



Latin American countries have begun to use land use planning tools to manage competing claims to land in a context of high extractive industry activity. The progress of five Latin American countries – Brazil, Chile, Colombia, Mexico and Peru – offers interesting lessons for other regions.

LAND USE PLANNING FOR EXTRACTIVE INDUSTRIES

SUMMARY



Because of the potential for negative environmental and social impacts, extractive industries are often viewed as posing a threat to more traditional livelihood activities, such as agriculture or raising livestock, and even to the development of more value-added or service-orientated economic sectors, like tourism. Competing views about the best use of land can also fuel social conflict. This Brief presents land use planning as a tool to mitigate these risks. It describes the basic steps in land use planning, explains the extent to which five Latin American countries are using the methodology, and draws out lessons from the region's experiences that may be useful for other countries.

THE LAND USE PLANNING CHALLENGE

Land use planning is a tool used to organise multiple demands for land while minimising the likelihood of competition and conflict. The main objective of land use planning is to prioritise economic activities within a specific territory, while at the same time ensuring the sustainable use of natural resources. This is achieved by identifying the right balance between economic, environmental and social goals.

Land use planning does not necessarily prohibit extractive industries; rather it regulates where extractive activity should not take place – such as in nature reserves – and where it may go ahead subject to certain conditions. Although restrictions on land use may limit opportunities for extractive industry developers, establishing clear rules can provide important incentives by reducing perceived investment risk.¹ Consequently, these rules can attract exploration to areas where negative environmental and cultural impacts are less likely to occur.²

Land is a finite resource, and, as such, is often the focus of competition and conflict, which has definitely been the case in Latin America (see text box). Land use planning offers a strategy for preventing and managing conflict.

¹ Postigo, W. 2006. [La Zonificación Ecológica Económica y la Prevención de los Conflictos Mineros](#) (Ecological Economic Zoning and Preventing Mining Conflicts). *Economía y Sociedad* 61(1) 63-71.

² Arranz, J.C. 2008. [Los Proyectos de Ordenación Minero-Ambiental Realizados por el IGME](#) (Mining-Environmental Ordering Projects Carried Out by the IGME). Seminar: Evaluation and Environmental Recuperation of Mining Spaces. Centro de Formación de la AECID Santa Cruz de la Sierra, Bolivia, 14-17 October 2008.



COMPETITION AND CONFLICT OVER LAND IN LATIN AMERICA

There are numerous examples of competition over land resulting in conflict in Latin America. In Tambogrande, a community in northern Peru, agricultural export production is the primary economic activity, though 40% of the territory is allocated to mining activities. In 2000, a simmering conflict over land became quite visible, due to local farmers' anger about a mining project, which, they argued, would negatively affect their irrigation systems.

In another example, in 2006, Pascua Lama, a mining project involving two countries – Chile and Argentina – was approved. Civil society protested fiercely over two of the project's contentious aspects. First, the project was located near ice bodies and therefore, near important sources of water. Second, it involved a planned takeover of indigenous lands. One complicating factor was that the indigenous Diaguita people did not have clearly defined property rights, as they were nullified during the Pinochet dictatorship.

These examples illustrate why competing demands for land must be assessed within an appropriate framework – such as that provided by land use planning – based on principles of consensus building and conflict resolution. Conflicts are complex, often fuelled by historical wrongs and perceived inequalities, and thus a clear framework like land use planning can be useful.

Sources: Mining Watch Canada. 21 December 2005. [Barrick Gold Faces Determined Opposition at Pascua Lama and Veladero](#). Mining Watch Canada online.
Haarstadt, H. 2005. [Globalized Power and Resistance: A Peruvian Case Study Demonstrating Embeddedness in Spatial Scales](#). University of Bergen, Bergen.

Yet implementing land use planning is not easy. Governments need a wide variety of capabilities and resources, including: an established documentation centre with high quality information readily available; financial resources; skilled staff; guidelines; inter-institutional cooperation and coordination; and implementation and follow-up procedures. The complexity and context-specificity of land use planning also means that a long-term vision of development in a given sub-region, as well as of national development more generally, is required to facilitate

decision making regarding economic development priorities.

Transparency is also necessary to manage uncertainty and criticism regarding how governments make decisions about land use. Transparent and participatory processes are therefore essential, though they are difficult to implement.

Latin American countries have made progress in going through the steps of land use planning, as the five countries covered in this Brief show. Important land use planning initiatives are also already underway in [Central](#) and [Southern](#) Africa, with some countries, such as [Tanzania](#), having implemented land use planning processes since the early 1970s.

Resource-rich countries can benefit by establishing a set of rules and regulations for access to and use of its natural resources in order to avoid social and environmental conflicts, as well as to promote a more sustainable path for growth. The Latin American experience hopefully has some interesting lessons to offer resource-rich countries in other regions.

LAND USE PLANNING: THE LATIN AMERICAN EXPERIENCE

Latin American countries have had some key successes in implementing land use planning, albeit to varying degrees. Below we describe the key steps in conducting land use planning, then discuss how the five Latin American countries in question have implemented the process in their own countries. These countries, while not representing a complete list of land use planning activity in the region, were selected to demonstrate a useful range of experiences from different stages of land use planning, from initial formulation through to implementation, and with a focus on the extractive industries.

Steps in the Land Use Planning Process

Land use planning is a tool to manage economic activities across any given territory. However, to achieve such a complex plan can take a long time and implies several stages of work. In simple terms there are two main phases – formulation and implementation – each of which consists of a range of activities. Figure 1 depicts the two phases and their relevant activities.

The formulation of a land use plan requires a broad assessment of current land use as well as the main limitations and opportunities for development. This assessment requires the collection, analysis and summary of a substantial amount of information. Once this assessment is complete, a scoping





study into public opinion and social impacts should be carried out via participatory planning processes.

WHAT IS EEZ?

The Food and Agriculture Organization (FAO) defines Ecological and Economic Zoning as an approach to land use planning that emphasises both physical and socio-economic factors. The reason for taking socio-economic factors into account is that people are potential land users. Therefore, they should have the potential to participate in decisions regarding future uses of land. Based on an analysis of physical and socio-economic factors, activities and opportunities for success can be identified, as well as areas with special needs. It is a useful tool with which to complete the diagnostic phase of land use planning.

Source: FAO. 1996. *Agro-Ecological Zoning Guidelines*. Chapter 5 Ecological-Economic Zoning. FAO, Rome.

Using this information, different land use scenarios can be developed and the best option can be selected according to sustainability criteria. This can be challenging since the most sustainable scenario may not always be the most profitable one. In some cases, social dynamics could be drastically altered if an activity such as agriculture were affected.

After a land use plan is elaborated, instruments have to be identified with which to develop specific programmes and initiatives to achieve desired results. This should be carried out within the framework of a clearly defined road map for implementation. However, implementation does not stop there. Mechanisms should also be put in place to monitor implementation, identify and correct mistakes and improve the ongoing process.

Status of Land Use Planning in Latin America

Creating and implementing adequate land use planning tools is certainly not an easy or quick endeavour. Consequently, Latin American countries have yet to complete such processes, though many are well on their way. A key challenge facing Latin American countries that rely heavily on extractive industries for economic growth, such as the five that we

focus on here, has been how to incorporate the land use planning process into existing policy and practice. Before [Rio 92](#), where land use planning was first introduced as a tool to achieve sustainable development, few of these countries had developed an effective response to the land use planning challenge. Today, some countries have made more progress than others, as Figure 1 demonstrates.

In 1991, Colombia established land use planning in its political constitution. The process actually started back in the early 1950s with a law requiring district governments to implement urban planning. By 2007, 96.9% of [municipalities had invested in land risk management](#), and last year the government announced the implementation of a Land Planning Commission to carry out monitoring.

Brazil is a different case. Ecological and Economic Zoning (EEZ), a tool for examining potential land uses and limitations for different territories (see text box), has been completed in every [region of the country](#), with the instruments needed for its implementation currently under development. Brazil has implemented the land use planning process starting at the local level, and then moving on to the national level.

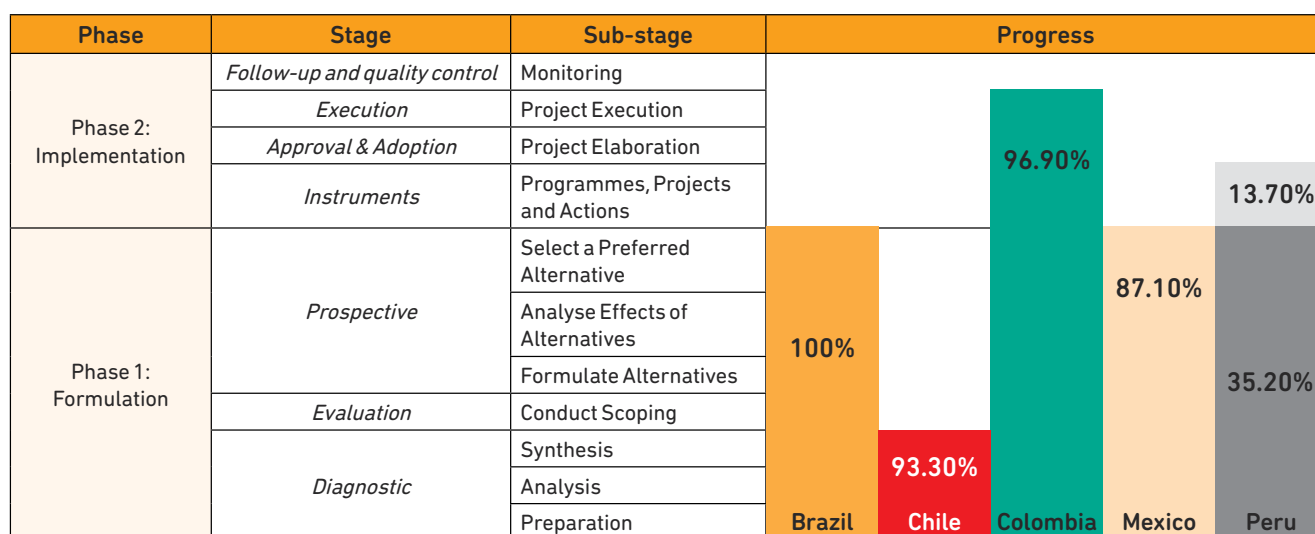
Almost all regions in Peru have demonstrated the political will to start land use planning processes, but by 2010 only 35.2% of regional governments had actually [carried out EEZ](#) (represented with dark grey in Figure 1). Some districts (13.7%) have gone further and have actually [developed land use planning instruments](#) (represented with light grey in Figure 1). The process has been highly disorganised and not all the stages have been completed (that is why in Figure 1 Peru is the only country with different colour tones). So, while Peru has made progress in many of the phases of land planning, many of these developments have only been partially completed.

Recently the Peruvian government has decided to re-centralise the land use planning process in order to establish dialogue with the private sector, which it saw as being in opposition to the process because it considers EEZ to be too restrictive for new private investments.³

Chile is an interesting case with which to compare. The government first initiated a centralised approach focused solely on urban areas. Chile is now adopting a decentralised model for land use planning after the centralised model did

³ In general terms it is common to think that land use planning could pose risks to the long-term value of companies within the extractive industry sector. For an example from Canada, see: De Cordova, M., Bonham, J. 2009. [Lines in the Sands: Oil Sands Sector Benchmarking](#). Northwest and Ethical Investments.

Figure 1: Progress on Land-Use Planning in Latin American Countries



Note: Bars indicate the highest stage that the government has mandated. Percentages refer to the percentage of government entities that have implemented that phase. In this way, the graph demonstrates both a country's overall policy with regards to land use planning as well as the extent to which the process has been rolled out in practice.

Own Elaboration. Stages taken from [Guía Metodológica para la Formulación del Plan de Ordenamiento Territorial Municipal](#) (Methodological Guide for Municipal Land Use Planning). Agustín Codazzi Geographical Institute, Bogota.

Sources: Castillo, M. 2007. [Borrador de la Memoria del Taller Subregional Andino Ordenamiento Territorial y Gestión del Riesgo](#) (Proceedings of the Sub-regional Workshop on Land Planning and Risk Management). 20-22 June, 2007. Andean Community, Lima.

Morales, M. May 3 2011. [Brasil Financiará Estudios de Zonificación Ecológica y Económica de Ucayali](#) (Brazil to Finance Studies on Ecological and Economic Zoning in Ucayali). Diarion Impetú, Pucallpa.

Sánchez, MT. et al. 2008. Análisis Comparativo de la Primera y la Segunda Generación de Guías Metodológicas para la Elaboración de Programas Estatales de Ordenamiento Territorial (PEOT) (Comparative Analysis of the First and Second Generation of Guidebooks for the Development of National Land Use Planning Programmes). In: Salinas, M.E. [El Ordenamiento Territorial: Perspectivas Internacionales](#) (Land Planning: International Perspectives). Universidad de Guadalajara, Guadalajara.

[Website](#) of the Chilean Government, Sub-secretariat of Regional and Administrative Development (Subsecretaría de Desarrollo Regional y Administrativo).

Ministry of Environment of Peru. 05 July 2010. PPT [Presentación: Procesos de Ordenamiento Territorial en el País](#) (Land Planning Processes in the Country). Ministry of Environment, Lima.

Peruvian National Institute of Statistics and Computing (INEI). 2010. [Registro Nacional de Municipalidades – RENAMU 2010](#) (National Register of Municipalities 2010). INEI, Lima.

not satisfy Government expectations. This process began in 2011 when Regional Land Use Plans were implemented with close support from the central government. The Government has recently completed a national land use assessment, and by the first half of 2011, 14 of its 15 regions had started to elaborate their own [Regional Land Use Plans](#).

Even though Chile is technically 'behind' Peru in terms of completing land planning processes, its decentralised approach is now achieving [better quality results](#). Chile therefore represents an interesting example of how a country can get back on track after failing an initial attempt at land use planning.

Finally, in the case of Mexico, regions have been implementing land use planning since 1995, though many regions are still at the design stage, while some are more advanced. At the national and sub-national level, Mexico has almost completed the formulation stage of land use planning, with [27 of 31 states having completed their State Land Use Plans](#). However, there has been no advance at the local level since Mexico's legislation does not require sub-national governments to implement their plans.

WHAT CAN WE LEARN FROM LATIN AMERICA'S EXPERIENCE?

The long-term impacts and effectiveness of these mechanisms on the environment, society and economic development – including extractive industries – are difficult to identify. Land use planning is not isolated from a variety of political, economic or social factors, so demonstrating direct causal links is difficult. That said, there is little doubt that a more inclusive, deliberative and long-term approach to land use planning is a step in the right direction.

Despite the fact that many Latin America countries have yet to complete the land use planning process, it is possible to draw out some useful conclusions and identify key lessons learned.

Extractive Industry FDI in the Context of Land Use Planning

Land use planning does not seem to present a barrier to attracting FDI. In fact, this tool could reduce investment risk by indicating which economic activities are most likely to be



approved in which areas, thereby promoting extractive sector activities in permitted zones. For example, in Colombia, where land use planning is more advanced, FDI has been significant in the mining sector. Despite the fact that Colombia lacks the same mining potential as other countries from the region, such as Chile or Peru, it has managed to increase the amount of mining FDI it receives. According to the Colombian Central Bank, from 2005 to 2010 Colombia received three times the mining FDI that it received between 2000 and 2004, showing that strong land use planning does not discourage FDI, and might even help it to increase.

The Importance of Politics

The Colombian case demonstrates how strong political commitment and the leveraging of appropriate legal frameworks, since land use planning was incorporated into the national constitution, have led to land use planning processes being implemented in each of the country's districts.

Although legal frameworks are important, sufficient financial resources are also required. If land use planning is integrated into national law, like in the case of the Colombian Constitution, these financial resources will be easier to secure from public sector budgets. For example, while Peru's EEZ Regulation was established in 2004, insufficient financial resources have been allocated for the implementation of land use planning tools, and, as a result, little progress has been made.

There are consequences for this type of delay and political weakness. In Peru's case, a number of local authorities and communities are attempting to veto proposed projects in their areas. In the region of Cajamarca, information about where mining investments were being developed was not included in the EZZ. This made it possible for conservation organisations and local governments to use the tool to fight against incoming mining projects. Consequently, Peru's EEZ not only failed to mitigate or prevent social conflict, like in the recent case of the [controversial Conga project](#), but its use at times has actually enhanced conflict. This was one of the reasons why the government decided to start the whole process again.

The More Complex the Task, the More Capabilities You Need

A variety of government capabilities are required to successfully implement land use planning tools. Inter-institutional collaboration is essential for identifying synergies that can accelerate the land planning process. Mexico and Colombia, for

example, have established independent institutions in charge of land planning and tasked them with the responsibility of coordinating with other public institutions and civil organisations. On the other hand, Chile does not have such a government agency and land planning implementation is therefore more susceptible to political and economic manoeuvring.

In Latin America, as in other regions, many countries lack public institutions that have strong technical skills and are financially efficient, both of which are necessary for effective land use planning. Some governmental agencies have produced useful information for land planning, but this has not necessarily led to successful implementation. Where governments are working in a more collaborative way, synergies are generated during the information collection process.

Often, dialogue between planners and the government officials responsible for environmental monitoring does not exist, meaning important environmental considerations are likely to be ignored. For example, while Environmental Impact Assessments (EIA) are a requirement for extractive projects in all resource-rich countries in the region, they are not necessarily taken into account in the land planning process. In Colombia, however, EIAs are approved faster because information from land use planning processes detailing potential opportunities and threats associated with developing particular extractive projects in specific territories is incorporated.

People Will Have To Be Heard

It is highly important that land planning is embedded within participatory processes that include civil society actors. This can help to ensure that the preferences of different sectors of society are represented in the decision making process, and that economic activities correspond with national development plans.

A key challenge in a highly centralised scheme is that planners tend to be working at a distance from the regions in question, and as a consequence, participative processes are generally lacking. Chile seems to be a high performer in terms of citizen participation in land use planning. The Chilean government has moved away from a centralised scheme to a more regional model with higher levels of participation from local people. Furthermore, all guidelines for land use planning in Chile highlight the importance of local participation throughout the process.

CONTEXTUAL FACTORS

ENABLING LAND USE PLANNING IN LATIN AMERICA



The main feature of land use planning as it has played out in Latin American countries is that it is a learning process. The establishment of clearly defined property rights regarding natural resources, the creation of environmental management systems, and different citizen policy oversight tools are some of the key drivers of land use planning processes.

Land use planning cannot be achieved without a clear definition of property rights. If there is uncertainty about who owns what land or has rights to which resources, it is extremely difficult to make any adjustments to how the land in a particular territory may be used according to a land use plan. Furthermore, if the limits of property rights are not defined, or if they overlap, then social conflicts are more likely to arise. In the case of the Brazilian Amazon, for example, research has shown⁴ that in a risky environment where there are few legal land titles and enforcing property rights is expensive, then deforestation through illegal mining and logging become a rational choice

whether or not land planning priorities have previously been defined. In this case, a 10% increase in tenure security led to a 7% reduction in the rate of deforestation.

Initial implementation of national land use planning systems happened around the Rio 92 Earth Summit. During the two decades following this Summit, Latin American countries have been developing better institutional frameworks for the implementation of environmental management systems.

Deciding how to organise territory is an important issue for sustainability and long-term development. Therefore policymakers, private sector and civil society actors have been taking these issues more seriously. Engagement of civil society has been a key factor in enhancing the role played by sub-national governments. The result has not only been wider participation but also capacity building practices have been developed through the Land Use Planning process.

⁴Araujo, C. et al. 2008. *Property Rights and Deforestation in the Brazilian Amazon*. Etudes et Documents. CERDI, Clermont-Ferrand.

LESSONS LEARNED

- 1** In Latin America, land use planning has not driven away FDI; on the contrary, it has probably reduced risk in the eyes of potential investors.
- 2** An adequate legal framework with strong political commitment and institutional capacity to integrate land use planning tools into national planning is crucial to enhance land use policy and achieve good results. Designating specific agencies for land use planning and assuring inter-institutional coordination have led to success in some countries.
- 3** Some countries have successfully assured multi-stakeholder participation in the planning process, often facilitated by a decentralised approach to land use planning.

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