Executive Summary

Access to land, under clear and efficient processes that take into account environmental, heritage, cultural values and land ownership issues, is fundamentally important to the successful management of competing interests of mining, energy, agriculture, environment, community and other significant land users.

On 10 June 2011, State, Territory and Australian Government Ministers responsible for resources and energy portfolios endorsed the development of the Standing Council on Energy and Resources (SCER) Multiple Land Use Framework (MLUF).

The MLUF is designed to be used by decision makers, primarily regulators, to achieve multiple and sequential land use outcomes that:

- Utilise land for different purposes simultaneously and sustainably within an area, with a view to maximising the benefits for all Australians, and to retain options for current and future uses to maximise net benefits to present and future generations.
- Utilise land sequentially, enabling land to be used later for another purpose once the current land use has ended or been terminated, noting sequential land use may be a reinstatement of the former land use or development of an alternative land use.

The MLUF features:

- Four desired outcomes;
- Eight principles to guide land access and land use decisions; and
- Nine components to consider in planning, preparing and assessing land access and land use decisions.

The MLUF is underpinned by a comprehensive research study that examined issues at play in multiple and sequential land use and the possible ways of addressing these issues based on leading practice approaches. The research study included stakeholder consultation, situation analysis and international leading practice.

A range of key stakeholders across jurisdictions and peak bodies were consulted to better understand current and emerging land access and land use issues confronted by all legitimate land uses in Australia arising from the implementation of current policies and planning systems.

Stakeholders strongly supported the development of the MLUF, recognising the significant potential to improve the efficacy and workability of interactions between regulated land users, land use regulators,
communities and landholders, which can demonstrate a shared commitment to maximising the social, economic, environmental, and heritage value of land environments.

Focus was also given to the assessment of leading practice to address these issues, through careful examination of international and Australian case studies. The elicited leading practice and guidance from stakeholder consultations then contributed to the formulation of the MLUF.

Guiding Principles

The MLUF guiding principles underpin key areas of activity required to achieve multiple and sequential land use outcomes. The principles should be embodied into the mindset of governments, community and industry in land use planning, policy and development.

- **Best use of resources** – Maximise the social, economic, environmental and heritage values of land use for current and future generations.
- **Coexistence** – The rights of all land users are recognised and their intentions acknowledged and respected. Ensure land use decision making does not exclude other potential uses without considering the benefits and consequences for other land users and the wider Australian community.
- **Strategic planning** – Inter-governmental planning to recognise community expectations and capacity to adapt to land change. Effective planning gives greater certainty to industry.
- **Tailored participation of communities and landholders** – Directly affected landholders should be informed and consulted on multiple land use options and potential for coexistence to promote a greater understanding of mutual benefits and to resolve problems.
- **Engagement and information** – Open and constructive debate and analysis of different multiple land use options. Stakeholders should be willing to listen and appreciate the views, concerns and needs of all land users.
- **Decision making and accountability** – Risk-based approach in the assessment of land use capability, including the benefits and consequences. Clear accountability and governance around the decision-making process.
- **Efficient processes** – Streamlined, transparent and consistent approvals processes. Those who are responsible for the planning, assessment and approvals processes are clearly identified.
- **Accessible relevant information** – Easy access to accurate information regarding land capability, and examples of multiple and sequential land uses.

The MLUF is capable of both pre-empting and responding to land access and land use challenges, thereby helping build the capacity of communities and the private sector to address challenges. The MLUF components are a blend of adaptive capabilities (leadership, partnerships, planning, engagement, information and continuous improvement) and technical solutions (assessment and approvals processes underpinned by sound scientific and engineering guidance and practice).

Components

The MLUF defines areas of activity, supported by the overarching principles (outlined above), that must be part of successful multiple and sequential land use:

- **Leadership, Facilitation and Coordination** – Strong leadership from government, industry and the community is central to successful multiple/sequential land use outcomes. Articulate the broad areas of responsibilities of government, industry and the community in terms of facilitating and leading the required changes to optimise multiple and sequential land use.
- **Planning** – Seek clarity regarding governments’ objectives and intentions. Describe the optimal approach to enable regions to benefit from land use change.
- **Partnerships** – Partnerships between industry and affected stakeholders play an important role in achieving mutually beneficial multiple and sequential land use outcomes. Identify what needs
to be done in order for regional communities to be prepared for land use changes. Extensive stakeholder consultation assists decision making and avoids inappropriate development and/or exclusion of land from other potential uses.

- **Engagement** – Early engagement to enable stakeholders to clearly understand any proposed land use activity. Progress a tripartite approach, with government, industry and community working, to resolving policy, planning and investment conflict. Guidance as to how to engage with key stakeholders with an interest or involvement in land access and usage issues.

- **Information** – Education and the adoption of evidence-based approaches are important features of successful multiple land use planning approaches. Inform the broader community, industry and media about the importance of land access and land use to the future viability of all industries and the ongoing sustainability of regions. Inform media and industry about what governments are doing to protect the public interest with respect to regulating industry and protecting social and environmental values.

- **Assessments and Approvals** – Project approvals are streamlined through applying risk-based approaches that are based on best available science, evidence and sustainable development principles. Transparent and consistent approvals processes which account for multiple and sequential land use, and identify related issues such as water, heritage and cultural values.

- **Monitoring and Compliance** – Improvement in the transparency and understanding of how government ensures industry compliance with conditions/regulations set to protect the public interest. Increased confidence in the regulator through spend and efficiency in enforcement.

- **Continuous Improvement** – Drawing on past experiences in decision making will improve multiple and sequential land use outcomes. Outline the necessary coordination of investment and the resulting outputs of the investment in the areas of activity, to better understand the cumulative effects of land use change and development across economic, environmental and social dimensions.

- **Sharing and Collaboration** – Collaboration between organisations such as government or industry bodies can support sharing of data and information, and assure of its quality, accuracy and correct application. Provide mechanisms and opportunities for government, industry and community to share land related information to identify potential issues and opportunities for multiple and sequential land use outcomes.

The MLUF has been developed from a comprehensive research study completed by Sinclair Knight Merz (SKM) during 2012, which identified multiple and sequential land use issues, challenges and opportunities. The study analysed approaches to multiple and sequential land use both nationally and internationally to identify common elements that are present for successful multiple and sequential land use and for leading practice.

The MLUF does not propose any significant change in existing accountabilities, roles and responsibilities of State and Territory government agencies. It does not seek to impose any additional responsibilities onto resource companies. Rather, the MLUF seeks to achieve consistent performance by the various participants in land access and land use planning.

Application of the MLUF is flexible, where not all components are necessary in all situations. Rather, implementing the Framework relies on users selecting the right mix of components to achieve the desired outcomes.
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1.0 Introduction
Competing land use can give rise to conflict through disagreements originating from different economic, social or ideological perspectives. Failure to accommodate, plan and resolve these differences, real or perceived, can inadvertently sterilise land from land uses that benefit the wider community. To address this, the Standing Council on Energy and Resources (SCER) commissioned the development of a Multiple Land Use Framework (MLUF). The aim of the MLUF is to effectively and efficiently meet the land access and land use challenges, expectations and opportunities.

1.2 Background
In recent times the pace and scale of growth of resource development activity across Australia has been significant. Rapid advancements in exploration technology has made it possible to re-examine explored areas as well as explore in previously underexplored sensitive ecological, cultural, agriculture and urban fringe areas.

Exploration investment in the minerals sector alone increased five-fold between 2002/03 and 2012 (from $1,725 in 2002/03 to $2.5 billion in 2012). The number of exploration licences issued per annum by State and Territory Government mineral and petroleum sector regulators trebled over the last decade (from approximately 1,600 in 2001 to approximately 4,900 in 2010/11).

Growth has occurred in areas without a strong history of resource exploration and development (i.e. resource extraction, processing, and transportation). In some instances, the manner whereby access to land for resource development has been granted has caused concern for community, other land users and land use regulators. This has led to community opposition and resource development either being excluded or significantly restricted.

Historically, land use planning controls were introduced to regulate the conversion of highly productive and/or strategically important farmland to rural residential or urban uses. The recent expansion of the resources sector, especially in New South Wales and Queensland, has refocused this issue. Recent reforms in some States and Territories have sought to more strongly regulate resources sector land access. Most notably these include Queensland’s Strategic Cropping Land Act 2011 (and other related amendments under the State Planning Policy) and New South Wales’ Strategic Regional Land Use Plans.

1.3 Aims
The aim of the MLUF is to effectively and efficiently meet the land access and land use challenges, expectations and opportunities. In doing so, the MLUF will play a key role in advancing Australia’s sustainable development aspirations in energy security, mineral resource development, agricultural production, greenhouse gas emissions reduction, biodiversity, heritage conservation and healthy communities.
1.4 Scope
Initially, the MLUF was intended to focus on facilitating multiple and sequential land use for the resources sector (Box A). Targeted stakeholder consultation with land use regulators and peak bodies representing community and private sector land use interests revealed significant support for an all-regulated land use framework. To expand from a 'minerals and petroleum sector regulated' to ‘all-regulated’ MLUF requires scaling from a ‘one to many’ (Figure 1) to a ‘many to many’ framework (Figure 2). The latter enables adoption of common land access and use principles, methods and tools to be applied by the respective land use regulator in land use decision making.

Box A – Multiple Land Use and Sequential Land Use

- Multiple land use is where land is used for different purposes simultaneously and sustainably with a view to maximise the benefits for all Australians. The objective is to retain options for current and future use to maximise the net benefits of all forms of land use for present and future generations.
- Sequential land use involves different uses of land over time. It may include a return to a former use or the development of an alternative land use.

Figure 1: A ‘one to many’ Framework

Figure 2: A ‘many to many’ Framework.
2.0 Comprehensive Research Study

A comprehensive research study was undertaken and completed by Sinclair Knight Merz (SKM) during 2012, which identified multiple and sequential land use issues, challenges and opportunities. The research analysed approaches to multiple and sequential land use both nationally and internationally to identify common elements that are present for successful multiple and sequential land use and for leading practice. Table 1 summarises the research undertaken.

<table>
<thead>
<tr>
<th>Area of research</th>
<th>Overview of research conducted</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stakeholder Consultation</td>
<td>A range of key stakeholders across Commonwealth, State and Territory governments and peak bodies were contacted to discuss their current and emerging land use issues, responses and effectiveness to date, and suggestions on the way forward (refer to Appendix A – List of stakeholders consulted).</td>
</tr>
<tr>
<td>Land use multi-perspective analysis</td>
<td>An in-depth analysis of Australia’s principal land uses was prepared from desk-top research. Land uses included: minerals and energy (including renewable), environment, agriculture, forestry, native title, heritage, urban, defence, tourism, critical economic and social infrastructure (transport, telecommunications etc.) and groundwater (a cross-cutting issue). Each land use was analysed in terms of its importance to Australia, current and emerging land use conflict, and policy and planning responses.</td>
</tr>
<tr>
<td>Policy and planning analysis</td>
<td>Relevant Commonwealth, State and Territory and local government policies and planning systems were reviewed in the context of competing land uses and resource development.</td>
</tr>
<tr>
<td>Leading practice case studies</td>
<td>Five international and thirteen Australian case study analyses were undertaken (Appendix 2). For each case study, lessons learnt and elements of leading practice were identified. These were combined with a wider literature review to establish current leading practice in land use planning and management of land use conflict.</td>
</tr>
<tr>
<td>Multiple Land Use principles analysis</td>
<td>Extensive analysis of land use planning, administration, governance frameworks, conventions and principles, including:</td>
</tr>
<tr>
<td></td>
<td>• Global – e.g. World Bank, United Nations, European Union;</td>
</tr>
<tr>
<td></td>
<td>• Resources sector – e.g. International Council on Mining and Metals, Minerals Council of Australia Enduring Value;</td>
</tr>
<tr>
<td></td>
<td>• Public sector administration – e.g. National Strategy for Ecologically Sustainable Development; and</td>
</tr>
<tr>
<td></td>
<td>• Related disciplines – e.g. regional growth planning.</td>
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</tbody>
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2.1 Stakeholder Consultation and Feedback

Targeted consultation occurred with stakeholders representing the private (minerals and petroleum, agriculture, pipeline infrastructure), public (Commonwealth Government departments responsible for environment, water, communities, agriculture, climate change, resources, energy, tourism, defence and transportation/infrastructure policy) and community (public health associations, conservation) sectors.
There was universal support for the development of a MLUF across all jurisdictions and industry sectors. All stakeholders agreed that the MLUF is a unique opportunity to help resolve land use tension and conflict.

An outcome of stakeholder consultation was the need for guiding principles applicable across jurisdictions that provide clear direction to policy, planning and development, and as such, the MLUF has been developed to provide a more consistent approach to development and planning across all jurisdictions aligned with COAG's broader policy commitment of Ecologically Sustainable Development, whilst allowing flexibility for locally developed mechanisms targeted to local situations and needs. The MLUF focuses on the guiding principles for the use of land (and all its values and associated resources) for more than one purpose both in place and time and must consider the broader ecologically sustainable development policy context.

2.2 Multi-Perspective Analysis: Land Use

This element of the research study analysed land use issues, policies and state and regional planning systems in Australia.

Multiple and sequential land use issues and conflict were considered from the perspectives of Australia’s principal land uses including resources, environment, forestry and agriculture to ensure all views were considered in the design of a MLUF. All principle land uses were discussed in terms of importance to Australia, current and emerging land use issues and policy responses.

Minerals and Energy

The minerals and energy industries include a range of subsectors. Depending on industry definitions, some of these can overlap, such as in respect of the exploration and mining of coal that provides for both a major mineral export and a domestic fuel source for power generation.

The minerals industry includes the exploration and extraction, as well as the associated minerals processing sectors. The following provides a summary of the major classes of multiple land-use tensions for the energy and minerals industries.

Land access

While the existing regulatory frameworks around Australia require processes of stakeholder engagement and fair compensation for land access and use, development proposals are often met with strong sectional interests and concerns that may cause some land-owners to prevent access to their land. Broader third party interests may object to changes in land-use on varying grounds, therefore prompting resistance to land access. Indirect, but potentially valid concerns are not well managed by some planning processes or policy responses.

Land tenure and use

Mineral resources are owned by the crown with State and Territory governments the principal authorities for regulating onshore mining and exploration in Australia. Tension typically relates to the challenge of co-existence, shared-use and sequential use. Changes in land use can trigger a diverse pattern of support or resistance, in the context of complex, expansive, overlapping and often competing interests.

Land tenure, in part, defines the process and stakeholders that are relevant in land use negotiations, and the process and parties that may be relevant in any decisions regarding compensation for a changed pattern of land use benefits, or for any degradation in the exclusivity in rights to ownership or use. The form of land tenure can therefore be a trigger, and can shape the character, of land-use tension, and the manner in which it may be resolved.

Land access agreements are negotiated when a new form of co-existence or shared use is proposed to an existing land use, for example installation of a wind farm or resource development. The purpose of land access agreements is to secure development whilst recognising rights of landholders to conduct their activities free from unreasonable interference or disturbance - including matters that affect the enjoyment or economic use of the land by others, legal liability, restrictions and constraints on
use, site maintenance and compensation. Agreements also provide for compensation where a ‘compensable loss’ due to a land use change. These issues are encouraging horizontal integration, including investment in agricultural ventures by mining companies.

**Issues associated with post-investment land recovery and sequential land use**

Effective mine closure plans can be a catalyst to improved land use options post mine closure. Post mining land use for an area should be defined in consultation with relevant interest groups (government, traditional owners, private land holders, local community etc.). The quality of mine closure planning and how production waste and by-products (water, tailings or other waste streams that may require specialist treatment and management) are managed through the life of mine will affect options for sequential land use.

Prior to mine closure, a decision may be made to place the mine site in care and maintenance for potential future development. This may occur for a variety of reasons including resource depletion, lower ore grades, ageing infrastructure or less efficient technology. During care and maintenance, resource companies maintain plant and equipment on site and actively manage environmental aspects.

A perceived impediment to sequential land use is the reluctance of State governments to relinquish mining tenure, leaving the mine in long term care and maintenance. Reluctance may be driven by concerns regarding liability for poorly rehabilitated mine sites. Adoption of the MLUF approach aims to reduce this risk through greater land use planning.

**Equity issues and concerns for corporate social responsibility**

Large and remote resource projects can trigger local community interests related to corporate social responsibility that may extend beyond the domain of the affected operations. This may be related to the potential burden of the venture on local systems and infrastructure, or by perceptions of fairness, local citizenship and equity on behalf of stakeholders and affected persons. This is suggestive of a type of land-use impact that extends to local and regional communities.

**Regulatory environment**

There is a perception that regulatory processes may be too narrow, thereby not effectively managing the breadth of issues or stakeholders that are relevant to investment projects. In some cases, important issues are too tangential or digressive to the project, making them difficult to effectively manage. Examples include cumulative impacts that are relevant to projects in aggregate, not in isolation, as well as impacts of a national interest or security nature, that may be triggered by a project, but are not solely caused by the project.

**Impacts on landscape and amenity**

Industry related land-uses imply some extent of land transformation, of a temporary or permanent nature. When land-use is shared, either directly or indirectly, this may enhance, degrade or change a pattern of land-use benefits, or benefits that may be linked to an adjacent natural or built system or service that is affected by the land transformation, including impacts on surface and groundwater.

**Environment**

The State of the Environment Report 2011 concluded biodiversity has declined since European settlement. Human land use is the biggest threat to biodiversity, having both direct and indirect effects. These threats include: harvesting of species, consumption of water, clearing and fragmentation of native ecosystems, land clearing, urban development, extractive industries, agriculture, production forestry, invasive species and pathogens and pollution.

The National Reserve System (NRS) is the main instrument by which Australia seeks to protect a representative sample of remaining intact, native ecosystems. The NRS includes conservation parks and reserves on both public and private land, as well as Indigenous protected areas. The NRS has grown steadily over the past 15 years.

Over the past decade, steps have been taken towards better managing native ecosystems outside reserves for conservation objectives. These have been largely through non-government groups investing philanthropic funds, and through government grants for projects to protect or manage...
remnant vegetation. There are 4,065 covenants on private land protecting 30,280 km$^2$ making up under 0.5 per cent of the area of protected areas (largely in Queensland and South Australia). They perform an important role in protecting biodiversity value on private land in the agricultural and pastoral regions of Australia.

**Land use conflict around mining and biodiversity**

Mining has direct local impacts on habitat extent and quality, as vegetation is removed, and wider spread ecosystem impacts due to transport systems on land. Mining is a major industry in many regions but currently accounts for 0.02 per cent of land use.

Successful rehabilitation of mine sites allow substantial offset of initial impacts in the long term. Environmental impacts are generally actively managed, with resource companies widely recognised for frequently going beyond environmental regulation. However, the rapid expansion of the resources sector is continuing, and the scale of disturbance in some regions is transforming the landscape and causing environmental change. Notable examples include the Hunter and La Trobe valleys and the Bowen Basin. The scale of expansion, particularly for gas in eastern and north Western Australia, is resulting in conflict over land use and the environment.

**Agriculture**

Agriculture is the predominant user of land and water in Australia. Agricultural uses account for 60 per cent of land area or approximately 4.6 million km$^2$. While irrigated agriculture occupies less than one per cent of land area, it is responsible for about 65 per cent of all consumptive water use in Australia. The direct value of agricultural production exceeds $40 billion annually, of which 29 per cent is from irrigated production. The value added through food and beverage production is substantial.

Over recent decades, agriculture has faced considerable competition for land from urban and rural residential uses, industrial-scale forestry plantations and mining. Competition between consumptive water users (e.g. mines, urban areas) and between consumptive and environmental uses of water is reducing water availability for irrigation and influencing land use patterns in areas with a strong history of irrigation.

Land use planning policies in most jurisdictions aim to limit the encroachment of non-primary production uses onto defined high value, prime or strategic farming land. Planning controls were initially introduced to protect highly productive farming land from conversion to urban uses.

Most land use conflict involving the minerals and energy sector relate to land whose traditional use is for agriculture. Conflict in extensively grazed rangelands areas that comprise the majority of agricultural land is limited. Conflicts with agricultural land uses are most commonly confined to areas where mining or energy exploration and developments are located on highly productive farming land. In some cases conflict is exacerbated by competition for water and/or perceptions that mining and energy developments will affect the quality of water available for agricultural uses.

Land use planning processes in most jurisdictions incorporate protections for productive farming land with particular economic or social significance from encroachment of other land uses. These processes are being strengthened in New South Wales and Queensland, where conflict between mining or energy development and agriculture are most intense. While the approaches that are being taken differ between the two states, they have a common focus on defining and protecting “strategic” cropping or agricultural land.

**Commercial Forestry**

Intense conflict over the management of native forests led to the Commonwealth, State and Territory Governments agreeing on a National Forest Policy Statement, which was followed up in the key native forestry states (New South Wales, Victoria, Tasmania and Western Australia) by the Regional Forest Agreement (RFA) process. The RFA process gathered an evidence base for strategic land use planning and led to development of a comprehensive, adequate and representative reserve system in native forests that were designed to protect key conservation values. Multiple use forests were also identified that were intended to provide resource security for the native forest timber industry. Regional communities and industry stakeholders were intensively engaged.
The move to establish forest plantations on farming land rather than native forests addresses most (but not all) concerns over their impacts on biodiversity. While questions of impact on water resources, agricultural land use and rural communities remain, forest plantations are now treated in a broadly consistent manner with other primary production land uses. Water issues are dealt with as consumptive water uses (e.g. irrigation) under national water frameworks and via regional, state or basin water resource planning processes. Like most other forms of primary production, plantations are generally an ‘as-of-right’ land use and are not regulated under local government land use planning processes.

The commercial forestry sector provides useful insights into land use conflict. Opposition to commercial forestry focuses on some common issues, including impacts on biodiversity and related conservation values, changes in the nature of rural landscape, potential effects on water quality and water availability, loss of productive farming land, and change in rural communities.

The RFA process offers some critical insights. Several of its key features are worth considering in the context of providing access to mineral and energy resources in ways that take account of environmental, heritage, cultural and land ownership issues. These include: strategic planning; developing an evidence base and common language; establishment of a scientifically comprehensive, adequate and representative reserve system; social impact assessment and extensive community and stakeholder engagement; commitments to long-term resource security; and resourcing of the underpinning studies, community engagement and strategic planning.

While the RFA process had many desirable features and some successes, it has not fully achieved its core objectives. It has only reduced, but not eliminated land use conflict over native forests. While it has improved resource security for the timber industry, the available resource has continued to decline as a result of further extension of the formal nature conservation reserve system. Failure to fully achieve the objectives of the RFA process reflects many factors, including underestimating the implementation challenge and under-resourcing implementation; failure to meet review and reporting commitments; inadequate process to assess economic implications of land use planning decisions; and the inability to bind non-government stakeholders (particularly environmental groups and non-government organisations) to the process outcomes.

**Culture and Heritage**

There are increasing pressures on Indigenous and non-Indigenous heritage values from a range of land use practices. Land use issues for cultural heritage include:

- **Land use change** – Extractive land uses (e.g. mining) have a greater potential to impact cultural heritage values than more passive land uses such as agriculture, where cultural values can remain undetected for many sequential land uses; e.g. burial sites laying undisturbed beneath fields or townships.

- **Scale of impact** – Extractive uses are likely to impact on Indigenous heritage values, particularly in Greenfield areas. Managing these activities is often problematic and may result in the cultural heritage values being removed, which is then addressed through offsets or compensation.

- **Cultural water flows** – Water usage by the energy and extractive industries can impact on cultural water flows by depleting, diverting, polluting or otherwise modifying the environmental flows.

- **Cumulative impacts** – The cumulative impacts of land uses on cultural heritage values are poorly understood due to poor baseline information regarding the presence and value of heritage locations, particularly Indigenous heritage resources.

Cultural heritage is a finite and often non-renewable resource which can relate to both land and water. Its preservation has in the past, and will in the future, require specific attention within the land use planning process.
Urban Development

Today, 64 per cent of Australia’s nearly 23 million citizens live in capital cities. This represents a trend that is forecast to continue so that by 2056, 66 per cent of Australia’s population will live in capital cities. In Sydney, Melbourne, Perth and Darwin, the urban populations will at least double during this period. In all states except Queensland, population growth will become more concentrated and occur at faster rates in capital cities than in the rest of the states. Queensland differs from other states in that it enjoys multiple high growth regional centres, most of which are within two hours of Brisbane.

The land use issues associated with urban development include:

- Population growth and distribution – Managing city and town centres that are experiencing population and economic growth and city and town centres that are losing population and experiencing declining economies.
- Inconsistent strategic land use planning across Australia – While there is progressive efforts to develop strategic land use plans in and around metropolitan centres, there remains a lack of regional-scale assessment. For high growth regions in particular, purposeful future land use planning, can contribute to more effective use of land and significantly reduce infrastructure investment supporting urban growth.
- Peri-urban development – Urban encroachment and sprawl on the fringe of our cities has emerged as an important issue in the areas of land use planning, natural resource management and conservation.
- Climate change – Urban heat islands, sea level rise, increasing demands on energy and water place strains on infrastructure and land use planning practices.

Tourism

Tourism contributes on average $23.6 billion to the Australian economy every year. Australia’s inbound tourism market has changed in recent times with arrivals and expenditure by visitors from the United Kingdom (UK), United States of America and Germany falling while the figures from China, New Zealand, South Korea, Singapore, Malaysia and India all rising. China overtook the UK in 2010 with some $3.1 billion in tourism “exports” compared with $2.9 billion from the UK. A change in market mix is likely to affect Australia’s key tourist markets. For example, UK and German tourists participate in more nature based tourism activities than Chinese and other mainland Europe tourists, who have a greater preference for the Indigenous tourism market.

Land use issues relating to tourism include:

- Infrastructure – Tourism relies on the quality and availability of appropriate infrastructure, including transportation, information services, accommodation and hospitality services.
- Carrying capacity – Managing the maximum number of visitors without reducing its environmental and cultural value.
- Attraction accessibility – Most Indigenous and nature based tourism activities are located in regional and often remote locations. Access may involve travel over unsealed roads that can be difficult and even unpassable in wet weather. There may be no accommodation in these desired areas or none of a quality that attracts many tourists.
- Quality of accommodation – There is a demand for good quality accommodation in appropriate locations including within or close to protected areas, including eco-type accommodation that must meet strict environmental criteria but also provide an appropriate level of services.
- Security of land tenure – Relatively short lease terms and the increased risk of investing in regional and remote infrastructure has made regional tourism more expensive than standard facilities and have reduced private investment interest.
- Potential cumulative impacts – Cumulative impacts of multiple tourism developments and the interaction of tourism with local communities can create conflict.
**Transport and Infrastructure**

Australia’s productivity and national economic performance will be increasingly linked to its cities. In Australia, State and Territory governments retain responsibility for metropolitan planning and infrastructure planning for Australia’s cities and regions. The Commonwealth plays a support role to these jurisdictions through the CoAG and through other agencies such as Infrastructure Australia. Land use issues relating to transport and infrastructure include:

- Infrastructure investment and links to economic prosperity – Governments and business leaders alike realise that delivering on major programs of infrastructure are critical to economic performance.
- Infrastructure repair and development – Governments confront divergent choices in their effort to fund essential maintenance or build expensive new systems while at the same time controlling overall expenditures in constrained budget environments.
- Financing challenges – Implementation of transport plans will increasingly be linked to the capacity to deal with funding challenges. Government budgets will be increasingly strained as competing priorities divert funds away from major projects. These funding gaps will need to be bridged by innovative approaches including de-risking projects for the private sector.

**Defence**

The role of the Australian Defence Force is to defend Australia against armed attack and to protect its interests. To support this role, the Department of Defence (Defence) maintains the largest and most complex land and property holding in Australia, comprising of approximately 389 properties (including 72 significant bases) and 25,000 assets. The estate falls in all states and territories of Australia and gives Defence environmental stewardship over three million of hectares of land, including some World Heritage Areas.

While Defence manages its lands with the primary objective of supporting its military capability, Defence also aims to manage a significant suite of conservation and environmental management responsibilities, predominantly those relating to the Environment Protection and Biodiversity Conservation Act 1999. The Defence estate land use issues include:

- Vast array of cultural heritage (indigenous and non-indigenous), environmental (endangered and threatened species and World Heritage Listed areas) within the Defence estate.
- Multiple land use has historically been problematic due to:
  - Restricted access for public safety;
  - Restricted access for national security; and
  - Imperative to maintain operational capability.
- Contaminated sites and Unexploded Ordinance (UXO) providing barriers to future land uses.
- Damage to flora and fauna and loss of biodiversity, bushfire risks, and feral species introduction or proliferation.

Areas of the Defence estate also coincide with mineral deposits and energy reserves, where access must be negotiated with Defence. The major considerations for Defence in assessment of access proposals include:

- Risk to national security through access to areas that have limited public access.
- National security risks posed by foreign investment and access to sensitive Defence areas.
- Risks to safety of people on Defence areas where weapons area testing or weapons training is conducted.

Despite these conflicts of interest, the Commonwealth and the South Australian Governments recognise the economic value of mineral and petroleum resources development and are working on innovative solutions to balance the use of the land in support of Defence capability, while allowing for realisation of their potential for benefits to regional, State and national economies.
2.3 Policy and Planning

Current land use and access regulation and administration
The current legislative mechanisms used by State and Territory governments to regulate the activities and behaviour of the minerals and petroleum sector are:

- Land access and compensation agreements.
- The licencing of resource development activities (exploration and extraction).
- The use of zonings/land tenure to exclude/restrict resource development (exploration and extraction) activities from high ecological and cultural sensitive areas.

There are key differences among State and Territory government licence approval processes, conditions and methods of managing and resolving objections from interested stakeholders. There is commonality though in the type of methods and tools used by states and territories to administer land access and usage. These methods and tools are largely technical as they are applied to known conditions, impacts and solutions (engineering, scientific etc.) but may not be as effective where contested on the basis of people’s values and views.

“Technical” tools and methods include:
- Guidance and information suitable to administering access and managing impacts;
- Resource surveying/mapping;
- Impact assessments (cost/benefit analysis etc.);
- Codes of practice and compliance standards; and
- Ongoing stakeholder consultation and monitoring and review.

The question that lies at the heart of the multiple land use is whether the current arrangements for the regulating and administering land access and use will be effective over the next decade in light of the emerging challenges, issues and opportunities.

Multi land use policy analysis: Commonwealth
Multiple and sequential land use is paramount to achieving national policy priorities. A number of key aspirations of the Commonwealth Government are heavily dependent upon the government’s, community and private sector’s ability to equitably, effectively, efficiently and economically utilise land. These include:

- Carbon reduction and environmental conservation – Strategies relate to how industry can contribute to reducing the impact of climate change and environmental damage through their operations, investments and long-term plans.
- Energy security – Strategies prioritise the long-term economic prosperity and energy security of Australia.
- Economic and industry development – Strategies promote the productivity and competitiveness of industries, specifically agricultural development, through innovation and technology improvements.
- Community and population growth – Strategies encourage planning that supports sustainable population growth, compatible with economic prosperity, communities and the environment.
- Urban planning – Strategies address local, regional and national urban planning that allows for sustainable city investments, including a focus on improvements in built infrastructure and skills development.
Multi land use policy analysis: State and Territories
The focus of State and Territory policy incorporates both sector-specific planning and more recent integrated planning frameworks that are based around achieving sustainable economic growth and investment balanced with protection of the natural environment and individual property rights.

Key policy priorities of State and Territory governments addressing land use planning relating to minerals and petroleum sector are:

- Regional planning – State-wide strategic land use plans enveloping comprehensive regional strategies and priority areas relating to the efficient and effective multiple use of land.
- Sustainable economic development (multiple industries) – Strategies highlight economic development as a key priority area.
- Environment, nature conservation and climate change – Strategies look to address fundamental concerns about the cumulative impact of mining activities on land and climate change.
- Liveable communities – Strategies encourage planning and development of liveable communities at or around minerals and petroleum activities.

A broad analysis of policies across jurisdictions relating to land use and mining revealed some common themes.

- Multi-land use conflict – Concurrence of competing uses of land and resource values presents significant challenges for local and regional planners to manage competing land use conflict.
- Cumulative impacts – The negative cumulative impacts of mining are of concern, including pro-longed exposure to noise and dust impacts, loss of agricultural land and further scarcity of water resources.
- Natural resource management – Greater mining activity has exacerbated concern about the current and future management of natural resources such as land, water, soil, flora and fauna.
- Sustainable regional development – Creating liveable communities: Mining activity has provided attractive employment options to regional areas but is often project driven and transient.

Multi land use planning, assessment and approval instrument analysis
An analysis across States and Territories also revealed common planning, assessment and approval instruments that are used to inform decisions around the identification/assessment of resources and mining projects, and enforcement and review of outcomes against strategic policy areas.

All States and Territories have some form of Strategic Regional Planning approach or framework, outlining the economic, social and environmental aspirations and goals of a region. Regional land use plans take a ‘place/spatial’ perspective of the different instruments and cohesively understand the economic, environmental and community drivers and needs to be satisfied at a ‘place’. Land use planning processes in most jurisdictions incorporate protection for productive farming land with particular economic or social significance from encroachment by other uses.

Additional common planning, assessment and approval instruments are:

- Land capability analysis – Comprehensive mapping of all alternative land uses is used to highlight and inform decisions regarding new mining projects.
- Impact assessments (e.g. cost/benefit analysis) – Impact assessments are considered important for understanding the complexity and multi-faceted effects of exploration and extraction within and across generations.
- Land access/licenses – Licenses are a mechanism used to regulate access to private and public land for exploration and development.
- Specific purpose zoning – Zoning of significant areas for extraction, agricultural, environmental or urban use.
• Compensation agreements – Providing an appropriate level of compensation recognises and clarifies expectations and rights of resource authority holders and private landholders relating to how resource activities must be undertaken on private land.

• Codes of practice and compliance standards – Codes of practice and compliance standards ensure conformity with appropriate exploration and extractive operations that result in consistent, transparent and appropriate investment and management decisions.

• Leading practice guidelines – Leading practice guidelines are provided for a range of operational considerations relating to exploration and extraction.

• Fostering partnerships – Partnerships and strategic alliances are encouraged to assist coordination and synergies in activities across difference land uses.

• Ongoing stakeholder consultation – Plans are informed by effective stakeholder engagement with key representatives whilst ongoing stakeholder reference groups are being used to guide the execution and monitoring and review of the plan.

• Monitoring and review – To deliver on outcomes, appropriate review mechanisms are and continue to be developed.

2.4 Case Studies: Multiple and Sequential Land Use

The purpose of case study analysis was to understand the issues, identify pertinent ‘lessons learnt’ and determine elements of ‘leading practice’ in multiple and sequential land use principles and frameworks. A summary of the case studies are at Appendix B and discussed in Section 2.5 in relation to leading practice.

Specifically, the case studies:

• Demonstrate the benefits of multiple and sequential land use.

• Elicit principles that guide decision making in regard to accommodating multiple and sequential land uses.

• Identify the necessary attributes and features of a land use planning framework that effectively enables multiple and sequential land uses (delegation of decision making powers, critical considerations, mechanisms to resolve grievances, how negative externalities and drivers that led to the preference for a single use have been addressed).

• Highlight the processes, practices and systems used by ‘impacted’ entities (regulators, land owners, industry, proponents, community, and non-government organisations) to identify, consult, evaluate and approve/reject changes in land use.

• Expose the skills, experiences and knowledge needed by ‘regulators’ to make evidenced based decisions regarding land uses that are in the ‘public’ good and demonstrate/explain to impacted and interested stakeholders the reasoning for those decisions.

• Enable comparison with comparable international jurisdictions to help identify specific multiple land use principles and framework components and elements which could be relevant to a MLUF.

2.5 Leading Practice Multiple Land Use

The case studies analysis identified components consistent to achieving leading practice multiple and sequential land use. The analysis identified ten themes to achieve leading practice multiple and sequential land use planning approaches that achieve multiple and sequential land use:

• Leadership, facilitation and coordination;

• Planning;

• Partnerships;

• Engagement;
The Multiple Land Use Framework

- Information;
- Assessments and approvals;
- Monitoring and reporting;
- Continuous improvement;
- Sharing and collaboration; and
- Physical evidence of good community or environmental practice.

The analysis also supported that a blend of adaptive and technical responses is needed to achieve multiple and sequential land use outcomes. Current approaches are largely technical. An adaptive response seeks to build capacity of affected landholders, communities and the minerals and petroleum sector to work together on key challenges, rather than solely creating and publishing more 'technical' guidelines and standards that are enforced through complex regulations.

Case studies that have used these adaptive and technical responses lead the resources sector to better integrate and co-ordinate with:

- Economic development priorities and policies – Economic development policies that better balance the economic benefits and land use impacts associated with the growth of the minerals and petroleum sector with the interests of incumbent land uses.
- Regional land use plans – Land use plans supporting economic development policies by outlining priority areas relating to the efficient and effective use of land.
- Environmental protection – Regulations and strategies better addressing fundamental concerns about the cumulative impact of resource development projects on the inherent and future value of land.
- Liveable communities – Strategies that contribute to maintaining the liveability of communities at or around resource development projects (skills training programs, improved social infrastructure, more land release for affordable housing etc.).

Leadership, Facilitation and Coordination

Strong government, industry and community leadership is necessary to evaluate, negotiate and introduce multiple/sequential land uses into the community. The key roles of industry and community actors are to:

- Enable communities to transition to new land use models;
- Articulate the benefits and concerns of that transition; and
- Effective communication through leadership and facilitation.

The Emscher Park International Building Exhibition (IBA) was launched as a comprehensive renewal programme to restructure a difficult part of the German Ruhr district that had a legacy of contaminated land and a redundant workforce. The programme was coordinated by IBA GmbH, a public limited company.

The company’s role was not to realise projects itself, but rather to act as quality control for individual initiatives. Projects were developed by a wide range of bodies, including private companies and voluntary organisations, but most work was actually carried out by the public sector. The approach adopted by the IBA involved no formal change in the administrative structure, but took more informal methods to increase public participation, cross-departmental cooperation and architectural competitions. Key learning to be gained from this approach includes:

- New linkages between industry and community actors;
- Reduction in conflict and improved levels of consensus;
- Sharing of resources;
- Mutual support of project outcomes; and
The approach encouraged projects that involved low levels of potential conflict.

Alcoa’s bauxite mining operations in south west Western Australia provide an example of the benefits to be gained through strong industry leadership. Through active community engagement, investment in community infrastructure and activities and employment opportunities, the benefits of Alcoa’s operations are tangible and recognisable in the local community. Alcoa has also invested in scientific investigations within, but also beyond the region within which they operate and have demonstrated commitment to education programs, including public tours of their operations.

The actions demonstrated through the Emscher Park and Alcoa examples generate goodwill between industry and communities and contribute to the granting of a ‘social license to operate’.

**Planning**
Governments and government agencies should set clear strategic priorities for what they want to achieve and have an informed understanding of land capability. Planning should also consider questions such as: What is the region’s preferred future? What are possible alternative futures? What planning, investment and actions are needed to realise the preferred future? How will the region transition to that future?

An effective integrated regional plan must:

- Assess and prioritise ‘need’ at different temporal and spatial scales – Operate top down and bottom up.
- Deliver ‘value’ – Balance long term value and short term need; generate value from linking growth investments to desired outcomes.
- Be transparent – Any assumptions used to develop the plan must be transparent to all.
- Be implementable – Recognise and co-ordinate strategic, operational and tactical level interdependencies between different actors (industry, government, community).
- Evolve – Monitoring, evaluate, report and evolve to maintain or reshape direction or strategic priorities.

The objective of the Regional Strategic Environmental Assessment in Canada (R-SEA) is to inform a preferred development strategy and environmental management framework for a region and improve management of cumulative environmental effects. The traditional approach to environmental assessment in Canada has been to address the symptoms or outcomes of individual project impacts and mitigating them until they are deemed acceptable rather than grappling with broader regional environmental change and the cumulative effects on valued ecosystem components.

The R-SEA in Canada is still in its early stages of development and is largely untested, however, there are a number of anticipated benefits:

- Analysing, identifying and managing cumulative environmental effects at the regional scale.
- Considering strategic alternatives early in decision making, ideally before irreversible development decisions are taken.
- Informing the subsequent project environmental impact assessment and providing opportunities to streamline the review process.
- Establishing the context and direction for preferred regional environmental management plans and frameworks.

During the 1980s open pit and underground mines were operating within the Golden Mile mining area that is located adjacent to the City of Kalgoorlie-Boulder, Western Australia. Kalgoorlie Consolidated Gold Mines (KCGM) planned to expand its operations, consuming its existing open cut operations into a single ‘Super pit’ that would then grow to take in parts of the Kalgoorlie-Boulder (predominantly Boulder) township. The Environmental Protection Authority (EPA) produced the Kalgoorlie Environmental Protection Policy in 1987 that focused on noise and air quality (particularly sulphur dioxide emissions) arising from mining activities around Kalgoorlie-Boulder.
The ‘Conceptual Plan for Mining Developments on the Golden Mile’ was produced that provided a framework for future mining developments to be viewed in the context of the overall social and environmental protection of the region. The conceptual plan established a clear separation between mining and residential areas (as conflicting land uses) and other mining-related areas such as waste and tailings dumps. When combined with new town development plans and the new Environmental Protection Policy, an integrated plan for the region was formed.

**Partnerships**

The formation of partnerships between industry and affected stakeholders require structured processes (e.g. community liaison group/contact), defined roles (e.g. liaison officer, community delegate) and incentives to formulate and sustain an effective, enduring relationship. Partnerships should aim to achieve mutually beneficial outcomes that endure for the duration of the industry’s involvement in the region.

The Land Governance Assessment Framework (LGAF) recognises that stronger industry and community partnerships may be a potential solution to land use conflict issues. LGAF is a diagnostic tool prepared by the World Bank for assessing the legal framework, policies and practices concerning land and land use and has been piloted in Peru, Ethiopia, Kyrgyzstan, Tanzania and Indonesia. LGAF comprises:

- Five thematic areas for monitoring and assessment;
- A set of 21 indicators, sitting below these main thematic areas; and
- A series of 80 ‘dimensions’, sitting below these indicators.

For each dimension, four pre-coded statements are presented. Assessors then determine which pre-coded statements best reflect the situation in that particular area. The outcome of this can then be used as a basis for discussion and development by policy makers and development partners.

Another useful model for consideration is the Commonwealth Scientific and Industrial Research Organisation (CSIRO) community development value chain framework. This approach is designed to support the delivery of multiple public policy outcomes in ways that build local capacity and resilience. The model is predicated on a taking a systems-based, participatory approach to developing and delivering responses to local needs.

**Engagement**

The process of including key stakeholders in setting policy and planning for the mineral and petroleum sector is vital. Stakeholders should include peak bodies and key influencers who represent the interests of the general public and enable other stakeholders to clearly understand the rationale for land use activities and help resolve areas of policy, planning and investment conflict. These stakeholders include those directly and indirectly impacted by the activities taking place and who have an interest in the economic, social and environmental impacts.

Strong community engagement featured as a highly successful aspect of the IBA Emscher Park rejuvenation in Germany. Involvement of the public was integrated through comprehensive participation of local project and community groups from the planning phase of a project. The engagement not only encouraged direct participation, but also played a vital role in stimulating change in the mindsets of local residents to help them realise that change was needed and desirable.

**Information**

Information plays an important function in informing affected stakeholders of the costs and benefits of a land use activity, and adoption of evidence-based approaches are essential to reinforcing or dispelling positive or negative perceptions. This includes using information and communication mechanisms such as the media to deliver the key messages. For example, advising stakeholders about the ‘true’ nature of the activities and the measures in place to recognise and protect public and environmental interests can play a significant role in reducing conflict and resistance.
The Woomera Prohibited Area (WPA) is a weapons testing range used by the Australian Defence Force. Mining activities also occur in the WPA, and while security and economic interests are the primary land uses, other land uses and interests include pastoral, Aboriginal native title claim groups, as well as highly significant conservation values. The Commonwealth and South Australian governments have established the Woomera Prohibited Area Coordination Office (WPACO) to implement a time-sharing co-existence model with the aim of maintaining the value of the WPA as a weapons testing facility, while increasing access for non-Defence mineral resource development opportunities. The WPACO acts as a ‘one-stop-shop’ for decision making on access to the WPA and administers all non-Defence access to the WPA. The ‘time share model’ requires delicate balancing between the different uses and has resulted in:

- Increased transparency of the key issues and drivers of each group;
- Increased surety of access to the WPA for mining interests;
- Increased investment in the region by the minerals sector and opportunities for regional community development for both Indigenous users and pastoral communities; and
- WPACO has been established as an example of an institutional innovation in the co-ordination of multiple land uses.

**Assessments and Approvals**

Consultation and assessment of land use activities or change (e.g. a mining development) should make clear and explicit connections to statutory planning and assessment processes to avoid inappropriate developments and/or sterilisation of land. Approvals, consultation and assessment processes should:

- Consider cumulative impacts and effects rather than single project direct impacts and effects;
- Be risked based, for example if exploration activity is low impact, the licence should be granted with minimal government intervention;
- Be meaningful – depending upon the extent of the likely impact of proposed exploration and extraction, engagement and negotiation with landholders should be meaningful, respectful and fair; and
- Be transparent – assessments of developments or projects should always take into account public interest.

An example of effective assessments and approvals is illustrated by the Regional strategic environmental assessment framework (R-SEA) model of the Canadian Council of Ministers of the Environment. Their approach allows for strategic, evidence based and region-wide assessments that accommodate consideration of cumulative effects, and different scenarios and preferences based on a clear understanding of land capability and potential environmental thresholds and impacts.

The Queensland Government, in partnership with industry, is developing a clean, green aquaculture industry. Fisheries Queensland has prepared the Great Sandy Regional Marine Aquaculture Plan (GSRMAP) to allow non-intensive marine aquaculture within the Great Sandy Marine Park, near Bundaberg, Queensland. GSRMAP is a non-statutory plan that is implemented and enforced through the existing regulatory frameworks. It functions as a guideline for identifying suitable sites and management measures; however, anyone wishing to conduct aquaculture will need to obtain the necessary approvals under planning and fisheries legislation. The GSRMAP management framework links to the statutory approvals process by specifying assessment criteria for new applications and conditions of statutory approvals. The plan’s provisions are thus enforceable under the relevant approvals legislation.

**Monitoring and Reporting**

On-going monitoring of industry activities reduces community concern, ensures government conditions are followed, but most importantly allows industry to identify potential hazards and respond before serious consequences occur.
The Mindarie Mineral Sands Project is located approximately 150 km east of Adelaide in an agricultural landscape. The proponent Murray Zircon has the intention of mining the agricultural land and rehabilitating the mined area back to agricultural land use after mine closure. The major community concern is managing the shared land use between cropping and mining and the potential impact on the agricultural value of the landscape. Other issues include:

- The level of compensation to affected landowners;
- Landowner concerns about rehabilitation performance and post mining agricultural productivity;
- Community concerns about haulage on local roads;
- Community concerns about how the regulator (South Australian Department for Manufacturing, Innovation, Trade, Resources and Energy (DMITRE)) will hold the company accountable to rehabilitation commitments and minimising social impacts; and
- Community concerns that the short term benefits of the mining operations do not adversely impact the long term viability of agricultural activities.

In order to address some of these challenges Murray Zircon have undertaken the following actions:

- Engaged with the affected landowners and negotiated compensation agreements to enable land access for the company and suitable payment for loss of income to the landowner;
- Setting clear closure outcomes that outline measureable crop yield targets;
- Regular community meetings with open discussion sessions on all areas of concern and clarity by the company to identify those issues out of its control yet still providing support on these issues where possible; and
- Ensuring the regulators (DMITRE, EPA) maintain transparency with the community throughout the process and including management strategies within the operational approval document.

**Continuous Improvement**

Carefully captured learning should contribute towards better strategic planning, as well as ideas for innovative research. Continuous improvement contains several elements that when combined contribute to better informed decision-making that encourages more consensus and creates lasting strategic direction. The application of emerging research or existing learning should be used to actively seek new approaches and solutions to multiple land use issues or conflict. The key elements of applied learning include:

- Consideration of a ‘whole of system’ perspective (community, industry, government, environment);
- Understand the past, present and future impacts of the multiple/sequential land use activities on local social, economic and environmental needs and drivers; and
- Make decisions that are informed by previous experience and look to continually improve processes.

In England, the Community Forest Program (CFP) started in the 1990s to bring back nature to spaces where the environment had been mined. Many Community Forests are newly planted, although some incorporate ancient woods. A key plank of the Community Forest programme is to connect regeneration, economic development, the environment and sustainable development. Long-term learning and demonstration of the benefits of land use for several socioeconomic functions, also helped to sustain and build community support for the multiple land use approaches.

The approach adopted towards Alcoa’s bauxite mining operations in south west Western Australia provides an adaptive planning and management framework in which state and local governments, government agencies, affected landholders and the proponent (Alcoa) all contribute to the project outcome.
While, the primary purpose for Alcoa is to derive economic benefit, the framework established commits the company to incorporating environmental and social benefits into the project. An example of this is the ongoing research into rehabilitation, water management and ‘dieback’ management. The research funded by Alcoa has derived best management rehabilitation practices which are now applied more broadly across different environments and land uses. Alcoa has received many global and national awards for their rehabilitation methods.

**Sharing and Collaboration**

In addition to shared platforms of information sharing, strong collaborations can also act as a platform to capture and share learning, towards a flexible and evolving approach to leading practice decision making and land management. The Land Governance Assessment Framework (LGAF) programme of the World Bank, for example, encourages public provision of land information in the participating countries, as a basis and starting point for shared and collaborative decision making.

**Physical Evidence of Good Community or Environmental Practice**

Success of the CFP in England is evidenced by the establishment of over 10,000 hectares of new woodland, while the 10 years of the Emscher Park project in Germany has seen the reclamation of 1,500 hectares of brownfield land, including regeneration of 17 derelict sites previously occupied by mines and steelworks to uses such as technology centres.

In the case of the Queensland Government’s Great Sandy Regional Marine Aquaculture Plan (GSRMAP), the following benefits were identified:

- Strong community engagement and active management of community expectations;
- Documenting and providing feedback to stakeholders, including a history of revisions outlining advice received and government responses;
- Clear delineation of potential uses;
- Adaptive management approach adopted, which contributes to communities feeling in control over what is happening around them and confidence in the ability of government (particularly environment agencies) to intervene if required; and
- Tangible evidence of the benefits through regional employment and infrastructure.

**2.6 Multiple Land Use Principles**

The principles identified generally support the underpinning proposition of the MLUF that land should not be put to a single use without considering the implications or consequences for other potential land uses.

**International principles, frameworks and conventions**

A careful analysis of the international frameworks, charters and principles highlighted a concern for ensuring intra and inter-generational equity and sustainability. In general, there were seven common themes that were consistent amongst the different international land use frameworks:

- Resource maintenance and efficiency – Use of sustainable natural resource management, minimising waste and optimising productivity.
- Livelihood sufficiency and opportunity – Establishment of local economies and markets, improving future employability.
- Socio-ecological integrity – Preservation of native environment and community values, considering local conditions.
- Strong democratic governance – Adherence to law and international conventions and standards, respecting human rights.
• Intra-generational equity – Provision of equal or higher economic compensation for exchange of property rights.
• Respect for Indigenous communities and cultural heritage – Incorporation of aspects of local customs into projects, acknowledging the beliefs of all stakeholders.
• Immediate and long-term integration – Balance of short-term goals with requirement for longevity; applying an approach to planning that supports durable infrastructure.
### 3.0 Issue Identification and Analysis

The MLUF will need to address an increasing number of complex, contestable and dynamic challenges to securing reliable, predictable and timely access to land.

#### 3.1 Public Debate

The public debate regarding resource development varies. Groups opposed to resource development are characterised by emotive language, worst case scenarios and poorly validated evidence. This has been viewed by other stakeholders as reducing the reliability and predictability of access to land. The public discourse is heavily influenced by:

- The ‘language of entitlement’ occasionally used by the resources sector can be offensive to other land uses. Stakeholders consulted regularly indicated that the ‘language of entitlement’ can often trigger confrontation with other land users. While land access may be a legal right for resource development activities, language that implies land access can be immediately assumed without question is deemed ‘offensive’ by other land uses, land use regulators and communities. The MLUF must recognise and respect the needs and interests of other land uses and communities, especially pre-existing occupiers or users.

- Broader narratives e.g. best mechanism to distribute the wealth from the ‘resources boom’, public debate regarding issues such as the Carbon Tax and Fly-In-Fly-Out (FIFO) workforce arrangements.

- Government’s role is perceived as being conflicted (both regulator and collector of royalties).

- Examples of highly publicised poor landholder consultation by exploration firms - It was reported that intermediaries such as State/Territory Farmers Federation bodies are being used for landholder consultation in lieu of individual land owners or tenants as this is seen as a lower cost approach for exploration firms.

- Vested interest groups (non-government organisations and industry lobby groups) are becoming more co-ordinated and sophisticated.

- There are individuals and institutions that possess deeply held ideological views regarding the legitimacy of exploration and extraction. Regardless of any reputable/verifiable evidence to the contrary they will continue to view and describe the minerals and petroleum sector as it operated in the 1970s. Difficulties easily identifying and understanding the “non-national” economic benefits generated by resource development projects. The national and state/territory economic benefits of resource development projects are well publicised; less well known are the social and environmental benefits. It takes a significant amount of searching to uncover relatively easily understood environmental benefits e.g. in the case of water usage by using saline to hyper-saline groundwater the resource development projects can provide surplus water to other adjacent land uses. Similarly locating clear and concise information on the recognised social benefits is time consuming e.g. training, apprenticeships, scholarships and work experience, funding of community services and infrastructure, sponsorship of local events, services, charities and community organisations, revenue and employment for Indigenous Australians.

#### 3.2 Landholders and Communities

A frequent stakeholder discussion topic was the acknowledgement that many communities and landholders were under-prepared for the pace and scale of development projects. The issues associated with community and landholder readiness for very large scale or multiple small footprint development projects were:

- Lack of clear planning regarding how communities will be prepared for development projects. In some instances, there was no well understood plan or direction to guide development to be consistent with community values and their capacity to adapt to the implications of the land use change. Therefore some communities perceived that a single development was the start of a long term trend and more of the same to come.
• Communities perceived they were not receiving back tangible benefits to offset the perceived or real impacts. The ‘hollowing out effect’ was regularly cited. The community’s livelihood has traditionally been associated with a few different land uses and the arrival of development projects is perceived to threaten that livelihood.

• Concern about health impacts of unfamiliar development activities in their area e.g. dust.

• Landholders are unclear regarding their property rights. Many landholders have been required to negotiate access agreements to their land and some have reported to their peak bodies that they are unclear regarding their property rights. Landholders have reported that often they were required to negotiate separate agreements with multiple entities for the same development project e.g. access, pipeline construction.

3.3 Assessment and Approval Regulations

There was general recognition by stakeholders that current regulations could be improved so as to lower costs to government and industry and strengthen public/community confidence.

The common regulatory issues cited by stakeholders were:

• The basis for determining whether a development can proceed in a highly regulated area should not be a drawn out process. There should be key decision points based on activities that inform whether a development should proceed, for example exploration, as it allows for data to be examined before a decision on whether to proceed with a development, or exclude development, is made.

• Areas should only be temporally excluded from development as long as the Government is making a fully informed decision regarding the consequences of exclusion or greater restrictions, noting circumstances change over time, and future advances in technology may support development in areas where it is considered an incompatible today. The rationale for exclusion must be transparent for all.

• If outright exclusion should be the last resort, exclusion should only occur where is it very clear that development activity creates value that is deemed to have a higher economic, social and environmental value than resource development, and would be impacted by such activity.

• Lack of clarity and transparency regarding regulatory mechanisms to evaluate the social and economic impacts of development projects. State and Territory government environmental assessment regulations are reported as being used to justify reasons to reject or place significant restrictions on resource development projects for primarily social impact reasons e.g. potential health impacts.

• Clear regulator expectations for assessing cumulative impacts. Stakeholders widely supported the concept of assessing all development projects on the basis of their cumulative impacts as this would provide greater insight into when development projects (as well as other surrounding existing activities) exceed the social, economic and environmental resources of a region. While strategic assessment instruments are available within various States and Territories, they are similarly restricted to the ‘scope’ of the specific statute (e.g. environment) and are used primarily for the assessment of cumulative impacts associated with sequentially implemented resource and non-resource development projects. Current approaches need to be clarified regarding non-environmental cumulative impacts that are relevant to resource or non-resource development projects in aggregate, not in isolation e.g. impact on local employment conditions etc.

• Cumulative impact assessments should inform policy responses. There is a common sentiment within the minerals and petroleum sector that cumulative impact assessment should inform policy responses to potential triggering of ‘regional thresholds’. The next proposed development project should not be adversely assessed because it could potentially exceed current social, economic and environmental capacity. It should be assessed in the context of the policy response that would be needed to accommodate the development.
Negotiating land access is overly confusing and complex by needing to identify and understand the constraints on access and use of a myriad of different land tenures, restrictions and exclusions.

Apparent duplication between Commonwealth and State and Territory legislation has led to growing frustration within affected communities and the minerals and petroleum sectors. This is being exacerbated by legislation within jurisdictions that prioritises a single land use over others and the increasing area of Crown Land being classified as either exempt or restricted, thereby excluding non-conservation orientated land uses.

Environmental offsets are cited as a significant area of ‘green tape’. The complexity of legislative requirements to provide environmental offsets under an exploration or mining licence is becoming increasingly unworkable. For example, criteria for ‘like for like’ are leading to some perverse outcomes. High offset ratios are also impacting other land uses, necessitating land buyout for this purpose.

Complexity of obtaining approvals for multiple land use arrangements can dissuade smaller resource companies from pursuing co-existence benefits. The minerals and petroleum sectors have sought out opportunities to turn challenging impact and waste management issues into supporting and enhancing host and adjacent land uses. Such benefits however have resulted largely from opportunistic synergies. Given that such resource development projects generally require additional statutory approval under separate legislation administered by different regulatory agencies, many smaller resource companies are reluctant to incur the necessary costs to pursue such benefits.

Uncertainty regarding mine relinquishment regulations has resulted in an increasing number of sites remaining in care and maintenance. A barrier to sequential land use is the uncertainty regarding whether operators have fulfilled their relinquishment obligations, and the willingness of government to sign-off on rehabilitation as complete to enable post-mine land use. Governments are also inclined to keep access to former mine sites available for future exploration and re-evaluation of remaining resources as governments are reluctant to sterilise any remaining resources left behind by resource companies. Governments are concerned regarding signing off relinquished mine sites with hidden defects or liabilities that require future costly remediation in order for the land to be used again. Community concern over mining ‘endpoint’, and hence land access, may also be alleviated if sequential land use is more effectively resolved.

Mechanisms for local councils to refer Development Applications to State and Territory mineral and petroleum regulators are unclear. The triggers for a local council to refer a Development Application are generally unclear and rely upon local councils having knowledge of where medium to high value deposits may exist.

3.4 Regional Strategic Growth Planning and Land Use Planning

Many stakeholders cited the need for better Regional Strategic Growth Planning. Comments made regarding the effectiveness of existing Regional Strategic Growth Planning included:

- Strategic regional plans along the east coast of Australia appear to primarily plan for population growth with land use, resource capabilities and values being a secondary consideration. Stakeholders indicated it was critical that governments retain a priority investment in surveying for resource deposits and publishing this information.

- Strategic regional plans tend to plan for a single, rather than multiple future scenarios and do not adapt well to change. When change occurs, it may be perceived as not being in the plan and therefore potentially resisted. Strategic regional plans have a tendency to be created, used to guide government decision making, but are not well reported to inform local communities on progress in implementing the plans.

- The myriad and diversity of Commonwealth and State and Territory government policies and plans (across different sectors, timeframes and spatial scales) makes strategic regional planning extremely challenging and time consuming.
4.0 Conclusion
By applying leading practices to identified land access and land use issues, the solution to achieving multiple and sequential land use outcomes is a MLUF that comprises:

- A set of principles for use by the resources sector and other land users that demonstrates a commitment to maximising the social, economic, environmental, cultural and heritage value of land and marine environments; and
- A suite of mutually supportive methods and tools to better plan, prepare and assess land access and land use decisions.

The MLUF is a blend of existing technical approaches, strengthened with more consistently applied (in some cases new) adaptive methods and tools (components).

4.1 Desired Outcomes
The MLUF must better enable mutually beneficial co-existence of resource development projects and other legitimate land uses such as agriculture, conservation, commercial forestry, defence, indigenous land use, urban development, tourism, and critical social and economic infrastructure (e.g. National Broadband Network and High Speed Rail).

The desired outcomes from the MLUF are:

- Shared commitment to multiple and sequential land use – Minimise conflict over land use decisions by improved ability to recognise multiple needs and beneficial opportunities early and implement effective risk based approaches to meeting needs, mitigating adverse impacts and realising mutual benefits.
- Better informed public discourse – Help balance the public discourse regarding the legitimacy of resource development activity through increased transparency and consistency in land use decisions and easier access to relevant fact based information about land access and use regulations.
- Merit based land access – Ensure land is not arbitrarily sterilised from other uses without understanding the consequences, therefore providing certainty for industry and improved community confidence in land use decisions.
- Better outcomes for affected communities and landholders – Demonstrate and facilitate that multiple land use can be accommodated in a manner that is beneficial to other landholders, impacted communities and engender greater confidence in communities and landholders impacted by resource development.

4.2 Guiding Principles
The MLUF principles (see Box B) are universal and do not promote the resource development sector over other land uses. It will be essential that the principles are revisited every few years to ensure they remain relevant and applicable. Changes in technology, community expectations, Australia’s economic prosperity and environmental needs must be continually reflected and recognised in the principles.

Box B – Multiple Land Use Framework Principles

- **Best use of resources** – Maximise the social, economic, environmental and heritage values of land use for current and future generations.
- **Coexistence** – The rights of all land users are recognised and their intentions acknowledged and respected. Ensure land use decision making does not exclude other potential uses without considering the benefits and consequences for other land users and the wider Australian community.
- **Strategic planning** – Inter-governmental planning to recognise community expectations and capacity to adapt to land change. Effective planning gives greater certainty to industry.
4.3 Components

Enabling multiple and sequential land use requires a range of tools and methods to be applied at a regional level, geographical features, economic and social context and current land uses.

The MLUF contains nine components (see Box C) that are adaptive (leadership, partnerships, planning, engagement, education and applied learning) and technically orientated (assessment and approvals processes underpinned by sound scientific and engineering guidance and practice).

Box C – Multiple Land Use Framework Components

- **Tailored participation of communities and landholders** – Directly affected landholders should be informed and consulted on multiple land use options and potential for coexistence to promote a greater understanding of mutual benefits and to resolve problems.

- **Engagement and information** – Open and constructive debate and analysis of different multiple land use options. Stakeholders should be willing to listen and appreciate the views, concerns and needs of all land users.

- **Decision making and accountability** – Risk-based approach in the assessment of land use capability, including the benefits and consequences. Clear accountability and governance around the decision-making process.

- **Efficient processes** – Streamlined, transparent and consistent approvals processes. Those who are responsible for the planning, assessment and approvals processes are clearly identified.

- **Accessible relevant information** – Easy access to accurate information regarding land capability, and examples of multiple and sequential land uses.

- **Leadership, facilitation and coordination** – Strong leadership from government, industry and the community is central to successful multiple/sequential land use outcomes. Articulate the broad areas of responsibilities of government, industry and the community in terms of facilitating and leading the required changes to optimise multiple and sequential land use.

- **Planning** – Seek clarity regarding governments’ objectives and intentions. Describe the optimal approach to enable regions to benefit from land use change.

- **Partnerships** – Partnerships between industry and affected stakeholders play an important role in achieving mutually beneficial multiple and sequential land use outcomes. Identify what needs to be done in order for regional communities to be prepared for land use changes. Extensive stakeholder consultation assists decision making and avoids inappropriate development and/or exclusion of land from other potential uses.

- **Engagement** – Early engagement to enable stakeholders to clearly understand any proposed land use activity. Progress a tripartite approach, with government, industry and community working, to resolving policy, planning and investment conflict. Guidance as to how to engage with key stakeholders with an interest or involvement in land access and usage issues.

- **Information** – Education and adoption of evidence-based approaches is an important feature of successful multiple land use planning approaches. Inform the broader community, industry and media about the importance of land access and land use to the future viability of all industries and the ongoing sustainability of regions. Inform media and industry about what governments are doing to protect the public interest with respect to regulating industry and protecting social and environmental values.
The Multiple Land Use Framework

- **Assessments and approvals** – Project approvals are streamlined through applying risk-based approaches that are based on best available science, evidence and sustainable development principles. Transparent and consistent approvals processes which account for multiple and sequential land use, and identify related issues such as water, heritage and cultural values.

- **Monitoring and compliance** – Improvement in the transparency and understanding of how government ensures industry compliance with conditions/regulations set to protect the public interest. Increased confidence in the regulator through spend and efficiency in enforcement.

- **Continuous improvement** – Drawing on past experiences in decision making will improve multiple and sequential land use outcomes. Outline the necessary coordination of investment and the resulting outputs of the investment in the areas of activity, to better understand the cumulative effects of land use change and development across economic, environmental and social dimensions.

- **Sharing and collaboration** – Collaboration between organisations such as government or industry bodies can support sharing of data and information, and assure of its quality, accuracy and correct application. Provide mechanisms and opportunities for government, industry and community to share land related information to identify potential issues and opportunities for multiple and sequential land use outcomes.

**Roles and responsibilities**
The MLUF does not propose any significant change in existing accountabilities, roles and responsibilities of the different State and Territory government agencies. It does not seek to impose any significant additional responsibilities onto resource companies. Rather the MLUF seeks to ensure the different participants in land access and land use planning, decision making and evaluation more consistently performing their expected roles.

**Interdependencies between components and their respective methods and tools**
There are a number of critical interdependencies that exist across the MLUF. Understanding these critical dependencies will help with its effective deployment. Figure 3 provides an overall illustration of the MLUF including key dependencies. For example:

- Clear Commonwealth, state and territory government policy and investment priorities regarding regional growth will influence land/resource capability analysis and strategic regional growth planning. In the absence of clear Commonwealth, state and territory government priorities the effectiveness of land/resource capability analysis and strategic regional growth planning is hampered.

- Strategic regional growth planning and clear interfaces with the statutory planning systems provide the “context” for community level partnerships. These two components provide the parameters in terms of what outcomes communities are seeking and how land can be used in the area to achieve those outcomes working side by side with industry and governments.

- All MLUF components will be more effective and efficient if government is involved early in coordination to facilitate bringing key stakeholders together to find workable and practical solutions.

- The achievement of multiple and sequential land use outcomes is heavily influenced by whether there exists strong community and industry leadership especially in regards to community debates about the legitimacy of resource development projects. Similarly effective intra and inter government co-ordination is necessary to drive outcomes around engagement, education and assessments, approvals and co-ordination.

- The messages used in engagement and education flow from having clear Commonwealth, state and territory government directions, strong regional planning, comprehensive land/resource capability analysis, effective community and industry leadership and co-ordination across different spheres of government.
• Underpinning the MLUF are the components regarding applied learning and sharing and collaboration. These components and their methods and tools provide the data, information and knowledge base to inform decisions needing to be taken in the areas of assessments and approvals as well as shaping messages/information products used in consultation, education and engagement.
Figure 3: Multiple Land Use Framework
Based upon the stakeholder consultation and research undertaken, the MLUF has been developed as a fit-for-purpose, values driven and authentic response to achieving multiple and sequential land use outcomes. The research undertaken demonstrates the conditions required to achieve multiple and sequential land use outcomes. Table 3 outlines how multiple and sequential land use outcomes can be achieved through application of the MLUF principles.

Table 2: Achievement of MLUF desired outcomes

<table>
<thead>
<tr>
<th>Desired Outcome</th>
<th>How MLUF seek to achieve outcome</th>
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| Shared commitment by government, industry and the community to multiple and sequential land use | • Clear expectations of the behaviours (motivations) of key stakeholders will be set - The minerals and petroleum sectors and other land use sectors will be able to demonstrate to each other a shared commitment to maximising the social, economic, environmental, and heritage value of land/marine environments.  
  • The legitimacy of the land use and access planning and decision making processes will be strengthened - The behaviours of key stakeholders involved in land use and access planning and decision making should be consistent with the principles, thereby making the land use outcomes less contestable and contentious.  
  • Guide and encourage minerals and petroleum sectors to avoid using “the language of entitlement” when interacting with other land users. |
| Better informed public discourse                     | • Strengthen community confidence by making it easier for public to discover authoritative information on when a breach of land access and use regulations has occurred and how those responsible have been held accountable (monitoring and reporting MLUF component).  
  • Strengthen stakeholder confidence by clearly demonstrating responsiveness to the concerns other land uses, land use regulators and community through greater visibility of the research and development activities and investments (applied learning MLUF component).  
  • Make it considerably easier to discover and understand information about the type of coexistence benefits that can be realised by landholders and the minerals and petroleum sector (education MLUF component).  
  • Make greater use of organisations and individuals who are deemed to be credible to develop and deliver education material to landholders, communities and other land users (education MLUF component). |
| Merit based land use decisions                        | • Effectively using strategic assessments to initially screen potentially contentious resource development projects in a timely manner so as to provide certainty to resource development firms and communities regarding how project level approval should proceed (assessments, approvals and consultation MLUF component – approvals).  
  • Earlier and comprehensive understanding of the region’s existing economic, social and environmental capacity to co-exist with resource development (and other development projects) and what would be needed to build the required capacity (assessments, approvals and consultation MLUF component – strategic cumulative impact assessments).  
  • Clearly setting out what a minimal level of research, analysis and consultation should be undertaken prior to any decision to permanently excluding any other land use (assessments, approvals and consultation MLUF component – consultation). |
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| Deliver acceptable outcomes for affected communities and landholders | • Clarifying regulatory requirements across jurisdictions regarding mine closure and using the different components of the MLUF to effectively plan and prepare for mine closure (assessments, approvals and consultation MLUF component).

• Providing clearer guidance for local councils regarding when they should consult with minerals and petroleum regulators on development applications and the conditions they are considering imposing for different land use zones (leadership, facilitation and coordination MLUF component).

• Better prepare potentially affected landholders and communities through regional strategic planning that considers the likely impacts and effects of resource development on the region and how resource development can occur in a manner consistent with community values and expectations (planning MLUF component).

• Better enable affected communities and landholders and resource companies to identify mutually beneficial outcomes based upon a clear set of regional/community economic, social and environmental values and needs (partnership MLUF component).

• Work with landowners (either directly or via credible intermediaries) to help them better understand their property rights with regards to resource development activity. This must occur prior to the landholders being required to negotiate land access agreements (engagement MLUF component).

• Streamline approval processes which involve different statutory authorities where the resource development firm and affected landholders can demonstrate that they are supportive of arrangements to mutually benefit from water, waste recycling, etc. sharing arrangements (leadership, facilitation and co-ordination MLUF component).

The other significant advantages of the MLUF include:

1. Does not require major change to existing roles and responsibilities - It seeks to hold all the different actors to greater account in terms of consistently performing their roles.

2. Seeks to gain greater value for money from existing investment in land access and use methods and tools – The MLUF will bring together under a single framework existing methods, approaches and tools being used disparately and intermittently across different jurisdictions, land uses and agencies.

3. Ability to adapt and customise the MLUF components – The MLUF principles are universal, however the application of the MLUF components will be based upon the specific challenges, issues and opportunities facing each LAWG member and the resource development projects planned or occurring in their jurisdiction (see case studies at Appendix B).
Appendix A – Stakeholders Consulted

The stakeholders closely consulted included:

- Australian Petroleum Production and Exploration Association
- National Farmers Federation
- Minerals Council of Australia
- Australian Pipeline Industry Association
- Australian Conservation Foundation
- Public Health Association of Australia
- Australian Local Government Association
- Department of Sustainability, Environment, Water, Population and Communities (Commonwealth)
- Department of Agriculture, Forestry and Fisheries (Commonwealth)
- Department of Climate Change and Energy Efficiency (Commonwealth)
- Department of Regional Development and Local Government (Commonwealth)
- Department of Finance and Deregulation (Commonwealth)
- Department of Defence (Commonwealth)
- Department of Resources, Energy and Tourism (Commonwealth)
- Victorian and Queensland Departments of Planning
- Victorian, Queensland and Western Australian Departments of Premier and Cabinet
- All Land Access Working Group members
Appendix B – Case Studies

Community Forest Programme, United Kingdom
The Community Forest programme (CFP) was established in 1990 as a pilot project to deliver a comprehensive package of urban, economic and social regeneration capable of combining several socioeconomic functions in the same area.

Since the late 1980s, the concepts and practices related to multi-purpose forestry, reclaimed ex-mine uses, and multifunctional agriculture have increasingly gained acceptance. In 1990 the Government published its Environment White Paper ‘This Common Inheritance’ that introduced the concept of sustainable development in England and Wales. This policy emerged in the wake of the 1987 Brundtland Report, which first drew the concept of sustainable development to mainstream audiences. In 1999 the Government published its first Sustainable Development Strategy. The revised strategy, ‘Securing the Future’, published in 2005 identifies four priorities: sustainable consumption and production, climate change, natural resource protection and sustainable communities. This policy context provided an ideal setting for the evolution of the concept of community forestry embodied in the CFP. As a result, the CFP quickly established itself as a model to test how different functions in problematic fringe locations may share space, why they may function badly, and how they might function better.

Emscher Park Ruhr District, Germany
Emscher Park is located near the Emscher River in the German Ruhr district and covers an area of approximately 800 square kilometers. For more than a century the area has been one of Europe’s largest industrial districts with mining operations and heavy industry. In the 1990s, faced with a legacy of contaminated land and a redundant workforce, the area commenced a long process of transformation in which the old industrial architecture is preserved and plays a decisive part in a framework for new multiple land uses. The IBA Emscher Park projects range from re-naturalization of watercourses to building new housing, business parks and research centres. The Emscher park is often portrayed as a leading practice model for sustainable development and as an example of civic participation in regional planning.

Regional strategic environmental assessment framework for Canada, Canadian Council of Ministers of the Environment
Regional strategic environmental assessment framework for Canada (R-SEA) seeks to incorporate environmental considerations into the development of public policies and strategic decisions. In doing so, R-SEA can support the preparation of a preferred regional development strategy and environmental management framework, and inform subsequent project-based environmental assessment and decision processes. Its main aim is to strengthen accountability and provide greater public confidence that federal government decisions are being made in full awareness of the potential environmental impact. The rationale for developing R-SEA was to provide a methodology capable of integrating environmental assessments in support of strategic planning and decision-making in a regional context.

Land Administration Assessment Framework
The Land Governance Assessment Framework (LGAF) is a framework aimed at monitoring land governance at the country level. It provides a diagnostic tool that covers five main areas for policy intervention: legal and institutional framework; land use planning, management and taxation; management of public land; public provision of land information; and dispute resolution and conflict management. Within each thematic area, a series of indicators has been developed with a subset of dimensions that establish a specific line of enquiry for investigation, quantitative measurement or qualitative assessment. LGAF was developed in order to provide governments with an objective assessment tool that they can use to identify areas for improvement.

This case study will provide a brief description of key features of the LGAF and will report on initial experience in one of the four countries where this approach was piloted. The pilot countries were Peru, Ethiopia, Kyrgyzstan and Tanzania.
Carbon de Cerrejon, La Guajira Colombia
Established since the mid 1970’s, this major coal mining project in La Guajira, the most northerly department of Colombia South America, represents a good example of mineral extraction in a well-populated area of traditional agriculture and indigenous as well as immigrant communities. Unlike many such projects in Latin America, Cerrejon’s statutory consent processes have all been negotiated with national and local authorities within the modern legislative era. Spatial planning, an awareness of the longer term interests of communities, and prioritising of environmental interests are all enshrined to a greater or lesser extent in policy statements at Departmental Development Plan level and within the mining company’s own statements of the social and physical context within which it operates.

Regional Forestry Agreements
Regional Forest Agreements (RFAs) were developed between the Australia government and those of New South Wales, Victoria, Tasmania and Western Australia. RFAs were developed for these regions:
- New South Wales – Eden, North East, Southern NSW
- Victoria – East Gippsland, Central Highlands, North East, Gippsland, West
- Western Australia – South West forest region
- Tasmania – State-wide
- Preparatory work for an RFA for south-east Queensland were commenced by not concluded

The RFA process commenced with the agreement by Australian, State and Territory Governments to the National Forest Policy Statement in 1992. Background work to the RFAs, including Comprehensive Regional Assessments, commenced soon after. RFAs were progressively negotiated between 1997 and 2001.

Western Growth Corridor of Melbourne
The Western Growth Corridor of Melbourne encompasses the Wyndham and Melton Growth Areas. The focus of this case study is the Wyndham Growth Area due to the presence of extractive industry in the western end of the growth corridor.

The City of Wyndham is the fastest growing municipality in Victoria and one of the fastest growing in Australia. According to the Australian Bureau of Statistics, Wyndham had a population of 168,552 in 2011, adding 12,230 residents during 2010/11. This represents an annual growth rate of 7.8 per cent p.a. Projections to June 2012 suggest an annual growth rate of seven per cent in the City, reaching a population of 184,191 by June 2012.

The Growth Areas Authority (GAA) has prepared a Draft West Growth Corridor Plan which sets out a comprehensive vision for the future evolution of the Wyndham and Melton growth areas. The Growth Corridor Plan contains a hierarchy of activity centres, existing and new residential areas, protection of biodiversity values, new infrastructure corridors and open space. The Wyndham growth corridor contains two quarries. One quarry is operated by Boral (Ravenhall), the other operated by Holcim (Werribee). Both quarries are used for rock extraction and are located adjacent or in close proximity to existing and/or proposed new residential areas.

In addition to urban uses, the corridor contains and interfaces with several key environmental assets including RAMSAR sites, the Cheetham Wetlands, marine environments, areas containing potentially endangered species and a large area of native grasslands. The Draft West Growth Corridor Plan also addresses buffer issues to extractive industries to ensure that these activities can still occur in an environment undergoing rapid urban expansion.

Underground coal mine, Margaret River
LD Operations Pty Ltd proposed to construct and operate an underground coal mine 15km east northeast of the Margaret River Township in south-west Western Australia. The proposal comprised three main components: mine site, coal handling and preparation plant and transport route.
The surface mine infrastructure and entrance to the underground would be located on an approximate 80 hectare (ha) parcel of land owned by the proponent, which is largely cleared agricultural land currently used for cattle grazing plus one dwelling. The proposed mine site area abuts the North-East Margaret River and Blackwood State Forests immediately to the north. Rezoning of the land was identified as potentially being required to allow development of the mine.

The proposed mine site would have a surface footprint of up to 40ha, with an extensive underground network of tunnels totalling 1,200ha. The underground mine would be 160 – 500 metres (m) below the ground surface, some of which underlies the North-East Margaret River and Blackwood State Forests, as well as the Margaret River (including two of its permanent pools). The proposed underground mining area would be located within the Sue aquifer, which is overlain by the Leederville aquifer.

The proposed mine site area would be located within the Proclaimed, Busselton-Capel Groundwater Area, Cowaramup Groundwater Subarea as well as the Proclaimed Margaret River Public Drinking Water Supply Area, Priority 3 Surface Water area. Some of the underground mine would be below the Priority 1 Surface Water area, which is part of the catchment for the Ten Mile Brook Dam. The Ten Mile Brook Dam is utilised for the Margaret River and Cowaramup town water supplies.

**Kalgoorlie-Boulder, Western Australia, Kalgoorlie Consolidated Gold Mines**

During the 1980s open pit and underground mines were operating within the Golden Mile mining area that is located adjacent to the City of Kalgoorlie-Boulder. Technological advances in mining made it possible to extract gold from lower grade ore. As a result Kalgoorlie Consolidated Gold Mines (KCGM) planned to expand its operations, consuming its existing open cut operations into a single ‘Super pit’ that would then grow to take in parts of the Kalgoorlie-Boulder (predominantly Boulder) township. As well as this, there were plans to re-process existing tailings and waste dumps that contained large volumes of material containing low gold grades.

In 1987, the Environmental Protection Authority (EPA) recommended that an integrated plan be developed for the region that recognised the role of mining in the region, the need to coordinate mining activities and the potential for significant environmental and social impacts on the township. In response, the WA Government established the Golden Mile Development Planning Committee group to oversee mining in the area in the same year. The EPA produced the Kalgoorlie Environmental Protection Policy in 1987. The policy was focused on noise and air quality (particularly sulphur dioxide emissions) arising from mining activities around Kalgoorlie-Boulder.

In 1989 a ‘Conceptual Plan for Mining Developments on the Golden Mile’ was produced by the Golden Mile Mining Planning Committee. The conceptual plan provided a framework for future mining developments to be viewed in the context of the overall social and environmental protection of the region. The conceptual plan established a clear separation between mining and residential areas (as conflicting land uses) and other mining-related areas such as waste and tailings dumps. When combined with new town development plans, the new Environmental Protection Policy and conceptual plan for mining, an integrated plan for the region was formed.

**Darling Range, Western Australia, Alcoa of Australia Limited**

This case study explores mining in high conservation forests and water catchments close to a metropolitan centre with excellent community interactions and corporate citizenship. Strip mining is used to remove the bauxite resource, which involves clearing of the overlying vegetation, mining the bauxite resource and then rehabilitating the site. Mining takes place predominantly within Jarrah forests south of Perth; however, comes within close proximity of local townships and private properties.

Exploration of the Jarrah forests began in 1957. In 1961, the first mining lease was granted and mining began in 1963. Since that time, Alcoa has continuously, cleared, mined and rehabilitated portions of the Jarrah forest. Alcoa has received national and international recognition for its continuing rehabilitation work and demonstrating successful land management practices.
Alcoa’s operations are overseen by the Mining and Management Program Liaison Group, chaired by the Department of Industry and Resources, on behalf of the Minister for State Development, with representatives from the Department of Environment and Conservation and the Department of Water.

Surat Basin, QLD
Queensland’s Surat Basin region comprises some 110,000 km² of land within the Toowoomba, Maranoa and Western Downs local government areas with a total estimated population in 2011 of almost 210,000. It is among the richest agricultural regions in Australia and holds vast reserves of thermal coal and natural gas from coal seams.

The mining and energy sectors provide unprecedented economic development opportunities for the Surat Basin region and its communities. However, it is also posing significant challenges for the region’s infrastructure and services and the management of land and water resources and natural environments. In recognition of these challenges, the Queensland government, local governments, communities and industry have prepared the Surat Basin Future Directions Statement to cast the vision for the region and provide a framework of principles and policies to sustain and manage the region’s anticipated growth.

Jacinth-Ambrosia Project, SA
The Jacinth-Ambrosia Project has been developed by Iluka Resources Limited, who is proposing to conduct a mineral sands mining operation within two Regional Reserve conservation areas. The project involves the establishment of a mineral sands mining operation in the Eucala Basin, approximately 200 km north-west of Ceduna in South Australia (Iluka 2008).

Upper Hunter Valley Land Use Plan, NSW
The upper Hunter Valley region is situated in rural NSW approximately 200 km north-east of Sydney. The changing concentration of land use and increasing amount of coal and natural gas from coal seams projects in the Upper Hunter has caused concern amongst various stakeholders. In March 2012, the NSW government released a draft Upper Hunter Valley land use plan to address this regional land use conflict.

High Speed Rail, East Coast, Australia
The Commonwealth Department of Infrastructure and Transportation completed a feasibility study into the potential introduction of high speed rail (HSR) to connect Brisbane, Sydney, Canberra and Melbourne in April 2013. Intermediate stations are being considered in regional centres, such as the Gold Coast, Newcastle, Wollongong and Shepparton.

The operational characteristics of HSR require railway corridors to be relatively straight and flat to allow the trains to reach maximum speeds of 350 kilometres per hour (kph). In addition, corridors must be designated, preserved and eventually acquired, in many cases years in advance of need, with little scope for changes in alignment once the HSR network has been established. Finally, interim management of the HSR corridor must be carefully considered and implemented to avoid the introduction of uses within or close to the corridor that would prevent, delay or impose unnecessary costs on the HSR when it is constructed.

As of September 2013, there was no arrangement between the Commonwealth, the affected states and the ACT for implementing an infrastructure project on the scale and scope envisaged for HSR. New agreements and legislation would be required between the various levels of government addressing environmental assessment procedures, regional and strategic land use planning, corridor acquisition and preservation, and funding arrangements. Since the corridor eventually selected will affect existing and potential mining leases, consideration must also be given to how the affected resources can be developed without adding to the cost or affecting the timing of the HSR network construction.
Woomera Protected Area
The Woomera Prohibited Area (WPA) is a weapons testing range used by the Australian Defence Force. Declared a prohibited area under the Defence Force Regulations 1952, the area’s remoteness, large area of 127,000 km², and relatively low levels of use by other people allow Defence (and our allies) to use the area to test long-range weapons systems and to conduct classified test activities. The WPA is an important Defence test and evaluation capability.

There are tight controls on access for non-Defence purposes, allowing for the testing to be conducted in safety and within prescribed security protocols. As a declared prohibited area, access to the WPA for non-Defence use requires Commonwealth approval and is based on the proviso that Defence activities would not be unduly compromised.

Mining activities also occur in the WPA. In addition to the current mining activities, the South Australian Government have identified a potential of $35 billion worth of mining developments in the area in iron ore, gold and uranium projects. While security and economic interests feature as the primary land uses in the WPA, other uses include pastoralism, use by Aboriginal native title claim groups, and conservation values.

Mindarie Mineral Sands Project, SA
The Mindarie Mineral Sands Project is located approximately 150 km east of Adelaide in Murray Mallee region of South Australia. The proponent of the project is Murray Zircon Pty Ltd. (MZ). This case study presents an example of a mining operation taking place in an agricultural landscape, with the intention of rehabilitating the mined area back to agricultural land use after mine closure. The predominant land use of this area is dry land agriculture, mostly as cropping and grazing. Wheat and barley are the main crops with smaller areas of rye, oats, and lupins.

Most of the native mallee vegetation of the area has been cleared during the mid-1900s for agriculture. Occasional areas of remnant, degraded or regrowth vegetation and low density scattered trees exist in paddocks and alongside the roads. The original site establishment and construction activities for the Mindarie Sands Project were undertaken by the company Australian Zircon. This original mining activity ceased in 2009 when Australian Zircon went into voluntary administration. The mineral sands mine has been under care and maintenance since this closure.

In 2011 the project was purchased by Murray Zircon and who embarked on extensive engagement and consultation with the community in the process of reapplying for operational approval. This also included the undertaking of the outstanding rehabilitation which was left uncompleted when the previous operator went into administration. In April 2012 Murray Zircon gained approval from the DMITRE to re-open the mineral sands mining operation on the site. The Mindarie Mineral Sands project will involve the mining of eight mineral sands strandlines located in nine separate Mineral Leases and two Exploration Licences.
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