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# Native Forests and Agriculture in Salta (Argentina): Conflicting Visions of Development

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## Abstract

Despite much deforestation in the past, the northwestern Argentinean province of Salta still has more than 6 million hectares of native forests. Land use conversion for agriculture is threatening these forests and the survival of indigenous populations and small-scale farmers. In November 2007, Argentina's National Congress passed a law to regulate the management and conservation of native forests. This "Forest Law" required provincial governments to implement comprehensive and participatory Land Use Planning Processes (LUPPs). In this article, we describe and analyze, within a political ecology framework, the LUPP carried out in Salta. We focus on the conflicts derived from the different visions of development held by the interest groups involved, and we highlight some contradictions between their discourses and practices. We argue that "development" or "progress," understood as a process of wealth and power accumulation linked to the possession of land and the production of agricultural commodities, was the leading ideology of political and economic elites in Salta during the LUPP. This ideology, and the established institutional power system behind it, was challenged when the National Supreme Court of Justice decided to suspend logging

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and deforestation activities on land claimed by marginalized ethnic and socioeconomic groups. We assess the implications of this ruling for the conservation of native forests and local livelihoods. As the final outcome of this case is still uncertain, a number of possible scenarios are presented and discussed.

### **Keywords**

Argentina, deforestation, development paradigms, native forests, Salta

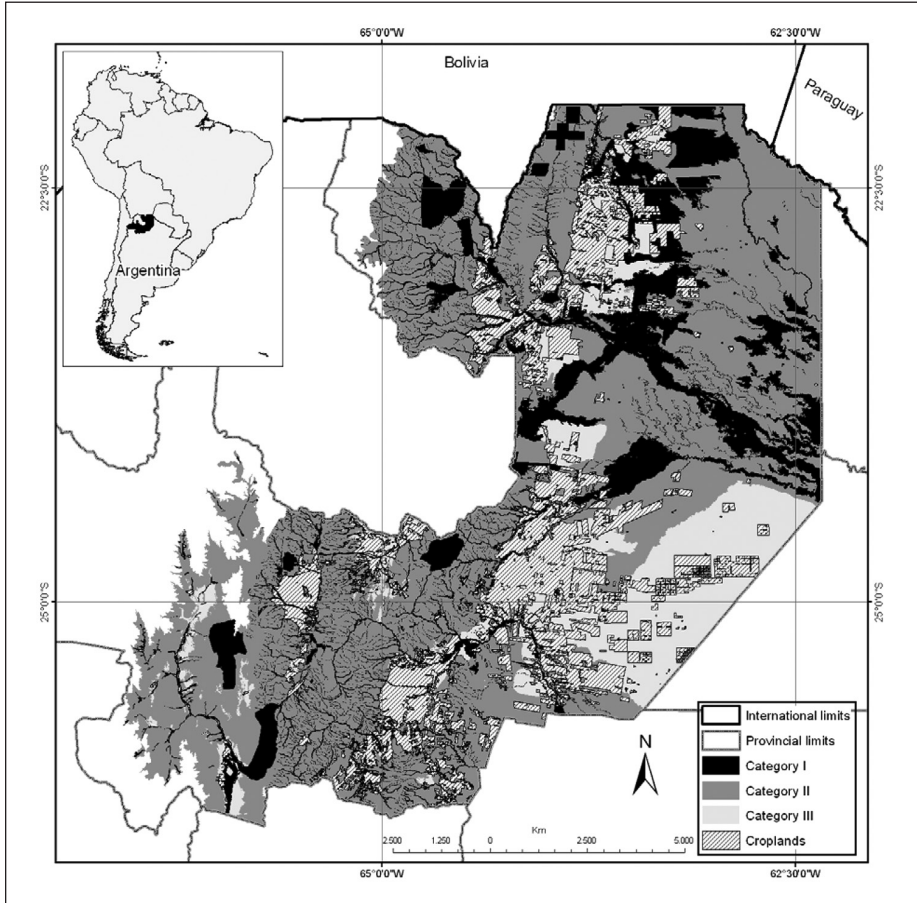
### **Introduction**

In the last two decades, Latin America has experienced an intense process of deforestation and loss of natural vegetation (Food and Agriculture Organization [FAO], 2009, 2010). Regional dry forests such as the Brazilian Cerrado, the Chiquitanos forests in Bolivia, and also the Chaco of Bolivia, Paraguay, Brazil, and Argentina have been strongly affected by this process (Grau, Gasparri, & Aide, 2005; Hoekstra, Boucher, Ricketts, & Roberts, 2005; Red Agroforestral Chaco Argentina [REDAF], 1999; Steininger et al., 2001). The Chaco region contains the second largest native forest of the South American continent after the Amazon (REDAF, 1999).

In the Argentine Chaco (which represents more than 60% of the entire Chaco region), annual deforestation rates for the last 5 years have varied between 1.5% and 2.5%, while Latin American and world averages were 0.51% and 0.20%, respectively (FAO, 2009; Gasparri, Grau, & Manghi, 2008; Paruelo, Guerschman, & Verón, 2005; Unidad de Manejo del Sistema de Evaluación Forestal [UMSEF], 2007; Volante et al., 2006). The Chaco also absorbs livestock displaced from the Pampas, the country's most productive land, where pasture is being claimed by more profitable activities such as soybean production (Paruelo et al., 2006).

Deforestation and land use changes have been particularly intensive in the northwestern province of Salta (see Figure 1), not only in its share of the Chaco region but also in a forest ecosystem known as the Yungas, located along the eastern slope of the Andes (Brown, Grau, Malizia, & Grau, 2001). Despite intensive land conversion processes, Salta still has more than 6 million hectares of native subtropical forests. In response to the high international prices of agricultural commodities (particularly soybean) and technological changes (mainly genetically modified soybean cultivars), the province has seen a very rapid expansion of industrial agriculture, a major driver of recent land use changes in the Chaco (Grau et al., 2005; Secretaría de Agricultura, Ganadería, Pesca y Alimentación [SAGPyA], 2009). This has made Salta one of the great agricultural frontiers of South America and a prime case for investigating the dynamics of land conversion processes experienced in the forests of the region during the last few decades.

In Salta, the most affected by these processes are "criollos" and indigenous people. Criollos are the local inhabitants of predominantly European descent. They depend to a great extent on small-scale extensive cattle ranching that makes use of both public



**Figure 1.** Map of Salta produced by the Executive Unit as a result of the land use planning process (LUPP) depicting different conservation areas, as required by the Forest Law Note: Category I: high conservation value; Category II: medium conservation value; Category III: low conservation value. Source: Adapted from Somma et al. (in press).

and private land. They have been present in the province of Salta since colonial times but they have intensified their presence in the Chaco region by the end of the 19th century (Gordillo & Leguizamón, 2002). Indigenous communities living in the province include Wichí, Guaraní, Chané, Qom [Toba], Iyojwa'ja [Chorote], Niwaclé [Chulupí], Tapu'i [Tapieté], and scattered Kolla families.<sup>1</sup> Their livelihoods consist of extensive forms of subsistence agriculture, hunting and gathering, and the widespread use of nontimber forest products (Leake, 2008). These activities are highly dependent on open access to and the good health of local ecosystems. This is especially important because the level of communal environmental management in some of these ethnic

groups is generally low, mostly limited to the abandonment of gathering, hunting, and/or fishing areas in the low season. Agriculture and cattle ranching are very incipient and circumscribed; they are not ancestral practices for the majority of these indigenous communities. Many natural goods and services have specific survival or cultural purposes. For that reason, they cannot be easily substituted or “traded-off” for other alternatives, not least because indigenous cultures do not accept the very notion of valuation of environmental goods and services in monetary terms. The concentration of land in a small number of large-scale agricultural firms (Van Dam, 2008) reduces the space and resources available for criollos and indigenous communities, which threatens their livelihoods, and is a potential source of land tenure conflicts.

Deforestation and its consequences have been the focus of much criticism on the part of environmental groups and members of the scientific community (Greenpeace, 2008; Leake & Economo, 2008; Paruelo et al., 2005; among others). Within the provincial administration, some reports warn about the potential negative consequences of this expansion on native forests, soil fertility, and food sovereignty (Secretaría de Ambiente y Desarrollo Sustentable [SADS], 2008). Between the clear-cut views that see land conversion as necessary for economic growth or as entirely negative, there are more complex arguments, such as the position based on the “forest transition theory” (Perz, 2007) that sees the expansion of industrial agriculture in the Chaco as a process that will relieve pressure on areas less suitable for agriculture and of greater biological interest, such as the Yungas (Aide & Grau, 2004; Grau & Aide, 2008; Grau et al., 2008). Deforestation would therefore be a provisional phenomenon, while GDP growth and the displacement of agricultural producers toward other activities or other areas would lead in a second stage to forests recovery. In response, Perfecto and Vandermeer (2010, p. 5786), consider this view as “overly optimistic” and probably useless for tropical areas “at least under current socio-political structures.” Whatever the case may be there have been increasing pressures to limit the loss of native forests at the national level.

In reaction to these mounting pressures, on November 28, 2007, Argentina’s Parliament enacted National Law 26,331. This law, known as the “Forest Law,” intended to regulate the protection, enrichment, restoration, utilization, and management of native forests and the environmental services they produce. The law acknowledges the ancestral rights of indigenous communities to land and territory in accordance with other national laws (in particular Law 23,302 on indigenous communities, and Law 26,160 on indigenous land), the 1994 National Constitution, and the Convention 169 of the International Labor Organization (ILO) ratified by Argentina in 2000. Within a year of the passing of the law, each provincial state was required to initiate a comprehensive and participatory Land Use Planning Process (LUPP) with respect to native forests. During this 1-year phase, native forests needed to be classified according to three conservation categories (Table 1) determined according to a number of technical and social criteria (Table 2). LUPPs had to be prepared by the executive branches of provincial governments, based on all available technical information, and had to be ratified by provincial Parliaments (Legislatures) or equivalent legislative bodies. From then on, they are to be updated every 5 years. The adoption of LUPPs by the provinces was a prerequisite for the distribution of federal funds attached to the Forest Law.

**Table I.** Conservation Categories Defined in Law 26,331 (The Forest Law) and Complementary Decree 91/2009

Category	Conservation value	Color in the map	Activities allowed
I	High	Red	Ancestral uses, gathering of NTFP, scientific research, “respectful” tourism, conservation plans, ecological restoration.
II	Medium	Yellow	Sustainable productive activities and tourism under the guidelines of management and conservation plans.
III	Low	Green	Timber production, agriculture, and cattle ranching, after the approval of a management plan and an environmental impact assessment.

Note: All activities in a lower category are also allowed in higher categories. NTFP: nontimber forest products.

This article describes and analyzes the LUPP carried out in Salta to comply with the Forest Law. We based our study on literature reviews, participant observation during the process, and analytical work. It is our belief that understanding better how conflicting worldviews and power games have affected the LUPP in Salta may contribute to improve land use planning processes at the national level and possibly beyond. On one side, we have focused our attention on the tensions between the discourses and practices of the most powerful (strategic) actors concerned by the LUPP (viz., the provincial government and the agribusiness sector) with the objective of understanding and comparing their worldviews and their idea of “development” (Hufty, in press). As will be shown here, these worldviews have exerted a powerful influence on the final outcome of the LUPP. Their influence was, however, partly counteracted by a ruling of the National Supreme Court of Justice by which deforestation was provisionally stopped in a large fraction of the provincial territory. This article ends with concluding remarks based on the arguments presented and some normative considerations as to how to build more participatory LUPP in the region.

## Theoretical and Methodological Framework

The main theoretical framework this article uses to analyze the Salta case is “political ecology.” This approach aims at understanding the drivers of the relationships between mankind and nature, assuming that nature is partly “constructed” (Escobar, 1999). It focuses its attention on “politicized environments” (Bryant & Bailey, 1997), the power struggles generated at the interface between environmental and social issues, and it “combines the concerns of ecology and a broadly defined political economy” (Blaikie & Brookfield, 1987, p. 17). Political ecology assumes that the understanding of these relations must consider “the complex and ambiguous spaces between

**Table 2.** Criteria Followed to Define Conservation Categories According to National Law 26,331

Number	Criterion	Brief description
1	Area and habitat	Minimum habitat required to ensure the survival of plant and animal communities. Especially relevant for large herbivores and carnivores.
2	Ecological links	Links of forest patches with other natural communities in order to preserve connectivity and ecological gradients. Important to take into account the varied use of habitats of many species of birds and mammals during different seasons of the year.
3	Regional integration	Links of forest patches with existing national or provincial protected areas and natural monuments. Complementarities between different types of landscapes and maintenance of ecological corridors.
4	Outstanding value	Existence of rare or unique natural or biological elements that may confer a particular site a high conservation value
5	Connectivity	Connectivity between different ecoregions has to be guaranteed by forest or riparian corridors to allow the free movement of some species.
6	Conservation state	Assessment of the current condition of forest patches by analyzing past land use changes, disturbances, fire events, existing biodiversity, and present consequences for inhabiting communities.
7	Forest potential	Current availability of forest products and potential forest productivity. This criterion is related to past interventions in the area. Includes forest inventories, impact assessments, and information provided by authorities and private actors.
8	Agricultural potential	Assessment of the potential for long-term economically sustainable agricultural activities per area after deforestation.
9	Hydrological basins	Indicates the existence of areas with a high potential for the preservation of river basins or wetlands and the protection of superficial or subterranean water sources. Steep areas (slope greater than 5%) fall under this criterion.
10	Cultural aspects	Value given by indigenous communities and small scale farmers to forests and surrounding areas. Assessment of survival and cultural uses of the forests and the extraction of nontimber forest products.

domination and resistance, between state and peasant, between protest and livelihood practices” on the one hand, and “the political-ecological context including resource ecology, rural livelihood and political discourse” on the other hand (Kull, 2002, p. 927). The analysis of the different ideas and discourses that different actors put across to support or reject specific policies is also central to political ecology (Peet & Watts, 1996).

Three types of interacting factors are usually considered within political ecology: ecology, economics, and politics. They interact in scalar chains: resource degradation is to be explained by looking not only at the local level, even if local actors are the immediate cause of degradation, but also by looking at the chains of intervening factors at the national and international levels in a historical perspective. In our view, a major improvement of this approach over classical critical political economy is that it takes into account the impacts of ecological factors on human institutions and vice versa. Nature and natural “resources” have their own characteristics, cycles, and dynamics, which set limits to or influence human action. These limits can obviously be partially overcome through improved techniques or social arrangements (e.g., the rationalization and industrialization of agricultural production), but nature also reacts to human activity, emitting feedbacks (e.g., increasing or decreasing soil productivity in reaction to overexploitation) that have to be taken into account. Ignoring these signals puts human societies at risk. While some epistemological and theoretical precautions are required (their type of agency is obviously not identical), nature and nonhuman actors can be considered as participating factors, in line with Callon and Latour (1981), and Bennett (2010).

Political ecology proceeds usually through the analysis of concrete case studies, making results accessible to different audiences, within and outside the academy (Blaikie, 2008). Case studies are powerful tools to analyze the discourses and practices of the intervening actors and to shed light on the worldviews that ultimately justify or support their interventions on the natural and social world. Attention is also given to awareness raising, capacity building among stakeholders, changes in institutional and political structures, and other factors related to the dynamic character of most socio-environmental processes. Beyond this attention to local circumstances, political ecology also tries to understand the ultimate causes behind environmental conflicts by putting them in the spatial and temporal context of global structures and processes (Adger, Benjaminsen, Brown, & Svarstad, 2001; Benjaminsen & Svarstad, 2009).

The complexity of its field of study makes political ecology a broad theoretical framework that can coexist with other approaches and may resort to a variety of methodologies and protocols to unravel the intricacies of the relationship between nature and culture, and the interdependence of political units and their environment (Robbins, 2004). Research in political ecology commonly presents its accounts as an alternative to other perspectives or explanations of the local and global conflicts between nature and society. It also differs from other theoretical frameworks in that reflexivity is recognized (Paulson, Gezon, & Watts, 2005; Walker, 2006). Researchers are participating actors. Through the selection of facts and interpretations, their perspectives and values inevitably influence the research outcome, including normative and applied aspects. This is not undesirable as long as the analysis is not determined by preexisting explanatory models or guided by prejudgments, as pointed out by Forsyth (2008).

Especially relevant at global scale in the last few decades has been the discourse of “sustainable development,” which has exerted a long-lasting influence on the environmental and social agenda since the release of the “Brundtland Report” (World Commission on Environment and Development [WCED], 1987). In spite of the international

acceptance of what was presented as a new paradigm, critical objections have been raised against the idea that development can ever be sustainable (Tijmes & Luijf, 1995). The idea has a strong appeal, but it can also be seen as one of the last strongholds of the modernization paradigm, for which linear growth is infinite and the physical limits of our environment can be circumvented by technical progress and increased wealth (Escobar, 1999; Hajer, 1995). A detailed discussion on this criticism is out of the scope of this article; suffice to say here that the technical and managerial approaches advocated under the concept of sustainable development have been infrequently successful in changing the material circumstances of the people in “developing” countries (Agrawal, 1997; Baker, 2007; Barry, 2003; Reitan, 2005). As pointed out by Dresner (2002), the concept of “sustainability” is not necessarily a synonym of sustainable development. Indeed, different interpretations of the idea of sustainability are possible for each particular set of spatial, temporal, social, and personal boundaries, as extensively discussed in Seghezzeo (2009).

The tools proposed by political ecology can be combined in three ways to examine the case of the application of the Forest Law in Salta. First, it is used to “deconstruct” the discourses proposed by the actors and understand their underlying worldviews (critical discourse analysis). Second, it is used to analyze the interactions of actors and their environment, and the power games over different stakes (social norms) at different levels (chain of explanation; Hufty, in press). Third, it informs proposals for alternative views and practices. As stated by Robbins (2004, p. 13), the broad field of political ecology “seeks not simply to be retrospective or reactive, but to be progressive.” In this respect, the inherently normative concept of sustainability could be a natural complement to political ecology and could provide concrete pathways and alternatives to help solve the mismanagement and exploitation of the natural environment.

## **The Land Use Planning Process**

Powerful economic and political actors in Salta opposed the Forest Law right from the start.<sup>2</sup> Their main argument was that the national government, following an alleged tradition of centralism, was attempting to curb or control the economic development of the country’s northern region. A similar line of argumentation is used to justify weak federal control on mining activities in sensitive regions such as glaciers.<sup>3</sup> On these accounts, the pressure exerted by the Federal Government on poorer regions of the country is aggravated by the action of fundamentalist environmental organizations (Orduna, 2008), supposedly “part of a global strategy to curb the development of Third World countries” (Alonso, 2010, p. 26).

While the Forest Law was being discussed by the National Congress in 2007, J. C. Romero, Salta’s governor at that time, issued authorizations to clear 435,400 hectares of forests, three times the area authorized between 2004 and 2006 (Leake & Economo, 2008). Some of these authorizations were issued in the interregnum period immediately after the provincial election in which a new governor, J. M. Urtubey, was elected. Urtubey was a young politician who served as government spokesperson and



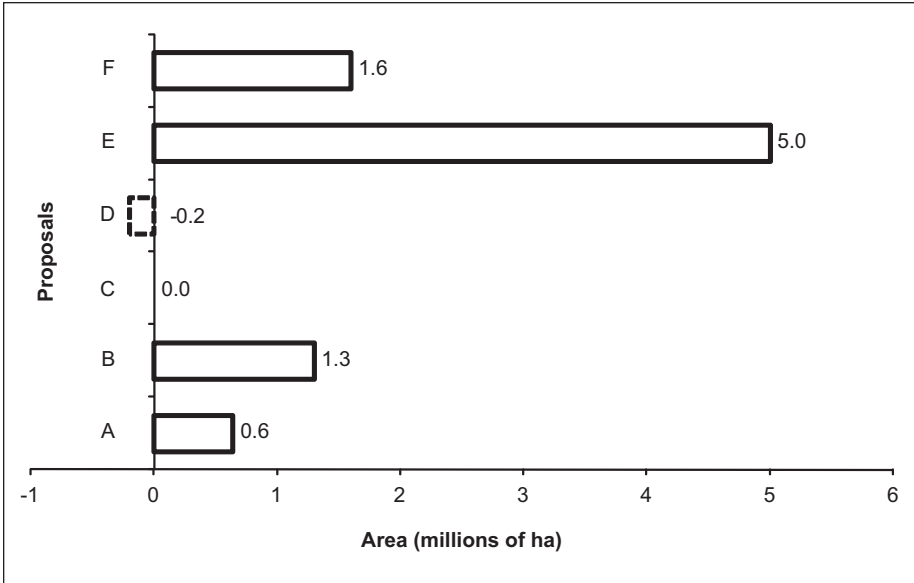
Secretary of State during previous Romero administrations,<sup>4</sup> but presented himself as an alternative to Romero's policies. In his inaugural speech on December 10, 2007, the newly elected governor declared that his future administration would end the "irresponsible and illegal festival of clearing authorizations"<sup>5</sup> and would revise everything the previous government had done on this issue. In part to that end, a provincial Ministry of Environment and Sustainable Development (MESD) was created when the new administration took office.

### *The Making of the Map and Discussion of Alternatives*

To comply with the Forest Law and carry out the required LUPP, an Executive Unit was constituted within the MESD, under the responsibility of the Secretariat of Environmental Policy. It included representatives of the provincial government, the Administration of National Parks (APN), and the National Institute of Agricultural Technology (INTA). The Executive Unit produced in due time (less than 1 year) the land mapping required by the Forest Law (Figure 1; Somma et al., in press). The Geographic Information System (GIS) elaborated for that purpose took into account and organized most of the scattered information available at that moment. The map also incorporated the views of different stakeholders through a participatory process (a detailed description of the characteristics of this process are out of the scope of this article).

The area allotted to potential agricultural expansion (Category III, low conservation value) was a major issue of debate between the provincial government, NGOs, landowners, small-scale farmers, and indigenous communities. Producers were particularly concerned with the area under Category III because this is the primary source of agricultural commodities. Environmental NGOs were eager to preserve special areas as nature reserves, parks, and ecological corridors. Some of these areas fell outside the region considered apt for soybean production, and therefore controversy around them was reduced. Producers even promoted the protection of inaccessible and remote areas in exchange for the release of profitable land for agriculture. But large sections of the soybean region were also inhabited by indigenous communities and small-scale farmers where there were many unsolved property rights conflicts. These communities saw the LUPP as a new opportunity to insist on their territorial claims and make their causes visible at a national level.

Different maps were put forward during the LUPP, in which the area in Category III varied from zero to practically all the remaining native forests in the province. These proposals have been summarized in Figure 2, where horizontal bars represent the potential loss of native forests that could occur if the entire area under Category III is eventually deforested. The land mapping proposed by the Executive Unit considered that around 0.6 million hectares could be safely put in Category III (Figure 2, Bar A). The report considered that this area could be extended to a maximum of 1.3 million hectares, provided that additional impact assessment studies were carried out (Figure 2, Bar B).



**Figure 2.** Area in Category III (low conservation value) in the different proposals put forward during the LUPP for Salta

Note: A: the Executive Unit map; B: maximum possible expansion of Category III in the Executive Unit final report; C: zero deforestation, as demanded by some environmental NGOs; D: net increase in forests that could be achieved by a combination of zero deforestation, forest restoration in specific areas, and recovery of soil productivity in degraded plots; E: proposal of senator A. H. Olmedo; F: the map eventually approved by the government. See more details in text.

Given that deforestation in the region has been around 100,000 hectares per year in previous years (Paruelo et al., 2005), the Executive Unit's proposal made possible a time span of 6 years to conduct such impact assessment without affecting the rate of agricultural expansion. Zero deforestation (Figure 2, Bar C) was the initial position of some environmental NGOs that launched prominent media campaigns demanding just that: *Desmonte cero*<sup>6</sup> (Greenpeace, 2008, p. 43). Environmental groups eventually abandoned this position and supported the map presented by the Executive Unit (Greenpeace & Fundación Ambiente y Recursos Naturales [FARN], 2008). It can be argued that "zero deforestation" was not really an extreme position, since a combination of zero deforestation in existing native forests and forest restoration in degraded areas, together with a gradual optimization of soil productivity in agricultural areas affected by bad agricultural practices, could allow a net increase in forests without negatively affecting economic outputs (a tentative figure for this potential forest recovery is shown in Figure 2, Bar D). Local economies could even benefit from international initiatives such as the REDD+ mechanism introduced by the United Nations Framework Convention on Climate Change (Barr, Dermawan, Purnomo, & Komarudin, 2010; UNFCCC, 2009)

or from renewed interest on the concept of ecosystem services provided by forests (Paruelo et al., in press; Viglizzo, Carreño, Volante, & Mosciaro, in press). Flash floods in the north of the province at the beginning of 2009, for example, could well be linked to the direct effect of deforestation and logging on the reduction of soil stability,<sup>7</sup> despite efforts by national and provincial governments to deny this connection.<sup>8</sup> We represented this option (Bar D) with a dashed line to indicate the uncertainty that surrounds such estimation. Although the accuracy of this specific figure could be questioned, our contention at this point is that deforestation of new areas is by no means unavoidable.

According to some social movements' leaders and conservation groups,<sup>9</sup> land owners and producers who realized that their properties would fall into Categories I or II (high or medium conservation value) exerted constant pressure on the government all along the LUPP to ignore the map made by the Executive Unit. Arguably as a result of this lobbying, the map was discarded. As the 1-year deadline set by the Forest Law was approaching, a project of law containing no map was prepared by the MESD and sent to the provincial Legislature. The absence of a map in the project was in violation of the Forest Law. The provincial Senate introduced changes in the law opening the possibility of extending almost indefinitely the area under Category III (low conservation value). Eventually, the modified project was made law on December 16, 2008, by the vote of the two chambers of the Legislature (Provincial Law 7,543). During the process, a senator who doubles as one of the largest soybean producers in the region (A. H. Olmedo) proposed a map of his own in which up to 5 million hectares were considered suitable for deforestation<sup>10</sup> (Figure 2, Bar E). Officially, this map was never taken into account by the government, but it gave a clear idea of the ultimate ambitions of the most radical faction within the agricultural sector. MESD officials declared that the modified law "could not guarantee the desired sustainability threshold".<sup>11</sup> Yet the role of the MESD was ambiguous given that the lack of a map in their project was one of the reasons why the Legislature was able to introduce the changes.<sup>12</sup> Governor Urtubey did not veto the approved law, as requested by environmental and social NGOs<sup>13</sup> and commissioned, through the MESD, a new map to a team of external consultants. This map, prepared in a few weeks, was roughly based on the map prepared by the Executive Unit. However, arguably as a result of the agricultural lobby, it extended the area under Category III by about 1 million hectares (to a final amount of 1.6 million hectares; Figure 2, Bar F). This map was eventually approved by the Legislature and became the official map of the LUPP.

### *Public Participation During the LUPP*

In conformity with the Forest Law, the Government set up a process of consultation of relevant stakeholders. This process was supposed to provide information to the Executive Unit, but it underwent criticisms on the part of social, environmental, and other grassroots organizations. Some indigenous communities were particularly frustrated. Leaders from these communities considered that "the participatory process was

useless” and even a “mockery”<sup>14</sup> used by the government to formally legitimize the LUPP. Indigenous communities claimed that “the right to participate enshrined in article 75 of the National Constitution and Convention 169 of the ILO has not been honored” and that their proposals “had not even been considered”.<sup>15</sup> Consensus was hard to build during the participatory workshops, even within supposedly homogenous constituencies. For example, not everybody within indigenous communities agreed on giving their ancestral land a high conservation value status (Category I).<sup>16</sup> Classifying land in this category was perceived by some as the imposition of an external worldview and as a potential hindrance to their rights to use the forests, including for extractive and productive activities not necessarily (or not always) related to traditional livelihoods.

The time schedule proposed by the government was also a matter of conflict. Some indigenous communities believed that it was too short to deal with such a fundamental issue as their territory. On the other side, landowners and large producers considered the participation process was ineffective and wanted to speedup the approval of the provincial law for which they had already secured a vast majority in both chambers of the Legislature. Their haste was also motivated by the prohibition of new clearings during the LUPP, even though deforestation activities did not stop during this process, as denounced by local communities and NGOs.<sup>17</sup>

### *The Intervention of the National Supreme Court of Justice*

At this point in the LUPP, some indigenous people and criollos farmers, helped by local NGOs, and grouped in a third degree organization called “Mesa de Tierra” (Earth Table),<sup>18</sup> decided to take legal action against the provincial government and demanded an immediate end to deforestation. The lawsuit made its way up to the National Supreme Court of Justice in Buenos Aires. On December 28, 2008 and March 26, 2009 the Court ruled against the provincial government and ordered a provisional halt to deforestation activities in four departments of Salta (San Martín, Orán, Rivadavia, and Santa Victoria).<sup>19</sup> In its ruling, the Supreme Court asked both the provincial and national governments to perform a “cumulative environmental impact assessment” (CEIA) study to determine the social and environmental effects of past deforestation prior to any new authorization. Even though there are no national standards for CEIA studies, antecedents and protocols can be found in other countries (Canadian Environmental Assessment Agency [CEAA], 1999; Court, Wright, & Guthrie, 1994; European Commission, 1999). A report from the University of Buenos Aires summarized the methodological approaches available to do a CEIA for this specific case and stressed the importance of involving public institutions and the scientific system in the process (Paruelo et al., in press). The Supreme Court called the parties for a public audience on February 18, 2009. In this audience, Salta’s Minister of Environment and Sustainable Development demanded the lifting of the ban on deforestation arguing it was causing economic damage to the province. The Supreme Court rejected this request.

Instead of starting the CEIA straight away, as required by the Supreme Court, the provincial government hired a private consultant to prepare a new map intended to be

acceptable to both agricultural producers and the Supreme Court. As was already shown in Figure 2, the new map delimited 1.6 million hectares in Category III. By means of Decree 2,785 Salta's government legalized the new map. The resulting map and report (Anonymous, 2009) are not available on the government website but unofficial versions can be found on the sites of some NGOs and producers organizations.<sup>20</sup> The report describes the criteria needed for the zoning procedure, but there is no explicit mention of the way in which these criteria were used to build the final map. The government's strategy was to present the new map as relatively proenvironment by contrasting it with the proposal of senator Olmedo (5 million hectares in Category III). Criticism of the new map from environmental sectors was dismissed as irrational or emotional, a typical argument in these cases, as pointed out by Huxham and Sumner (1999). Yet despite what the figures might suggest, discrepancies between the government and senator Olmedo on this issue were not that large. In fact, Decree 2,785 included provisions to eventually "reclassify" areas after a relatively simple and potentially arbitrary administrative procedure in which public participation was no longer required.

The CEIA requested by the Supreme Court was eventually commissioned to another private consultant. The CEIA was submitted to the Court in mid-2009, a few months after the new map had been definitely approved by the Legislature and promulgated by the Government. An independent team of scientists and university teachers from Salta and Buenos Aires, which included some of the authors of the present article, evaluated the study and concluded it was incomplete and, in many respects, simply inaccurate. The assessment concluded that the impact assessment had major flaws concerning public participation and methodological aspects, and contained inconsistencies and internal contradictions. The participatory process was considered especially weak, especially the one performed by the private consultant to legitimize the new map. During this new process, only a few workshops had been held, and at least two of them ended in violence. Employees from timber companies participated in these meetings in large numbers, and they were particularly aggressive against representatives of indigenous communities who wanted to stop logging and deforestation. To make things even more complex, some chieftains joined the timber companies in their claim to restart timber production, generating additional tensions and distrust within the indigenous movement.<sup>21</sup> Methodologies used during these workshops, such as contingent valuation tools known as the "willingness to pay" and the "willingness to accept compensation," were also questioned, especially when applied to the indigenous people. As discussed in Hanley (2000) and in Arvanitakis and Boydell (2009), poor people tend to accept relatively low compensation in exchange for the loss of natural assets, something that perpetuates the unequal distribution of wealth and constitutes a major drawback of these methodologies.

In contradiction of the Supreme Court's specific request, the National Secretary of Environment and Sustainable Development (NSES; the highest ranking environmental office in the country) did not participate in the elaboration of this CEIA study.<sup>22</sup> As it later transpired, there were deep disagreements between the national and provincial environmental offices. In fact, experts from the NSES reviewed Salta's impact

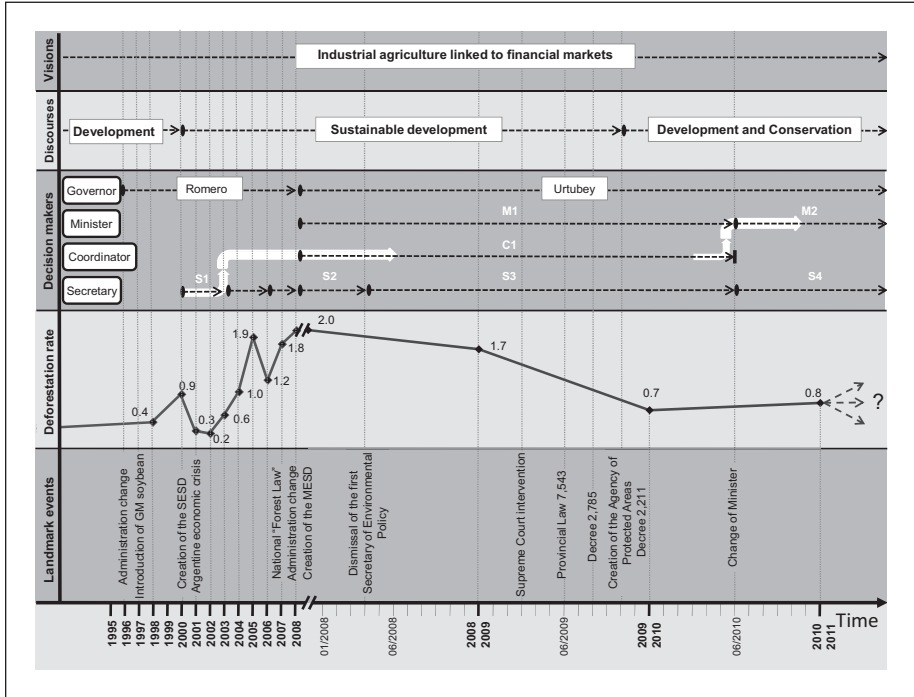
assessment and their report was officially presented to the Supreme Court. It indicated that the CEIA prepared by the province of Salta was confusing, presented inconsistencies with respect to the scale of analysis (regional, local), utilized unsuitable impact assessment indicators, lacked systematic organization criteria, ignored the visions of indigenous cultures, assigned biased values to ecosystem services, presented confusing cost-benefit results, and underestimated the cumulative or synergistic character of some impacts. The report also indicated that the province infringed the ruling of the Supreme Court and disregarded the spirit of the Forest Law by approving a modified zoning map long before the CEIA study was finished. In view of all these developments, the Supreme Court asked the provincial government to revise the study.

The province presented a second version of the CEIA, which was almost indistinguishable from the first and therefore equally unsatisfactory. At the time of writing the final version of this article (June 2011), more than a year and a half has passed but the Supreme Court is still due to deliver a final verdict on this issue. During this period, the Mesa de Tierra denounced illegal clearings in almost 10,000 hectares, in open violation of the Supreme Court ruling.<sup>23</sup> However, no significant measures have been taken by the provincial government on this issue in spite of the recent creation of a special bureau in charge of the enforcement of the Forest Law.

### **Visions, Discourses, and Practices During the LUPP in Salta**

The Forest Law unveiled profound conflicts that went beyond the management of the forests themselves, such as issues of land tenure and property rights. Different discourses were deployed by the intervening actors to defend their interests. While formal norms and discourses invoke consensual values, practices might differ hugely and are based on deep-rooted worldviews and current power relations. Figure 3 shows a schematic and simplified time line with our version of the visions, discourses, and practices observed during the LUPP in Salta. The graph is focused on governmental actors. Deforestation rates (as a percentage of remaining forests) are plotted for each year. The time scale varies to allow for a clearer representation of some of the landmark events discussed in this article.

As we show in Figure 3, the traditional development discourse can be directly linked to the former Governor Romero, who served three consecutive terms and played a key role in the process of natural resources privatization that took place in Argentina and Latin America in the 1990s (Liverman & Vilas, 2006). This discourse was particularly dominant during that period after the Washington Consensus that has shaped liberalization policies and strengthened the role of industrial agriculture in developing countries such as Argentina (Stiglitz, 2006). During his second term in office, he created a provincial Secretary of Environment and Sustainable Development (SESD) initially headed by a lawyer with a degree in environmental law (indicated as S1 in Figure 3). The SESD was essentially in charge of enforcing a provincial environmental protection law passed in 2000 (Law 7,070). This law was enacted “. . . to guarantee a



**Figure 3.** Visions, discourses, and practices in Salta before and after the approval of the Forest Law 26,331

Note: Deforestation rates as a percentage of existing forests. GM = genetically modified; MESD = Ministry of Environment and Sustainable Development; M = Minister; C = Coordinator; S = Secretary. Thick, white arrows in panel Decision Makers indicate that S1, C1, and M2 are the same person. Detailed explanation in text.

sustainable development, intra- and inter-generational equity, and the conservation of nature.” This formulation seems a direct echo of the Brundtland Report (WCED, 1987). The law acknowledges the existence of some natural assets with intrinsic value, aesthetic or cultural, but asserts the objective of the government is to reach “environmentally sustainable economic development.” Despite his apparent inclination to tackle environmental problems with a new (yet arguably weak) institutional framework, Romero’s handling of the deforestation issue was regarded as an “ecocide” by Miguel Bonasso, the author of the Forest Law.<sup>14</sup>

A clear indication of the importance the Urtubey government gave to the discourse on sustainable development was the creation of the MESD by upgrading the preexisting SESD. As indicated in the Visions panel in Figure 3, in spite of this discourse, the Urtubey administration seems as influenced by the modernization paradigm as the preceding government, namely, the expansion of industrial capitalist agriculture oriented to the production of commodities for a globalized market (Hufty, 2008; Risku-Norja

& Mikkola, 2009). In fact, during his inaugural speech, the new Governor distanced himself from his predecessor on the issue of deforestation, on the one hand, but on the other hand he also made it clear that “Salta must produce more, intensify industrial activity, and sustain the development of mining operations”.<sup>25</sup> He promised loans to “. . . improve the competitiveness of agricultural activity” praising the number of jobs that depend on this sector. He went on to say that his government would “. . . guarantee . . . sustained economic growth and progress.” There was clear tension between the political ideas expressed by Urtubey on the issue of deforestation and his policies, visibly guided by a development paradigm centered on economic growth and based on an industrial vision of development (see a similar analysis in Bond & Mossison-Saunders, 2011). For this worldview, the most that governments can (and ought to) do is circumscribe or mitigate the negative consequences of inexorable, sometimes admittedly unfair, economic (and agricultural) expansion by promoting the internalization of economic externalities and incorporating them into the market (Martínez Alier, 2004; Norgaard, 1992). In fact, the need to generate economic benefits was used as the main justification to resume timber production in the north of the province, in spite of the Supreme Court order.<sup>26</sup> The extent to which the market has been the appropriate tool to stop environmental degradation and the sustainability of the capitalist principles of infinite economic growth and wealth accumulation have, however, been extensively discussed in political and economic circles for decades (Barde & Pearce, 1991; Blühdorn & Welsh 2007; Holland 2003).

An early indication of the inconsistency between Urtubey’s initial discourse on sustainable development and his actual practices was the dismissal of the Secretary of Environmental Policy he had appointed after taking office, because she opposed the clearing of land occupied by indigenous people (indicated as S2 in Figure 3; subsequent Secretaries indicated as S3 and S4). This is significant for this case because the mapping process suffered a major setback at this point and put environmental and grassroots organizations under alert. In fact, after less than a year into his administration, indigenous communities had already accused Urtubey of the potential “genocide” that could be caused by the “massive clearing” of thousands of hectares they claimed as their own.<sup>27</sup>

As Figure 3 suggests, the enactment of the Forest Law and, above all, the intervention of the Supreme Court were essential to significantly reduce the rate of deforestation in the province. This rate decreased by more than 65% in less than 2 years (from 2.0% at the beginning of 2008 to 0.7% at the beginning of 2010), reversing the trend that started in 1997, when genetically modified soybean was introduced in Argentina, and intensified in the first decade of the 21st century, in the aftermath of an economic crisis that hit the country in 2001 (Volante, Paoli, & Bianchi, 2005; see panel Deforestation rate in Figure 3). Yet to put this figure in perspective, it is worth highlighting that the deforestation rate for the entire year 2010 (0.8%) was still higher than the Latin American average in recent years (0.51%; FAO, 2009). Whether this Latin American rate is acceptable or not remains to be seen, especially for some specific forest ecosystems. Therefore, further reductions in deforestation are possibly needed in Salta to preserve



the integrity of native forests and to ensure the survival of indigenous communities and criollos living therein.

Some time before the minister appointed at the beginning of Urtubey's administration (M1 in Figure 3) was replaced by the same lawyer who headed the SESD under Romero (M2 in Figure 3) the government discourse, arguably influenced by pressure from the agribusiness sector, had already changed into one of "development and conservation." A government decree of that time (Decree 2,211 of May 28, 2010) established the system where land use projects should be assessed at farm-scale, including details about the recategorization of different areas, a procedure that could be used to gradually increase the area under Category III, inevitably leading to more deforestation. It seems unlikely that private actors would submit applications to transform their farms into high conservation value areas (Category I) from which no commercial revenues can be expected. Almost simultaneously, the provincial government launched a new office in charge of supervising and eventually increasing the number of protected areas (Decree 1,849 of May 5, 2010).<sup>28</sup> These combined moves epitomize the government's newest discourse (see panel Discourses in Figure 3). This discourse of development and conservation is shared by large agricultural producers and is promoted by international seeds and agrochemical companies (Oliverio, López, & Segovia, 2005). Under this productivist vision, production and conservation are to be spatially separated from one another under the implicit assumption that all "productive" land must be exploited to foster development and generate wealth that would later trickle down for the benefit of society as a whole. Since the control capability and funds of the MESD are limited, the conservation part of the equation is in risk of being disregarded. As indicated by the dashed arrows and the question mark after year 2011 in the Deforestation rate panel in Figure 3, the complexity of the situation in Salta makes it difficult to produce an accurate estimation of the future evolution of the rate of deforestation in this province.

Figure 3 is a condensed picture of the entire Land Use Planning Process (LUPP) and shows schematically our theoretical interpretation of the raw and scattered data generated during this planning process over 4 years. Concepts such as "industrialism," "development," "sustainable development," and "conservationism" reflect complex visions of the relationship between nature and culture. They take in different meanings depending on the history, culture, and ideology of those who use them. Loaded with values, they were easily detected at the core of the discourses held by the actors in the LUPP. These ideas are also tools to interpret the world and points of reference for action. Owing to space limitations, we cannot provide in this article a more meticulous account of all the above-mentioned worldviews and their proponents. For further discussion on these development paradigms, we refer the reader to a former article (Seghezzo, 2009).

The events indicated in Figure 3 also give ideas about the changes observed in the discourses during the LUPP. These changes intended to convey particular messages to the public at different times; in particular, we argue, they have been carefully articulated to encourage people to believe and defend the worldviews implicit behind the discourses indicated in the Discourses panel in Figure 3. The presence of the same

people in top positions across different administrations (i.e., Urtubey himself, high-ranking officials within the MESD, amongst others) is also a hint that, despite changes in discourses, ideologies and worldviews remained unaffected.

## **Final Discussion and Concluding Remarks**

The case described in this article can be seen as an illustration of the struggles regarding the issues of conservation of native forests and agricultural development. The case of Salta is not an isolated example. Similar circumstances can be observed in many places in the entire Latin American region, particularly in the Gran Chaco of Bolivia, Paraguay, and Argentina. Conflicts between different worldviews together with vested economic and political interests can make LUPPs, such as the one in Salta, particularly complex and difficult to understand. It is our contention that to unveil the actual visions of development held by the intervening actors it is useful to compare their concrete practices with their political discourses. The conceptual framework known as political ecology is sufficiently flexible and comprehensive to be applied with success in these cases.

The economic incentives provided under favorable international conditions (in particular the profitable price of soybean in European and Asian markets) has paved the way to an unprecedented deforestation in Salta and other northern regions in Argentina, increasingly marginalizing populations such as indigenous communities and small-scale farmers. Power inequalities are particularly relevant in environmental planning debates as the one that took place in Salta during the LUPP described (Blaikie & Brookfield, 1987; Bryant & Bailey, 1997). We have shown in this article that political and economic interests tend to ignore or override both technical considerations and social concerns during LUPPs, something that can happen in both authoritarian and democratic governments, as indicated by McCarthy & Tacconi (2011).

We argue that “development” and hence “progress,” understood mainly as a process of wealth and power accumulation inextricably linked to the possession of land, was (and still is) the leading ideology of provincial political and economic elites in the case of Salta. Yet this case also shows that established institutional power systems can be challenged by concrete claims, solid arguments, and organized, nonviolent resistance by relatively marginalized groups and grassroots social organizations. Those groups rejected the idea that development is inexorably linked with a type of economic growth based only on intensive, large-scale exploitation of natural resources. Their opposition to public and private land use policies was primarily based on preexisting struggles for property rights, as ownership of the land is considered the best way to preserve traditional livelihoods. We have also showed evidence that indicates that even the more politically correct discourses of sustainable development and nature conservation can be put under scrutiny. None of these visions of development (conventional progress, sustainable development, and production with conservation) seem effective enough to comprehensively deal with complex social, cultural, and

environmental conflicts, as already suggested by Escobar (2001) and Martínez Alier (2004), amongst others.

Comprehensive LUPPs require constant updating to broaden and deepen the levels of analysis. The case described in this article suggests that a balanced combination of technical expertise and public participation is imperative to provide sound methodological and social platforms to refine forest mappings and facilitate rational and equitable planning processes. Participation is a flexible concept that holds different meanings to different people depending on the natural and cultural context. Efforts to measure participation and develop indicators of the level of participation have led to the development of typologies to describe various forms of participatory arrangements and the corresponding extent of power and responsibility sharing they entail (Stringer et al., 2006). In Salta, the government rhetoric partly relied on the idea of public participation applied in the early 1980s to agricultural development and in the 1990s to poverty alleviation (Chambers, 2010). However, it can be argued that so-called participatory processes were mainly utilized to validate external changes, legitimize previously made decisions, and facilitate their acceptance by local and marginalized populations. A more genuine and meaningful participation will require accurate identification of all relevant stakeholders, a more transparent link between grassroots participatory practices and institutionalized decision-making processes, and an open debate conducive to social learning (Pahl-Wostl et al., 2007).

The relationship between native forests and agricultural development has never received so much public and private attention in Salta's history. Yet the final outcome of this case is still uncertain, as the Supreme Court is now confronted with, at least, three options. The first alternative would be to accept the revised CEIA study and legitimize the process that led to provincial Law 7,543 and Decree 2,785. The second option would be to reject the CEIA, forcing the provincial government to modify these legal instruments and restart the entire LUPP from scratch. It could also encourage a third, intermediate option, as often occurs in these complex cases, although the characteristics of this third option are difficult to anticipate. Based on the insight gained during the analysis of this process from a political ecology perspective, the second option (reject the CEIA and reformulate the LUPP) seems the best. We believe that this option is the only one that can be fully justified on technical, legal, and ethical terms. It would also be an opportunity to reopen the spaces for public participation and rediscuss the future of Salta's native forests. The delays and potential difficulties of this alternative would be justified if the new process ends up with a long-term action plan founded on solid technical grounds and agreed on by all relevant stakeholders, irrespective of their political, economic, or institutional power.

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## **Notes**

1. Ethnic denominations are provided in indigenous languages. When different, Spanish versions have been added between brackets.
2. Newspaper "Nuevo Diario de Salta," December 19, 2008.
3. Digital newspaper "El Intransigente," July 16, 2010 and April 27, 2011.
4. Digital newspaper "Salta 21," September 20, 2007. Retrieved from <http://salta21.com/Juan-Manuel-Urtubey-los.html>.
5. The inaugural speech of governor Urtubey can be retrieved from <http://gestionurtubey.wordpress.com/2007/12/10/discurso-y-promesas-de-urtubey-al-asumir-el-gobierno-de-salta/>.
6. Newspaper "Nuevo Diario de Salta", November 12, 2008.
7. Newspaper "Nuevo Diario de Salta", February 11, 2009.
8. Newspaper "Nuevo Diario de Salta", February 11, 2009.
9. Newspaper "El Tribuno", July 11, 2009.
10. Newspaper "Nuevo Diario de Salta", November 25, 2008.
11. Newspaper "Nuevo Diario de Salta", December 17, 2008.
12. Newspaper "Nuevo Diario de Salta", December 5 and 12, 2008.
13. Newspaper "Nuevo Diario de Salta", December 13 and 18, 2008.
14. Newspaper "Nuevo Diario de Salta", December 16, 2008.
15. Newspaper "Nuevo Diario de Salta", January 2, 2009.
16. Newspaper "Nuevo Diario de Salta", November 05, 2009.
17. Newspaper "Nuevo Diario de Salta", December 17, 2008.
18. The Mesa de Tierra was founded in 2008, some time before the passing of provincial Law 7.543, with the explicit goal of claiming property rights on fiscal and private land traditionally occupied by indigenous peoples and criollos farmers.
19. The case is referred to as follows: S. 1144. XLIV. ORIGINARIO. Salas, Dino y otros c/ Salta, Provincia de y Estado Nacional s/amparo. This ruling received ample attention in local and national media.
20. The map can be downloaded from the site of Greenpeace at <http://www.greenpeace.org.ar/blogbosques/> or from the site of ProGrano at: <http://www.prograno.org/docs/Decreto%202785%20-%20Reglamentada%20ley%207543.pdf>.
21. Newspaper "Nuevo Diario de Salta," June 16, 2009.
22. This report has never been made publicly available by the government.

23. Digital newspaper “El Intransigente,” February 23, 2011; Newspaper “Nuevo Diario de Salta,” March 2, 2011.
24. Article written for Newspaper “Página 12,” December 11, 2008.
25. Retrieved from <http://gestionnurtubey.wordpress.com/2007/12/10/discurso-y-promesas-de-urtubey-al-asumir-el-gobierno-de-salta/>.
26. Resolution 327-2009 BIS.
27. Newspaper “Clarín,” November 24 and 25, 2008.
28. Digital newspaper “El Intransigente,” May 13, 2010.

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