

PUBLICATION INFORMATION

This is the author's version of a work that was accepted for publication in the Environment and Planning C: Government and Policy journal. Changes resulting from the publishing process, such as peer review, editing, corrections, structural formatting, and other quality control mechanisms may not be reflected in this document. Changes may have been made to this work since it was submitted for publication. A definitive version was subsequently published in <http://dx.doi.org/10.1177/0263774X15621758>

Digital reproduction on this site is provided to CIFOR staff and other researchers who visit this site for research consultation and scholarly purposes. Further distribution and/or any further use of the works from this site is strictly forbidden without the permission of the Environment and Planning C: Government and Policy journal.

You may download, copy and distribute this manuscript for non-commercial purposes. Your license is limited by the following restrictions:

1. The integrity of the work and identification of the author, copyright owner and publisher must be preserved in any copy.
2. You must attribute this manuscript in the following format:

This is a pre-print version of an article by *de Jong, W., Pacheco, P.* 2015. **Integrating multiple environmental regimes: Land and forest policies under broader democratic reforms in the Bolivian tropical lowlands.** *Environment and Planning C: Government and Policy.*
<http://dx.doi.org/10.1177/0263774X15621758>



This is a pre-print version of the paper, published as: Wil de Jong and Pablo Pacheco, Integrating multiple environmental regimes: Land and forest policies under broader democratic reforms in the Bolivian tropical lowlands, *Environment and Planning C: Government and Policy*, DOI: 10.1177/0263774X15621758.

Integrating multiple environmental regimes: Land and forest policies under broader democratic reforms in the Bolivian tropical lowlands

Wil de Jong¹, Pablo Pacheco²

Abstract

The paper uses a policy integration (PI) approach to analyse forest sector reforms in tropical countries, using the case of reforms that affected the northern Bolivia forest economy. The paper provides a brief overview of PI and then analyses the various reforms that all contributed to reshaping Bolivia's forest sector. The major related reforms are forestland tenure reforms, a new forestry law, but also important public administrative and democratic reforms. The case of democratic reforms linked with land and forestry reforms in northern Bolivia makes it possible to discuss environmental policy integration in a tropical context, and thus to review some of the key postulates that have been formulated on the topic, but which are to date largely based on empirical experiences from the northern hemisphere.

1. Introduction

There are many slightly different definitions of policy integration (PI), on how it can be analysed, or how it should be achieved (e.g. Briassoulis, 2004; Jordan and Lenschow, 2010; Meijers and Stead, 2004; Persson, 2004; Underdal, 1980). Briassoulis (2004: 10), for example, defines PI as: "coordinating and blending policies in a unified whole, or incorporating concerns of one policy into another", while Meijers and Stead (2004: 2) define it as "the management of cross-cutting issues in policy making that transcends the boundaries of established policy fields". Environmental policy integration (EPI) can be traced back to the Brundtland Report and the 1992 United Nations Conference on Environment and Development (Bierman et al. 2009). Since then sustainable development objectives have been incorporated into multiple policy domains (Persson, 2004). Both Peters (1998) and Briassoulis (2004) note the relevance of PI because of the changing nature of government in modern democracies, characterized as a shift from government to multi-level governance (Peters and Pierre, 1998). As a result, environmental and sustainable development concerns have gained prominence in many sector policies that have an environmental impact. PI, therefore, is not only a pursuit of increasing policy effectiveness and efficiency (Underdal, 1980), but also a necessary adaptation of policy making and implementation to a world that has set new standards for policy processes and that has become more aware of sustainable development challenges.

¹ Center for Integrated Area Studies, Kyoto University, dejongwil@gmail.com

² Center for International Forestry research

Since the 1990s the majority of tropical forest countries have seen forest sector reforms that shifted the goals of forest policy from a focus on narrow economic interests, mostly timber production, to a broader set of societal objectives, including livelihood improvements of rural communities, biodiversity conservation, recreation and the provision of environmental services (Sist et al., 2014). Sustained production objectives have been superseded with sustainable forest management objectives that address the needs and demands of a broad range of forest stakeholders. However, where such objectives are pursued, they compete almost everywhere with demands on forestlands from other sectors like agriculture, energy, mining and infrastructure (de Jong et al., 2010; Katila et al., 2014; Wunder, 2000). A new trend is the focus on forest landscapes rather than on forests (Sayer, 2009; Sayer and Maginnis, 2005); landscapes that include forest lands, agricultural lands and other natural habitats. Forest governance and forest policy have become much more complex, as has happened in other sectors.

Bolivia is one of many countries that have experienced forest policy reforms that reflect the trends described above. The country started wide-reaching forest sector reforms in the mid-1990s (Müller et al., 2014; de Jong et al., 2014) that enhanced the role of municipal governments by granting new authority in planning and public investment along with fostering civil society participation in decision making. For example, enhanced participation happened as a result of legal requirements for the involvement of rural community leaders in the annual planning and budget allocation of the municipalities to which they belonged (Ruiz, 2005). Concurrent administrative reforms gave rural communities a new legal status. These political reforms took place at the same time as policies granting land tenure rights to communities and smallholders, including rights over forestlands. Finally, new forest policies allowed these communities to use their forests commercially, providing they complied with regulations devised for such purposes.

The aim of this paper is to reflect on this package of forest sector reforms that has taken place in multiple tropical forest countries since the 1990s and onwards, using a PI framework for analysis. PI and its role in forest policy have not yet been explored extensively and even less so in tropical forestry. Neither PI theory nor experience with integration have been used in guiding these forestry reforms, especially in tropical countries. However, the reforms referred to here do have elements of PI. We hypothesize that it is useful and relevant for both the understanding of the relevance of PI in forest policy design and in implementation to highlight this connection with PI and to demonstrate that forest policy reforms can benefit from PI theory and the accumulated experiences integration when they are implemented. New efforts of forest policy reforms can draw from PI literature and documented cases in the design and implementations of the reform, and avoid the known pitfalls of such reforms. We also hypothesize that the analysis of forest policy reforms from a PI perspective may benefit the accumulated knowledge and experience on PI. This is the case not only because forest policy is a new policy domain in which PI is being attempted, but also because this paper concerns a case of tropical forest policy reform in Bolivia, whereas to date most of the lessons of PI have been based on northern hemisphere cases.

We use the Bolivian forestry and related reforms as a case to test the assumptions formulated above, and to meet the aim of the paper. This requires a deeper understanding of the various policy reform processes in Bolivia during the 90's, reforms which have important links between each other (e.g. Ruiz, 2005). We therefore review multiple environmental legislative and policy reforms in Bolivia, and will answer the following research questions: 1.) What reforms concurred simultaneously in Bolivia during the 1990s that shaped the way in which forest resources were used? 2.) Why were different land and forest related policy reforms scheduled at the same time? 3.) How did the scheduling and implementation of those reforms influence their mutual outcome 4.) What

are the overall outcomes of the integrated environmental policy reforms for, for instance, land ownership and forest management activities of new communal actors in the forest sector and 5.) To what extent are the various outcomes a result of intended or accidental PI?

The Bolivian forest sector reforms have been studied in great detail, although not yet from a PI perspective. We focus particularly on the country's northern Amazon region, an area of intensive forest extraction since the late 19th century. The region was exploited for quinine, rubber, Brazil nuts and timber (Ruiz, 2005; Stoian, 2005). Since the 1990s, both Brazil nut and timber have been the two most important forest products that drive the region's economy. We draw on our knowledge on forestry in the region where we have conducted research for the last 20 years, but also on multiple reports ([Assies, 1997](#); [Benneker, 2008](#); [Cano, 2012](#); [de Jong, 2004](#), [de Jong et al., 2006](#); [Pacheco, 1992, 2007](#); [Pacheco et al., 2009](#); [Ruiz, 2005](#); [Stoian, 2000, 2005](#); [Stoian and Henkemans, 2000](#); [Zenteno, 2013](#); [Zenteno et al., 2013](#)).

The remainder of this paper is structured as follows. After this introduction, section 2 briefly introduces PI. Section 3 provides a brief introduction to the Bolivia's northern Amazon region. Section 4 reviews policy reforms that are not directly related to environmental sectors but that had important implications for simultaneous implementation of forestry and land reforms. Section 5 reviews the specific forestry and land reforms highlighting why they were proposed and how they were implemented? Section 6 summarizes some of the most relevant outcomes of the integrated policy reforms. Section 7 returns to the questions formulated above, and the final section 8 provides a conclusion.

2. Policy integration, environmental policy integration, and tropical forest policies

PI has been debated among academics since the 1980s (e.g. [Underdal, 1980](#)). It emerged again as the EPI and climate policy integration (CPI) debate during the 1990s ([Adelle and Russel, 2013](#); [Bierman et al., 2009](#); [Ishii and Langhelle, 2011](#); [Persson, 2004](#); [Ross and Dovers, 2008](#)). PI started as an inquiry into public policy, with the aim of increasing efficiency and effectiveness ([Underdal, 1980](#)). Some authors make a clear distinction between PI and EPI, suggesting that the latter is a special case of PI in which environmental objectives are integrated into non-environmental sector policies (e.g. [Persson, 2004](#)). Others (e.g. [Briassoulis, 2004](#)) view the EPI efforts since the 1990s as a further refinement of PI itself, because environmental concerns and sustainable development concerns are, on this view, required in order to further develop PI conceptually and in practice.

An early theorist on the matter, [Underdal \(1980\)](#) suggests PI as an adjustment to public policy. He proposes three key criteria: comprehensiveness of the design of policies in a certain domain; consistent implementation of such comprehensive sector policies; and the subsequent aggregation of the outcomes of comprehensive sector policies. Comprehensiveness can be assessed using the dimensions of time, space, actors and issue ([Underdal, 1980](#); [Person, 2004](#)). Thus, a more integrated policy will adjust its scope to encompass these four dimensions more adequately than a less integrated policy. While this oftentimes implies higher levels of inclusiveness, this is not always the case, as sometimes a more focused approach will increase efficiency and effectiveness. Aggregation refers not only to a proactive consideration of possible policy alternatives, but also considering multiple, oftentimes complementary, policies that link to multiple sectors, constituencies and higher levels of objectives. The third criterion, consistency implies that different components of the policies adequately complement each other and as a result cumulatively contribute to achieving the policy objectives ([Underdal, 1980](#)).

Peters' (1998) debate on horizontal policy coordination, a concept that can be understood as policy integration, is in fact a further elaboration on PI. He argues, like Briassoulis (2004) and others, that there is an increased need to coordinate policies horizontally, across public administrative sectors. He points out that policy issues have become more complex because policy decisions more often have implications for multiple administrative sectors. In addition, policy agencies have adopted a new philosophy of client satisfaction that demands public participation in policy processes. Moreover, national policy making is increasingly conditioned by global policy processes, and last, environmental concerns have become common to all policy sectors. The typical option to enhance coordination is through hierarchy, which implies directing of PI by higher echelons of civil servants, or by more powerful ministries. Options more in tune with modern policy making cultures include market and network pathways of policy coordination.

Markets may increase policy coordination if actors involved each perceive benefits from coordination. Where that is not the case, a network pathway to policy coordination is the alternative approach. Peters understands networks as active interactions among independent organizations. Policy coordination following the network pathway is conditioned by multiple factors, some of which are the attributes of the networks themselves, like shared policy goals and values. Network coordination is more common nowadays than before because civil society organizations have become key players involved in political decision making and state agencies have become more autonomous. Peters (1998) distinguishes vertical and horizontal networks, roughly a distinction between intra-sector networks and inter-sector networks. Bierman et al. (2009) describes a roughly similar distinction between internal and external environmental policy integration. When vertical networks are strong and well-functioning, they may actually hinder horizontal or inter-sector coordination. Peters also fully recognizes that other factors, such as the increased complexity of issues and the internationalization of what used to be domestic issues, make the need for policy coordination more urgent but at the same time more challenging.

Both Underdal and Peters develop their theoretical approach to PI by emphasizing the organizational aspects of the policy process. Underdal (1988) identifies attributes of the policies themselves (comprehensiveness, consistency, aggregation) to assess the level of integration of policies. Peters (1998) on the other hand, suggests that the attributes of network of organizations engaged in policy processes is a key defining condition that defines how successful PI will be. Briassoulis (2004) has developed a more encompassing theoretical conceptualization of PI, which according to her is characterized by four clusters of dimensions: substantive, analytical, procedural, and practical. The substantive cluster of dimension, for instance, relates to the policy domain or policy objects. In this sense, policy integration is only feasible if there is commonality in scope or problems are complementary (2004: 19). In addition PI is influenced by relationships of policy goals of different policies, relationships between actors, relationships among policy structures and procedures and relationships among policy instruments. A comprehensive list of criteria grouped under each of the dimensions can be used for assessing either the need or the feasibility of PI and to assess whether PI has been successful, when it was pursued.

The different elements of the PI debate, theories, concepts, criteria and the like, have been largely developed with a European and North American focus, and by academics very much with a political science or policy sciences background. EPI analyses, equally, were inspired in large part by EU efforts to adopt environmental and sustainable development objectives in multiple sector policies. In recent years climate policy integration has become the latest development of the PI approach. Bierman et al. (2009) have used PI theory to explore alternative options of enhancing global environmental governance. However, there is less experience with applying a PI approach to forest policies in

tropical forest countries. The forest sectors in tropical countries have experienced profound changes over the last decades and similarities can be observed how forest policies have evolved in different countries: e.g. land and forest tenure reforms, new and broader goals for the forest sectors, government decentralisation and democratization of political decision making. As such Bolivia is an exemplary case of the tropical forestry reforms that appear to be relevant for a PI analysis. It is for this reason that the analysis of the Bolivian forestry and related reforms from a PI point of view is undertaken here, as insights from this analysis will have some bearing on similar reforms that are taking place - and sometimes have already taken place - in many tropical countries.

In this paper we rely on several elements of PI theories reviewed here. We adopt the horizontal policy coordination concept suggested by Peters (1998) and further refined by Briassoulis (2004), because this concepts represents well the particular case of policy integration across different policy domains, which is what the Bolivian case reviewed here represents. We also use Underdal's (1988) comprehensiveness, aggregation and consistency criteria to evaluate Bolivia's integrated land and forest policy measures, and in that way assess their degree of integration. We will also use Briassoulis' (2004) four clusters of dimensions: substantive, analytical, procedural and practical. We operationalize the different theoretical views of PI by translating them into the questions laid out in Table 1. These questions provide the framework to assess the degree of policy integration of democratic, administrative, land and forestry reforms in Bolivia.

Table 1. Operationalization of PI concepts into questions to assess policy integration in Bolivia

Cluster of dimension Briassoulis (2004)	Underdal's (1988) Criteria	Related questions used to assess integration of Bolivia's concurring democratic, administrative, land and forest policy reforms.
Substantive	Comprehensiveness and aggregation	Did different policies address similar, overlapping or complementary policy issues?
Analytical		Did different policies relate to the same actors and/or the same, overlapping or complementary environments?
Procedural	Consistency	Did different policies rely on similar procedures, policy instruments or pre-existing structures?
Practical		What were the outcomes of concurring policies?

3. The northern Bolivian Amazon

The northern Amazon of Bolivia is part of the Amazon watershed in its south western portion. Administratively, the region encompasses the prefecture of Pando, the province of Vaca Diez of the prefecture of Benin, and a part of the Province of Iturralda, of the Prefecture of La Paz. The total area is about 86,000 km² and inhabited by a population slightly above 229,500 (Zenteno, 2013). The region is mostly covered with dense tropical rainforest that is still over 90% intact. Large parts of this forest are habitat to both rubber and Brazil nut trees and valuable timber species. The region was first commercially exploited for quinine, but between 1880 and 1920 northern Bolivia became one of major Amazon rubber production regions (Fifer, 1970). Once rubber was supplied from plantations in Southeast Asia, forest production in northern Bolivia shifted gradually to Brazil nuts, although the definitive collapse of rubber production would not occur until the mid-1980s (Pacheco, 1992). Since that time, Brazil nuts have become the main forest product of the region. From the 1990s onwards, the region also has become an important producer of timber from forest concessions (Pacheco, 1998) and cattle raising has also gradually increased (Stoian, 2000; Zenteno, 2013). Since the early 1990s, the region became accessible by road, not only from Bolivia's interior, but also from Peru and

Brazil. Cross-border trade in commodities is now a major part of the region's commercial activity (Pacheco et al., 2009).

The region's isolation until the 1990s explains much of its social and institutional particularities. Forest exploitation, mainly for rubber and Brazil nuts extraction, was until the late 1990s controlled by a select number of economically well-endowed families that managed to maintain control over large tracts of forests. These families held substantial forest estates, called *barracas* under private control. The *barracas* commonly had a resident population that worked and lived in settlements inside the forest, mostly under semi-feudal conditions and bound by debt peonage (Cano et al., 2014a). This situation was still common well into the 1990s in the remoter parts of the region (Bojanic, 2001; de Jong and Evans, 2005). Part of the rural population moved to the cities after the collapse of the rubber economy in the mid-1980s and others moved to independent settlements (Stoian, 2000; Stoian and Henkemans, 2000). Since then rural-urban interactions have become quite important. Brazil nut harvesting requires large amounts of labour for a concentrated period of time (Stoian, 2005) and this labour is supplied by itinerant migrants who move to the Brazil nut harvesting areas during harvesting season.

4. Policy reforms that conditioned the integration of land and forest policies

The forestry reforms analysed here can ultimately be traced to broader economic and political reforms that started since 1985. The reforms were inspired by neo-liberal notions of development designed to stimulate market liberalization and reduce the role of the state (Pacheco, 2006). During the first half of the 1980s Bolivia suffered from high levels of foreign debt and from hyperinflation, which in turn inhibited savings and both public and private investments in productive sectors (Morales, 1994). Consumption levels fell significantly, which was felt especially among middle and low income groups. The informal trade in foreign currency created excessive disparities between the official and the unofficial US dollar exchange rates, causing significant disincentives for export-oriented production, including the agricultural and forest sectors (Crespo, 2000). In response, Bolivia started a program of structural adjustment after 1985. This program eliminated price controls, deregulated the private sector, eliminated subsidies and reduced multiple taxes. The trade in foreign currency was equally liberalized (Kaimowitz et al., 1999; Crespo, 2000).

During much of the second half of the 1980s and into the 1990s macro-economic indicators improved, but promises of economic growth were not fulfilled. For example, employment, low and middle incomes and consumption levels still lagged behind (Juemio, 1999), causing continued discontent among large parts of Bolivia's population. It is in this context that the so called 'second generation reforms' were devised. The second generation reforms had as their goal the further reduction of the role of the state and the continuation of the path towards a privatized society; but the reforms also aimed to respond to the social unrest that characterized Bolivia during the late 1980s and early 1990s (Crespo, 2000).

Two important second generation reforms that had important implications for the forest sector were the efforts to improve democracy through social participation and to improve state effectiveness in promoting public investment through decentralization. With regard to the first reform, democracy was improved by putting in place a wide-reaching process of social participation through the passage of the Popular Participation Law in 1994. An Administrative Decentralization Law issued in 1995 complemented the previous law. Decentralization had major implications at the municipal rather than at the departmental levels of government.

The two laws granted wide reaching authority to both municipal and prefectural governments to decide on many aspects of social and political life, including education, healthcare, and infrastructure. A major change was to expand the administrative jurisdiction of municipalities beyond towns and cities to embrace rural areas. The Popular Participation Law gave a new legal status to rural communities as territorially based organizations (OTB Organización Territorial de Base). These OTBs became legally entitled to participate in municipal investment decisions and elect oversight committees to monitor municipal finances. The decentralization process included a redistribution of Bolivia's state budget in favour of municipalities, based on the number of registered inhabitants. With regard to the forest sector, municipal authorities obtained the power to grant forest concessions on public forestlands inside the municipality that did not have any other use claim, i.e. they were neither private property, part of a forest concession, protected area nor indigenous or communal territory (Pacheco, 2004).

The democratic reforms implemented by means of the Popular Participation Law are especially relevant for land and forest sector reforms in northern Bolivia. The majority of rural settlements in the north had been linked to barracas and a large number of those had no legal status or recognition until the 1990s. Once recognized, the new OTBs were entitled by law to receive some of the funding assigned to the municipalities to which they belonged. Equally important for forest related activities, once communities obtained OTB status, they also began to claim formal tenure rights, a process that was regulated under the land reforms, discussed below.

5. Integrating Bolivia's land and forest policies

Since the mid-1990s, Bolivia embarked on legislative and policy changes specifically addressing the land and forest sectors. The core of these policy reforms are two laws also considered 'second generation reforms' (Ruiz, 2005), similar to the Popular Participation and Administrative Decentralization Laws. In 1996 a new Forestry Law profoundly reformed the sector, and that same year a Land Reform Law initiated a new wave of land reforms. These two laws clearly and purposively incorporated statemodernization visions and objectives (Urioste, 2011).

During the 1980s, the Bolivian forest sector was in crisis, not only because of the general economic crisis at that time but even more so because of the poor administration of public forests and corruption within the sector (Quiroga and Salinas, 1996). Until the early 1990, in spite of the existence of a forestry saw, the regulations that existed were poorly implemented and benefited exclusively a richly-endowed and politically well-connected industrial timber elite. There was very limited incentive to engage in sustainable forest management. Forest entrepreneurs operated under forest contracts that in practice lasted only 4-5 years, in which management regulations were completely ignored (Mancilla, 1994). Fees were paid based on volumes extracted, which promoted exclusive control of the industry by a very small group of forest operators. Forest tax evasion was widespread. The sector was marred by corruption and forest exploitation opportunities were often handed out as political favours among cronies (Pavez and Bojanic, 1998). In addition, intense conflicts were created when logging permits were issued inside colonists and indigenous people's lands. The former had legal status but the latter groups' rights to forests were completely ignored.

The Forestry Law, based on the newly granted tenure rights, also granted local communities and indigenous people the right to undertake commercial use of their forests, including timber extraction. The law created a new legal status of Local Social Association (ASL, Asociación Social del Lugar). Groups living in or near a forests could under the Forestry Law organize themselves and

register as an ASL. Most commonly, groups residing in regional towns but in some cases also organized groups from rural areas benefitted from this opportunity. In northern Bolivia, for instance, chainsaw operators, who are an important service provider in the domestic timber value chain (de Jong et al., 2014) used this opportunity to become independent forest operators (Kaimowitz et al., 1999).

Additional innovations in the Forestry Law that addressed the shortcomings of the old forest regime included a shift to 40 year forest concessions, the payment of forest taxes on a per hectare base, and the requirement to prepare forest management plans and annual logging operation plans for forest concession holders (Pacheco, 2007; Ruiz, 2005). The law created a new Forest Superintendence that was financed from forest taxes and decentralized some forest monitoring responsibilities to municipalities (Pacheco, 2004; Zenteno, 2013).

Ultimately, the new forestry regime was intended to convert the forest sector into a modern well-administered sector in which not only companies but also communities and ASLs applied modern administration to their enterprise, while also managing forests according to scientific principles. The new regime would also align the sector to international sustainable development standards. At the same time, however, the new forest regime assured that the forest sector remained within the neo-liberal doctrine of private enterprise governed by market mechanisms. The law also created mechanisms for local forest users who were able to use their forest resources commercially. An unresolved issue, however, remains the obligation to prepare forest management plans and make them new participants, such as forest communities and ASLs. The demand to prepare forest management plans proved especially serious obstacles for these new forest sector actors (Pacheco, 2009; de Jong et al., 2014).

The land reforms started at the same time as the forestry reforms, at least partly as a result of social demands and the intervention of the state land agency. A central event of this demand was the 'March for Land and Dignity', a march by indigenous groups that took place in 1990 (Balderrama, 2011). The march was triggered by three conflicts over land: the Chimane Forest which had been declared a Permanent Forest Reserve in 1978, only to have this status was suspended in 1986, permitting access to various forest enterprises since 1988; the National Park of Isiboro Secure, established in 1965 but which was subject to invasions of areas occupied by indigenous groups since 1980; and finally Ibiato in Lomo Alto, where land was given out for 11 cattle estates leading to an armed resistance by Siriono indigenous people against the ranchers in 1989. The latter was solved with an intervention by the International Labor Organization. A direct result of the march was the recognition by presidential decree of four indigenous territories.

Several years later, the Land Reform Law began a process of clarifying land ownership by granting legal tenure over extensive areas of lands to indigenous groups that were legally recognized as such, and to indigenous and non-indigenous communities that had gained legal status of OTB under the Popular Participation Law. The 1996 Land Reform Law clarified land ownership mostly in the eastern and northern parts of Bolivia, areas that had not been addressed during the country's first land reforms of 1953. The land reforms of the 1990s and onwards had fewer implications in the Bolivian highlands, where land property had mostly been resolved during the earlier land reform.

The land reform that started in 1996 by means of the Land Reform Law has greatly influenced the forest sector especially in the northern Bolivian Amazon. First, it resulted in the legal titling of multiple Native Community Lands (TCOs, Tierra Comunitaria de Origen). These are extensive areas of lands giving under property to legally recognized indigenous groups. In the northern Bolivian Amazon, five of these TCOs are now legally recognized and the titling process has been completed.

Second, the Land Reform Law started the land titling process of Northern Bolivia's OTBs, also as result of a social demonstration in opposition to large estate holders. A Presidential Supreme Decree N° 27572, a specification of the Land Reform Law issued in 2004, established that communities in forest rich regions should be granted a communal area equal to the number of families times 500ha, to make it possible to continue customary forestry livelihoods (Ruiz, 2005).

6. Outcomes of integrated land and forest policies under wider policy reforms

The political reforms have increased local level autonomy and democratized municipal decision making. In all Bolivia, municipal governments decide on multiple matters of relevance to the public, including education, public health and transportation (Fuentes et al., 2005). The establishment of OTBs and the decentralization reforms now make the rural population active participants in municipal elections, and their representatives are by law active participants in the municipal planning process. OTB members can also submit their candidacy for municipal government. Forest OTBs have gained almost exclusive control over natural resources within their own communal lands, so much so that the power balance in the timber and Brazil nut value chains has changed fundamentally. Entrepreneurs nowadays compete for access to resources by coaxing communities, rather than coercing them, as used to be the custom in the region (Cano, 2012; Cano et al., 2014b).

There are also a number of measurable outcomes of the integrated land and forest policies in the northern Bolivian Amazon. Under the Land Reform Law, property rights over a total of six million ha of land in the Department of Pando alone were clarified, thus granting rights to indigenous people, families in rural settlements, and individual landholders. In Pando 629 indigenous families were given property titles to two TCOs with a total area of 371,619 ha (INRA, n.d.), and three other TCOs in the remaining northern Bolivian Amazon received titles over 1,067,000 ha (Zenteno, 2013). In addition, in Pando 4,081 families living in 182 rural settlements, which received OTB status under the Popular Participation law, were granted communal titles under the land reform law over an area of 2,236,182 ha. In Pando, about 2,607,801 ha have been allocated to indigenous and non-indigenous communities, which represent 41% of the Department's total area (INRA, n.d.). The rest is still held by individual middle and large-scale landholders, forest concessions for timber and Brazil nuts, and some forests under protection. Thus, the proportion of land that is now under control of local settlers and indigenous people is quite significant.

Over the entire country, following these shifts in forestland property under the revised Forestry Law, indigenous and peasant communities had 2.8 million ha under forest management plans and ASLs had a total area of 0.7 million ha under forest management plans (Zenteno, 2013: 33). In northern Bolivia, the number of communally implemented forest management plans increased from six to 39 between 1997 and 2010. While this is an increase of 550%, the absolute number remains low, largely because of the administrative barriers to implementing forest management plans (Zenteno, 2013). An important amount of timber, however, originates from communal lands and is processed and sold into the domestic timber market in the region, and therefore poorly recorded in official statistics (de Jong et al., 2014).

There have also been less positive outcomes from these integrated policies. There were tensions, for example between, the communal titling or TCO titling and forest conservation objectives or forest concessions. In part this was a result of the Land Reform Law failing to put in place a mechanism to adequately identify public lands that could be claimed by the state either for production logging or conservation. During the land reforms, it was assumed that all the land that was not claimed either

for large-scale farmers, smallholders or indigenous people, was essentially unoccupied land, and thus could be given out to users requesting such land. Yet, anecdotal evidence suggests a process of public land encroachment right after the land regularization process began that has been poorly documented but that should have been considered in the subsequent land regularization process (Müller et al., 2014).

7. Integrating land and forest policies under social participation policies

Reviewing the evidence presented above, there are different processes of policy integration that can be observed in the reforms of the Bolivian forest regime. There are four policy efforts that were intended to realize a vision of a reformed forestry sector but were allocated within four different laws, each of which linked to a different policy domain. Central to this reform was the Forestry Law, with its multiple measures, which, as explained above, had a clear objective of a reformed, modern, forest sector that was to be sustainable, profitable, equitable, and contributed to biodiversity conservation. A key component of the reform was implemented through the Land Reform Law, but the outcomes were also strongly influenced by the Administrative Decentralization Law, and in the northern Bolivia Amazon also by the Popular Participation Law.

The most important contribution of the Land Reform Law to the forest sector reforms was to clarify ownership over forestlands and to put in place a mechanism through which local settlers and indigenous people could get formal access to forestlands. This was partly an accidental contribution of the Land Reform Law to the forest sector reforms. The Land Reform Law addressed an important economic and social need of a large number of rural people in the country, and thus of Bolivian society at large. The Forestry Law, however, allowed land ownership to be granted over land that held forest, as long as it was clear that these forest resources were important for residents' livelihoods (INRA, n.d.). In addition, forest conservation was included as a way to identify the social function of land (FES, *Función Económica Social*) which is a key requirement that needs to be met before tenure rights are granted by the state. Hence in this sense, the Land Reform Law did regulate one important aspect of the forest sector.

One additional reason why the Land Reform Law needed to be implemented simultaneously with the Forestry Law is because of the latter's newly articulated spatial focus. Multiple administrative and technical steps that apply to forest exploitation require a clear definition of the area for which they are applied. This is the case, for instance, with forest taxes, forest management plans and annual forest operations plans. Furthermore, forest concessions that were defined for the first time under the Forestry Law could only be granted over state forest lands. State forest land is essentially that kind of land that has no other property claims. Before forest concessions could be granted, it was necessary to clearly define the property status of all forest land that possibly had any other legal status. Hence the Land Reform Law also played an important role in the implementation of the new forest regime in Bolivia.

A similar argument can be made in case of the Administrative Decentralization Law. This law, in addition to reorganizing Bolivia's overarching governance design, also reorganized the country's political responsibility over the country's territory. The law actually assigned specific responsibilities over territorial jurisdictions to municipalities, something that previous legislation had not done. These measures were largely meant as a nationwide governance organizing principle, and were thus considered independently of the almost concurrent redesign of the forestry sector. However, the

Administrative Decentralization Law also defined the authority of municipal governments over their territory, and this included the right to give out forest concessions to ASLs, a legal category that was newly defined in the Forestry Law. In this sense the Administrative Decentralization Law also contributed policy that was deemed necessary to implement the new forest regime in Bolivia.

In addition to the land reforms and decentralization reforms, the Popular Participation Law contributed to the forestry reforms, because it assigned legal status to new actors that were considered under the Forestry Law, namely the forest communities of most of Bolivia, but especially in the northern Bolivia Amazon as new rural settlements, whereas previously they lacked legal recognition. As in the case of the land reforms and the decentralization reforms, this outcome was not a primary objective of the Popular Participation Law, as that law was designed to address several socio-political needs of the Bolivian state and society. However, since the Forestry Law specifically mentioned newly established communities as new actors in the forest regime, a specific policy was necessary to give these new actors legal status to allow them to benefit from the new opportunities considered in the Forestry Law.

The forest policy reforms reviewed here can be summarized using Briassoulis' (2004) grouping of substantive, analytical and procedural dimensions of PI. The reforms were substantive, because they addressed comparative contentious issues that are resolved through policy intervention, for instance sustainable resource use, benefit capturing among multiple forest actors, and biodiversity conservation, to respond to expanded societal demands on forests. They were analytical, because the reforms embraced new actors who had an economic dependence on forest and this dependence became protected under law and associated policies, and the new forestry regime also focused on territory, through payments of concessions rights in relation to the area of the concessions, but also through redefining new rights over forest territory. The regime also focused on long term forest use, for instance by allowing for 40 years concessions, yearly annual operations plans, but considering 20 year cutting cycles, or long term ownership of land and forest. In Briassoulis' clusters of dimension, the analytical dimension refers to entities that are affected by complementary policies that are integrated, and that include territory (Briassoulis, 2004: 19), and as we interpret this, also actors (Table 1).

The reforms also included procedural aspects because of the many complementary measures that were addressed in different laws but that ultimately all contributed their own share to the wider forest sector reforms. The complementary measures were designed to be able to generate synergies and mutually enforcing outcomes through a design that facilitated procedural complementarity. The designers of these reforms had duly recognized that multiple issues needed to be addressed to achieve a newly envisioned forest sector, but that not all could be addressed through a single, revised forest legislation and policy. As mentioned above, land reforms, decentralization, recognition of forest settlements and political participation of rural communities through a legally proscribed process in the annual planning and budget allocation of municipalities to which they belonged, were all goals on their own, but they equally contributed to shape the outcomes of the forest regime reforms. This was understood and foreseen when the Forestry Law was designed and enacted (Pavez and Bojanic, 1998). That is the reason why implementation problems in any one of the sectors also have consequences on forests. For example, the remaining lack of clarity on tenure rights tends to place additional pressures on forests or intensify predatory logging under short-term perspectives.

The reforms can be understood as including both horizontal and vertical PI, using Peters' (1998) differentiation. The reforms reflect horizontal PI, because they linked land and forest sectors, but also democratic and public administrative reforms. The latter are not intuitively related to forest

sector reforms. However, they have been quite common in many countries where forestry reforms similar to the Bolivian reforms have taken place. For instance, government decentralization has occurred in many locations where eventually forestry reforms occurred, and the outcome of the decentralization reforms have had important implications for the outcome of the forestry reforms (e.g. Ribot et al., 2006).

The policy reforms in Bolivia also reflect PI using Underdal's (1980) comprehensiveness, aggregation and consistency criteria. The reforms addressed time, space, actors and issues, the four dimensions of comprehensiveness. The many complementary measures that were addressed in different laws, but that ultimately all contributed their own share to the wider forest sector reforms reflect the aggregation requirement. The outcomes of Bolivia's new forest regime achieved a fair degree of consistency, the third criterion in Underdal's (1980) conception of PI. The establishment of communities, the granting of property rights over forest land, and the opportunities given under the Forestry Law to exploit forests has indeed led to positive outcomes as summarized at the end of the previous section.

Several critical reviews of Bolivian forestry in recent years (Pacheco 2007, 2009; Pacheco et al., 2010; Müller et al., 2014) have also shown that, in spite of all progress made mainly in granting tenure rights and enhancing social participation at the municipal level, some of the reforms finally did not really work well. Outcomes have been disappointing mainly with regard to expanding sustainable forest management and improve the income streams at the local level and for all local people involved. Some regulations, for instance those in relation to the payment of area based taxes and the like, had already been revised before 2000 (Pacheco et al., 2010), and some others were not implemented, like the ones imposing forest management plans for Brazil nuts extraction (Cronkleton and Pacheco, 2010).

These conclusions while valid, beg the question if Bolivia's, or other countries' forestry reforms could have benefited from the input of PI expertise and if so, how that should have happened? The first part of that question can be answer positively. Using PI theory and practical insights would have benefited complicated forest policy reforms that required intra-sectoral and inter-sectoral coordination and adjustments. As for second part of the question, a conceptual understanding of PI is likely to point to possible challenges that lie ahead when policy reforms are being considered, even if those reforms are not yet perceived as delivering PI. Briassoulis' (2004: 22) list of PI criteria or enabling conditions could be used to identify the likely challenges of the policies to be integrated. To our knowledge no ready-made tools that can assist in PI efforts are available. However, acquiring a detailed understanding of PI theory and practical experiences could certainly be an important and valuable input into future forestry reform efforts, wherever they will be pursued. This is quite an ambitious expectation to put upon PI, but it is somewhat along the lines of suggestions made by Briassoulis (2004). PI can be looked at as a concept and theory that can be used *ex post* to understand whether PI has taken place or not and why this is the case, as we have shown in this paper with respect to the Bolivian reforms. This way, lessons learned from PI research could be transformed into knowledge for practical application.

Many countries have experienced forest sector reforms, and, equally, such reforms have taken place in many countries in the tropics. A typical reform trend has been a shifting focus from narrow economic interests, mostly timber production, to a broader set of societal objectives, including contributing to the welfare of rural communities, biodiversity conservation, recreation and the provision of environmental services. These reforms can be understood and analysed as PI, providing important and relevant new insights on the reforms themselves. Forestry sector PI reforms are mainly of the intra-sectoral, or vertical PI type, but necessarily also of the inter-sectoral, or

horizontal PI type, because forest sector reforms need to be adjusted next to other sectors that compete for forest lands. Such tropical forest sector reforms can benefit from current PI theory and practical experiences, but more detailed analysis of cases using a PI lens can also contribute to additional PI theory development and contribute to the accumulated practical PI experiences.

There is reason to argue that PI in the tropical forestry sector is a fruitful endeavour. PI is a transformation of policies that aims to achieve better outcomes than when PI is not pursued. In tropical forest countries, such as Bolivia, forest sector problems are often linked to extra-sectoral causes, a fact that has been recognized since the 1990s (e.g. Geist and Lambin, 2002). Equally, recent trends in tropical forest science propose a broader forest landscape approach to better address forest conservation and forest development challenges (Sayer, 2009; Sayer and Maginnis, 2005). These are both arguments that are supportive of pursuing PI approaches in tropical forestry. The argument against this, is that PI, requires policy efficiencies that are typical for highly specialized administrations with a highly skilled and motivated workforces. The latter conditions are not always available in countries like Bolivia. However, at the same time, PI in tropical forest countries is a reality, even if it is not always undertaken for the sake of achieving PI objectives.

References

Adelle C, and Russel D, 2013, ["Climate policy integration: A case of déjà vu" Env Pol Gov 23 1-12](#)

Assies W, 1997, Going nuts for the rainforest. Non-timber forest products, forest and sustainability in Amazonia (Tropenbos International, Wageningen, Netherlands)

Balderrama R, 2011 "La Marcha por el Territorio y la Dignidad (1990) " 3 July, <http://www.gobernabilidad.org.bo/piocs/tierra-y-territorio/la-marcha-por-el-territorio-y-la-dignidad>

Benneker C, 2008, [Dealing with the State, the Market and NGOs: The impact of institutions on the constitution and performance of Community Forest Enterprises \(CFE\) in the lowlands of Bolivia \(Wageningen University, the Netherlands\)](#)

Biermann F, Davies O, van der Grijp N, 2009, ["Environmental policy integration and the architecture of global environmental governance" Int Environ Agreements 9 351-369](#)

Bojanic A, 2001, Balance is Beautiful: Assessing Sustainable Development in the Rain Forest of the Bolivian Amazon (PROMAB Scientific Series No. 1. Utrecht University, Netherlands)

Briassoulis H, 2004, "Policy integration for complex policy problems: What, why and how" Paper presented at the 2004 Berlin Conference "Greening of policies: Interlinkages and policy integration", December 3-4

Cano W, 2012, Formal institutions, local arrangements and conflicts in the northern Bolivian communities after forest governance reforms (PROMAB Scientific Series 14, Utrecht University, Netherlands)

Cano W, de Jong W, Zuidema P., Boot, R, 2014, "The new face of the debt-peonage system in the Bolivian Amazon: Social networks and bargaining instruments" *Human Ecology* 42 541–549

Cano, W., de Jong W, Zuidema P, Boot R, 2014, "Diverse local regulatory responses to a new forestry regime in forest communities in the Bolivian Amazon" *Land Use Policy* 39 224–232

Crespo Valdivia F, 2000, Incidencia de las reformas estructurales sobre la agricultura boliviana. (CEDLAC, UN, Santiago, Chile)

Cronkleton P, and Pacheco, P 2010 "Changing policy trends in the emergence of Bolivia's Brazil nut sector", Wild product governance: Finding policies that work for non-timber forest products, Eds Laird S, McLain R, and Wynberg R (Earthscan, London) pp 15-41

De Jong W, Ed, 2004, Retos y perspectivas del nuevo régimen forestal en el norte amazónico boliviano (CIFOR, Bogor, Indonesia)

De Jong W and Evans K, 2005, "Volatile markets and the empowerment of the poor" Japan Center for Area Studies Newsletter, No 18,
<http://www.cias.kyoto.ac.jp/jcas/newsletter/essay/20050705/01.html>

De Jong W, Cano Cardona W, Zenteno M, Soriano M, 2014 "Illegal logging and Bolivia's domestic markets: The legally allowable versus the informally practicable" Forest Policy and Economics DOI: 10.1016/j.forpol.2014.07.001

De Jong W, Borner J, Pacheco P, Pokorny B, Sabogal C, Benneker C, Cano C, Cornejo C, Evans K, Ruiz S, Zenteno M, 2010, "Amazon forests at the crossroads: pressures, responses, and challenges", in Future of Forests – Responding to global changes, Eds Alfaro R, Kanninen M, Lobovikov M, Mery G, Swallow B, Varjo J (IUFRO-WFSE, Helsinki) pp 283-298

De Jong W, Ruiz S, Becker M, 2006 "Conflicts on the way to communal forest management in northern Bolivia" Forest Policy and Economics 8 447-457

Geist, J.H. & Lambin, E.F. 2002. Proximate causes and underlying driving forces of tropical deforestation. Bioscience 52(2): 143–150.

Fuentes D, Haches R, Maldonado R, Albornoz M, Cronkleton P, de Jong W, Becker M, 2005 Pobreza, descentralización y bosque en la Amazonia Boliviana (CIFOR, Bogor, Indonesia)

Fifer J V, 1970, "The empire builders: A history of the Bolivian rubber boom and the rise of the house of Suarez, Journal of Latin American Studies 2 113-146

Ishii A and Langhelle O, 2011, "Toward policy integration: Assessing carbon capture and storage policies in Japan and Norway" Global Environmental Change 21 358-367

INRA nd, Tierra saneada con la reconduccion comunitaria (Instituto Nacional de Reforma Agraria, La Paz, Bolivia)

Jordan A and Lenschow A, 2010, "Environmental policy integration: A state of the art review" Environmental Policy and Governance 20 147-158

Juemio LC, 1999, Reformas, políticas sociales y equidad en Bolivia (CEDLAC, UN: Santiago, Chile)

Kaimowitz D, Thiele G, Pacheco, P, 1999, "The effects of structural adjustment on deforestation and forest degradation in Lowland Bolivia" World Development 27 (3) 505-520

Katila P, Galloway G, de Jong W, Mery G, Pacheco P, 2014, Forests under pressure: Local responses to global issues (IUFRO WFSE, Helsinki)

Mancilla R, 1994, Consultoría sobre recursos forestales (Programa Nacional de Uso Sostenible de los Bosques e Incremento a las Exportaciones, La Paz, Bolivia)

Meijers E and Stead D, 2004, "Policy integration: what does it mean and how can it be achieved? A multi-disciplinary review", Paper presented at the 2004 Berlin Conference "Greening of policies: Interlinkages and policy integration. December 3-4

Morales JA, 1994, Ajuste macroeconómico y reformas estructurales en Bolivia, 1985-1994 (UCB-IISEC, La Paz)

Müller R, Pacheco P and Montero J.C. 2014. *The context of deforestation and forest degradation in Bolivia: Drivers, agents and institutions*. Occasional Paper 108. Bogor, Indonesia: CIFORpacheco

Ormachea E, and Fernandez J, 1989, Amazonia boliviana y campesinado (Centro de Estudios para el Desarrollo Laboral y Agrario, La Paz, Bolivia)

Pacheco P, 1992, Integración económica y fragmentación social: El itinerario de las barracas en la Amazonia Boliviana (Centro de Estudios para el Desarrollo Laboral y Agrario, La Paz, Bolivia)

Pacheco P, 1998, "Pando: Barraqueros, madereros y conflictos por el uso de los recursos forestales", in Municipios y Gestión Forestal en el Trópico Boliviano, Eds Pacheco P and Kaimowitz D (CIFOR/CEDLA/ TIERRA/BOLFOR, La Paz, Bolivia)

Pacheco P, 2004, "What lies behind decentralization? Forest, powers and actors in lowlands Bolivia", European Journal of Development Research 16(1) 90-109

Pacheco P, 2006 "Agricultural expansion and deforestation in lowland Bolivia: the import substitution versus the structural adjustment model" Land Use Policy 23(3)205-225

Pacheco P, 2007, "El nuevo régimen forestal boliviano: una mirada retrospectiva a diez años de su implementación" Recursos Naturales y Ambiente 49 58-67

Pacheco P, 2009, Enfoques forestales homogéneos para actores diversos: La encrucijada del manejo de bosques en Bolivia (PNUD, La Paz, Bolivia)

Pacheco P, Ormachea E, Cronkleton P, Albornoz MA, Paye L, 2009, Trayectorias y tendencias de la economía forestal extractiva en el norte amazónico de Bolivia (CIFOR/CEDLA/RRRI, La Paz, Bolivia)

Pacheco P, de Jong W, Johnson J, 2010, "The evolution of the timber sector in lowland Bolivia: Examining the influence of three disparate policy approaches Forest Policy and Economics 12 271-276

Pavez L I and Bojanic Helbingen A, 1998, El Proceso social de formulacion de la ley forestal de Bolivia de 1996 (CIFOR/CEDLA/TIERRA/PROMAB, La Paz, Bolivia)

Person A, 2004, Environmental policy integration: An introduction, (Policy for Sustainability Background Paper, Stockholm Environment Institute, Stockholm)

Peters BG, 1998, "Managing horizontal government: the politics of co-ordination", Public Administration 76 295-311s,

Peters BG, and Pierre J, 1998, "Governance without government? Rethinking public administration", Journal of Public Administration Research and Theory 8(2) 223-243

Quiroga MS and Salinas E, 1996, Minerales y madera, temas para el debate ambiental, (Grupo de Acción y Reflexión sobre el Medio Ambiente, La Paz, Bolivia)

- Ribot JC, Agrawal A, Larson AM, 2006, "Recentralizing while decentralizing: how national governments reappropriate forest resources" *World Development* 34(11) 1864-1886
- [Ross A and Dovers S, 2008, "Making the harder yards: Environmental policy integration in Australia" *The Australina Journal of Public Administration* 67\(3\) 245-260](#)
- Ruiz S, 2005, *Rentismo, conflictos y bosques en el norte amazonico boliviano* (CIFOR, Bogor, Indonesia)
- Sayer JA, 2009, "Reconciling conservation and development: Are landscapes the answer" *Biotropica* 41(6) 649-652
- [Sayer JA and Maginnis S, 2005, *Forests in landscapes: Ecosystem approaches to sustainability* \(Earthscan, London\)](#)
- Sist P, Pacheco P, Nasi R, Blaser J, 2014, "Management of natural tropical forests in the past, present, and projections for the future" in *Forests under pressure: Local responses to global issues*, Eds Katila, P, Galloway G, de Jong W, Mery G, Pacheco P, (IUFRO,WFSE, Helsinki)
- [Stoian D, 2000, "Shifts in forest products extraction: The post rubber era in the Bolivian Amazon" *International Tree Crop Journal* 10 285-299](#)
- Stoian D, 2005, *La economía extractivista de la Amazonía norte Boliviana* (CIFOR, Bogor, Indonesia)
- [Stoian D, Henkemans A, 2000, "Between extractivism and peasant agriculture: Differentiation of rural settlements in the Bolivian Amazon" *International Tree Crops Journal* 10 299-319](#)
- [Underdal A, 1980, "Integrated marine policy: What, why, how?" *Marine Policy* 4\(3\) 159-169](#)
- Urioste M, 2011, *Concentración y extranjerización de la tierra en Bolivia* (Fundacion Tierra, La Paz, Bolivia)
- Wunder S, 2000, *The economics of deforestation: the example of Ecuador* (St Antony's Series - St. Antony's College, UK)
- [Zenteno M, 2013, *A quantitative analysis of livelihoods in community forestry in the northern Bolivian Amazon* \(PROMAB Scientific Series 15, Utrecht University, Netherlands\)](#)
- Zenteno M, Zuidema P, de Jong W, Boot R, 2013, "Livelihood strategies and forest dependence: New insights from Bolivian forest communities" *Forest Policy and Economics* 26 12-21