Life as Commerce in Paraguay:
Market Mechanisms for Conservation
and their impacts on the capacity of indigenous communities to govern their own territory
January 2006 – July 2008

I. Introduction and Background

"It's the economy, dummy!" was a popular refrain used by certain conservation scientists and NGOs when proposing their hypothetical solutions to the pressing problems of nature conservation and the fiasco of conventional schemes of strict and exclusive protected areas. Appraising biodiversity with the eyes of economists, the conservation community hoped to be able to influence economic policies and adapt them to biodiversity conservation needs.

Unfortunately, the economists' power was underestimated to such an extent that, instead of adapting economies to the needs of our planet's biodiversity conservation, the growing trend is to adapt biodiversity conservation policies to conventional economies (CENSAT, 2005). The fundamental economic reasoning is relatively straightforward and goes like this: if it is possible to make biodiversity and other environmental "services" marketable, then market forces will further biodiversity conservation.

The now popular term 'environmental services' was coined alongside the thrust to mainstream biodiversity policy into classic development policy. However, it should be noted that many Indigenous Peoples and social movements have expressed their profound concern about this concept because they argue that it just reduces biodiversity to a commodity and does not take into account its intrinsic value nor its political aspects. (Acción Ecológica, 2003 y CENSAT, 2005).

The policy mechanisms that have been classified as 'environmental services' markets are the following:

- Carbon market
- Offset markets
- Certification
- Genetic resources markets
- Ecotourism
- Watershed services

There are two principal problems with the creation of 'environmental services' markets as part of the market-based approach to biodiversity conservation. In the first place, there are the problems related to using market-based approaches to resolve social issues and the challenges of the public sector. It would be naive to ignore the political dimension of this debate.

Speaking of the political dimension of this debate, it is not breaking news that it was the large social movements, especially in the Global South, who led the charge in condemning the commodification of life and market-based approaches to conservation.

Their skepticism about the supposed ability of the market to solve social and environmental challenges, as well as the need to conserve biodiversity, is rooted in their grim experience with 'free' trade, which has shown itself totally incapable of solving social challenges in developing countries.

The second set of daunting problems is inherent to the challenge of trying to fit the world's biodiversity into the rigid, reductionist structure of the market. In the majority of market-based approaches to conservation, the complexity of separating and commodifying the distinct elements of ecosystems has proved overwhelming. Ecosystems are not only complex but also interactive and interdependent and almost all the elements are fundamental to the system as a whole and, are therefore inseparable.

A prerequisite for setting up an 'environmental services' market is that the so-called service has to be owned by an entity that can sell it. This raises a host of serious questions about equity: Who owns biodiversity? The government? The owner of the land where it is found? The community that manages the land? The men within that community who make decisions or the women who actually manage the land in practice? Or the Indigenous community that managed the land sustainably until Western landowners took over their land in colonial or post-colonial times?

In theory, it is assumed that market-based conservation mechanisms could be effective and equitable but *only*:

- If all values are properly accounted for;
- If returns are equitably distributed to the proper 'owners';
- If the market is properly regulated;
- If those regulations are effectively enforced; and
- If there is an equal level playing field so that all biodiversity consumers and producers can participate equitably.

In reality, however, it is difficult to assess whether it is ever possible to meet all these conditions or to find evidence of environmental services markets having a positive impact on poverty alleviation, since the overwhelming majority of existing payments for 'environmental services' projects (PES) are funded through public or philanthropic financing. Moreover, most existing PES schemes are accompanied by strict regulations, sometimes even prohibiting the very activity that is being paid for, and most 'success stories' are only really

successful because of effective public governance, rather than their links to the market.

A famous example in this respect is the Costa Rican Payments for Environmental Services scheme, which is arguably one of the oldest PES schemes for biodiversity conservation, and perhaps the most well known. In its understandable attempts to sell this scheme on the international carbon market, the Costa Rican government tends not to mention the fact that the scheme was actually accompanied by a nationwide deforestation ban when it was introduced. (FoEI, 2005, CENSAT, 2005) So while there is general consensus about the fact that the *overall* policy was successful in terms of halting deforestation in Costa Rica, it is hard to tell whether this success was due to the deforestation ban or the far more expensive PES system.

In Paraguay, the activities of both the national and international private conservation entities have come into the limelight since the beginning of the democratic period that started with the fall of the dictatorship of Stroessner in February 1989.

The subsequent democratic regime (in so far as political rights and civic liberties go) has ignored the land tenure debacle caused by the dictatorship and has not addressed nor solved the many cases in which indigenous and small farmers' lands were usurped by the dictator to hand out to his cronies. The landowners who benefited from this illegal wheeling and dealing currently are receiving the support of the new regime to assert their ownership over these lands, despite lawsuits brought by indigenous communities and small farmers. These are rarely settled in favor of the original inhabitants even though the National Constitution recognizes the right of indigenous peoples to their ancestral territories.

The 1990s saw the emergence of conservation institutions as a new actor in land privatization. Some of the first land privatized by these institutions was the last vestige of the Mbaracayú forest, part of the ancestral territory of the Ache Guayakí and Ava Guaraní peoples.

In the last ten years, these institutions have consolidated their land holdings and the current proliferation of conservation organizations has unleashed a race to privatize vast tracts of the ancestral territories of the more than 20 first peoples of Paraguay. But instead of buying this land outright, these parcels and small farms are simply declared private reserves under Act 352 that stipulates that private protected areas may not be expropriated nor confiscated (Sobrevivencia, 2005).

II. Nature and the Environmental Problem in Paraguay

Paraguay is a landlocked country with a surface of 406,752 km^2 and a population of 5,798,603. Paraguay is known as "the heart of America" since it is located in the center of South America. It is divided in two principal regions: the

Eastern region, with 39% of the land and 97% of the population, and the Chaco with 61% of the country and 3% of the population. The two regions have very different geological, edaphic, ecological, topographic and climatic characteristics, which result in a very evident differentiation in the composition of the flora and fauna in each region as well as in the use of natural resources.

The climate of Paraguay has been defined as continental subtropical. The annual rainfall varies from an average of 400 mm in the far northeast of the Chaco to 1,800 millimeters in the southeast of the Eastern Region. The temperature ranges from 25 ºC in the Chaco to 21 ºC in the south of the Eastern Region, with highs reaching 40 ºC and lows reaching -2 ºC. Paraguay in its entirety is part of the Plata River Basin and also includes the Paraná River and Paraguay River sub-basins.

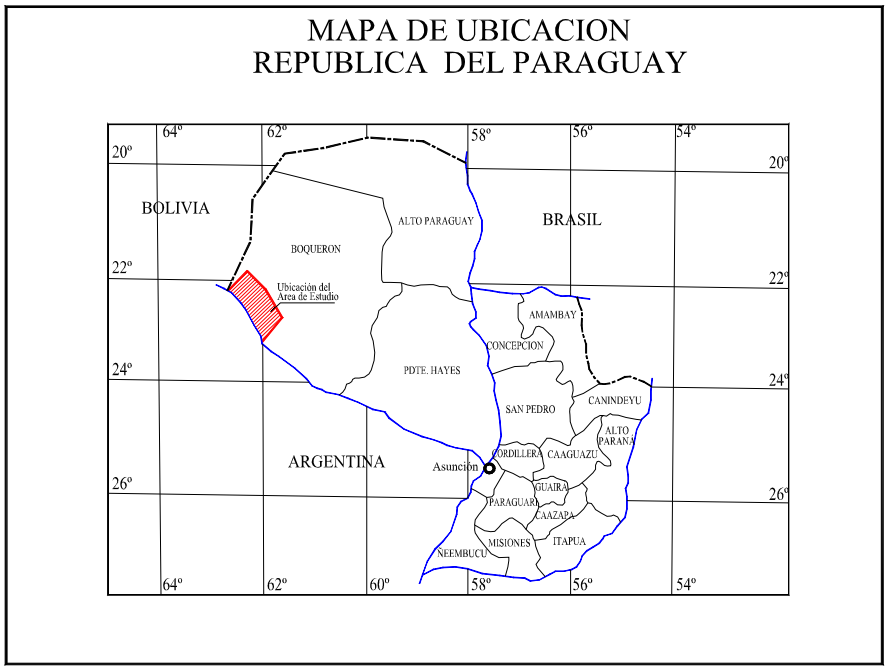
The most important environmental problems in Paraguayan territory are the outcomes of a development model that conceives of the environment as an inexhaustible resource and that prioritizes short-term profits as the motor of said development. There are no ecosystems in the country that have not suffered some irreparable loss. The Eastern region is the most damaged by deforestation. Since 1945, it has suffered unbridled clear-cutting, which has intensified since the '70s as well as after the coup d'etat in 1989 that resulted in the fall of the Stroessner dictatorship.

The case studies for this research focus on areas in Paraguay either inhabited by indigenous peoples that are part of their ancestral territories or indigenous settlements located outside their ancestral territories.

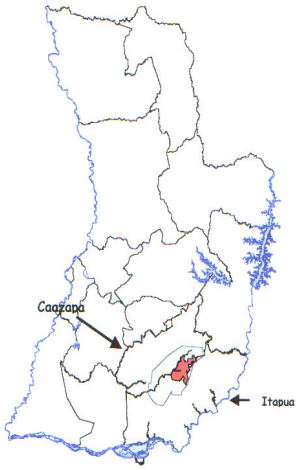
One of the case studies is from the Chaco with indigenous communities in the Pozo Hondo area (See Graphic1) who belong to the Nivacle, Enxet and Guaraní Peoples who inhabit an area near the Pilcomayo River. These peoples have adapted their lifestyles to the seasonal flooding of the river. The highs and lows of the river determine to a large extent the river's capacity to sustain human life. Currently the traditional way of life of these peoples is adversely impacted by two artificial alterations in the river's natural flow. On one hand, the water is redirected towards the right shore (on the Argentine side), and on the other hand, by the canals of the La Madrid canyon, which have been built to provide water to those downstream who have been adversely impacted by redirecting water to Argentina. The flora in the area is mostly xerophytic species and desertification is increasingly apparent. The fauna, which historically have been diverse and plentiful, are now showing signs of depletion caused by overexploitation of species with nutritional and commercial value, such as jaguars, peccaries, tapirs, caimans and armadillos, among others.

The other case study was done in an area inhabited by the Mby'a communities of Arroyo Claro, Arroyo Morotí and Taguató and the ancestral area to which they still have access in the San Rafael Wildlife Protected Area and surrounding areas in the eastern part of the country. (See Graphic 2). The natural vegetation is made up of dense subtropical humid forests (classified in some literature as Interior Atlantic Forest) with lateritious soils of basalt origin. The abundant annual rainfall varies between 1,600 and 1,800mm. The area is rich in plant

diversity and has more than 500 vascular plant species. The vast majority of these plants are well known by the Mby'a and many of them have been identified for their medicinal use or for other purposes. The fauna are also rich and varied, including many mammals, such as jaguars, several kinds of deer, various primates, peccaries, tapirs, and giant otters, among others. The quality of the habitat that supported this rich and varied fauna has diminished to such an extent that some species are now threatened with extinction. According to the Mby'a, the fauna is so close to extinction that they have taken measures to restore and protect the remaining fauna.



Graphic 1: Priority Conservation Sites of Pozo Hondo



Graphic 2: San Rafael Wildlife Protected Area in the Caazapá and Itapúa Provinces, Eastern Region of Paraguay. Source: Bogado 2003.

The Environmental Problem in Paraguay

Since time immemorial, indigenous peoples have lived in harmony with nature and have achieved high levels of well being, and have proved themselves to be an essential component of the environment and well adapted to it.

With the advent of colonial occupation and subsequent creation of the new national states as hegemonic geopolitical units, the territories of the indigenous nations of America (and the world) were usurped by the new occupants of the land. These national states, in close collaboration with the latifundist oligarchy, have usurped the territory and have enjoyed a virtual monopoly on its exploitation.

Since the beginning of the last century, the devastation resulting from this exploitation during the colonial period and the ongoing latifundist exploitation has prompted new actors interested in nature conservation and preserving its attributes to desire to control territory. These new actors purport to wish to rescue the remaining natural areas.

All these systems of territorial control involve monopolizing the control and ownership of land and nature. The new conservation model is also based on the ownership or exclusive control of territory and is intent on selling products from the functioning of natural systems and the traditional knowledge systems of indigenous peoples to generate capital to accumulate profits and to provide incentives for the landowners – many of whom violate indigenous peoples' rights to their territories –not to alter the attributes of their holdings. The market-based strategies for conserving nature consist of a package of options for exploitation and neoliberal control of natural goods. Some of these options include 'environmental services': carbon sequestration, biodiversity offsets, ecotourism and bioprospecting, among others. Rarely do these options respect the indigenous peoples' sovereignty over their territory. On the contrary, they usually establish systems that compete with or undermine the indigenous peoples' territorial rights. The usual consequences for indigenous peoples are poverty, destitution and loss of access to the vital resources that they depend on to survive.

The Environmental Problem in the Pozo Hondo Area

Some of the principal problems in the Pozo Hondo Area, identified in their own words by indigenous experts interviewed by the Yvy Pora Foundation in 2007, are the following:

- Measures taken by political institutions and entities "so the country works" have adversely affected the forest areas that the indigenous peoples own and which are part of their ancestral territory. These measures include:
    - Redirecting the Pilcomayo River and sending it through the Madrid Ravine: This has caused the death of the algarrobo tree groves

(*Prosopis sp.)* that grew in the old riverbed and the arrival of other species such as the palo bobo tree (*Tessaria integrifólia)*

- Indiscriminately granting land in indigenous peoples' territories to cattle ranchers: This has caused the destruction of vast tracts of wild animals' habitat and plant species that are the livelihood of indigenous peoples; which forces the indigenous people to rely too heavily on forest products in an attempt to make ends meet.
- Opening roads through indigenous territories: This dramatically increases demographic pressure and transit, which, in turn, cause environmental destruction and cultural upheaval such as prostitution, alcoholism and other problems, which prompt indigenous people to sell off timber and other forest products at bargain basement prices. This violates the funding criteria of the international donors that fund these projects.
- Applying legal instruments like Resolution Nº 139/06 of the INDI on forest management of their lands, which can cause complete degradation of a forest, since they do not know how to manage it; furthermore this can also give rise to the indiscriminate use of other forest resources and renting or granting concessions to loggers who never even try to manage the forest sustainably.

- According to the indigenous people, bad agricultural practices such as burning of fields and slashing and burning vegetation are the norm since there are no authorities regulating the cattle ranchers; and the tendency is that the indigenous people carry out such practices too, to clear pastures for their cattle and to make hunting easier.
- Underestimating the value of the indigenous-owned forests: indigenous people feel that the estimates they are given are too low, but are compelled to accept them by the need to make a living and their lack of knowledge little of civil law.
- The failure to grant permits to indigenous people for the use of forest products.
- The disappearance of other wooded areas: the loggers have noticed the scarcity of forest products for industry and so they are eager to find other wooded areas to exploit for raw materials. It is likely that all indigenous communities have been *approached* and asked about *exercising their legitimate right to their property,* which is very dangerous. It is common knowledge that forest management plans are being developed based on the Resolution of the INDI on forest management to obtain environmental licenses and permits from the state Forestry Authority.

The Environmental Problem in San Rafael

The principal threat to the integrity of the forests of the Mby'a People of San Rafael, where the Arroyo Claro, Arroyo Morotí and Taguato communities are located, is deforestation to clear land for fields.

Since the 1990s, deforestation fueled by the expanding agricultural frontier consumed almost the totality of the Mby'a territory, Currently only 700 km^2 of the 10.000 km^2 that existed at the start of the '90s is still forested (See Graphics 3 and 4).

Most of the deforested area is used for mechanized soy production in rotation with wheat, corn and sunflower, oleaginous and cereal crops that fuel deforestation to make way for large scale crop cultivation. The environmental damage caused by agricultural production is not limited to deforestation but also includes massive pollution from the agrotoxins used by the technological packages that are in vogue: genetically engineered crops that are highly dependent on repeated applications of these chemical products. In Table 1, we see the yearly increase in the importation of pesticides and in Table 2 the pesticides used in soy production.

TABLE 1: PARAGUAY: **Importation of Pesticides in Kilos.**

Type of Pesticide	Year 2000	Year 2001	Year 2002	Year 2003	Year 2004	Year 2005	Year 2006	Year 2007
Herbicide	**2.553.133**	**11.318.195**	**22.603.834**	**14.597.016**	**10.720.367**	**9.648.190**	**12.563.882**	**13.280.046**
Fungicide	**234.186**	**1.095.212**	**2.295.919**	**2.116.384**	**1.560.172**	**1.460.541**	**1.197.172**	**3.977.097**
Insecticide	**485.587**	**2.452.314**	**8.992.411**	**3.701.356**	**3.363.016**	**5.057.361**	**3.261.498**	**5.565.494**
Total Kilos	**3.245.906**	**14.865.721**	**33.892.164**	**20.414.756**	**15.643.555**	**16.216.296**	**17.022.552**	**22.822.637**

Source: OCIT Comercio exterior-2000/2007. Asunción –Paragua**y**

TABLE 2: * Pesticide Use for Growing RoundupReady Soy in Paraguay –Agricultural Cycle 2007 - 2008

Technical Name	Common Commercial Name	Type	Toxicological Classification According to SENAVE	Application/ Hectare (liters)	Application/Hectare (Kgs)	Total Quantity applied 2.644.856 Hectares in liters ***	Total Quantity applied 2.644.856 Hectares in Kilos ***	Mutagenic and Teratogenic Effects	Eye irritation	Applied to soy
Glyfosate	Round Up	Herbicide	Usually not dangerous (Class IV) **	2 l.		5.289.712			Corrosive: clouds the cornea, not irreversible in first 7 days	Sprayed twice before planting once afterwards to control wee
Cipermetrina ****	Desis, Lextrina	Insecticide	Not very dangerous (Class III)	0.75 l.		1.983.642			Non-cornea clouding; irritation reversible in 7 days	To control Oruga before flowering (frequency of spra depends on infestation)
Acefato ****	Orthene, Acetax, Bladex	Insecticide	Moderately dangerous (ClassII)	0.75 l.	0.4 kg.	1.983.642	1.057.942 kg.		Reversible clouding of cornea in first 7 days; irritation for 7	To control ticks in seed formation (frequency of spra depends on infestation)
Endosulfan ****	Tecnosulfan	Insecticide	Very dangerous	1.2 l.		3.173.827		Teratogenic according		

			(Class Ib)					to EPA		
Tebuconazole	Folicur, Bladex	Fungicide	Usually not dangerous (Class IV)	0.5 l.		1.322.428			No irritation	To control roya (frequency o spraying depends on infestation)
Carbendazin	Glex, AC(Active Component)	Fungicide	Usually not dangerous (Class IV)	0.4 l.	0.33 Kg.	1.057.942	872.803		No irritation	Applied at end of cycle (frequency of spraying according to infestation)
Paraquat	Gramoxone Dragoxone	Herbicide	Very dangerous (Class Ib)	2.5 l.		6.612.140		Has shown to cause mutation in microorganisms and in rat cells	Corrosive: not reversible cornea clouding in first 7 days	If it does not dry naturally, sprayed 8 days before harv
TOTAL						**21.423.333 L**	**1.930.745 Kg.**			

Source: Biodiversity Program of Alter Vida with commercially available data from companies that sell agrochemicals.

* **These data are estimates calculated by the Biodiversity Program of Alter Vida according to the sources consulted. This is not official data.**

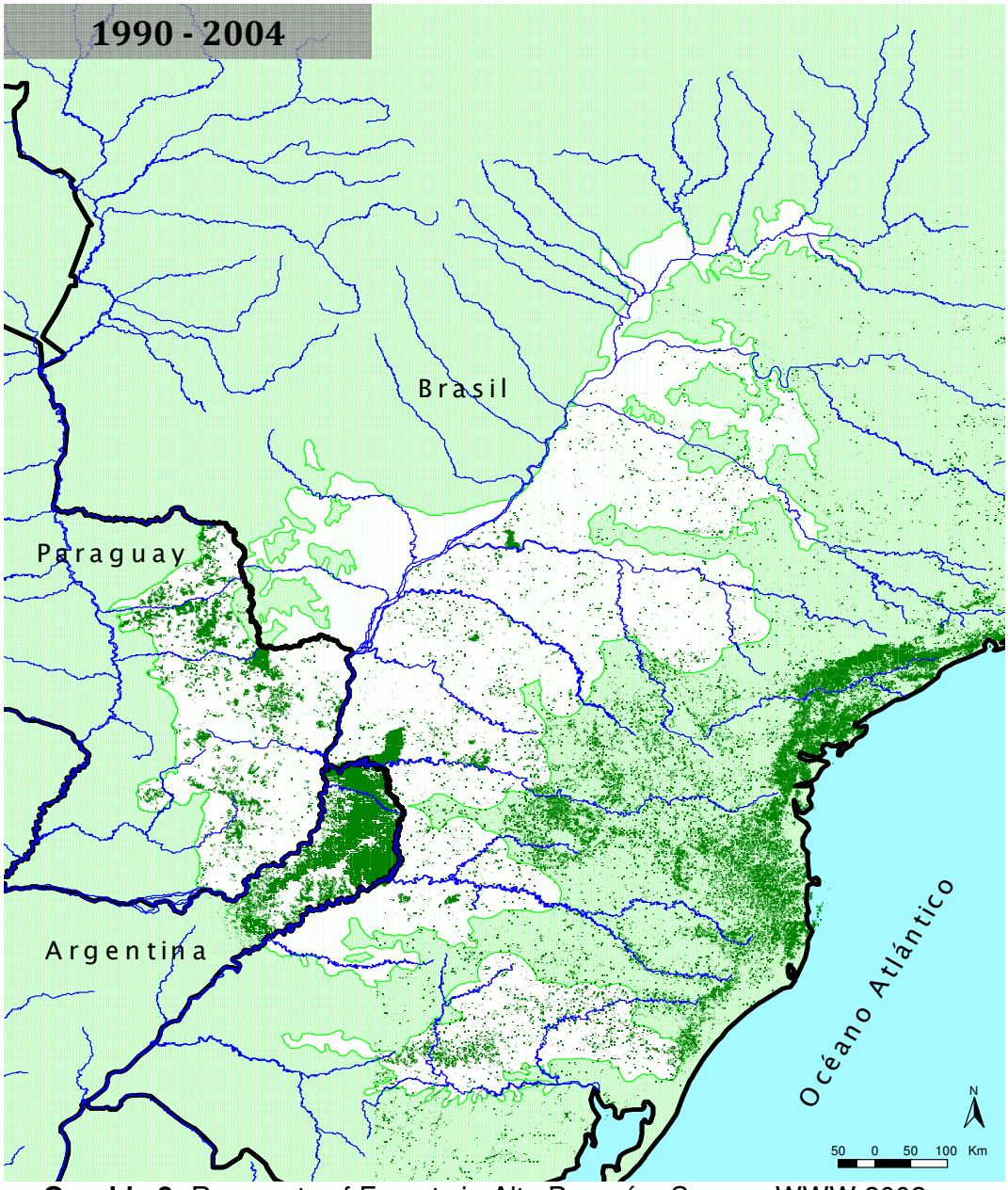
*** * The Environmental Protection Agency of the United States (EPA) classifies this as a Class 1 toxin due to its extreme toxicity for the eyes.**

**** * The application of these agrochemicals varies depending on the need of the crop, so the quantities used may vary.**

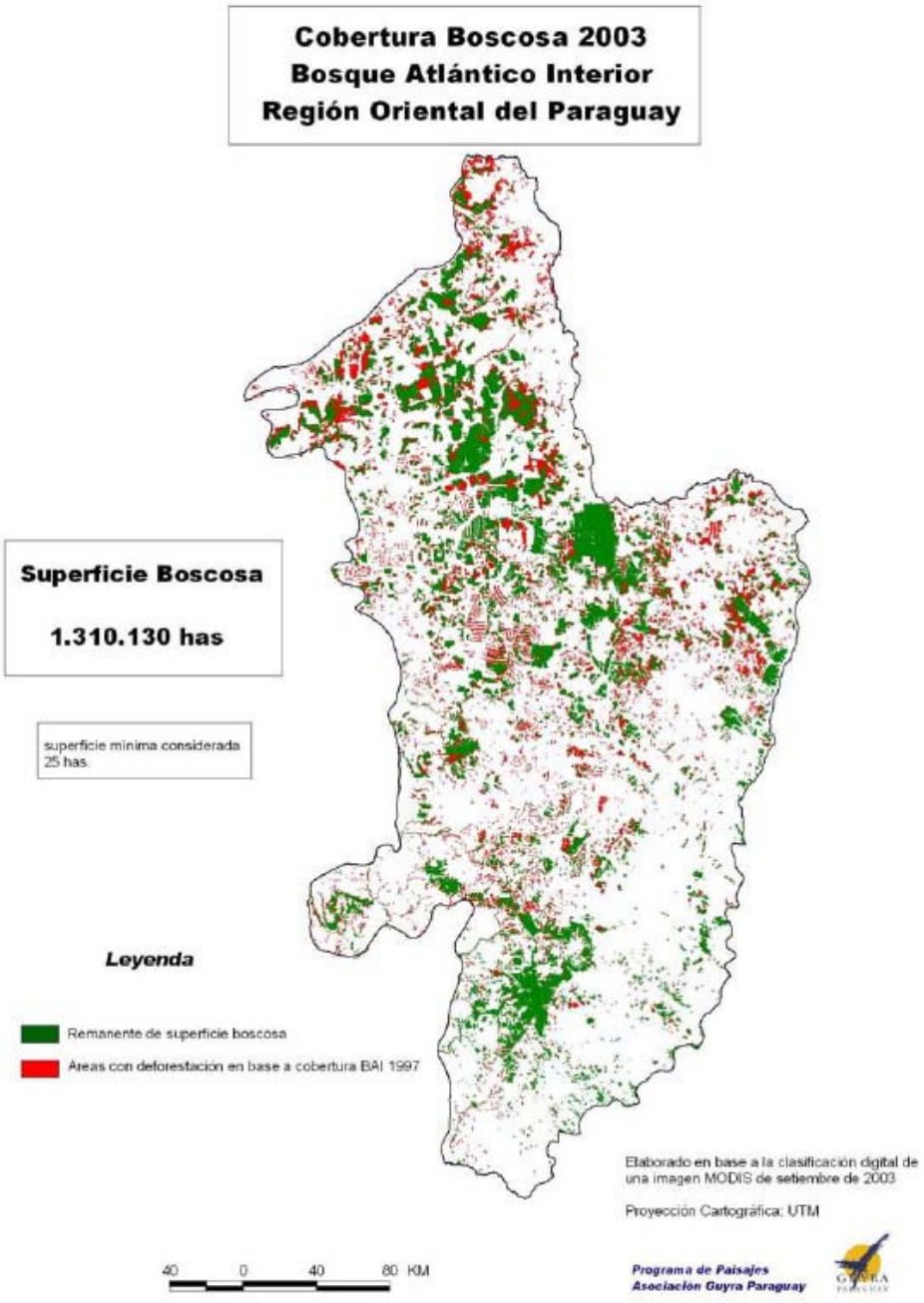
****** These are insecticides and the soy farmers do not use all four at once, but one or two at a time.**

In the course of a cycle of soy cultivation in adverse conditions, 7 to 10 different pesticides may be used and an average of 12 sprayings applied in 100 days. Among the pesticides used to grow soy, some are classified with a red band (extremely dangerous and very dangerous, according to resolution 295/03 of the Ministry of Agriculture and Cattle Ranching), including Paraquat (which has no antidote to intoxication) and Endosulfan, which has been classified as a teratogenic by the Environmental Protection Agency of the United States.

The pesticides lixiviated from agricultural fields has practically wiped out the fish species used by the Mby'a and contaminated the sources of drinking water which the communities depend on to such an extent that they are rendered unusable in certain seasons of the year.



Graphic 3: Remnants of Forests in Alto Paraná – Source: WWW 2003



Graphic 4: Remnants of forests in Alto Paraná – Year 2003

III. Analysis of Act 3001/06 on value and remuneration for environmental services

When the Act on the Value and Remuneration of Environmental Services (Act 3001/06, also referred to as Payment for Environmental Services or PES) was passed in the country, it did not include specific rules nor financing. The conservation organizations supported the adoption of this Act, and it was adopted without adequate consultation with the social movements and indigenous peoples, or with the small farmer's organizations. Act 3001/06 promotes the sale of environmental services by establishing an environmental services certificate market.

At the same time, the Act only stipulates that all the owners of the land and natural components that generate 'environmental services' will have the right to the corresponding compensation for those services. No estimate of the total budget that this would require was made.

The Paraguayan system of PES supposedly will be financed mostly from offset payments made by businesses whose activities have negative environmental impacts elsewhere in the country. An offset margin of up to 10% of the budget of a project is required if an infrastructure project causes significant environmental impacts (according to the Environmental Impact Value Calculation). This means that businesses can offset their environmental impacts by paying to protect biodiversity elsewhere. In other words, the Paraguayan PES scheme legalizes a broad range of environmental sins.

The Act also allows landowners that have broken the forestry law (that stipulates that at least 25% of a landowner's holdings must conserve forest cover) to simply compensate this violation by buying biodiversity offset certifications. At the same time, those landowners who have conserved 25% of their land with forest coverage and complied with the deforestation ban, which is in effect and obligatory, are compensated for their compliance with the law and could receive payment for 'environmental services'. The ethics of this Act are questionable; the Act grants Environmental Services Certificates to landowners who have not complied with the prerequisite of keeping at least 25% of their land with forest coverage as stipulated by the Forestry Act No 422/73.

Furthermore, according to Article 64 of the National Constitution it would be illegal to implement PES programs in indigenous lands since these require signing a contract and Article 64 clearly states that contractual obligations do not bear on indigenous lands and that these lands cannot be rented.

Will the poor benefit? The Pozo Hondo Case Study

It was always argued that PES systems could benefit the poor, since many of the most valuable ecosystems of the planet are inhabited by Indigenous Peoples and other local communities without economic resources. However, an often insuperable legal obstacle for many of the poorest of society is that they do not have the legal deeds or titles to the lands they occupy.

Although some PES systems, including the Paraguayan one, officially recognize the rights of Indigenous Peoples including their land rights and, implicitly, their right to receive compensation under PES, this only applies to territory that is officially recognized – there is a big difference between this and original territory of the majority of Indigenous Peoples in the American Continent.

In the Chaco, indigenous peoples have suffered from the pressure of the cattle ranching in their territories from the very beginning of European colonization. However, with a few exceptions, this did not cause the total eviction of the indigenous population until recently. Currently, the indigenous peoples of the Chaco suffer pressures from expanding cattle ranching, compounded by the relocation of cattle ranching from the Eastern Region and the declaration of their lands as “vacant” by the dominant economic model to justify the expansion of the soy frontier(1).

The Nivaclé People of the Mistolar community in the 29.876 ha Pozo Hondo Priority Conservation Site have explored the possibility of increasing their income by selling environmental services, in the framework of Act 3001/06. For this purpose, in 2007, the community had the Yvy Pora Foundation do the necessary viability studies for decision-making (Management Plan of Environmental Services of the Lands of the Indigenous Mistolar Community). Despite their efforts, the community has not been able to get any funds under the Act. But the practicalities of conforming to PES requirements – which include presenting proposals and projects; determining the baseline; compliance with the norms on environmental impact assessments and, especially, calculating the value of socio-economic convenience of the PES mechanisms for the community – turned out to be far too costly for communities.

Also, the Act raises other tricky questions like what happens to the indigenous peoples, small farmers and even small and medium property owners who sign contracts to enter into environmental services schemes that privatize their real estate and goods for years and whose incompliance makes them delinquents.

According to legal experts, this law is not equitable since it requires that the first step is to do an environmental impact assessment, the prohibitive cost of which means that small and medium property owners cannot access the benefits.

The truth is that it is very difficult for small landowners to actually get paid for an environmental service if they do not have family members or other contacts high up in government. There are many examples in Paraguay of other public subsidies that have not been allocated to the intended beneficiaries (and still others that have ended up in illegitimate hands).

Furthermore, the competition to own and use land, unleashed by the conservationists, has created an insuperable obstacle for indigenous communities, whose land claims have been stymied since the current owners speculate with the land and sell to the highest bidder.

Neither is it in the best interest of the ‘decapitalized’ Paraguayan State to recognize indigenous peoples’ claims in the environmental service market, because the owners or holders of the natural resources that contribute to environmental services have the right to remuneration for the services rendered.

It is important to analyze how apparently innocent theoretical proposals such as PES affect government, especially in countries like Paraguay where corruption

is a well-recognized problem. While Geographic Information Systems (GIS) have had a very important positive impact on the forests in general, since they allow the government to verify forest cover relatively easily, the road from detecting an environmental violation to actually getting the perpetrator to pay a fine can be an exceptionally long and rocky one in a country like Paraguay.

Impacts of Offset Areas on Indigenous Peoples

a) Impacts in the Paraguayan Chaco

The situation of the other indigenous peoples of the Chaco is much like that of the Nivaclé People in the Mistola community with regard to access to land, natural resources and economic resources and the lack of community infrastructure. In a series of consultation workshops organized as part of preparing the *Life as Commerce* case studies in Paraguay, the peoples of the Chaco identified the following challenges: geographic isolation, discrimination and social marginalization, the expropriation of their ancestral territories and the lack of land and natural resources.

According to the indigenous workshop participants, the principal cause of poverty is the loss of ancestral territory. This not only results in the lack of land and natural resources but also disrupts the continuity of traditional lifestyles. These lifestyles, based on knowledge systems developed and passed down for thousands of years while living in the territory, allows the indigenous peoples of the Chaco to enjoy a healthy and fulfilling life, in harmony with nature. Ensuring the minimum area needed per inhabitant of the territory is crucial for maintaining environmental balance and staying within thresholds of acceptable change for each ecosystem and the load bearing capacity of the natural systems. With the expansion of the agricultural and livestock frontier in the Chaco, fueled by the migration of cattle ranching from the Eastern Region to the Boreal Chaco caused by the expansion of soy production (2) – the opportunities for indigenous people to access land is significantly diminished.

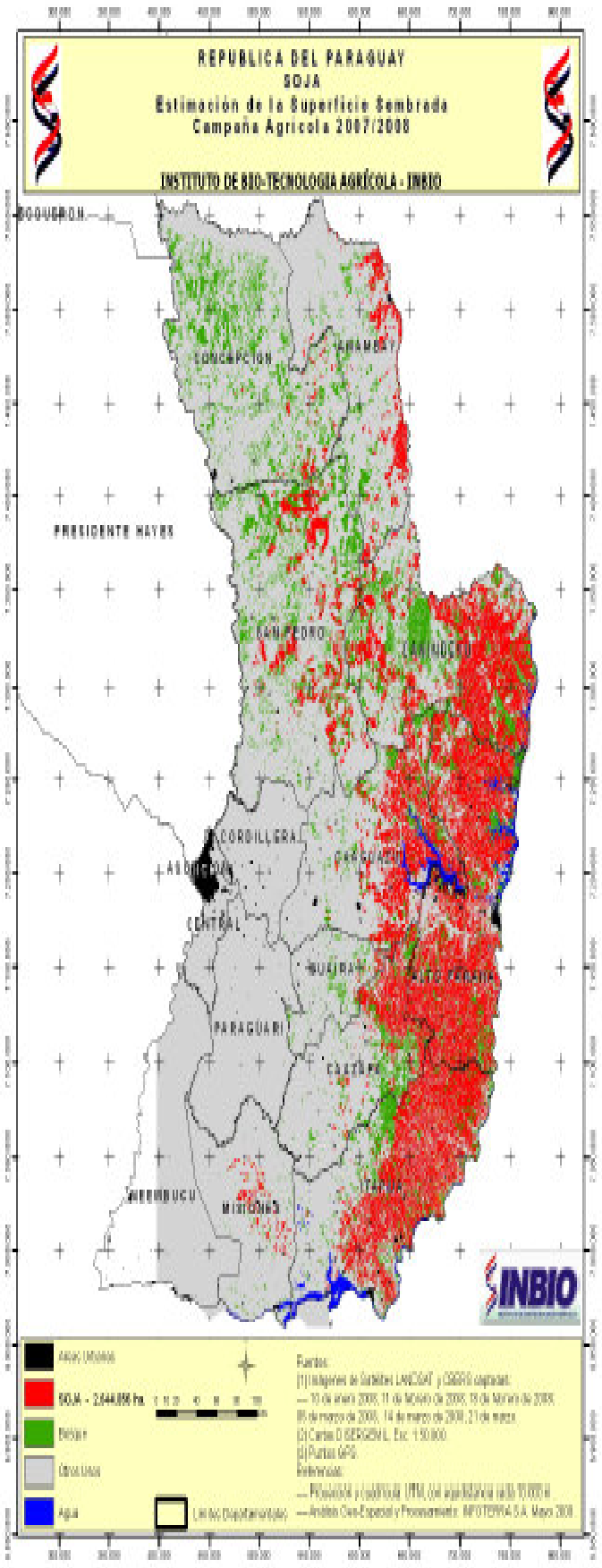
In addition, private conservation areas are being established on the last remnants of natural areas, where there is biodiversity of tremendous cultural value for these peoples. According to leaders of the Angaité, Ayoreo and Guarani Ñandeva Peoples, several nature reserves have been established in their ancestral territories without their knowledge, let alone their free, prior, informed consent. The leaders reported that these reserves are established almost secretly and once again the indigenous peoples of the Chaco are in a disadvantageous position to fight for their territory.

b) Impacts in the Mby'a Territory

This case study focuses on the Mby'a communities of Arroyo Claro, Arroyo Morotí and Taguató. The ancestral territory of the Mby'a People makes up approximately a third of the Eastern Region of Paraguay, about 110,000 km^2. Currently, (Graphic 5) the majority of this territory has been converted into large-scale mechanicanized agriculture, mostly for soy monocultures that are rotated with corn, wheat, sunflower and other crops (Fogel, 2005). Recent

skyrocketing grain prices on the international market mean that demand for grain has doubled. This is partly because of the global strategy to replace fossil fuels with agrofuels (GFC, 2008). The expansion of these crops means that they now border the limits of the indigenous lands of the Mby'a People.

A full analysis of the environmental impacts of the ing offsetting process needs to take into account the environmental impacts of the harvest itself, as well as the losses and impacts caused by the deforestation. The expansion of soy, for example, is considered by many to be one of the most challenging environmental and social problems of Paraguay. Yet soy growers plan to sow 2.8 million hectares of soy in Paraguay this year and hope to reach 4 million hectares by 2010. This soy explosion threatens the country's remaining forests.



Graphic 5: Soy Expansion in Paraguay. Source: INBIO, 2008

Currently, there are only 70,000 hectares of forests left dispersed in tiny parcels in the Itapua y Caazapa Provinces (3).

The remaining forests in the ancestral Mby'a territory are disputed, on one hand by the conservationist organizations (treated as allies of the State), and, on the other hand, by the Mby'a People, whose claim is based on their constitutional and ancestral rights. The area is totally privately owned, except for 10,000 hectares that belong to indigenous Mby'a communities (4).

The indigenous communities' land claim includes all the remaining forest, with the hope of maintaining it intact by practising ther traditional lifestyle, which involves the complete adaptation to the ecological dynamic of the forest.

The conservationists' strategy, however, consists of consolidating a system of private protected areas, which would control and limit the access of the indigenous as well as limit their rights to hunting and gathering (5). This strategy violates the Indigenous Peoples' constitutional and ancestral rights, as well as the United Nation Declaration on the Rights of Indigenous Peoples and Convention 169 of the International Labor Organization on Indigenous and Tribal Peoples.

According to indigenous leaders of the Mby'a People, the conservationists, in their eagerness to implement their strategy, have resorted to buying lands in Mby'a territory (about 6,000 ha at the time, according to community leaders from Arroyo Morotí) with funds mostly derived from foreign donors. These institutions are prepared to exploit the market created by the PES Act in Paraguay.

This process of privatization of the Mby'a lands has given rise to a number to abuses, such as the violation of sacred areas and unauthorized bioprospecting. Furthermore, the relations of the Mby'a People with the conservationists is complicated by the role of the State and multilateral aid agencies, which are aggressively promoting the establishment of a protected area that restricts the ancestral rights of the Mby'a People.

The previously cited impacts on Indigenous Peoples are also found in the offset area that traditionally belongs to the communities of the Mby'a Guaraní in the San Rafael Hills in southern Paraguay. The San Rafael Hills have been slated to be demarcated as a National Park, a proposal firmly opposed by the Mby'a Guaraní, who consider these mountains their ancestral motherland (*tekoha guazú*) and fear that their land claims will be undermined if the area is officially declared a nature reserve.

The majority of the lands in the San Rafael Hills are also private property, and the whole zone is under intense pressure from the vast soy monocultures that stretch to the east and south and are encroaching on the hills as well. It is foreseen that the soy growers in the zone will benefit enormously from the proposal to compensate the damage caused by the soy expansion by buying

environmental services certificates from the landowners that still own considerable number of the forests in the proposed reserve.

The Mby'a Guarani People in communities such as Arroyo Morotí and Arroyo Claro may have to pay a high price, even if not in monetary terms. They already suffer from the persistent expansion of soy monocultures. Their water resources are dangerously polluted from the runoff of agrochemicals used in the surrounding soy plantations and the use of these chemicals in the pastures.

The Arroyo Morotí community has expressed its profound concern about the plummeting quality of drinking water in the stream it depends on, which has been seriously polluted by the agrochemicals used by the nearby soy producer. Furthermore, due to the increasing pressure for land, there are frequent incursions into the forest. For example, the forest of the Arroyo Claro community was devastated by an invasion by farmers ten years ago. Two years ago, after an eight year legal fight, they were successful in getting the invaders to leave the land. Unfortunately, the invading farmers returned in September 2007 and threatened to continue deforesting the area. Because of these pressures, members of the Mby'a Guarani People have ended up in the outskirts of Caaguazú and even in the streets of Asunción, the capital of Paraguay, where they are extremely marginalized.

But the Mby'a Guaraní communities are also adversely affected by the expansion of the private reserves which will supposedly offset the soy expansion. In some hunting areas, their access has been severely restricted, which has resulted in the excessive use of the remaining areas and malnutrition from a lack of protein. Furthermore, their land claim processes to recover their territories are frustrated by the possibility that the current owners of the private reserves receive income under the PES scheme. The Mby'a dispute the landowners' rights, both within and outside the designated private area, as they consider the entire area part of their *tekoha guazú*, land whish they have always managed sustainably. The communities are angry because the landowners illegally acquired huge tracts of land or were given them in questionable circumstance during the dictatorship, and now are hoping to cash in on the environmental services from the forests the Mby'a Guaraní have conserved for centuries.

Could the Mby'a Communities benefit from PES?

Of course, part of evaluating the impacts of PES on Indigenous Peoples is to also address the potential positive impacts. From the legal point of view, communities such as the Mby'a Guarani People of San Rafael in southern Paraguay could themselves request PES for the areas that are legally theirs. To do so, however, they have to overcome several obstacles, including the issue of language.

Another obstacle is that the vast majority of these Peoples of the forests are not trained to do the necessary marketing to sell environmental services such as CO_2 sequestration in a market that is increasingly turbulent. The hurdles that have to be jumped in order to acquire an Environmental Impact Value Calculation, a prerequisite to selling environmental services also impede the

participation of poor landowners in the system, since this is an expensive undertaking. Individual landowners with large tracts of land have a considerable competitive advantage over (sometimes loosely defined) communities holding territory collectively, as decision-making is a much simpler and swifter process for individual owners.

The sale of environmental services also could result in grave governance problems since it is not always clear if a chief of a community has the mandate to be a legal representative for contractual arrangements. In general, it is worth noting that transforming the current non-monetary economy of the indigenous communities into a monetary one could have a profound impact on cultural and environmental values and traditions. Women are likely to suffer most, as their interests are more likely to be overlooked in commercial transactions normally closed by men. Women also have a disadvantageous position in monetary economies in general, as they spend a significant part of their time on activities such as childcare and household management that are not rewarded in monetary terms. Moreover, they are generally underpaid in the formal labor market, as well as being responsible for providing clean water and other non-monetary goods for the family.

It is also important to note that in indigenous communities, land ownership is communal or associative and that there is no individual tenure.

And regardless of how much money could be earned by selling environmental services, clean and healthy drinking water cannot be obtained from another source. Tthere is no formal public service that provides water near the communities and buying water is impossible because of the distances involved, especially as the community does not even have transport.

V. Conclusion: The PES Act and Environmental Governance

In summary, the Paraguayan PES Act will probably have several adverse impacts on Indigenous Peoples and other poor sectors of society, such as landless small farmers.

- The distribution of land in Paraguay is extremely unfair and the lion's share of any PES funding will undoubtedly end up in the pockets of the large landowners.
- The Act undermines the ongoing agrarian reform and Indigenous Peoples' land claims to their territory, since it increases the value of unused land.
- The PES system will be burdened with the grave problems of governance that plague the country. In particular, it is likely that politically influential groups will enjoy greater access to the funding than politically marginalized groups such as Indigenous Peoples and small farmers. A bad government plagued by corruption and market-based conservation mechanisms are a dangerous combination. The experience of the implementation of the Act in relation to the promotion of reforestation is illuminating in this regard.
- During the national consultation workshop organized in July 2008, the representatives of Indigenous Peoples also expressed their fear that the

complexity of the procedure would mean that an NGO or 'expert' consultant would prepare the required proposals and forms. Thus, Act 3001/06 could make indigenous peoples more dependent on the goodwill of NGOs and consultants and in the process undermine their autonomy.

In the case studies from Paraguay, it is clear that market-based conservation mechanisms create or exacerbate a series of key obstacles for nature conservation and the full exercise of the rights of indigenous peoples. These problems – such as competition for land that is vital for these peoples, creation of financial burdens for the State and the erosion of indigenous lifestyle – are the key obstacles caused by a form of conservation based on the buying and selling of the environmental functioning of natural systems.

A legal way out for those that break the law. Since the funding for the PES program would come from the National Environmental Fund, which was created in 2000 to finance the implementation of the National Environmental Policy, budget items that environmentalists thought would be part of the endowment for the National Environmental Fund are severely diminished because of the allocations that the State has to make under the PES Act. In summary, the public is going to pick up the bill for environmental services than will mostly benefit those who have not complied with conserving 25% of the forest cover on their lands as stipulated by Act 422/73. In this fashion, an unfair situation is created with grave consequences for indigenous peoples while at the same time giving a legal escape route for those who unabashedly break the environmental laws of the country.

Truncated Traditional Government. As we have seen above, the National Constitution recognizes the right of indigenous peoples to their ancestral territories. Due to the privatization of almost the entire nation, including San Rafael, where the Mby'a communities of Arroyo Claro, Arroyo Morotí and Taguató are located, indigenous peoples have lost sovereignty over their territories. Indigenous Peolpes' land was expropriated first by the State (especially during the dictatorship of Stroessner 1954 to 1989) and, then later, it was given away by Stroessner to his cronies, who, in turn, sold the lands when ongoing speculation frenzy took hold of the real estate market. Given the reigning feudal tradition in the country, from the moment the land passes to private hands, the power and right of the property owner is irrefutable. Private property then gives rise to the expansion of agriculture and livestock rearing, which result in the clear-cutting of forests and draining and leveling of wetlands and prairies.

Thus, neither the State nor the indigenous communities exercise sovereignty over their respective territories. Instead the protection of individual private property is wielded as a *carte blanche* for the destruction of the environment, egged on by rampant real estate speculation and the commodification of nature.

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