>
<td>No</td>
<td>No</td>
<td>10%</td>
</tr>
<tr>
<td>Nigeria</td>
<td>2007</td>
<td>25 years</td>
<td>3 years</td>
<td>No</td>
<td>No</td>
<td>Not specified</td>
</tr>
<tr>
<td>Senegal</td>
<td>2003</td>
<td>5 years</td>
<td>4 years</td>
<td>No</td>
<td>No</td>
<td>10%</td>
</tr>
<tr>
<td>Sierra Leone</td>
<td>2009</td>
<td>25 years</td>
<td>4 years</td>
<td>No</td>
<td>No</td>
<td>Negotiable</td>
</tr>
<tr>
<td>South Africa</td>
<td>2004 (am. 2008)</td>
<td>30 years</td>
<td>3 years</td>
<td>No</td>
<td>No</td>
<td>n/a</td>
</tr>
<tr>
<td>Tanzania</td>
<td>1998 (am. 1999)</td>
<td>10 years or life of mine</td>
<td>5 years</td>
<td>No</td>
<td>No</td>
<td>10%</td>
</tr>
<tr>
<td>Uganda</td>
<td>2003</td>
<td>21 years</td>
<td>3 years</td>
<td>No</td>
<td>No</td>
<td>n/a</td>
</tr>
<tr>
<td>Zambia</td>
<td>2008</td>
<td>25 years</td>
<td>n/a</td>
<td>No</td>
<td>No</td>
<td>10%</td>
</tr>
</tbody>
</table>
SESSION 2

INTRODUCTION TO MINING
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### Introduction to Mining

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- **Resources and Reserves - the investment decision** ........... 5
Mining Basics

[1] Mining is about the commercial extraction of minerals from an ore body. Mineral deposits can sometimes be in very small concentrations. Consequently the definition of the ore zone is critical to a successful extraction. For bulk mining operations the definition of the ore zone is also very critical as the unit value of the saleable product is low. A process flow diagram of a gold mining operation is shown below. As can be seen from this there are a number of steps to produce the final smelted gold. If any of them are performed ineffectively or uneconomically, then the overall operation may not provide a commercial return. Some of the typical mineral concentrations are:

Precious metals (for example Au, Pt, Pd): parts per million (1g/t = 1ppm)
Metallic minerals (for example Cu, Ni, Pb, Zn): parts per hundred (0.3% - 5%)
Bulk Commodities (for example Fe, Cr): parts per hundred (20%-69%)
Industrial minerals (for example C, Li, W): Parts per hundred (0.2%-95%).

[2] To add to this complexity, the grades of mineral deposits are generally not homogeneous. Mineral deposits can be tabular, disseminated or in veins. The geometry of mineral deposits is often unpredictable. So the availability of ore of the right grade to feed the milling and
processing circuit (mill cut-off grade) is vital. As we saw in Session 1 mining involves a number of stages to first identify an ore body and then establish the characteristics and quality of the deposit, which will ultimately see the creation of a mine plan.

[3] The reasons for the variability of ore bodies can be seen from a simple illustration of how ore deposits are formed.

Geology simplified
The inputs into the mining process are not restricted to the ore. Some of the other required elements include:

- Water
- Electricity
- Chemicals used in the treatment process
- Transport and other infrastructure
- Labour
- Mining Equipment
- Explosives
So the extraction of ore to produce something like the iron ore mine shown below is only a part of the process of mining.

Resources and Reserves- the investment decision

Resources and reserves estimations are fundamental to the valuation and funding of mineral and petroleum projects. Underlying these estimations are the facts that geology is not an exact science and that most ore and petroleum deposits can be interpreted in many different ways. So various attempts have been made to bring greater consistency into this estimation. This has been driven significantly by the investment industry which wanted have greater certainty of valuation of its security where it lends debt or equity finance. The JORC Code is one such approach, and it is worth considering both to get a deeper understanding of how ore bodies can be evaluated and also the way in which companies approach the decision to mine.

The JORC (joint ore reserves committee) Code
- Established in 1999, significantly updated in 2004, further review in 2012;
- The JORC code sets minimum standards for the public reporting of exploration results, mineral resources and ore reserves;
- The JORC Code provides a basis for the classification of the tonnage and grade estimates within a mineral resource based upon the level of geological confidence and technical and economic considerations;
- The JORC Code requires that all public reports be based on work and credited to work undertaken by a competent person. The JORC Code describes the qualifications and experience required to called a competent
person;
- The JORC Code provides extensive guidelines on the technical criteria to be considered when preparing public reports on exploration results, mineral resources and ore reserves; and.
- The JORC Code is applicable to all solid minerals including diamonds, other gemstones, industrial minerals and coal.

[7] The JORC Code gives one approach to the reporting of Exploration results, Mineral Resources and Mineral Reserves. The requirements for exploration results are:
- Exploration results include data and information generated by exploration programmes that may be of use to an investor;
- Exploration results must be technically based;
- Exploration results must not be reported out of context or out of perspective;
- Exploration results must contain sufficient information on how the results were gained so as to allow an investor to determine their significance. This could include sample locations, methods of sampling, sampling intervals, details of geological mapping, assay data and how the sample were assayed; and.
- The exploration results must not be reported so as to unreasonably imply that economic mineralisation has been discovered.

[8] A Mineral Resource is a concentration or occurrence of material of intrinsic economic interest in or on the earth’s crust in such form, quality and quantity that there are reasonable prospects for eventual economic extraction. Under the Code portions of a deposit that do not have reasonable prospects of eventual economic extraction must not be included in the mineral resource. The term “reasonable prospects for eventual economic extraction” implies that a preliminary judgement by the “Competent Person” in respect of the technical and economic factors likely to influence the prospect of economic extraction, including the approximate mining parameters.


[10] An Inferred Mineral Resource is that part of a mineral resource for which the tonnage, mineral content and grade can be measured, albeit with a low level of confidence. It is inferred from geological evidence but with assumptions on the geological and/or grade continuity. An Inferred Mineral Resource is based on information gathered through appropriate exploration techniques applied to the prospect including geological mapping, trenching, pit sampling and drilling but all of which may be limited or of uncertain quality and reliability. Confidence in an Inferred Mineral Resource is usually not sufficient to allow the results to be used for detailed planning. It is reasonable to assume that a significant part of an Inferred Mineral Resource would upgrade to an Indicated mineral Resource with further exploration.
[11] An Indicated Mineral Resource is that part of a mineral resource for which the tonnage, densities, shape, physical characteristics, mineral content and grade can be estimated with a reasonable level of confidence. This is based on exploration, sampling and testing information gathered through appropriate techniques such as geological mapping, outcrop sampling, sampling and mapping of pits and trenches and drilling. The locations used for this data gathering are too widely or inappropriately spaced to confirm geological and/or grade continuity but are spaced closely enough for continuity to be assumed.

[12] A Measured Mineral Resource is that part of a mineral resource for which tonnage, densities, shape, physical characteristics, grade and mineral content can be estimated with a high level of confidence. A Measured Mineral Resource implies that, in the opinion of the Competent Person, the nature, quality, amount and distribution of data are of such quantity and quality that the tonnage and grade of the mineralisation can be estimated to within close limits and that any variation from the estimate is unlikely to be of economic significance.

[13] An Ore Reserve is the economically mineable part of a Measured and/or Indicated Mineral Resource. It includes allowances for ore that may be lost in the mining as well as worthless material (known as “gangue”) which may be included when the ore is mined. An Ore Reserve has had the appropriate technical and financial studies carried out which include but are not limited to mining, metallurgical, economic, marketing, legal, environmental, social and government factors. Ore Reserves are sub-divided in order of increasing confidence into Probable Ore Reserves and Proved Ore Reserves.

[14] A Probable Ore Reserve is the economically mineable part of an Indicated and in some cases a Measured Mineral Resource. It includes allowances for ore that may be lost in the mining as well as gangue which may be included when the ore is mined. A Probable Ore Reserve has had the appropriate technical and financial studies carried out which include but are not limited to mining, metallurgical, economic, marketing, legal, environmental, social and government factors. This assessment process implies that at the time of reporting that extraction of the ore could be reasonably justified. A Probable Ore Reserve has a lower level of confidence than a Proved Ore Reserve but is of sufficient quality to serve as the basis for a decision to develop the mineral deposit.

[15] A Proved Ore Reserve is the economically mineable part of a Measured Mineral Resource. A Proved Ore Reserve represents the highest confidence category of reserve estimate.

[16] In the context of the JORC Code a competent Person is a member of the AUSIMM or the AIG or of a recognised overseas professional organisation. A Competent Person must have a minimum of five years’ experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which that person undertaking.

[17] What approaches like the JORC Code are seeking to do is to improve the transparency of the information provided and ensure material information is used. Also a competent person has to perform the estimation. But the Code does not regulate the procedures used by
Competent Persons to estimate and classify Mineral Resources and Ore Reserves or Regulate the internal reporting and classification systems used by companies.

[18] A proper estimation of reserves is central to the decision by a company to commence mining. On the basis of the reserves and the mineral to be extracted and the associated costs the company can perform an economic evaluation of the deposit and decide whether it is worth mining.

[19] As commercial enterprises, mining companies are intent on building wealth for their owners. The end point they want to arrive at is having profitable projects. So they will evaluate each project on the basis of the return it will provide and at what risk. Typically they will do so using a number of measures, including:

- **Net Present Value (NPV)**, is the value of a project, taking the cash inflows and outflows over its life and discounting them to give a present value. This is a measure of the market value of the project and can be compared with its cost. So it shows how much value is created by an investment. Only projects with a positive NPV are normally considered. The rate used for the discount calculation is normally the rate of return that could be earned in the financial markets on an investment with a similar risk. Riskier projects will have to be potentially higher positive cash return to achieve a positive NPV;

- **Internal Rate of Return (IRR)**, in a simple sense is the annualised effective compounded return rate of a project\(^1\). It is commonly used as an alternative to NPV. Most companies will have a minimum hurdle rate of return, which may also be adjusted for a country’s risk factors; and

- **Payback**, the time taken for the project to return the investment made.

[20] Making these calculations will require detailed financial models which can only be developed over time as the costs and cash flows of a project can be clarified. At the stage of initial exploration there will be no defined project. Nothing has yet been discovered. Accordingly, the decision whether to acquire exploration acreage and explore has to be made on the basis of much less robust estimates of what may be discoverable. Nevertheless companies will still try to estimate that using comparable geological data and projects. They will also take into account broader criteria such as corporate strategy, geological potential, risk and a comparison of available opportunities.

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\(^1\) It is the rate that that makes the net present value of all cash flows (both positive and negative) from a particular investment equal to zero.
Note regarding Country Specific Material- Check the method of resource/reserves evaluation. Is the JORC Code used
SESSION 3

MINERAL RIGHTS AND ALLOCATION

Country specific material

Material needs to be added to explain the system of land title and mineral ownership for the host country. Its mining code should be introduced at this point.
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Mineral Rights and Allocation

3.0 Rights to explore and mine

Ownership of minerals and land ................................................................. 2
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Sale and mortgage of mineral rights ............................................................ 9

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3.0 Rights to explore and mine

Ownership of minerals and land

[1] Around the world, nations have three basic approaches to the ownership of minerals.

a) *State ownership*, where all minerals in the land that belong to the nation, and the government grants rights to private parties to mine and own these minerals. This is known as the **regalian system** and is the most common form of mineral ownership. It exists in many countries in Africa eg. Angola, DRC, Ghana, Mozambique, Namibia, South Africa.

b) *State ownership with an inability to alienate*. The law requires that any mining must be done by state-owned entities or by private parties contracted to them. This is uncommon.

c) *Private ownership*, where the minerals are owned by the person who owns the land in which they are located, who can mine them her/him self or grant rights to other parties to mine the minerals. This is known as the **accession system** and is the historical way minerals were regulated in common law countries. In most countries this has since been changed by statute so that the state now owns the minerals but in some countries there is still some land with private mineral ownership (eg. Sierra Leone, United Kingdom, and South Africa). Additionally, in some jurisdictions, minerals are owned by indigenous people who have cultural/religious connection to the land, which is a form of accession system.

[2] A Federal system of government, where legal responsibilities are divided between a national government and subnational governments, further complicates the ownership and control of minerals. Mineral ownership may be located at subnational level (eg. by a province, state or territory) or may be divided between that and the national level.

[3] The ownership and regulation of most minerals is treated in the same way: the law specifies who originally owns them, what rights can be granted to other parties, and how any exploration/mining must occur. Generally, the ownership of minerals passes at the time they are extracted. That is, the minerals go from being owned by the state to being owned by the person who extracted them lawfully. If the minerals were not lawfully extracted then ownership remains with the parties who owned them prior to extraction. In some cases there are additional controls even after extraction, eg. that the state retains ownership until royalties are paid, or until the minerals are sold to a customer (eg. Indonesia). Some jurisdictions

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3 Tucker & Gore (2012)

4 For example, *Trojan Exploration -v- Rustenburg Platinum* (1996); *Mining Act 1992* (AUS), s 11 and *Cadia Holdings -v- NSW* (2010), [78].

5 *Mining Act 1971* (AUS), s 18. There may also be conditional ownership, in that the miner can lose rights to minerals if they fail to pay royalties: *Mines & Minerals Act 1995* (ZMB), s 69(1).

have additional laws controlling highly valuable minerals (e.g., gold, gems) about their subsequent possession and sale.\(^7\)

**Mineral rights: types and allocation**

[4] The basic situation in most countries' law is that all mining activity (exploration or mining) is prohibited unless the government has given you the right to do so.\(^8\) There are different types of rights which the government can give parties to undertake mining, which are summarised in the table below.

### Common mineral rights or titles

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>prospecting / reconnaissance</td>
<td>usually non-exclusive, in that different parties can have these rights over the same area (therefore little used by mining businesses) allow small-scale exploration (e.g., without mechanical equipment) and the removal of small amounts of material</td>
</tr>
<tr>
<td>exploration</td>
<td>detailed below - [5a]</td>
</tr>
<tr>
<td>extraction / mining / exploitation</td>
<td>detailed below - [5b]</td>
</tr>
<tr>
<td>retention</td>
<td>‘holding’ right while development is impractical - not common in many jurisdictions; protects the holder against other parties mining rights in the area but does not impose immediate obligations of exploration/extraction titles</td>
</tr>
<tr>
<td>ancillary / infrastructure</td>
<td>see 4.2 Government approvals &amp; infrastructure</td>
</tr>
<tr>
<td>artisanal</td>
<td>not large-scale or commercial (therefore little used by mining businesses); see 3.6 Artisanal Mining</td>
</tr>
<tr>
<td>mining agreements / contracts</td>
<td>may address any of above, plus other arrangements see 4.4 Government &amp; statutory agreements</td>
</tr>
</tbody>
</table>

Note: these are all types of mineral rights, and one type of mineral right is the mining right which allow minerals to be extracted). A mineral right is frequently known as a mineral 'title' because it is a formal permit or document issued by the government which permits the particular activity. Some jurisdictions will have general mineral titles for most minerals apart from specific exemptions and a different process/title is used for those minerals (e.g., different titles for gold, coal, or gas).

[5] The two key mineral rights/titles in commercial mining are exploration and extraction. The typical characteristics of these are explained below.\(^9\)

a) **Exploration right/title**

- permits access to the area for mineral exploration
- allows drilling and analysis, usually have limits on the amount of material that can be removed
- exclusive (in that no other party is allowed to hold mineral exploration rights over the area, but this usually does not mean the party holds 'exclusive possession' of the area and other parties are allowed to enter and use the area if that does not impede the exploration).
- fees set by government
- minimum expenditure requirements and work requirements
- environmental and social impact plans required

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7 For example, Precious Stones Act 1969 (BWA); Mogopodi -v- BWA (1989) (parties convicted for sale of precious stones without relevant legal authority).
8 eg. Mineral Resources Act 2002 (ZAF), s 5A; Mineral Resources Act 1989 (AUS), s 9; Mines & Minerals Act 1995 (ZMB), s 5(1); Resources Minister -v- Cazaly Iron (2007), [71].
9 Summary from CSMI (2010), 14-17.
• reporting required (eg. discoveries, work conducted, amounts spent)
• holders have registration and conversion rights (to mining right)
• 1,000 - 2,000,000 hectares in area
• 2-5 years (renewable)
• relinquishment (ie. various incentives to refine exploration activity to exact location within the whole area)

b) **Extraction or Mining right/title** (also sometimes termed 'exploitation' right)

These are similar to exploration right, with these changes:

• smaller area
• 25-40 years (renewable)
• allows the extraction and removal of minerals for sale

[6] These mineral rights or titles are usually granted separately as permits by the relevant government agency. However, not every jurisdiction has each of these rights: sometimes they may be combined. In a few countries there are no standard mineral rights and the only way to obtain permission to mine is a contract with the government.11

[7] There are sometimes restrictions on who may hold a mineral right. The law may require that a mineral right can only be held by a citizen or company from that control (eg. Namibia, Tanzania, Malawi, Uganda12). This does not, however, necessarily prohibit foreign parties from mining and controlling mining in that jurisdiction – such a system existed in Indonesia for many decades, where foreign investors gained no title to minerals until loaded for export. It was observed that, despite that legal structure, the investor:

retains full control over the project, provides or arranges for all necessary finance, and basically derives its return from a share of the profits. The only distinction [between the required joint-venture arrangement with a national mining entity and an arrangement where the international investor holding the rights itself] is a juridical one, not one of economic perspective.13

The objective of restricting mineral rights to nationals is to control the extent to which assets are controlled by non-nationals. That same objective is achieved in other jurisdictions by foreign investment restrictions.

**Foreign investment controls** (Southalan 2012, 154)

Frequently, the following investments are prohibited without prior government approval:

• direct investment by another government;
• investment by private industry over a certain monetary amount; and
• investment in resources considered strategically important, such as nuclear minerals or in areas considered sensitive because of their proximity to national borders or military establishments.

Foreign investment procedures are usually undertaken separately from acquiring mineral rights, with the foreign investor needing approval before it can acquire mineral rights.

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10 See [8] below.
11 Southalan 2012, 43.
12 eg. Namibia (Koep & van den Berg (2012)); Tanzania (Maro & Ramadhani (2012)); Malawi (Savjani & Singano (2012)); and Uganda (Kusaasira & Kalisa (2012)).
A critical issue is what rights a miner has if it makes an economic discovery. Recall that $m spent exploring, usually unsuccessfully.\textsuperscript{14} Therefore companies will need assurance of being able to extract and profit from anything found to justify making that expenditure. There are different methods to give that assurance.

a) granting exploration and extraction rights as one title or permit (eg. old concession agreements, which are rare today):

b) limiting the parties who can apply for a mining-right to be only those parties who hold existing exploration rights in area (or have the consent of such parties);

c) giving the holder of an exploration title a preferential right, over all other parties, to the mining title for that land (eg. Namibia\textsuperscript{15}); and

d) limiting government discretion to withhold the grant of a mining right - for example being granted automatically on fulfilment of administrative requirements (such as payment of fee; or on proof of the environmental & social management processes which will be used – eg. Mozambique and Uganda\textsuperscript{16}), or only allowing the government to refuse to grant where that is in the ‘national interest’.

The mineral law will specify the basic rights and responsibilities which arise with every mineral right (eg. every holder of a mining lease can do X or must do Y). Usually, the law also allows the government to include specific conditions on a right which become additional obligations the miner must observe. This is a way in which the government can address issues specific to the particular project eg. controlling impacts on particular areas, interaction with local landholders/users, use of specific roads, and requiring reporting to various government agencies.

Most jurisdictions have a principle of "use it or lose it" for mineral rights. This is designed to ensure that parties who hold a mineral right actively explore or mine, and if they do not then they forego those rights and which allows other parties to do so. There are various ways in which this is achieved, with some or all of the following present in many mining laws.

**Use it or lose it' control of mineral rights**

a) *Forced relinquishment* of exploration rights. The amount of land covered by the permit halves each year (the holder can specify which half to return to the government).

b) *Short time periods* for exploration. This ensures that, after a couple of years, the holder either needs to apply for an extraction right, or other parties can obtain exploration rights on that land. In some countries extensions will only be allowed when the company has been actively exploring the area, eg. Ghana\textsuperscript{17}.

c) *Increasing rental charges* for exploration rights. The fees charged by government may increase each year, encouraging the holder to decide whether they want to mine or surrender the rights.

d) *Work or expenditure requirements* - on exploration or production titles. This specifies that amount of time or money that must be spent each period, failing which the right can be lost.

\textsuperscript{14} See 1.1 Mining Basics.
\textsuperscript{15} Koep & van den Berg (2012)
\textsuperscript{16} eg. Mozambique (Pereira de Miranda & Cabeçadas (2012)); Uganda (Kusaasira & Kaliisa (2012)).
\textsuperscript{17} Akafia & Kuenyehia Sr (2012)
There are three basic methods which governments use to allocate or grant mineral rights under their mining law: (1) a competitive process, by tender or auction; (2) a free-entry process, where most parties can obtain the right on compliance with basic conditions; and (3) by negotiated agreement, which is examined in 4.4 Government & statutory agreements.

A country’s mining law will specify the method of allocating mineral rights which must be used, or allow the government to use different methods in different circumstances. A common arrangement is that most mineral rights are allocated by a free entry process, but the government can use a competitive process if they consider a specific area merits this. There may also be requirements in the constitution about ownership or allocation of minerals, eg. in Uganda the constitution specifies that mining & exploration shall occur taking into account the rights of local government, landowners and government. Recall, also, that some jurisdictions have different arrangements for specific minerals and so there may be a general arrangement for allocating rights in most minerals with a different with a different arrangement for those specified (eg. gold, coal, diamonds, uranium).

Generally the greater the geological information available, the more likely a competitive process will be used because bidders can make informed decisions. This is seen in many petroleum fields and coal deposits (which are more easily delineated) and also where the government holds more details about the geology. However for most hard minerals, no-one knows whether a feasible deposit will be found, meaning much money be spent in exploration without any reward (a mine might be feasible only 1 in 1000 exploration programs). The free entry system works on the basis that, provided the applicant satisfies basic administrative criteria, then they are entitled to the exploration right for that area eg. DRC, Ghana, Angola, Malawi, South Africa, Tanzania, Uganda, and Zambia.

Where a jurisdiction uses the free entry process for allocating mineral rights, this usually is combined with a general approach that mineral rights can be sought over most land in the country. However this is usually combined with three methods to control mining impacts on other land uses.

a) Mining & exploration activity is banned within certain distances of existing activity and structures, even if a party holds the relevant mineral rights which would otherwise allow this. Alternatively, mining exploration can only occur here after the consent of the landowner or Government. This may include areas covered by urban dwellings, intensive farming, cemeteries, religious areas (eg. Malawi, Namibia and Uganda).

b) Obtaining mineral rights on anything other than unused public land requires additional procedures or approvals. For example, for private land, often the mineral rights cannot be granted or cannot be exercised without compensation being agreed with the landowner or decided by the court; and for land reserved for other uses like conservation, additional approvals may be required before the rights can be granted.

c) The Government can identify areas where no mineral rights or activity can occur. This occurred in DRC in 2010 where the Government suspended mining in eastern

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18 Kusaasira & Kaliisa (2012)
19 CSMI (2010), 3.
20 AUS Gov 2012, 6.
22 Southalan 2012, 49; Campbell (2004); AUS Gov (1991), 41-43.
23 eg. Malawi (Savjani & Singano (2012)); Namibia (Koop & van den Berg (2012)) and Uganda (Kusaasira & Kaliisa (2012)).
Government control/direction of exploration and mining activity

[15] The issue of direct government involvement or ownership in mining was addressed in the first chapter, but even where the government has no direct ownership in the mining, it still has significant control over the mining operations. Different jurisdictions have different degrees to which the government maintains ongoing control or direction in private mining operations. There are a variety of ways in which this occurs, with no universal “standard formula” because it will often depend on the specific things the state considers is required in addition to normal direction or monitoring. Examples of different things which may be a government priority include employing local or national workforce, controlling environmental impacts, understanding the production plans, addressing social and public health issues, or controlling the minerals mined. The following are different ways in which these controls can work.

Examples of government direction/control of mineral operations (Southalan 2012 95-96)25

- **Staged development planning**, where the company must submit plans for government approval or change and then develop according to the approved plans. This structure is used in relation to many issues (for example, feasibility studies, exploration, mine development, infrastructure construction, maintenance, environmental impact, security arrangements). Some agreements specify what must be contained in plans in considerable detail, or even specify minimum construction costs. Staged development planning, and the necessity for approvals, have been used by governments to further particular aims (for example, environmental matters) even when there is no direct regulation.

- **Require the company to maintain a specified presence at identified locations**, for example, the company's head office, or personnel of a specified level of authority, must be located in the host country.

- **Require the company to have a listing on the country’s stock exchange**, (eg. Tanzania26) which enables easier access and investment within the jurisdiction, including any mandatory requirements about minimum levels of government ownership.

- **Require the company to conduct exploration and feasibility studies** for mineral development or provide evidence of its finance to undertake agreed plans.

- **Specify production amounts** and require the development of sufficient infrastructure to support a minimum amount of production.

- **Require the establishment of committees responsible for various decisions about development and production** with the committee to comprise company and government personnel.

- **Restrict the assets the company can acquire**, for example, only assets ‘reasonably estimated’ as necessary for mining operations.

- **Restrict what the company can do with the mined product**. In some jurisdictions, the extracted mineral is separately regulated and sometimes only able to be sold to government-licensed parties, although this is generally only in relation to gold and gems where there is great difficulty in controlling illegal mining. However, it has also been used in various jurisdictions as a way of controlling the production and sale of coal by parties who hold mining rights over the coal.

- **Mandate a certain percentage of local ownership**. In some countries the government might not require ownership for itself, but will specify a certain percentage of the business which operates the mine to be owned by local population. The most notable example of this in

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25 Additions the text at Southalan 2012 are referenced below.
26 Yager (2012)
Africa is South Africa's Black Economic Empowerment which requires that mining companies have 26% black ownership by 2014, but similar initiatives also exist in Namibia in the New Equitable Economic Empowerment Initiative and Framework. These, together with the Zimbabwe's 'indigenisation' actions, are discussed in local content in 4.3 Local content.

[16] A common regulatory measure being used in relation to mining titles is for the miner to provide an additional document explaining how the mining will occur. The mining law specifies what matters need to be addressed in this document eg. production schedule, the constructions which will occur, environmental management measures, mine site design. In some jurisdictions, this document needs to be provided before rights to mine will be granted (eg. Mozambique Northern Territory), while in other countries it is a condition placed on the mining right, and work cannot occur until the plan has been submitted to government and approved.

Land access and interaction

[17] Mineral titles, in most jurisdictions, give the right to explore or mine the product from the ground but usually do not include rights to access/use/ownership the land over which the mineral title is held. Access to the land frequently has to be acquired separately although the mining law usually describes a procedure for doing so. There are a range of approaches which jurisdictions take to addressing land access for parties with a mineral right.

Mineral rights and land access (Southalan 2012, 68)

- granting/confirming ownership of public and private land to the mine rights-holder;
- providing free transfer of publicly owned surface rights to the mine rights-holder;
- giving the mining title holder an automatic right to access the relevant land (and use consistent with the mining right - eg. Ghana) with possible need for compensation of any resettled peoples (eg. Mozambique);
- enforcing, on private land-holders, access and use rights for the miner – mining in effect being given preferential use of land (sometimes with prior notice required, and usually on the condition that compensation be paid to the land-owner), although often this is expressly stated as a right to do only what is necessary and the miner cannot unreasonably impact or impede other uses of land (eg. South Africa);
- requiring the surface-holder's agreement before mining, but providing for arbitration and

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27 Yager & others (2010), 1.2.
28 Bermúdez-Lugo (2013), 32.1
29 eg. 'mining production plan': Mozambique (Pereira de Miranda & Cabeçadas (2012)); 'production work program': South Africa (Tucker & Gore (2012)); 'mining management plan' (Mining Management Act (AUS), s36(2)(a))
30 Pereira de Miranda & Cabeçadas (2012)
31 Mining Management Act (AUS), s36(2)(a).
32 eg. Mining Act 1978 (AUS), s 82(1)(ca).
33 Basic data and explanation from Southalan (2012), 68 with additional material noted in following footnotes.
34 Akafia & Kuenyehia Sr (2012)
35 Pereira de Miranda & Cabeçadas (2012)
36 Tucker & Gore (2012)
compensation where agreement cannot be reached (eg. Uganda and Zambia);37
• only enforcing access against a land-owner’s wishes where that is in ‘the national interest’; or
• giving the surface-holder a complete veto over mining.

[18] Various mining laws give greater access rights and freedoms to mineral rights which involve more impact (such as an extraction title), while those with lesser impacts (eg. exploration or prospecting) have lesser access rights. While that may seem somewhat counter-intuitive, it reflects a drafting intention to preference and enable productive mining where that can occur.

[19] The interaction of mining with other land uses is a critical issue because the government's granting of a mineral title is rarely sufficient to address every possible concerns about the proposed operation. Community opposition to mining operations have led to projects being terminated - not just exploration programs but even after a mine has been built and started operating following the massive investment and development.38

[20] Analysis has summarised 'four central concerns' about poverty and mining being:
• ownership and control of territories by local communities,
• self-determination through informed consent, participation and engagement,
• the right of the local groups to represent themselves through their own institutions, and
• food security.
Clearly the fulfilment of these cannot occur through the mining law alone. However law can contribute to the improvement, or aggravation, of these concerns. The significance of these four concerns has been summarised that: 'Unless means are developed to ensure that these concerns are met, mining will invariably lead to social unrest and protests even when it may be beneficial for some stakeholders.'.39

[21] Conflict over land use is not, of course, a dynamic unique to mining. There are many other land use conflicts. Often, the conflict may be in relation to the different resources which could be taken from the land but which are mutually exclusive, such as food production -v- bio-fuel;40 and coal -v- coal seam gas.41

Sale and mortgage of mineral rights

[22] Governments invariably retain some degree of control over future dealings with a mineral right. One reason for this is to ensure that the party holding the rights is always able to meet the various responsibilities, particularly in relation to mining and rehabilitation. The government will also want to ensure that the rights are used for mining and not simply create a market for the sale and transfer of mineral rights with no benefit arising to the state from those transactions.

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37 Uganda (Kusaasira & Kaliisa (2012)) and Zambia (Mkokweza (2012)).
38 Examples are discussed in Lahiri Dutt 2010, 2-3 (from Papua New Guinea, Bangladesh & India).
39 Lahiri-Dutt (2010), 8.
40 Andrews Speed 2012, 72.
41 Southalan 2012, [3.20].
Most mining laws allow mineral rights to be sold, or used as security (eg. against a loan or finance for the project) provided the government has agreed to the proposed transaction.\textsuperscript{42} Usually government agreement will be dependent on the government being assured that the proposed new title holder will be able to meet all the mining and rehabilitation obligations. That assurance may occur simply through the government being satisfied that the proposed new title-holder has sufficient assets and experience, or it may require a formal legal contract when the new title holder commits to these obligations.

It is sometimes possible for parties to acquire rights to mine in an area without holding the mineral right themselves (eg. through a contractual agreement with the rights holder, or by controlling the shares in the rights holder). However the rights holder normally remains responsible for ensuring that the various conditions on that title are met.

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\textsuperscript{42} Southalan 2012, 52.


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Mining Regulation and Policy Course

SESSION 4

SMALL GROUP SESSION
ALLOCATION OF MINING RIGHTS
Small Group Problem

[will need adjustment for host country]

A railway company agreed in [1960] with the state government to construct a railway line in return for freehold land grants. The land grants issued in 1964 without any reservation of minerals, in accordance with the regulations in effect then.

Amok Mining Corporation wants to explore on the land granted to the railway company, on adjacent pastoral [lease] land originally leased in 1920 and in a national park. Both the land held by the railway company and the adjacent pastoral lease land is used for grazing cattle. It is particularly interested in looking for gold, uranium and bauxite.

You will be divided into groups who will consider this problem from the point of view of the Mines Department and Amok Corporation. Consider the following issues:

1. as to ownership of the gold, uranium and bauxite on the land.
2. how and to what extent, and the conditions subject to which, it might obtain access to the surface of the land for exploration and mining of bauxite.
3. the validity of any government restrictions upon the export of any of the minerals.
4. the mining tenement that should be applied for and any conditions that will be applied.
5. the other matters that need to be considered before mining can commence if a commercial deposit is found.
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Mining Regulation and Policy Course

SESSIONS 5 and 6

ENVIRONMENTAL AND SOCIAL ISSUES

Country specific material

Material needs to be added to explain the system of environmental management for the host country and other relevant local public policy issues at this point.
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## Environmental, Social and Public Policy Issues

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5 & 6 Environmental, Social and Public Policy Issues

Environmental regulation

[1] Minimising the environmental impacts of mining is not only a legal issue but also increasingly subject to controls from financiers of mining - including development agencies and private banks. A complexity in addressing environmental impacts of mining is how this interacts with the stages of mining (recall the stages identified in 1.1 Mining Basics).

a) At the exploration stage, when it is uncertain if sufficient deposits will be found and therefore whether a mine will be built, the company will not want to conduct the full environmental compliance requirements for a mine. However the company will want the assurance that, if it discovers adequate deposits, then it can obtain the right to extract them.

b) For the government, it will not want to grant mineral rights if it is not assured that any environmental impacts will be appropriately controlled.

[2] In some jurisdictions, the legal interaction of mining and environmental issues is dealt with under the mining law, and managed by the government agency responsible for mining. However that structure is less common these days, and many jurisdictions approach mining as any other activity which has environmental impacts, and that need to occur under the terms and procedures of the jurisdiction's environmental law.

[3] There are different ways in which jurisdictions have approached environmental regulation. In a few jurisdictions, the national constitution contains some environmental protections (eg. in Africa this includes South Africa and Namibia). Most jurisdictions, however, have environmental protection at the level of parliamentary law, often establishing environmental impact assessment (EIA) as a process of determining whether a mining proposal should proceed and, if so, subject to what environmental controls. In Africa, example of this include Angola (where mining operations within a mineral investment contract are subject to EIA); DRC (EIA required for extraction titles but not for exploration); Ghana (EIA used where the government considers the proposal will have significant adverse environmental impacts); Malawi; Mozambique (EIA for extraction titles, with lessor mineral rights not usually requiring this extent); Namibia and Uganda (EIA for extraction titles).

[4] EIA is encouraged through international standards and although its procedure varies in different jurisdictions, a comprehensive EIA will involve the following.

Steps in Environmental Impact Assessment (Southalan 2012, 144)

• initial publication of proposals (for example, environmental impact statement / proposed management plan – the obligation to prepare this may be on the government or the company, depending on the country’s law);
• inviting public submissions;
• public hearings;

1 JS fns p108
2 Pereira de Miranda & Afonso Fialho (2012)
3 André-Dumont (2012)
4 Akafia & Kuenyehia Sr (2012)
5 Pereira de Miranda & Cabeçaças (2012)
6 Kusaasira & Kaliisa (2012)
• publicising the proposed regulatory controls to be used, and again allowing comment from the proponent and public; and
• issuing a public decision.

[5] Countries use different ways to require compliance with environmental controls. The standard arrangement is to specify certain conduct as illegal and enable government prosecution. This exists in most laws (see 5.2 Administration & enforcement) but some areas are given extra incentive. In part this is because if mining's environmental impacts are not remedied by the company who ceases mining or goes out of business, the government is left with significant clean up expenses and no way to recompense those costs. A common way to deal with this dilemma is through 'environmental bonds' which are explained in 3.5 Mine closure.

[6] Another way, used in a few jurisdictions, is to regulate the miner's environmental management system (EMS) rather than simply the environmental impacts. Under this structure, the company is required to have an EMS in place that will address the specified operations, and to audit and report on this system. Failures in reporting or implementing the system can be offences of themselves, regardless of whether any environmental impacts actually occurred.8

Mining and water

[7] Mining can use enormous quantities of water, in processing and dust suppression at the mine site, as well as water for associated infrastructure (eg. power supply and residential areas). Depending on the environment and mining type, there may also be significant risks of pollution to nearby water from mining waste9 and de-watering (if mining is to occur below the water table). These dynamics occur in the context of rapidly growing concerns about water use and allocation within society.10 A 1991 court case noted the problem and it has only increased in significance since then:

This present case highlights the problems which will be faced by many mining operations in the future. Water is an essential ingredient to mining operations and it is in short supply in many locations.11

Historically, parties with rights to land had little regulation or control about the use of water on their land. This approach existed in mining law (with the holder of a mining right given unrestricted rights to water with the mining title) as in other areas. Shortages of water have led to greater concerns and controls over its use, including between different mineral rights holders.12

[8] There are a range of different ways in which jurisdictions have approached the interaction of mining and water use.

Mining and water - different legal approaches (Southalan 2012, 113)

• The mineral right in an area can automatically include the right to take and use any water in that area (for example, company is entitled 'to water to the extent reasonably necessary for its operations'13);
• No automatic right to water, but a procedure in the mineral law whereby a mineral rights-holder can gain water rights from a government regulator;

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10 For example, ICMM (2012); Thatcher (2008); Nelson & Ellis (2008)172; MCA (2009).
12 eg. Southalan 2012, 113.
13 Bougainville Agreement (PNG), cl 11(a) & 13(d).
• Providing a separate procedure, outside mining law, which requires government approval for water access or use and the construction of water infrastructure; and
• Issuing a mineral right with limits on production specifically related to water availability.\(^{14}\)

Various jurisdictions protect water for human use from mining operations, sometimes including providing government/third party rights to water controlled by a miner.\(^{15}\) Human rights have also identified a right to water which must be protected and respected by the State and companies.\(^{16}\)

**_Human rights_**

[9] The international human rights standards, and processes, relevant to mining are largely contained in a series of international documents which governments agreed through the United Nations and the International Labour Organisation.\(^{17}\) These documents specify standards to be met in a broad range of human activities, and the three fundamental documents are the 1948 _Universal Declaration of Human Rights_ (UDHR)\(^{18}\) and the two 1966 treaties which were drafted to implement the UDHR being the _International Covenant on Economic, Social and Cultural Rights_ (ICESCR)\(^{19}\) and _International Covenant on Civil and Political Rights_ (ICCPR).\(^{20}\) These documents have contributed to the development of many other human rights treaties and mechanisms, which cover particular issues (eg. racial discrimination, torture, discrimination against women, children, migrant workers, people with disabilities) and also particular regions (eg. the human rights structures in Africa - expanded below - and in Europe, the Americas and South East Asia). The International Labour Organisation also has treaties about human rights matters such as work conditions,\(^{21}\) child labour,\(^{22}\) slavery\(^{23}\) and indigenous peoples.\(^{24}\)

[10] The objective of human rights standards is to protect peoples' rights by national government and societies, and the obligations here fall primarily fall on the nation state.\(^{25}\) A government must ensure that individuals in its country can enjoy the human rights standards. That involves more than simply passing laws but also policies and actions to change societal behaviours where these are inconsistent with human rights. The international human rights standards are relevant to all branches of government (executive, judiciary and legislature) and also sub-national governments: a State is responsible to ensure that all forms and levels of government within the nation comply with the nation's human rights obligations.\(^{26}\) Some States create agencies with specific responsibility to monitor and act in relation to human

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\(^{14}\) eg. _Ulan Coal v Planning Minister_ (2008), [39], [54] & [59]. In this case, the mining project was approved with environmental conditions including that the company ‘must … if necessary adjust the scale of mining operations to match its water supply’.\(^{15}\) For example, _Bougainville Agreement_ (PNG), cl 13(i) (parties have a right to the company’s water, where that does not interfere with the company’s operations and the party meets the company’s terms and charges).\(^{16}\) eg. _UNGA_ (2010); _Gen Comm 15_ (2002).\(^{17}\) There are some human rights principles which derive from international customary law (eg. prohibitions on genocide, slavery, torture, piracy) but these have little relevance to normal mining operations.\(^{18}\) _UDHR_ (1948).\(^{19}\) _ICESCR_ (1966).\(^{20}\) _ICCPR_ (1966).\(^{21}\) eg. _ILO 98_ (1949); _ILO 111_ (1958).\(^{22}\) eg. _ILO 182_ (1999).\(^{23}\) eg. _ILO 105_ (1957).\(^{24}\) eg. _ILO 169_ (1989); see _ILO_ (2009).\(^{25}\) See Robinson (2005), 32; Milanovic (2008), 412-413 & 447.\(^{26}\) The various treaties (eg. ICCPR, ICESCR and other human rights treaties) where joined by a state, include an obligation to ensure that the obligations are met by all public authorities and institutions (eg. _ICERD_ (1965), arts 2.1(a) & 6; _Conclusions: AUS_ (1994), [542]). A nation is obligated to perform its treaty obligations regardless of internal laws and responsibilities, such as laws enacted by sub-national governments: eg. Brownlie 2008, 34-35; _VCLT_ (1969), art 27.
rights, called national human rights institutions - the South African body has reported on mining and human rights.  

[11] Human rights have relevance to most activities which occur in exploration and mining, not only to how the mining operator interacts with other parties, but also how matters occur within that operator (eg. employment and workplace arrangements). The following table outlines some of the main human rights issues which can arise in a mining operation.

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<td>Freedom of movement</td>
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<td>Right to privacy</td>
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[12] The human rights standards are specified in various international agreements and the principal form of protection and protection of the standards is domestic legal structures. States must act to prevent and redress human rights abuses, and this occurs in most countries through laws, court proceedings, prosecution and government campaigns. But in addition to those domestic structures there are also a range of international mechanisms which can examine and report of human rights abuses. The key ones are summarised below.

**International human rights mechanisms** : Southalan 2012, 120-121

*Universal Periodic Review*. The United Nations Human Rights Council reviews and comments on the human rights situation in every country that is a member of the United Nations. Each country is reviewed every four years, which involves the government providing a ‘national report’, the Council considering this and other material from the United Nations and other parties, and then the Council issuing its report.  

*Treaty mechanisms*. The main international treaties each have a monitoring committee which oversees its implementation. These committees have a range of roles including: (1) receiving and considering regular reports of the countries who have joined the treaty; (2) issuing general
explanations on the treaty’s requirements; and (3) where the treaty permits this, receiving and deciding on peoples’ complaints that a state has breached its obligations under the treaty.

Regional mechanisms. All continents have a regional human rights mechanism, apart from Asia although a human rights structure is developing for countries in the Association of South East Asian Nations. Some of the regional human rights treaties and systems have detailed and comprehensive procedures and bodies which can make decisions and observations on human rights situations within a country.

General United Nations procedures. Various UN bodies have mechanisms to investigate a human rights issue generally or situations in specific countries. This includes appointing officials (for example, special rapporteur or working group) who can analyse the topic/country and advise the United Nations; advocate on behalf of victims; and request action by states. This can include investigations and reports into particular incidents, although generally only as part of a broader theme.

Africa has a regional human rights mechanism, the African Commission on Human and Peoples’ Rights,30 which can examine and report on human rights issues in countries in Africa. The Commission established a ‘Working Group on Extractive Industries and Human Rights Abuse in Africa’ to examine the human rights impacts of the extractive industries in Africa.31 The Working Group has only effectively operated for a year,32 due to funding constraints,33 but its first report recommended:

States to be part of the Extractive Industries Transparency Initiative (EITI) which is a coalition of governments, companies, civil society groups, investors and international organisations whose reports help to verify and reconcile, in an independent manner, taxes and other revenues from the exploitation of natural resources. Some States have complied with the EITI requirements by publishing their revenues (Ghana, Nigeria, Zambia, Mauritania, Central African Republic, Liberia, Mali and Niger). Other States are EITI candidates (Côte d’Ivoire, Burkina Faso, Gabon, Congo, DRC, Cameroon, Chad, Guinea, Mozambique, Tanzania, Togo) which shows their willingness to publish revenues from extractive industries.

States Parties to grant authorization to the Working Group, at the latter’s request, to undertake country visits for information gathering. These field missions are a crucial element of the Working Group’s mandate, as they will enable its members to verify information collected during the research phase and to prepare a


31 Working Group on Extractive Industries (2009). The full mandate includes to ‘[1] Examine the impact of extractive industries in Africa within the context of the African Charter on Human and Peoples’ Rights; [2] Research the specific issues pertaining to the right of all peoples to freely dispose of their wealth and natural resources and to a general satisfactory environment favorable to their development; [3] Undertake research on the violations of human and peoples’ rights by non-state actors in Africa; [4] Request, gather, receive and exchange information and materials from all relevant sources, including Governments, communities and organizations, on violations of human and peoples’ rights by non-state actors in Africa; [5] To inform the African Commission on the possible liability of non-state actors for human and peoples’ rights violations under its protective mandate; [6] Formulate recommendations and proposals on appropriate measures and activities for the prevention and reparation of violations of human and peoples’ rights by extractive industries in Africa; ...’.

32 Manirakiza (2012), [25].

33 Malila (2011).
comprehensive report that will be submitted to the Commission in accordance with its mandate.\textsuperscript{34}

[14] Human rights are not the sole responsibility of the government: businesses also have responsibilities in relation to human rights. The UN has recently adopted a framework, called \textit{profit, respect and remedy}, as a way of understanding the role and responsibility of business. The framework confirms that states have a duty to protect persons from human rights abuses regardless of their cause (government, business or non government parties) and states also have to provide public remedies such as through court processes. Businesses also have obligations in relation to remedies, and these are informed by the business responsibility to respect (or 'not to harm') human rights. The framework's key significance for business has been summarised thus:

[B]usiness enterprises should have in place policies and processes appropriate to their size and circumstances, including:
(a) A policy commitment to meet their responsibility to respect human rights;
(b) A human rights due-diligence process to identify, prevent, mitigate and account for how they address their impacts on human rights;
(c) Processes to enable the remediation of any adverse human rights impacts they cause or to which they contribute.\textsuperscript{35}

[15] There is increasing attention to extraterritoriality in human rights, particularly obligations on a state to address the human rights impacts of its nationals while in other countries. Most human rights standards in this area are couched in very general terms\textsuperscript{36} but there are increasing examples of existing standards being applied extra-territorially. This is particularly so in the case of mining and other extractive industries. Monitoring committees, which oversee the various human rights treaties, have recently indicated that home states are not doing enough to control the activities of mining companies operating in other countries. The following is one example, in relation to Australian mining companies operating in various countries, but there are similar examples with directions given to Canada and Germany in relation to their companies operating in other countries\textsuperscript{37}:

The Committee [on the Rights of the Child] is concerned at reports on Australian mining companies’ participation and complicity in serious violations of human rights in countries such as the Democratic Republic of Congo, the Philippines, Indonesia and Fiji ... Furthermore, while acknowledging the existence of a voluntary code of conduct on a sustainable environment by the Australian Mining Council ("Enduring Values"), the Committee notes the inadequacy of this in preventing direct and/or indirect human rights violations by Australian mining enterprises.

... the Committee recommends that the State party [ie. the Australian Government]:
(a) Examine and adapt its legislative framework (civil, criminal and administrative) to ensure the legal accountability of Australian companies and their subsidiaries regarding abuses to human rights... committed in the territory ... or overseas and establish monitoring mechanisms, investigation, and redress of such abuses, with a view to improving accountability, transparency and prevention of violations;

\textsuperscript{34} Manirakiza (2012), [23]-[24].
\textsuperscript{35} UN (2011), [15].
\textsuperscript{36} eg. 'nations 'undertakes to take steps, individually and through international assistance and co-operation...with a view to achieving progressively the full realization of the rights': \textit{ICESCR} (1966), art 2(1); see Robertson (1994) and Southalan (2011).
(b) Take measures to strengthen cooperation with countries in which Australian companies or their subsidiaries operate to ensure respect for ...rights, prevention and protection against abuses and accountability;
(c) Establish that human rights impact assessment, ... are conducted prior to the conclusion of trade agreements with a view to ensuring that measures are taken to prevent ...rights violations from occurring and establish the mechanisms for the [Government's agency which assists exporting companies] to deal with the risk of abuses to human rights before it provides insurance or guarantees to facilitate investments abroad.38

[16] These comments apply not just to Australia and the rights of the child. They are relevant directions to any country which has joined the various human rights treaties and has companies operating in other jurisdictions.

**Artisanal mining**

[17] Artisanal and small-scale mining (ASM) is mining which occurs with little machinery and often no legal rights to mine. ASM provides the only means of survival for millions of people but frequently also involves considerable social and environmental damage.39 ASM occurs in most countries but accurate figures on its extent is difficult because of its operation outside formal and legal structures in many places. It is estimated, however, that ASM involves many more people than regular commercial mining (2002 estimates considered that over 13 million people were involved in ASM, compared with just 2.5 million in regular large scale mining40). 'In Sierra Leone and parts of the DRC, artisanal miners play a larger role than multinational corporations in the extraction of minerals.'41 Most ASM is for gold but other minerals are produced as well, with estimates that 15-20% of the world's non-fuel minerals (and 15% of its diamonds) are produced through ASM.42

[18] Historically, different jurisdictions had sought to simply ban ASM outright, but this had little success because most people were not doing ASM by choice but rather because they had no other form of survival. Various countries have, however, enacted laws which seeks to accommodate and incentivise ASM in certain directions, including creating ASM rights which give limited permissions to extract minerals (eg. small area, limited depth and mechanisation).43

[19] The contemporary approach to ASM in many jurisdictions is, in recognising the social support it provides many people, to find ways to formalise the activity and provide incentives for those involved to work in ways which create lesser environmental and social impacts.44 This will involve government policies and campaigns to address the reasons why ASM occurs, eg. Ghana recently created small scale miners associations to help manage ASM.45

**Mine closure**

[20] After mining has completed, there will be much work needed for the area to be made available for other uses in the future. Depending on the type of mining and local environment, the area may be able to be returned to the state it was prior to mining, or it may require

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38 Conclusions: AUS (2012), [27] & [28].
39 Southalan 2012, 122.
40 Southalan 2012, 122.
41 Bryan & Hofmann (2008), 17.
42 Southalan 2012, 123.
44 Maconachie & Hilson (2011)293-294; Hilson (2011)(it is imperative that the linkages that have emerged between artisanal mining and smallholder activity in sub-Saharan Africa are preserved, not severed).
ongoing maintenance for decades to control the potential impacts of pollutants. Historically, mining regulation paid little attention to what happens when the mining finishes, but the resultant problems of that led to many jurisdictions taking a different approach.

Legal approaches to mine closure (Southalan 2012, 134)

- In some jurisdictions, a mineral right cannot be relinquished until the government consents, which gives the government control over ensuring the remediation requirements have either been completed or there are adequate resources and arrangements in place to ensure that remediation will occur.
- Another option is to legislate that until the government issues a closure certificate, the holder of current or previous rights remains responsible for any environmental degradation or liability.
- Some jurisdictions impose a requirement to ‘progressively rehabilitate’; for example, that the miner ‘take all reasonable steps to progressively rehabilitate a site whether or not closure has commenced or a closure plan has been’ finalised.

[21] Environmental bonds, or performance guarantees, are being used in many countries. These operate as a condition that, before activity can occur under a mineral right, the holder must ensure that the State can automatically obtain the funds to cover the cost of environmental remediation in the event that the company does not complete the remediation work. There are different ways in which this is done, eg. by requiring the company provide deposit or bond, or arranging a bank guarantee, or insurance policy in favour of the State.

[22] The amount, and time, of financial security which the miner needs to provide can be set in different ways. For example in Angola it is a % of the total investment; in other countries a financial guarantee/insurance policy or bank deposit if required for the expected remediation costs (eg. DRC, Mozambique). In other jurisdictions, there is no specified amount, with the Government Minister/Agency given a general power to determine and require a bond for rehabilitation (eg. Malawi and Tanzania). South Africa requires the holder of a mining right to annually assess its environmental responsibilities and ensure there is financial provisions for this, requiring ministerial approval.

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46 Southalan p133.
47 Pereira de Miranda & Afonso Fialho (2012)
48 DRC (André-Dumont (2012)); Mozambique (Pereira de Miranda & Cabeçadas (2012)).
49 Malawi (Savjani & Singano (2012)); Tanzania (Maro & Ramadhani (2012)).
50 Tucker & Gore (2012)
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SESSION 7

DEVELOPMENT OF LARGE PROJECTS
7 Large projects

Private contracts

[1] Large mining operations involve many contracts and legal arrangements with various parties, some of which may have government oversight and some of which will be solely private arrangements between two businesses. Common contracts which may arise include the following.

a) Negotiation agreements, specifying rights and procedures between the parties during negotiations (typically about the provision or use of information).¹

b) Tenure agreements, where a party gets the rights to mine/revenues from mining, eg. through joint-venture arrangements, government agreements, or royalty agreements (with the party who owns the minerals or with the holder of the mineral tenement).²

c) Transfer agreements, which transfer control of mineral rights through sale of the rights or the party which holds the rights (eg. transferring the shares of a company). There may be government control over that (eg. ministerial consent required) and also financial implications in how the transfer occurs (eg. transaction tax).³

d) Financing agreements, about funds for a mine's construction and operation, as well as arrangements for security over assets in case the funds are not repaid.⁴

e) Development/operating agreements, used where the party who holds the mining rights arranges for some other party to build or operate the mine.⁵

f) Transport/sales agreements, addressing how the product is moved from the mine site, and when it changes ownership to the customer.⁶ Frequently, for longer life mines, there will be long-term contracts between the miner and customer governing arrangements about the volume and price of product to be bought.⁷

g) Joint ventures, which are contractual arrangements through which parties cooperate in mining. The form of a joint-venture changes across jurisdiction, in particular whether it creates a new legal entity, and how liabilities and rights are shared between the parties.⁸

Government approvals & infrastructure

[2] Large mining operations require considerable land and facilities in addition to the actual mine site and right to extract minerals. To support the operation of a mine will need power supply, workers' accommodation (potentially whole town-sites for workers, dependents, and associated populations), waste dumps, initial crushing/processing, transport, administration and minesite accommodation, storage. It will be rare that a new mine will be able to use existing land and facilities for all these ancillary activities and infrastructure.

¹ Southalan 2012, 86.
² Southalan 2012, 89.
³ Southalan 2012, 89.
⁴ Sutherland page 89.
⁵ Sutherland page 89.
⁶ Southalan 2012, 89.
⁷ eg. Dharmananda & Firios 2013.
⁸ Southalan 2012, 90]
The miner will need to obtain the rights to construct and operate these various facilities. Authority for these may be included as part of a mining right but often requires separate rights. Some jurisdictions include separate ancillary titles under the mining law (eg. a facility lease/licence which allow mining infrastructure but not the actual extraction of mineral on that particular land) but in many countries these rights have to be obtained outside the mining law.

Regardless of how ancillary rights are obtained (under mining law or other laws) these can sometimes be more difficult and costly than obtaining the mining right. This is particularly so where third parties are involved, eg. the proposed use or title will impact competitors' tenure, landowners, or communities. Two frequent areas of contention are the company's use/control of public infrastructure, and third party use of company infrastructure.

In addition to mineral titles and ancillary rights, a miner usually require various other government approvals in order to construct and operate a mine. The following table shows the extent of approvals and regulatory schemes which may need to be processed before exploration or mining can occur.

### Approvals required for mining/exploration operations

*(table adapted from Kelly 2007, 387-390)*

<table>
<thead>
<tr>
<th>Activities</th>
<th>Approvals/comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Land and conduct of mining operations</td>
<td>In addition to the basic mineral rights, there may be additional approvals required before any ground disturbance can occur for mining or infrastructure (eg, roads, wells, airstrip and accommodation facilities). These specific approvals are usually satisfied through approval from the government's mining agency after review of the miner's program of work. A range of other regulatory approvals may be required for clearing native vegetation, accessing water, accommodation facilities.</td>
</tr>
<tr>
<td>Potential impact on human heritage</td>
<td>If the jurisdiction has laws protecting cultural or heritage sites, approval may be required where proposed operations are going to impact on these sites.</td>
</tr>
<tr>
<td>Potential impact on the environment</td>
<td>Large projects usually require an EIA (see 3.1 Environmental regulation). Approval for minor or preliminary works may also be required, as may future changes in the scope of the project. Separate licensing may also be required for non-mining operations such as ore processing and dewatering. Surveys are usually conducted before any major ground disturbance takes place, in order to identify the location of any significant flora, fauna or ecological community. Where significant areas are identified that may be disturbed by proposed exploration or mining activities, a permit to take declared rare flora or specially protected fauna may be required. Where the nation has joined the United Nations Convention on Biological Diversity, 11 and that has been implemented in domestic law, where necessary, then approval processes may be required for impacts on biodiversity.</td>
</tr>
<tr>
<td>Potential impact on water resources</td>
<td>Approval required for constructing a water-bore and extracting water. Approval required before disturbing a watercourse.</td>
</tr>
<tr>
<td>Planning and development</td>
<td>Town planning laws may apply to some areas of resource development activity, particularly for accommodation facilities.</td>
</tr>
<tr>
<td>Building and health</td>
<td>Building licences may be required from the local government for accommodation facilities. Health permits may be required from the local government for waste-water treatment plant facilities.</td>
</tr>
</tbody>
</table>

---

9 eg. In Malawi a mining licence includes the right to a take all reasonable measures for mining in the area, including erecting installations, plant and buildings: Savjani & Singano (2012)

10 See Southalan 2012, [3.35]-[3.36].

11 CBD (1992)


| Miscellaneous | includes a range of approvals under a range of legislation including environmental licensing, rail safety plans, fuel, explosives and hydrocarbon storage and transport, general plant and equipment, potable water, liquor, swimming pool, poisons and radiation safety. |

**Local content**

[6] Many governments, in approving and regulating mining operations, want to increase the miner's use of goods and services from within the country, rather than these being imported. Government initiatives with these aims have various names including 'local content' or 'beneficiation', and may comprise: legal provisions about employing local workers, requiring the use of local suppliers/supplies, and incentives to develop related industries.\(^\text{12}\) These provisions have had limited success in increasing local content in many countries,\(^\text{13}\) with the same dynamic observed in African countries:

At the community level, the promised benefits and linkages of resource exploitation have often failed to materialize. As a recent study by the African Development Bank has shown, few of the inputs into capital-intensive mining activities in Africa over the last decade have been sourced locally. Rather, equipment, machinery and consumables are most often imported.\(^\text{14}\)

The following paragraphs explain issues which should be considered in negotiating or drafting laws or arrangements about local content.

[7] Different minerals require different compositions in workforce, which needs to be appreciated in structuring any local content provisions about employment. The following table indicates the different workforces involved in various mineral operations.

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\(^{12}\) Southalan (2012), 98.
\(^{13}\) Southalan (2012), 99.
**Labour profile of different minerals** (Lowry, Molloy & others 2006, 21)\(^{15}\)

![Graph showing labour profile of different minerals](image)

[8] Obviously, if the particular operation requires mainly technical or professional workforce, and that workforce is not available in the country, there will be no possibilities for immediate local employment. However obligations should then be structured toward training rather than immediate employment.

[9] Local content obligations should not be framed solely on the basis of commercial feasibility. Historically many provisions were expressed as only requiring local content when that was suitable to do business. Such obligations are pointless. If it becomes suitable to the business to use local content (eg. local workers, suppliers) then the business will do that in any event without any legal requirement to do so. What local content obligations should do is specifically identify when and how the mining operations will preference local content where that would not otherwise occur. There are a range of areas where this could be considered.

**Examples of local content obligations** (Southalan 2012, 101)\(^{16}\)

*Specified percentage of workforce*. Negotiate and specify an agreed percentage of local employment positions and, if they are unfilled, the company will put the money that would have been used for those positions into activities which will assist local employment (for example, training). This way, the positions have greater chance of being filled in the future.

*Specified ‘preference’ for local suppliers*. The company and government could negotiate and specify a percentage preference for local suppliers. For example, local content obligations directing that if local businesses can match the quality of a non-local supplier and are no dearer than X% of its quote, the local supplier will be used.

*Structures to assist local downstream processing*. The parties may identify a percentage of mineral that will be given to local firms for further processing, which occurred

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\(^{15}\) This graph is only relevant to show different minerals require different amounts and skills of workers. The actual numbers here are not relevant because the data is expected labour profiles for 2015 in Australia which is, of course, influenced by size and maturity of particular operations.

\(^{16}\) Additions to the text from Southalan 2012 are noted in the following footnote.
in an agreement in Namibia.\textsuperscript{17} In South Africa, any unpolished diamonds intended for export must first be offered for sale at the government-established Diamond Exchange and Export Centre\textsuperscript{18}

\textit{Infrastructure access with arbitration system for disputes}. In relation to public/third party access to infrastructure, the parties could pre-agree (or the government could legislate) a system for independent assessment and arbitration about the extent and terms of such access.

Drafting agreed and measurable targets should also include consideration of what should happen if key requirements are not met. It may be appropriate that some of this is specified in the agreement.

\[10\] Sometimes the 'encouragement' of local content is not subtle. Recent changes in Guinea are reported as resulting in the requirement for 'all mining companies ... to invest a minimum of $1 billion in order to obtain a mining concession'.\textsuperscript{19} In Zimbabwe, 2007 laws require that businesses in Zimbabwe exceeding more than $0.5 million in assets need to become 51% owned by historically disadvantaged Zimbabweans, and in 2011 this was implemented by directing that businesses under this percentage must divest shares to approved government entities.\textsuperscript{20} There is considerable debate as to whether these initiatives are achieving the object of benefitting large amounts of previously disadvantaged populations.\textsuperscript{21}

\[11\] A more nuanced local content framework is seen in recent initiatives in Namibia and South Africa, aimed at promoting the participation of people who had been disadvantaged by previous apartheid practices.\textsuperscript{22} For these people, the initiatives include:

a) government assistance for purchasing shares in businesses,
b) mandating company assistance and involvement in training, employment and management; and

c) requiring company reporting against various indicators.

Non compliance with these can see companies being prohibited from bidding for government contracts or acquiring mineral rights.\textsuperscript{23}

\textit{Government & statutory agreements}

\[12\] Many larger mining operations are regulated through an agreement between the minor and the government – either in substitution of, or in addition to, controls under the general mining law. In some countries, a contract or agreement is the main/only way in the government specifies the terms and conditions for any mining operations, eg. Angola,\textsuperscript{24} Philippines, Vietnam, Kazakhstan\textsuperscript{25}.

\[13\] Is more difficult to provide an overview of mining agreements, as compared to general mining laws, because each document is negotiated and agreed between the company and the government and therefore their content varies widely (and frequently is not publicly available.
in the same way as a general mining law). Some agreements address only one aspect of the operation while other agreements provide a comprehensive statement of the law covering the entire mine life from pre-exploration to closure and rehabilitation. An example of the former (agreement with limited scope) is the investment agreements which exist in various jurisdictions addressing the financial aspects of the operation, eg. in return for the company committing to invest $X billion, the government undertakes that total tax take will not exceed Y%. An example of the latter (agreement with comprehensive coverage) are some of the earlier concession agreements which were negotiated in the absence of broader laws regulating the proposed mining and infrastructure.

[14] The role of agreements, as a way of regulating mining, is contested. Many commentators consider agreements as an anachronistic and an inappropriate way to regulate mining.26 Instead of agreements, this analysis considers regulation should occur through general and predetermined law applying throughout the jurisdiction. Despite this, agreements continued to be used in various jurisdictions. Examples of current mining operations regulated under an agreement include Selebi Phikwe (nickel) in Botswana,27 Sierra Rutile (titanium dioxide) in Sierra Leone,28 Grasberg (mining copper and gold) in Indonesia;29 Ok Tedi (copper) in Papua New Guinea;30 Olympic Dam (uranium, copper and gold) in Australia;31 and Mt Tom Price (iron ore) in Australia.32 These, and other examples, suggest an ongoing validity for agreements, but that should only occur while restricting the scope of what can be agreed.

a) Smaller operations, where all the relevant titles and arrangements are available under the existing mining law, should occur through the normal processes under that law.

b) For larger projects, where considerable additional infrastructure and requirements will be needed in addition to the basic mine site and its operation, there is a role for agreements. It makes little sense for a country's parliament to debate and establish these laws in the abstract when it is not even known if such a project might ever eventuate.33 It is a more sensible use of government resources to only consider instruction at the regulation when the potential project is known. This does not mean that everything must be specified in the agreement ahead of time: the "development proposals" framework can be used (see 2.2 Government control/direction of exploration and mining activity).

c) Various matters should be protected as non-negotiable, either in the mining law or as minimum standards which must prevail throughout the jurisdiction (eg. through constitutional or statutory protections). Examples include specifying basics about workplace safety, environmental protection and human rights. This would address the problem, that in many jurisdictions, the law allows the government to enter an agreement but does not specify when or what the agreement must (or must not) cover.

d) The government's negotiation of the agreement should have some degree of transparency and assurance that interests other than the miner and the current executive are addressed in the negotiation and structuring of the agreement. This could be through using a process similar to regulatory impact assessment (see 5.7 Law reform and regulatory impact assessment).

27 Selebi-Pikwe Agreement (BWA).
28 Sierra Rutile Agreement (SLE).
29 Southalan (2012), 173.
30 Ok Tedi Agreement (PNG).
31 Olympic Dam Agreement (SA).
32 Hamersley Agreement (WA).
33 Southalan (2013), pTBC.
An agreement about exploration/mining between government and the company is invariably made with the executive government, eg. the relevant minister or the head of state. Sometimes, however, the agreement is then approved by Parliament to give it additional force beyond that of a private contract between a company and government. Parliamentary approval ensures the agreement's terms are valid even they conflict with any current law (unless that law is a constitutional requirement which the parliament cannot amend). It also serves as an additional form of assurance that the government of the day will observe the terms where they can only be amended by subsequent Parliamentary law. There is, however, a dilemma in endeavouring to gain the benefit of Parliamentary approval of the agreement, without allowing the usual parliamentary process to occur. Parliament should involve autonomous debate, assessment, and then decision of the terms to which the parliamentarians agree – which is the process by which laws are passed by Parliament. This is not used for mining agreements and, as noted above, structures from regulatory impact assessment may assist.

Wherever agreements are used in regulating mining, two related issues will arise: stabilisation and renegotiation. Essentially, stabilisation is the extent to which terms a fixed regardless of future changes (a common example is tax stabilisation in which the government agrees that the tax take will not exceed X% for the life of the project) and renegotiation which addresses the circumstances and arrangements under which all or some terms of the agreement may be renegotiated. Common stabilisation arrangements feature the following areas.

**Common stabilisation arrangements** (Southalan 2012, 182)

- (a) prohibiting changes in the law or financial/tax regime,
- (b) giving assurances not to interfere; or
- (c) guaranteeing treatment as a local company (that is, non-discrimination).

Stability arrangements usually: [1] cover a 10-30 year period; [2] can be transferred (with consent from relevant government authorities); and [3] require a minimum investment or commitment.

Renegotiation is contested, with various commentators either supporting it, or opposing it. Renegotiation is a way to agree on how the parties should deal with the potential changes in the future. Often, many potential changes can be foreseen and their effects predicted, and these should be addressed during the initial negotiations so that broad renegotiation is not required if these changes arise. This can be done by negotiating agreement terms which will change if there are changes because of ‘price fluctuations, larger reserves than originally believed, ... and ... macroeconomic fluctuations [affecting] ... profitability and hence royalties and tax revenues’. Not all changes can be foreseen and so some agreements include a renegotiation framework which uses a regular review renegotiation process, whereas others use a renegotiation trigger.

**Review of Mining Agreements in Africa** (Southalan 2012, 184)

There are various countries which have Agreements that were entered into during conflict, by a transitional government, or just after civil war had ended. Various countries which have moved to a more representative government have reviewed earlier Agreements, addressing either specific Agreements or all existing Agreements. This process has occurred in Tanzania; Sierra Leone; Liberia; and the Democratic Republic of

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34 Southalan (2013), pTBC.
36 eg. Rankin-Reid (1984), 1347; see also Chêne (2007), 7 and Carter (2007) (both describing government misuse and manipulation of 'renegotiations').
38 eg. O'Faircheallaigh (2003), 17-28; Bougainville Agreement (PNG), cl26A.
Congo (DRC). In the DRC, a 2007 review identified various problems with earlier Agreements, including unjustifiably favourable commercial terms for companies, no valuation of assets before contract, unexplained variation of contractual terms, and lack of implementation and review.

[18] One example of reviewing previous mining agreements occurred in the DRC but there have since been problems in implanting anything from the review. The review 'called for under the peace agreement, [involved] the transitional legislature creat[ing] a special commission to review contracts signed during the conflict periods of 1996-97 and 1998'.

The Commission's terms of reference included '[1] Compiling an inventory of all contracts signed during the two wars; [2] Analyzing the terms and financial impact of each agreement; [3] Recommending validation, amendment or cancellation of each contract as appropriate; [and 4] Recommending compensation to the government or its nationals for any losses suffered as a result of any of the stated contracts'.

The Commission, comprising parliamentarians across various interests, reporting in October 2005 'Yet, by the time the legislative elections were held in July 2006, the Commission’s report had not been debated by the legislature, possibly because various factions or individuals within the transitional assembly blocked discussion to prevent potential damage to their electoral chances'.

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40 Bryan & Hofmann (2008), 63.
41 Bryan & Hofmann (2008), 63.
42 Bryan & Hofmann (2008), 64.
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The Centre for Mining, Energy and Natural Resources Law

Mining Regulation and Policy Course

SESSIONS 8 & 9

CASE STUDY AND DISCUSSION PROBLEM ON NEGOTIATION A MINING CONCESSION

Country specific material

Two relevant state agreements/mining concessions should be inserted here in Session 8 (selection will depend on the host country).
Small Group Problem

Two relevant state agreements/mining concessions have been provided (Contract A and Contract B).

Extreme Mining Ltd and Overseas Miner Ltd are international mining companies each of which is contemplating a choice between mining exploration and production areas [specify mineral] by the countries of Suedonia and Calornia.

Both Extreme and Overseas are prepared to contemplate substantial exploration investments, in one country or the other, if the financial terms are sufficiently attractive and the legal arrangements are satisfactory.

Each country has adopted a standard form mining agreement. Environmental and health and safety rules are however contained in regulations made under the authority of the country’s general Law. Suedonia has adopted Contract A. Calornia has adopted Contract B. Each of these is a model form whose terms are in principle open to negotiation. The financial benefits and burdens under each regime will be determined partly by its general tax law and partly by negotiation as indicated in the agreements.

Extreme and Overseas have been invited by each of the two governments to enter into negotiations with a view to the conclusion of a concession or agreement as appropriate. In this session, groups will represent respectively

- Extreme
- Overseas
- the Suedonia Mines Ministry
- the Calornia Mines Ministry.

Each company group will negotiate with each government group with a view to securing any modifications in the model agreement that it deems essential to its legal and commercial security. These changes may be by way of deletion, amendment or addition of clauses or sections.
The task of each company group is to secure as many of these modifications as it can, and in the light of its success in the two negotiations, to make a recommendation to its Board as to the better investment option. Assume that parallel negotiations on financial terms have produced equally attractive deals with both governments.

The task of the government groups is to concede the minimum of changes while still keeping the regime attractive enough to secure the investment of both companies.

The key issues for the companies are

1. the extent of their freedom to decide what discoveries to develop and produce, when, how and at what rate, and

2. their position under the agreement if they find themselves in disagreement with the state authorities on any of these points.

Analysis and negotiation should concentrate only on these points (so ignore, e.g. issues relating to the exploration clauses of the contracts, or those on disposition of produced petroleum).

Following the negotiations, each company group will decide in which of the countries it will invest, and why; each government group will decide which company it is likely to prefer as an investor, and why.

The session will be divided into four phases:

A. Identification, by each group separately, of negotiating concerns and positions by analysis of the agreements.

B. Negotiation 1: Extreme/Calornia; Ocker/Suedonia

C. Negotiation 2: Extreme/Suedonia, Ocker/Calornia

D. Plenary session: report of results (contract modifications accepted; choice of contract partner).
The Centre for Mining, Energy and Natural Resources Law

Mining Regulation and Policy Course

SESSIONS 10 & 11

ADMINISTRATION OF MINING LAW

Country specific material

Material needs to be added to show the registration system, conditions of mining tenements and environmental and safety regulation
10 & 11 Administration of Mining Law

**Governance**

[1] For mining regulation to be effective, the government's administration of the mining law is just as critical as the law's content. Obviously this involves matters wider than the mining law regime; in particular governmental resources (both financial and personnel)\(^1\) and the degree to which the public service can operate free from improper external influence (be that government officials, politicians, business, international organisations, or non-state parties).

[2] These broader issues, of socio-economic development and governance, are significant determinants of the benefits and impacts that any mining operation will have on the local and national populations where it occurs.\(^2\) Even a 'best practice' mining law, if operating in government and societal context without transparency and accountability, will provide little benefit to the population. These are broader issues of public policy and planning, and there is considerable material elsewhere on mining's implications for a nation's socio-economic development,\(^3\) and how mining could better contribute to development.\(^4\) Part of any recommended framework is, however, the structure and procedures of the mining law. These structures and procedures are the focus of this chapter.

[3] The finance for government agencies to administer mining law usually comes from the nation's consolidated revenue fund (ie. central government coffers to which all taxes are paid). However it is also possible for mining revenues to be specifically earmarked for use in aspects of government regulation of mining, for example in environmental protection, or a percentage to local authorities. The level of government which collects the revenues will greatly determine the population and subjects to which the revenues can be applied: a national government has responsibilities nationally whereas a local government's spending will necessarily be limited to the local population.

[4] Most mining laws contain discretionary powers (eg. when mineral rights will be granted or removed) which may be specified to be decisions of the Minister or another nominated official such as the head of the government agency which administers the mining law. Ideally any criteria on which these decisions are to be exercised should be specified in the law, and it be possible to objectively determine whether any such criteria are satisfied. However many jurisdictions also include the potential for ministerial override when that is in the 'national' or 'public' interest. A 2010 study of by Centre for Sustainability in Mining and Industry (University of the Witwatersrand) examined best practice principles governing the allocation

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1 Bryan & Hofmann (2008), 20.
2 eg. Governance can include a massive diversity of issues (and therefore different responses) 'At one extreme lie the failed states in which national government is effectively absent and civil conflict has destroyed local institutions for managing common pool resources (e.g. Yemen, Somalia). Once peace and physical security can be secured, these cases require basic state-building measures accompanied by institution-building at the local level. At the other extreme lie well-governed spaces where sophisticated governance institutions are stretched by the challenges posed by the resource nexus, most notably in the tension between the supply of energy or minerals, on one hand, and food or clean water, on the other. … Very different social conditions and norms in different parts of the world, such as in terms of norms of water governance, are often simply irreconcilable, making one-size solutions untenable.': Andrews-Speed & others (2012), 79
4 eg. ICMM (2011); Natural Resource Charter (2010); UNECA (2011); MMSD (2002).
of mineral rights but these observations also have broader relevance for mining law administration.

**Principles governing allocation of rights** (CSMI 2010, 4-10)

*Equality before the law* - Non-discrimination – the regulatory framework applies equally to all applicants without fear or favour, whether local or foreign.

*Good governance* - ...[T]he concept of the rule of law is fundamental for the effective and efficient governance of the minerals and mining sector. This implies the concept of “the rule of law” should apply to both the host Government and the investor.

*Social and environmental protection* - It is now common practice that host countries require the compilation of Environmental and Social Impact Assessments. Having regard to the environmental and social importance of these instruments, it would be prudent to require their submission and adjudication prior to the award of the mineral right.

*Equitable distribution of benefits* - fiscal terms that serve both the interests of the investor and that of the hosting country equitably; employment equity and charters that ensure benefits filter to society in general.

[5] One last 'governance' observation is to encourage 'good enough governance' concept of the analysis proposed by US Development Academic, Professor Grindle. This concept emphasises the 'need to develop a reasonable understanding of what good governance can deliver—and what it cannot..[and to advocate] more realistic expectations about how much good governance can be expected in poor countries struggling with a plethora of demands on their capacities to pursue change'.

Any analysis or advocacy which goes looking for deficiencies (eg. ‘do locals have access to all the land they need?’ or ‘is the company paying the lowest tax’?) usually reinforces pre-conceived ideals and results in long list of deficiencies with little guidance for priorities. There is little point in focussing attention on the arrangements for (eg.) a mineral rights register if the public lack the basic essentials for survival. Priorities need to be consciously assessed and decided.

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5 Grindle (2010), 1.
Illustrative list of governance priorities (Grindle 2007)

Is there a hierarchy of governance priorities?
(for illustrative purposes only)

<table>
<thead>
<tr>
<th>Governance characteristics</th>
<th>Collapsed states</th>
<th>Personal role</th>
<th>Minimally institutionalised states</th>
<th>Institutionally non-competitive states</th>
<th>Institutionally competitive states</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal safety ensured</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
</tr>
<tr>
<td>Basic conflict resolution systems in place and functioning</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td></td>
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<tr>
<td>Widespread agreement on basic rules of the game for political succession</td>
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<tr>
<td>Government able to carry out basic administrative tasks</td>
<td>P</td>
<td>P</td>
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<td></td>
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<tr>
<td>Government able to ensure basic services to most of the population</td>
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<tr>
<td>Government able to ensure equality/fairness in justice and access to services</td>
<td>P</td>
<td>P</td>
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<tr>
<td>Open government decision-making/implementation processes</td>
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<tr>
<td>Government responsive to input from organised groups, citizen participation</td>
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<tr>
<td>Government fully accountable for its decisions and their consequences</td>
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</tbody>
</table>

Note: P = priority.

Administration and taxation

[6] Mineral laws invariably use the standard format of most regulatory laws, specifying that certain activities/failures to act are offences (see 5.5 Enforcement). These "command-control" forms of regulation are appropriate for many areas, but other forms of encouraging compliance may be used for some matters. The following outlines other forms of regulatory control.

**Regulatory forms** (Southalan 2012, 23)7

(a) **performance-based**, specifying required outcomes but leaving freedom in the means used to achieve those outcomes;

(b) **process-based**, requiring management plans and policies to be adopted;

(c) **co-regulation**, where the government and industry both have involvement, often through legislative endorsement of an industry code of practice;

(d) **information/education**, raising public and consumer awareness of issues to encourage and enable them to create incentives that business will respond to;

(e) **guidelines**, explanation/criteria issued by governments providing processes and interpretation to help understanding of government objectives; and

(f) **economic instruments**, for example, economic subsidies, tradable permits, tax incentives and so on.

[7] While there are advantages in some other forms of regulation, which use economic and market incentives, these only work where the relevant market can operate so that the desired voluntary sanctions and rewards will occur. The encouragement of self-regulation in various areas, with the state withdrawing to a less intervening role and simply regulating the market

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7 The description in Southalan (2012) is drawn from OECD (2002).
within which parties operate, can pose real hazards if not accompanied by appropriate protection against market abuses.8

[8] Government regulation of a mining operation can be assisted by requiring the company to perform certain reviews and reporting, and for these to be provided to the government.9 Mining permits can include a requirement for an independent evaluation of the mine's environmental performance including the activities of company and the relevant government agency, with the report being not only provided to government but also made publicly available.10

[9] Government revenue from a mining operation comes through three basic forms.

**General forms of government taxation of mining** (Southalan 2012, 159)

- **Profit-related taxes**: typically income tax and super-profits tax, with income tax commonly around 30-40 per cent of the miner's income. Companies prefer profit-based taxes over other forms of revenue because they impose little burden when profits are low; while governments are often wary of revenue based on 'profit' as determined by the company because the true profitability of a particular project is often contested.

- **Output-related revenue**: which is essentially royalties. Governments prefers these because they deliver more predictable revenue. Royalties will be based on output (unit or price), or value of production, or some combination of these, and will often be fixed for each particular mineral. A comprehensive study on mining royalties was commissioned by the World Bank and released in 2006.11

- **Input-related revenues**: including sales tax; import duties; land and property tax; land rent; and payroll tax. Stamp duty or transactions tax can involve significant amounts (for example, one government recently indicated it would be owed approximately AU$1 billion in stamp duty alone if a proposed merger of two mining operations proceeded).

[10] A recent study described the following as 'internationally competitive': income tax of 25-35% of profit, royalty rates of 1-3% of gross royalty, and accelerated capital allowances.12 The importance of a tax system being 'internationally competitive' is open for debate:13 having a very low tax take may be 'very competitive' but not beneficial for the country in the long term. The administration, and transparency, of revenue management is equally as important as tax rates.14 A 2012 study provided the following advice in relation to a government's structuring and administration of its mineral tax regime.

**Recommendations for mineral tax/royalty regulations** (Guj 2012, 15)

- Are clearly written and understood by both government and industry, transparent, equitable, predictable and stable;
- Achieve defined government revenue collection and stability objectives without excessively compromising economic efficiency, equity and ease of administration;
- Are enforceable and supported by adequately skilled and resourced government administrative institutions and systems, with good inter-ministerial and inter-departmental co-ordination and information sharing;

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8 Southalan (2012), 24.
9 Southalan 2012, 227 footnote 12.
10 eg. EES (2011) (McArthur River mine in Australia, where 'As part of the approval for ... mining operations... [the] Conditions ... included the provision of an Independent Monitor ... to monitor the environmental performance of the Mine by reviewing: environmental assessments and monitoring activities undertaken by the operator ...[and undertaken by the Government] Department; and report to the Operator and the Department any urgent issues requiring investigation'; see p1 of EES 2011).
12 Parsons (2010), 10.
13 See discussion in Southalan (2012), 14-15; also Bridge (2004); Krugman (1994); Bergsteiner & Avery (2012).
14 eg. OSI (2009); Dietsche & others (2009).
Anticipate and minimise or pre-empt the need for future amendments. Where these are necessary, they should be based on the principle of “no surprises” and continuous and meaningful industry consultation, avoiding perceptions of sovereign risk;

For unit based and ad valorem royalties, make use of actual volumes and realised values as shown in sales invoices, rather than contained metal and deemed prices;

If incorporating more sophisticated, complex and more economically efficient profit or rent based taxation regimes, ensure that they are based on unequivocal methodologies and definitions for the determination of the appropriate taxation base, thus reducing compliance costs, ambiguity and potential for litigation;

Differentiate royalty/taxation rates for different minerals according to their general “ability to pay” and provide, as an incentive, decreasing royalty/taxation rates to recognise the value added to various mineral products sold by investment in downstream processing. Lower royalty/taxation rates negotiated at the individual project level should not be viewed as an effective means of providing investment incentives and subsidies;

Have penalties for non-compliance that are proportionate and progressive, increasing from penalty interest to fines to forfeiture of mining titles; and Involve appropriate but not excessive ministerial powers of discretion and determination that, if excessive, may become the source of inequitable decisions and open to abuse.

Registers and reporting

[11] Most mining laws establish a register to record the ownership, and dealings in, mineral rights. Private investment in mining is most unlikely without a formal and assured way to prove ownership, through a register or other official record. Without these, it is unlikely that companies and financiers will consider there is sufficient certainty and protection of interest to justify the investment. There are two broad types of register of mining rights, outlined below.

Types of mining registers (Southalan 2012, 207)

Registration creates the right. This is a system of ‘title by registration’ where a party gains legal and effective title through the act of registration. For example, the registration of a transfer of a property gives the new holder the legal title to that property, effectively extinguishing any earlier-arising rights in that property. This is known as ‘indefeasibility’ (that is, the title cannot be challenged) and the registered right is conclusive proof that the party named in the title holds the interest specified. It is a feature of the Torrens system of land registration, but it is also used in various jurisdictions to record mineral rights (including widely in francophone Africa). Some jurisdictions have a ‘partial’ Torrens system for mining, where registration gives protection but some interests can still exist outside of the register.

Registration provides ‘good faith protection’. Under this system, each right must be created and exist independently of any registration, but the act of registration gives additional protection to the right. The recording system essentially catalogues the evidence of title, establishing priority between those registered interests, but registration does not prove the validity of the registered interest.

[12] The legal requirement for a register of mineral rights and dealings exists in many African countries although in some it is reported that the register is written in the law only and does yet physically exist or operate, eg. Zambia and Ghana.\footnote{Ghana (Akafia & Kuyenyehia Sr (2012)); Zambia (Mkokweza (2012)).}

[13] Most jurisdictions require mining companies to provide regular reports on the activities they conduct on the mineral rights granted by the government, and also to report any mineral discoveries made, eg. Angola, DRC, Namibia, South Africa, Tanzania, Uganda and Zambia.
These reporting requirements can be as part of the general mining law, or imposed as a condition on the particular mineral title.

[14] Company reporting is increasingly a factor of home government regulation: countries where companies are incorporated are specifying matters which must be reported regardless of where they occur. These requirements can be seen in relation to conflict minerals and certain areas; and also in human rights standards about the companies' procedures and activities. However the furthest development of reporting is in stock exchange rules about reporting of mineral deposits, explained below.

[15] Many countries control what companies can say or report about their mineral deposits, particularly where other parties will make investment decisions based on any such reporting. Stock markets regulate company statements through listing rules: if a company wants to 'list' on that market and have its shares available to be traded in that market, then it must comply with the listing rules. Various stock market rules have requirements about how mineral deposits are to be reported, which seeks to give standard terms and assessment. These largely use two main concepts: resources (deposits with 'reasonable and realistic prospects for eventual economic extraction') and reserves (that amount of the resource which is economically mineable at the present time). South Africa has developed its own code for how resources and reserves are to be measured and reported, the South African Code for Reporting of Mineral Resources and Mineral Reserves, which is also applied in Namibia.

In other African countries (eg. Uganda and Ghana) use is often made of the reporting codes of Canada and Australia as the countries from where investing mining companies originate. The reporting standards in 'Canada (43-101) and Australia (JORC) ... are now standards accepted by exploration companies from many other jurisdictions. The purpose of these instruments is to provide a minimum standard for reporting exploration results and to protect investors from undue risk.'

**Mine safety**

[16] Workplace safety is a matter often given additional regulation in mining (ie. different laws and requirements than other workplaces) because of the hazards in mining. Mining safety is covered in standards from the International Labour Organisation (covering matters like safety and health in mines, minimum age for underground work, and air pollution, noise and vibration in workplace); domestic regulation (some of which apply to any workplace in general and some of which are mining specific); industry guidelines and the policies and practices of each miner. The miner's practices may be given additional legal significance by making them a condition of the mineral title, such that future non-compliance with these has implications for the ongoing mineral rights.

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17 eg. UN (2011), [21].
18 Southalan (2012), 157-158.
19 See description and references in Southalan, 158.
21 Koep & van den Berg (2012)
22 Uganda (Kusaasira & Kaliisa (2012)); Ghana (Akafia & Kuanyehia Sr (2012)).
23 Thompson (2010), 3.
27 eg. ICMM (2009).
The laws and standards on workplace safety commonly target four levels, imposing different obligations on each. This is summarised in the following table.

**Common mining safety obligations** (Southalan 2012, 92)

<table>
<thead>
<tr>
<th>Obligations</th>
</tr>
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<tbody>
<tr>
<td>Governments – must provide a regulatory system specifying (and enforcing) a minimum level of safety in mining operations;</td>
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<tr>
<td>Mine owners – must provide finances and equipment sufficient for the mine to operate in a safe manner;</td>
</tr>
<tr>
<td>Mine managers – must ensure there are appropriate safety procedures for the mine’s operation, and that these and all safety and health laws are followed; and</td>
</tr>
<tr>
<td>Workers – must take reasonable care of their own safety and that of anyone who may be affected by their conduct.</td>
</tr>
</tbody>
</table>

The jurisdiction's law may also impose obligations on the miner to take care of trespassers on the mine site. This can be particularly onerous in large or deep operations where people may illegally hide in the mine in an effort to steal the product, which has occurred in some South African mines.

**Enforcement**

The power to prosecute offences under the mining law will lie with the agency with responsibility for mining law or the more general government prosecuting procedures. Where a matter is not specified as an offence, the government's mining agency will usually have the powers to investigate and require compliance.

In some countries, competitors and other parties are also given a role in policing mineral conditions, through a form of self-regulation. In this, where a party has not complied with the conditions on their mineral title, other parties are allowed to challenge that the necessary minimum has not occurred (and if that is correct, the challenging party has preferential options of acquiring mineral rights in the area). This is not applied in relation to significant issues (like workplace safety) but for more administrative matters such as annual reporting and work requirements.

There are many different forums for the resolution of disputes about mining and mineral rights. There are five main mechanisms which can be used, and a jurisdiction may specify some or all of these for mining disputes.

a. **Administrative processes.** Many mining laws make provision for minor disputes to be decided by a government official.

b. **Mandated negotiation/arbitration.** Many jurisdictions have a general law establishing rules and procedures for arbitration, which can be left as a voluntary option (with the parties choosing, through contract, if disputes must be referred to arbitration) or can be mandatory. Mining laws frequently also have requirements for parties to first negotiate to endeavour to read an agreement, and only after a certain time has elapsed and no agreement reached, can the dispute be heard by an arbitrator or court/tribunal.

c. **General courts.** In some jurisdictions, mining disputes and government prosecutions are heard and decided by the normal courts in the same way they deal with any other disputes between parties or government law enforcement.

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29 Reichardt (2009), 20–22.
d. **Specialist court/tribunal.** The law may establish a separate court/tribunal which has jurisdiction to hear and decide disputes about mining. This may be for mining alone, or may have a range of jurisdiction (e.g. land, environmental and resources matters). There are various arguments about the benefit of a specialist forum to hear matters, as opposed to the general courts, however there is often little evidence to demonstrate such benefits.30

e. **International arbitration.** A frequent regime established with larger international investment, is that the government agrees that disputes between it and the investor will be heard by international arbitration. National laws often have provisions about the enforceability of international arbitration decisions, which may require the award to first be recognised by a domestic court (e.g. Angola31) or be freely enforceable (e.g. Ghana32).

[22] The government invariably has the legal power to cancel mineral rights, although generally this will be only in specified circumstances and through a specified procedure. This will generally involve notice and the opportunity to rectify the default for which the right may be cancelled, eg. in Tanzania and Uganda.33

[23] Additionally, in various jurisdictions, there are constitutional protections of property rights, with mineral rights either specifically or impliedly included within these protections. Accordingly, where there is a requirement that property not be taken without adequate compensation (either though domestic or international law) this will provide a protection and remedy against government action which interferes with a right without providing compensation.

**Law reform and regulatory impact assessment**

[24] Law reform in mining is often a highly contested area because of the many different interests which can be impacted by the proposed changes. The following table provides some examples of the debate in relation to mining law reforms in various countries.

<table>
<thead>
<tr>
<th><strong>Law reforms and mining</strong> (Southalan 2012, 215)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>South Africa – international law impacts</strong></td>
</tr>
<tr>
<td>After apartheid ended, the South African Government entered investment arrangements with international companies and other governments. The country’s mining laws were changed, with minerals now being state-owned rather than belonging to private land-owners, and the new law specified levels of involvement of historically disadvantaged South Africans. Existing mineral rights granted under the old regime could be transferred to rights under the new regime. [This was challenged by international investors] ...</td>
</tr>
<tr>
<td><strong>United States of America – proposed changes to mining law</strong></td>
</tr>
<tr>
<td>Proposed changes to an 1872 mining law, including that mining on public land is no longer royalty-free. Opponents assert: ‘... the bill could threaten national security by limiting the domestic availability of minerals critical to the US military like magnesium, which is used to make airplanes and missiles’. A public interest NGO considered that ‘[M]ining operations in the United States would [not] be dramatically undercut by the implementation of a royalty for minerals extracted from public lands. ...’</td>
</tr>
<tr>
<td><strong>Australia – court decision recognising indigenous rights</strong></td>
</tr>
<tr>
<td>A court decision in 1992 ruled that some indigenous customs and connection to land are protected under Australia’s legal system. The Managing Director of large mining company said ‘... what has been put at risk now is the whole legal framework of property rights</td>
</tr>
</tbody>
</table>

30 eg. Wright & Diveley (2013) (dealing with specialist tribunals -v- general courts, but not in relation to mining in particular).
32 Akafia & Kuenyehia Sr (2012).
33 Tanzania (Maro & Ramadhani (2012)), Uganda (Kusaasira & Kaliisa (2012)).
throughout the whole community ... The law of property is now in a state of disarray’. A legal
analysis of the case stated: ‘...To suggest that the High Court was enunciating a principle of
land ownership may very well suit the aspirations of some members of the community.
However this suggestion is wrong’.

[25] South Africa has moved further than most jurisdictions in regulating in an endeavour to
address social and historical discrimination and disadvantage.34 There is considerable
reservations on these initiatives,35 but while criticism is easily levelled, there is far less
suggestion or identification of what feasible alternatives are available which would address
the extent of historical discrimination and disadvantage.

[26] One process which can assist in analysing and planning law reform is regulatory impact
assessment (RIA). RIA is used in many jurisdictions as a process for identifying and
assessing the expected effects of regulatory proposals36 but its framework provides a useful
checklist for contemplating law reform or analysis in general. This is particularly useful in
this area because mining regulation and agreements involve reconciling conflicting interests,
and therefore there is rarely a ‘perfect’ solution.37 Most government regulation in the mining
area 'involves trade-offs between different possible uses of resources, and RIA can provide
the data to enable the best informed government decisions in the circumstances'.38

[27] There are ten standard RIA questions, which are directed to parliament/government in
determining whether and what type of regulation should be used when a particular problem
has arisen. These questions have useful guidance for analysing a mining law and considering
issues for law reform.

RIA questions - checklist for mining law analysis and reform (from OECD 1995, 9-10)

Is the problem correctly defined?
The problem to be solved should be precisely stated, giving clear evidence of its nature and
magnitude, and explaining why it has arisen (identifying the incentives of affected entities).

Is government action justified?
Government intervention should be based on clear evidence that government action is
justified, given the nature of the problem, the likely benefits and costs of action (based on a
realistic assessment of government effectiveness), and alternative mechanisms for
addressing the problem.

Is regulation the best form of government action?
Regulators should carry out, early in the regulatory process, an informed comparison of a
variety of regulatory and non-regulatory policy instruments, considering relevant issues such
as costs, benefits, distributional effects, and administrative requirements.

Is there a legal basis for regulation?
Regulatory processes should be structured so that all regulatory decisions rigorously respect
the "rule of law"; that is, responsibility should be explicit for ensuring that all regulations are
authorised by higher-level regulations and consistent with treaty obligations, and comply with
relevant legal principles such as certainty, proportionality, and applicable procedural
requirements.

What is the appropriate level (or levels) of government for this action?

34 Described in Bryan & Hofmann (2008), 88-90.
35 eg. 'Although South Africa contains some of the richest mineral deposits in the world, mining’s contribution to GDP
has fallen from a fifth in 1970 to less than 5%. During the recent minerals boom, production actually shrank by 1% a
year, whereas it surged by an annual average of 5% in the rest of the world. Output has now dropped to its lowest
level for 50 years and the industry is much smaller than it was in 1994, when the ANC first came to power and mining
still represented 9% of GDP. ’: Economist (2012); see also see Economist (2010); Coleman & Williams (2008); Vis-
Dunbar (2009).
Regulators should choose the most appropriate level of government to take action, or, if multiple levels are involved, should design effective systems of coordination between levels of government.

*Do the benefits of regulation justify the costs?*
Regulators should estimate the total expected costs and benefits of each regulatory proposal and of feasible alternatives, and should make the estimates available in accessible format to decision-makers. The costs of government action should be justified by its benefits before action is taken.

*Is the distribution of effects across society transparent?*
To the extent that distributive and equity values are affected by government intervention, regulators should make transparent the distribution of regulatory costs and benefits across social groups.

*Is the regulation clear, consistent, comprehensible, and accessible to users?*
Regulators should assess whether rules will be understood by likely users, and to that end should take steps to ensure that the text and structure of rules are as clear as possible.

*Have all interested parties had the opportunity to present their views?*
Regulations should be developed in an open and transparent fashion, with appropriate procedures for effective and timely input from interested parties such as affected businesses and trade unions, other interest groups, or other levels of government.

*How will compliance be achieved?*
Regulators should assess the incentives and institutions through which the regulation will take effect, and should design responsive implementation strategies that make the best use of them.
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SESSION 12

SMALL GROUP SESSION
PROBLEMS IN ADMINISTRATION
Amok Mining Corporation was granted an [exploration permit]. In the first two years after grant of its permit it meets its minimum expenditure requirements.

In those years the company conducted a geomagnetic survey, which was followed up by a 50 hole 3000 metre RC exploration drilling programme. This has tested a strike 5 km long. Preliminary test work on the chip samples indicated the presence of numerous rich horizons of haematite and magnetite of a thickness of between 10 and 15 metres, with the magnetite testing at 30% iron uniformly through the horizons. An independent conceptual mining and economic study conducted by an engineering firm suggested the possibility of low-cost start-up, trucking an estimated 10 million tonnes of the shallow haematite ore, grading 62%, with an initial capital cost of $25 million and an operating cost, pre-royalties of US$60 per tonne. Initially the ore would be trucked a distance of 20 kilometres to a nearby rail line. The study gave a net present value of the project of US$160 million.

You will be divided into groups who will consider this problem from the point of view of the Mines Department and Amok Corporation. Consider the following issues:

(1) Amok is running short of money and wants to apply to the Mines Department for relief from its expenditure requirements for the next 2 years.

(2) At the same time to improve its financial situation it would like to start an initial open cut mining operation at the rate of 50,000 tonnes a month on a contract basis using a local trucking contractor who has some spare capacity due to a cut in production at another mine.

(3) Amok would need to use an existing dirt road to truck the ore which would pass over several farms and close to a number of villages.

(4) Amok would need to use water from a nearby stream for its mining operations. This stream provides a source of drinking water for the village nearby.