

The Forest Carbon Partnership Facility (FCPF) Readiness Plan Idea Note (R-PIN) Paraguay

Country submitting the R-PIN: REPUBLIC OF PARAGUAY

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For the elaboration of this R PIN the main source of information was extracted from the WWF – World Bank Material “ Sustainable Forestry in Paraguay A review of its Past, Present, and Opportunities”, Asunción, June, 2006.

c) Who was consulted in the process of R-PIN preparation, and their affiliation?

The Secretariat of Environment, the national authority for environmental issues in Paraguay, has given to the Climate Change National Office a clear directive to lead the follow up actions related to Reducing Emission from Deforestation and Forest Degradation REDD. For this reason, an Adviser Committee in REDD has been established; this committee is integrated by the National Forest Institute, the Secretariat of Environment as well as other relevant institutions.

The Government Decree N° 14.943/01 established the Climate Change National Programme within the scope of the Secretariat of Environment. The Programme aims to follow up national commitments under the UNFCCC and the Kyoto Protocol. Currently, the Climate Change National Programme is comprised by a Climate Change National Office, a Clean Development National Mechanism Office and a National Climate Change Commission that involves 18 institutions. According to the Governmental Decree mentioned above and considering the new incorporations from 2004 onwards, to date the following institutions are part of the National Commission: Secretariat of Environment, Ministry of Foreign Affairs, Ministry of Agriculture and Livestock, Ministry of Public Works and Communications, Ministry of Economy, Ministry of Commerce and Industry, National Meteorological Service, Secretariat of Technical Planning, National Administration of Electricity, Paraguayan Industry Union, Paraguayan Rural Association, University of Agrarian Sciences, Faculty of Civil Engineering, Faculty of Natural Sciences, Faculty of Sciences and Technologies, Faculty of Chemistry Sciences, Environmental NGO Network (ROAM), Sustainable Development Alliance (ALIDES) and World Wildlife Fund (WWF).

In this context, an R-PIN proposal has been developed and submitted to the National Commission on its Ordinary Meetings held on December 2007 and February 2008. Also the REDD RPIN draft was submitted in a Congress Session prepared by the National Commission of Natural Resources of the Senate Chamber with the participation of 70 representatives from different organizations and sectors of the country as: Red de Organizaciones Ambientistas del Paraguay, Altervida NGO, Fundación Naturaleza Pura, PAREX S.A, Federación de Madereros del Paraguay (FEPAMA), Asociación Rural del Paraguay (ARP), Universidad Columbia, AMDWORLD, Red Paraguaya de la Conservación Privada, Red de Inversiones y Exportaciones del Paraguay, Comisión de Medio Ambiente de la ARP, Asociación de Productores de Soya (APS), Secretaria Técnica de planificación, Cámara Paraguaya de Cereales y Oleaginosas, ABC Periódico, Secretaria Nacional de Turismo, Cámara de Anunciantes del Paraguay, Comisión Nacional de Defensa de los Recursos Naturales (CONADRENA), Policía Nacional Agrupación Ecológica, Red de Organizaciones No Gubernamentales del Paraguay POJOAJU, Unión de Industrial del Paraguay, Bolsa de Valores, Asociación Guyra Paraguay, Entidad Binacional Yacyreta, Consorcio de Ganaderos de Experimentación Agropecuaria, Fondo de Conservación de Bosques (Consejo de Canje de Deuda), Red de ONGs de los Pueblos Indígenas.

Recognizing the importance of the REDD process the SEAM includes this issue on its Quinquennial Plan and also creates the **REDD Technical Advisor Committee** through a Ministerial Resolution number 1092/08.

The resolution is included in Annex1 and the complete list of the Congress Session participants is presented in Annex 2.

In addition, the major international NGOs as the Nature Conservancy (TNC) and World Wildlife Fund (WWF) supported the preparation of this document through its local representatives in Paraguay as well as the BirdLife International Partner - Guyra Paraguay also part of the Climate Change Global Task Force for BirdLife.

It is also important to mention that within the framework of the Environmental Services Law regulation a participatory consultation process has been carried out. In accordance to the law, all the institutions responsible for its regulation (the National Forest Institute, Ministry of Economy, Stock Exchange, Ministry of Agriculture and Livestock and the Secretariat of Environment) took part of the process. Throughout these consultations, forest issues were debated basically as they role on emission reductions.

2. Which institutions are responsible in your country for:

a) forest monitoring and forest inventories:

National Forest Institute (INFONA)

The newly created National Forest Institute (INFONA) through national law 3464/08 replaced the former National Forest Service (SFN) as the operational body in charge of the implementation of the Forest Law (Law 422/73), the INFONA is an independent institution.

Currently the INFONA is taking a series of actions aimed to reform, adequate and improve the political and regulatory framework for the forest sector, such actions will include: the development of national forest policy, the regulation of its current operative law and the reform of the 422/73 forest law.

However, it is important to describe the role of the former SFN; it was created with a mandate to implement actions in order to advance towards the objectives of the law 422/73 aimed to “protect, conserve, increase, renew the sustainable and rational use of forest resources of the country”. The concept of sustainability was incorporated into language of the law well before the term was widespread. The implementation has fallen short of these lofty goals, however, as demonstrated by the tremendous loss of forests due to deforestation and the weak state of forestry that currently prevails.

The SFN had three basic ways in which it oversees use of forest resources: the *plan de manejo* or management plan, the *plan de aprovechamiento* or use plan, and the *plan de uso de la tierra*, or land-use plan. The management plans are intended to allow a sustainable harvesting annually, while the use plans allow a one time use every 15 years.

Both seeks to allow use, while maintaining the forest resource base, while the land-use plan is essentially an approval to deforest for agriculture or grazing and only requires 25% of its original forest cover to be left as forest. This requirement has a loophole that has been one of the factors for permitting continued deforestation. The properties are not required any type of registration for their 25% forest reserves (such as a conservation easement for example), therefore they can be partitioned from the original property and subject again to the 75% authorization to cut. This parceling has resulted in less than 25% of the Eastern Region with forests remaining.

The percentage of plans, corresponding to management and use plans are quite low, compared to the extent of the resource base with only 232,802 hectares of forest registered between 1992 and 2001 according to a 2002 FAO review. Clearly, the majority of the interest and work of the SFN over the years has been in authorization of land clearing rather than stewardship of the resource base as demonstrated by the low levels of management plans in existence. This situation is compounded by a perverse incentive relative to the financing of the SFN. It generates much of its own financial resources through the approval of plans and collection of fees on permits (called *guias*) used to authorize transport, commerce, and export of wood. Therefore, there is an incentive to maximize the use and potentially abuse of forest resources because of its potential for income generation for the SFN.

The 1973 Forestry Law (422) also included provisions requiring zoning for forestry and establishment of permanent forestry regions that property owners were to respect. The identification of special forest areas was also to be carried out by SFN to preserve water resources, prevent erosion, landscape and public health protection, and to conserve flora and fauna.

The country is divided into 10 forestry districts for regional management of forestry. Of these 10, eight are in the Eastern Region, primarily within the confines of the Upper Parana Atlantic Forest (UPAF) eco-region, and two in the Western Region with one for Boqueron and one for the rest of the Chaco departments. There is only one post for forestry oversight in the entire Chaco region located within the Boqueron district. This also reflects the fact that only the UPAF eco-region has been traditionally considered appropriate for forestry in Paraguay, leaving large forests of the Chaco out of consideration..

Secretary of Environment (SEAM)

The Secretary of the Environment (SEAM) is one of the newest government institutions, created by Law 1561 in the year 2000 and is in charge of the general environmental oversight and regulation in conjunction with a consultative body called the CONAM (National Environmental Council). Among the many laws that fall under the SEAM, several include aspects pertaining to conservation and sustainable use of forests and non-timber forest products, including wildlife and plant products. These includes, the laws that ratifies the Convention on Biological Diversity, the Climate Change Convention, the Kyoto Protocol and other MEAs, the Protected Areas Law, the Wildlife Law, and the Environmental Impact Law which is very importantly in regard to use and management of natural resources.

Under the current Secretary, the deforestation issue has been confronted head on as a priority policy; albeit with the limited resources allocated to the institution (the entire budget for all environmental functions does not surpass US\$2 Million annually). Efforts have also been undertaken to consolidate protected areas with support from the GEF and in decentralization of environmental oversight with a loan from the IADB. The establishment of the National Environmental Policy followed with the so-called Zero Deforestation Law, has reduced deforestation in the Eastern Region by over 90%, as monitored independently by local NGO Guyra Paraguay. At the same time it has carried-out several interventions in the Chaco to halt deforestation beyond the authorized limits.

CIVIL SOCIETY ORGANIZATIONS (NGOs)

Several of the leading environmental NGOs in Paraguay work in close relation to the governmental institutions in charge of forest monitoring and inventories through specific agreements. For instance, Guyra Paraguay and WWF worked together with the SFN and SEAM to follow the implementation of the Zero Deforestation Law and Guyra Paraguay was in charge of a broad campaign to the general audience about deforestation events, and is also providing high-level expertise in monitoring and a real-time follow up of land use changes. Paraguayan government works in coalition with the civil society sector and this could be expanded and strengthened during future initiatives.

b) forest law enforcement:

Two primary institutions govern the use and conservation of forests in Paraguay, the Secretary of Environment and the INFONA. Other institutions that intervene in these resources use are the Rural Development Institute (INDERT), and the INDI (National Institution of Indigenous Affairs). The mentioned institutions are supported jurisdictionally by the Environmental Attorney through the investigation of environmental illegal actions and crimes such as unauthorized deforestations, hunting, fishing, water resources pollution and others.

One of the main challenges envisages for the INFONA is to revert the past situation where the situation of SFN, low within the hierarchy of the MAG (Ministry of Agriculture and Livestock), and hence dominated by agriculture and livestock interests, combined with the ability to collect fees for the movement of wood, has generated a prevailing atmosphere against management and geared towards maximizing logging and deforestation.

The role of NGO's in the forestry sector through the 1990's and the turn of the century has been very important from the perspective of mobilizing public opinion with regard to deforestation and its impacts as well as in the monitoring and governance of the forestry.

More recently there have been more opportunities for collaboration between the NGO sector and the SEAM. Thanks to collaborations over the years between US and European-based organizations such as The Nature Conservancy, World Wildlife Fund, and Conservation International, the national NGO technical capacity has been strengthened to a point where they are leading in the use of GIS systems and satellite imagery for conservation planning, management, and governance. This capacity is being applied for monitoring deforestation in support of SEAMs efforts under the recently signed "Zero Deforestation Law" that prohibits new deforestation in the Eastern Region of Paraguay. Under this collaboration alliance the NGOs, in particular Guyra Paraguay, the national BirdLife partner, have been using their capacity in satellite imagery (using freely distributed images from the CBERS satellite and fire data from the MODIS satellite) to generate useful information for national institutions that are enforcing the law. This collaboration has led to a reduction in deforestation over the last years keeping it limited to under 20,000 hectares per year.

Again it is important to emphasize the strong links with the NGOs, especially to facilitate law enforcement actions, in special for Guyra Paraguay and WWF, institutions with a strong presence in the field and current direct contact with the Public Ministry, the Specialized Group on Ecology and Protection of the National Police and the SEAM.

c) forestry and forest conservation:

It is important to mention that the INFONA is still using the operative scheme of the Law 422/73, which aims to protect, conserve, increase, and renew the sustainable and rational use of forest resources of the country". Concerning forestry, the INFONA is the main institution in charge of approving at national level the Management Plans and Land Use Plans. However the INFONA requires a previous authorization from SEAM in accordance to the Environmental Impact Assessment Law in order to enforce the full compliance of the Law 422/73 (to keep at least the 25% of the original forest cover as a private forest reserve in private lands).

Regarding forest conservation, SEAM through the Protected Areas Law is in charge of the National System of Protected Areas which gathers public and private protected areas in relation to their protection and management. The involvement of the private sector in natural resources is very innovative and this is expected to be expanded with further incentives for forest conservation.

d) coordination across forest and agriculture sectors, and rural development:

The INFONA has a National Forest Council which gathers a broad group of stakeholders with representatives of the following institutions: a) Ministry of Agriculture and Livestock, b) Secretary of Environment (SEAM) c) Academic sector, d) Ministry of Trade and Industry (MIC) e) Central Bank of Paraguay (BCP) f) Private productive sector for timber products g) Paraguayan Rural Association h) Association of professionals of the Forest Sector. This council works jointly through the development and implementation of policies and institutional strategies in consistency with the overall National Strategic Plans.

3. Current country situation (consider the use of Annex 1 to help answer these questions):**a) Where do forest deforestation and forest degradation occur in your country, and how extensive are they? (i.e., location, type of forest ecosystem and number of hectares deforested per year, differences across land tenure (e.g., national forest land, private land, community forest, etc.):**

Paraguay is a unique landlocked country situated in the heart of South America. The Paraguay River bisects the nation into two contrasting ecological regions, Eastern Region and the Chaco, west of the River. Deforestation occurs in both regions of Paraguay, though it has devastated great part of Eastern Paraguay. Both regions are described below.

The Great Chaco Americano spans from Southern Bolivia, all of Western Paraguay, and most of Northern Argentina, this region harbors over 3400 species of plants, some 500 species of birds and 150 types of mammals. The forests are very diverse in their species composition and vary from xerophytic forests in the driest Western portion transitioning, to taller forests with hardwood Chaco species mixed with UPAF species along portions of the Paraguay River. The Chaco, has been used traditionally only for its Quebracho trees, that produce tannin for industrial applications and Copernicia palms for utility posts and constructions. However nowadays, grazing activities for cattle ranching has triggered an accelerated deforestation process. During the period between 1990 and 2000 the Chaco Region has lost more than 1,000,000 hectares (GLCF, 2006)¹, and recent studies (Guyra Paraguay, 2007) estimated a loss of 130,000 hectares of forest for the period between may 05 – may 06 period. This region is suffering immigration of enhanced livestock production because of low prices of lands compared to other lands apt for intensive agriculture (soy) and plantations.

Paraguay's eastern region holds the majority of the country's industry, agriculture, and population, and also supports the Upper Parana Atlantic Forest (UPAF). The UPAF is a sub-tropical humid (rainfall greater than 1300 mm), semideciduous forest. There are various subdivisions of this forest which vary somewhat, with the tallest and most productive forests in the region of greatest rainfall (>1800 mm annum) on the Basaltic soils that are also highly suitable to agriculture, at least by national standards. The forests reach a level of some 40 m in the Amambay or Montane forests with up to 80 tree species and some predominance of the peroba rosa (*Aspidosperma polyneuron*). Somewhat lower forests of the Upper Parana subdivision (30 m average) are dominated by several important commercial species of trees including the lapacho (*Tabebuia spp*) and the cedar (*Cedrela fissilis*) among others. The Central Forests generally to the West of the other two regions is more open and interspersed with grasslands and the wetlands towards the Paraguay River and higher levels of deciduous trees. The fauna of this ecoregion is rich with almost 400 species of birds present of which an estimated 80 are endemic. A quarter of these endemic species are threatened with extinction at a global level. The flora is also diverse, with an estimated 7,851 species of vascular plants including many species of plant relatives of domestic crops. From a forestry standpoint, the UPAF is the ecosystem that has carried the weight of the sector and continues to be the main provider of export income from sawn wood, and provides most of the household and industrial energy (more than 50%) in the form of charcoal and fuel-wood used in Paraguay. Over three quarters of the UPAF has been deforested leaving only around 2 million hectares standing at present and is highly fragmented. (FAO, 2006)². This includes almost 300,000 hectares of protected areas. Although this area is considered forest, studies determined only 765,455 hectares (WWF 2007)³ could be considered potentially productive forest. In addition to these features, protected areas represent only about 2.4% of this ecoregion spread-out over the 94,000 km² of its original range, which is inadequate to conserve the biodiversity and basic ecological functions. It is important to mention that only 2,000 hectares of the UPAF are presently under certified management (FSC standards) in Paraguay. Table 1 shows forest cover and deforestation in Paraguay for the period 1990 - 2000.

Paraguay Forest loss 1990 - 2000

Upper Parana Atlantic Forest in 2000	2,900,608 ha
Chaco Woodland in 2000	14,773,429 ha
Atlantic Forest loss 1990 - 2000	1,488,147 ha
Chaco Woodland loss 1990 - 2000	1,057,878 ha

Table1: Deforestation estimation for period 1990-2000

¹Source: The Global Land Cover Facility (2006), Forest Cover Change in Paraguay, Version 1.0, University of Maryland Institute for Advanced Computer Studies, College Park, Maryland, 1990-2000

Land Tenure

Most of the Paraguayan territory (> 90%) is privately-owned, therefore the private sector is a key player in the conservation and sustainable use of forests in Paraguay.

Paraguay has one of the most unbalanced land tenure patterns of the region, 2% of rural properties holds 82% of the land suitable for agriculture and livestock activities (about 20 million hectares), half of the total area of Paraguay. During the second half of 20th century, the national government implemented an agrarian reform program. The mentioned program reinforced the current unequal land distribution, by giving around 9 million hectares to only 2.5% of its beneficiaries, nevertheless, this reform also distributed 3 million hectares to about 160,000 rural families, but only a few of them currently have legal land rights (land title). (World Bank, 2007)⁴.

These lands were mostly located in large forests areas and hence considered unproductive by government. The preference for this forest areas reflects the rural migration during the 90s and especially for the so called *land less peasants*, who mostly have the preference to invade this areas and claim their expropriation, this fact led to a massive deforestation, this situation also triggered a negative collateral effect; most of the original landowners started to clear their forests as a preventive measure to avoid further invasions. In a retrospective manner, the agrarian reform process which defined forests areas as unproductive lands and the invasion for *land less peasants* also contributes to the depletion of the forest resources especially in the Eastern Region of Paraguay.

In 2002 a new agrarian reform law replaced the old one, as main advantage for forest conservation this law recognized the principle of environmental and productive value of forest lands and other ecosystems in the context of rural planning and development, and in this way shifted the principle that forest land are synonymous of unproductiveness.

Indigenous lands

The indigenous land tenure is recognized as a constitutional right, which is reflected in the indigenous law 904/81 which established that each family has the right to receive 20 hectares in the Eastern region or 100 hectares in the Chaco (Prodechaco 2003, Tierra viva 2005). It is important to mention that in Paraguay the land tenure system for indigenous is basically communitarian. According to the 2002 indigenous census carried out by the General Direction of Polls, Statistics and Census (DGEEC, 2007)⁵, 1.7% (89169, 49% women and 51% men) of Paraguay's inhabitants are indigenous. They are distributed in 496 communities/villages, of this 95% stated that depend on forest products for food supply. Of the total indigenous population of the country 91.5% live in rural areas and the rest in urban areas (8.5%). In relation to the distribution between the two regions of Paraguay the distribution is almost even (50.7% in the Eastern and 49.3% in the Chaco or Western Region). It is important to mention that in the year 1981 the relation was 32.8% in the Eastern and 67.2% in the Western Region of Paraguay (INDI-CEPIP, 1981 cited by DGEEC, 2002)⁶.

From the total of 394 indigenous communities there are 247 with legal status and legal land tenure, 56 with legal status without legal land tenure and 91 without legal status and without land (DGEEC, 2002). There are some issues regarding indigenous community law and their constitutional protections that generate some conflicts and limitations regarding the use of their natural resources. Although the constitution ensures that communities will have sufficient land and the right to carry out their traditional way of life, the wildlife law establishes that the communities can use traditional methods to harvest wild flora and fauna for their basic needs..

b) Are there any estimates of greenhouse or carbon dioxide emissions from deforestation and forest degradation in your country? If so, please summarize:

Paraguay has reported in its First National Communication⁷ the GHG Inventory corresponding to the LULUCF sector for the base year 90-94, according to the 96 IPCC Guidelines for GHG Inventories. These estimations are detailed in Table 2.

EMISSIONS (Gg)	CO ₂	CO	NOX	CH ₄	N ₂ O
1990 LULUCF	3530.45	1094.1	31.04	125	0.85
1994 LULUCF	17812.3	640.4	6899	73.19	235

Table 2. GHG Emissions corresponding to LULUCF sector. (Paraguay, NAC - 2000)www.pncc.gov.py .

The preparation of the Second National Communication is underway, and based on preliminary results, the GHG Inventories for base year 2000, are estimated to be 131,838.33 GgCO₂ for the LULUCF sector. To estimate these numbers 1996 IPCC Guidelines were used. The Second National Communication will be submitted to the UNFCCC in 2009, and after its validation the preliminary version will be posted by the end of 2008.

c) Please describe what data are available for estimating deforestation and/or forest degradation. Are data published? Describe the major types of data, including by deforestation and forest degradation causes and regions if possible (e.g., area covered, resolution of maps or remote sensing data, date, etc.).

An accurate image of deforestation for Paraguay is complex to obtain according to the different sources of information. This is illustrated by FAO (2002), which supported a study that estimated a total of 17.7 million hectares of forest over the whole country. FAO figures reported show discrepancies with previous studies. The 2005 Forest Resources Assessment (FRA) by FAO⁸ gave a slightly higher figure for forests at 18.5 million hectares country-wide. It is important to mention that most of the projects working with forest cover and deforestation were focused on the Eastern Region.

The NGO sector also shows some discrepancies, WWF (200?) considers that there are only about 800,000 hectares in the Eastern Region of continuous forest. Detailed information is provide in table 3.

Regarding forest lost

According to the FAO FRA 2005 Paraguay deforestation rates are around 180000 ha^{yr}

However the available information for the two regions are quite unbalanced in terms of studies and deforestation analyses, much more sources of information are available for Eastern Paraguay compared to that of Western Paraguay or the Chaco, which is currently suffering accelerated deforestation rates. One of the few studies was carried out in 2006, by Guyra Paraguay, who estimated that 130,000 hectares were deforested during 2006 in the Chaco. Detailed information of deforestation studies are detailed in table 3. See Annex 3 for forest cover maps.

Region	Period	Deforestation (forest>156 ha)	Deforestation Rate (all forests)
Eastern (Mainly the UPAF)	1945-1865/68	95,606	88,150
	1965/68-1975/76	169,429	155,000
	1975/76-1984/85	131,004	156,300
	1984/85-1991	27,619	254,333
	1991-1997	84,040	196,409
	1997-1999	109,288	
	1999-2002	6,194	166,392
	2005	19,605	19,605
Chaco (Dry and Humid Chaco)	1986-2002	201,707	-
	2005/2006		130,000

Compiled by Guyra Paraguay and F. Fragano from following sources: 1) "Etapas de la Deforestación en la Región Oriental del Paraguay" (1989), 2) "Uso de la Tierra y Deforestación en la Región Oriental" (1994), 3) "Proyecto Sistema Ambiental de la región Oriental" (1998), 4) "Plan de Reforestación en la Región Oriental de la República del Paraguay" (2002), 5) "Estudio Para la Identificación de Áreas Prioritarias para el Manejo de Bosques Nativos y la Reforestación" (2003), 6) "Proyecto Planificación y Manejo de los Recursos Naturales" (1992), 7) "Vegetación y Uso de la Tierra de la Región Occidental del Paraguay" (1991), 8) "Forest Resources Assessment 2005" (2006) 9) Guyra Paraguay (2006).

Table 3: Deforestation data available for Paraguay

d) What are the main causes of deforestation and/or forest degradation?

Deforestation

The deforestation drivers in Paraguay are slightly different for each of its two major regions; however, the drivers that cause deforestation are mainly due to cattle ranching and agriculture. Regarding degradation, the main drivers are biomass extraction, slash and burn activities to open areas for agriculture and livestock. This led to a steady degradation process in the remaining forest areas either in the Chaco or the Eastern region. However, degradation is a phenomenon that requires more accurate assessment due to the lack of methodologies to quantify it. Basic information currently available indicates that approximately 40% of the land use in Eastern Paraguay has been due to opening of areas for livestock production, the remaining has been due to soy production.

An eco-regional assessment of the Chaco was completed in 2005 by a consortium of NGOs including TNC, Fundación Desde el Chaco, and Guyra Paraguay, this work cites the primary threats for the Paraguayan Chaco's biodiversity. These threats in order of importance are: deforestation for cattle ranching, roads, inadequate use of fire, the Paraguay-Parana Waterway, unsustainable forestry, advance of agriculture, drainage projects, aqueducts and small dams, and commercial fishing.

The Chaco has become a more interesting place for the location of ranches over the last two decades. Factors that have influenced this expansion of livestock production (and associated deforestation) include: (i). Relatively inexpensive land (until recently at little more than US\$10/ha in some areas but most in the range of US\$45 to US\$150/ha), (ii). Close proximity to Brazil (in fact some logistical aspects make it easier to access the Northeastern Chaco and Pantanal area from Brazil), (iii). Improved infrastructure through multilateral bank investments in the road system, (iv). Increased beef and milk processing capacity in Central Chaco Mennonite colonies tied with favorable international export markets for Paraguayan beef and (v). Reduced or total absence of social pressures from invasion and expropriation (with a few exceptions regarding indigenous communities and the town of Puerto Casado).

The main cause of deforestation in the Eastern Region has been the expansion of the agriculture frontier, exacerbated by a steady increase on commodities prices such as soybean. In addition, the contribution to GDP of the agricultural sector is nearly 30% compared to the 2% that the forest sector contributes (BCP-National Account Report, 2004)

This situation has generated a displacement of cattle ranching activities to the Chaco that used to be traditional in the Eastern Region, arising as a serious threat to its forest ecosystems. In addition to this, high market prices for beef and dairy products had produced a dramatic increment of the deforestation rate in the Chaco.

Forest degradation

A slow but intensive “mining” of the secondary forests has led to a strong degradation process for production of fuel-wood and charcoal, due to the fact that these are the main sources of energy for more than 51% of Paraguayan households. Biomass is also a key source of the energy supply for industries, currently more than 87% (MOPC- VME, 2005)⁹ of the energy consumed by them come from fuel-wood and charcoal. For instance fuel-wood is an important source of heat used for drying most of the soybeans produced and stored in silos around the country as well as for the production of quicklime for construction, steel, bricks, and even bakeries. Much of these industrial activities are linked to deforestation and degradation processes on large properties, including smallholders colonization and indigenous lands. Production is carried out primarily in brick ovens with the most primitive technology while the production outcome is generally carried-out under grim conditions. Therefore most of the production and processing of charcoal in the country can be considered unsustainable.

The pursuit of sustainable forest management for Paraguayans in the private sector involves many hurdles to be overcome including: (i) Competition from illegal forestry activities that pay little or no taxes and deal with little bureaucracy. (ii) Few options for long-term financing of sustainable forestry operations or little knowledge of how to access them. (iii) High perception of risk regarding products and companies of Paraguayan origin leading to lower prices or less potential for joint-ventures. (iv) Little entrepreneurial culture to generate innovative ventures. (v) Insecurity with regard to land tenure and long-term ownership of forests.

These conditions generate an overall short-term outlook which predisposes the private sector to focus on activities such as grazing and agriculture before seeking options for forests. Should a landowner decide to seek options for the forest that are sustainable, there is an overall lack of capacity to support entrepreneurial initiatives both technically and financially.

e) What are the key issues in the area of forest law enforcement and forest sector governance (e.g., concession policies and enforcement, land tenure, forest policies, capacity to enforce laws, etc.?)

The Government of Paraguay is making big efforts in order to adequate the whole forest sector. In May 2008 a strong signal was given with the creation of the INFONA, which will work with other institutions (such as SEAM, Ministry of Agriculture and Livestock, Secretary of Technical Planning, Ministry of Industry and Commerce, National Indigenous Institute (INDI), National Institute for Development and Land (INDERT) and environmental NGOs), it is going to have the challenging mission of design the forest policy in Paraguay, in consistency with other sectoral policies such as the environmental, rural and socio-economic development. This process is aimed to address the root causes of an unsustainable forest regime.

These causes, which are expected to be overcome with the new institutionality have been the lack of a) an adequate policy frame, b) institutional and technical capacity, c) non-centralized planning, d) strengthening and implementation of incentive mechanisms, and e) interinstitutional and intersectoral coordination.

The indigenous situation

Regarding Indigenous communities, there are some legal conflicts with the use of their wood and non-timber resources. Since they cannot access the legal documents needed to transport wood out of their communities under the 1973 Forest Law, they are forced to sell their logs well below market cost or are even bartered for goods. The INDI reportedly provides permits for sale of lumber from indigenous lands but current legislation and regulations do not permit this kind of activities.

The logging is generally selective, however the forest resources are significantly degraded in the process and management is not applied to improve the conditions for sustainable use.

The situation has become markedly worse recently in the Eastern Region of Paraguay, where land values are high and pressures to convert indigenous resources into mechanized agriculture are also strong. Since the areas bought for indigenous settlements are generally inadequate for maintaining traditional resource use, typically limited to some 20 ha per family and leaving little options except meager agricultural parcels, the communities allow logging and mechanized soy plantations.

4) What data are available on forest dwellers in lands potentially targeted for REDD activities (including indigenous peoples and other forest dwellers)? (e.g., number, land tenure or land classification, role in forest management, etc.):

According to the 2002 indigenous census carried out by the General Direction of Polls, Statistics and Census (DGEEC), 1.7% (89169, 49% women and 51% men) of Paraguay's inhabitants are indigenous, distributed in 496 communities/villages, of this 95% stated that depend on forest products for food supply. Of the total indigenous population of the country 91.5% live in rural areas and the rest in urban areas (8.5%). In relation to the distribution between the two regions of Paraguay the distribution is almost even (50.7% in the Eastern and 49.3% in the Chaco (Western)). It is important to mention that in the year 1981 the relation was 32.8% in the eastern and 67.2% in the western (INDI-CEPIP, 1981 cited by DGEEC, 2002).

Of the total of 394 indigenous communities there are 247 with legal status and legal land tenure, 56 with legal status without legal land tenure and 91 without legal status and without land (DGEEC, 2002)

PRODECHACO (Chaco Development Project - Proyecto de Desarrollo del Chaco) 2001, did a summary of indigenous settlements in the western region (Chaco) of Paraguay, according to them, there are 1,159,765 ha distributed in 131 settlements, this refers to the communities with good information available on land tenure.

There are some issues regarding indigenous legislation and their constitutional protections that generate some conflict and limitations regarding the use of their natural resources. Although the constitution ensures that communities will have sufficient land and the right to carry out their traditional way of life, the wildlife law establishes that the communities can use wild flora and fauna for their basic needs and utilizing traditional methods.

Since hunting has been a traditional form of generating cash income especially for the Chaco groups, they are forced to do so illegally and at substantially lower prices than legal sales would permit. The same situation pertains to use of their wood and non-timber resources. Since they cannot access the legal documents needed to transport wood out of their communities under the 422/73 Forest Law, they are forced to sell their logs well below market price or are even bartered for goods.

The INDI reportedly provides permits for sale of lumber from indigenous lands but current legislation and regulations do not permit it legally. The logging is generally selective, however the forest resources are significantly degraded in the process and management is not applied to improve the conditions for sustained use.

The situation has become markedly worse recently in the Eastern Region of Paraguay, where land values are high and pressures to convert indigenous resources to mechanized agriculture are also strong. Since the surface areas bought for indigenous settlements are generally inadequate for maintaining traditional resource use, typically limited to some 20 ha per family and leaving little options except meager agricultural parcels, the communities allow logging and mechanized soy plantations. Recent press reports indicate that indigenous communities are renting their land for as little as 18 cents per hectare/month to farmers, which is insignificant compared to market rates and is constitutionally prohibited. Alternatives such as yerba mate which historically has been a forest resource for indigenous communities to access the markets within their own cultural context have not been promoted to a significant degree outside of one case in Canindeyu Department. The Chaco communities have generally fared somewhat better in regard to land titling as compared to Eastern Region groups, however their resource base, capital, capacities, and many other factors limit their potential for endogenously driven development.

In the Chaco, there have been efforts to support indigenous use of forest resources but as mentioned previously, these programs have not been systematically reviewed for their effectiveness and true impacts on communities. One program seeks to develop carob flour industry based on the *Prosopis* species that produce beans with high levels of protein. This flour is used for the communities own nutritional needs and is sold commercially.

Another effort supports production of charcoal by the Ayoreo communities of the central Chaco utilizing the Quebracho tree from deforestation.

The current situation finds indigenous communities at two extremes that have negative outcomes in regard to their development and cultural survival. At one end of the spectrum the communities living on fragments of forest cannot sustain their traditional livelihoods. At the other end those that become engaged with the surrounding agricultural economy are subject to exploitative practices given their weaker capacity for negotiation and lack of capital. The Government of Paraguay (GOP) has put a big effort in order to make operational the national cadastral information for the eastern region, which contains detailed information about the number of dwellers and big land owners.

Other two institutions are key on this matter; the Rural development Institute and the National Indigenous institute which have the land inventories of rural communities and indigenous people

5. Summarize key elements of the *current* strategy or programs that your government or other groups have put in place to address deforestation and forest degradation, if any:

a) What government, stakeholder or other process was used to arrive at the current strategy or programs?

The GOP has implemented a wide variety of instruments and tools to widespread its strategies and programs. The civil society also supported and developed some private initiatives aimed to engage all sectors involved in the natural resources use and management. The sign of a Social Pact whereby the conservation community has come to the table with the large-scale farmers, smallholders, and governments (national and local) was one of the first steps to conciliate different views from antagonists sectors in order to find ways to reduce conflicts and environmental damage of agricultural activities. As a result a wide range of initiatives were developed in the recent years in order to achieve the present strategy:

- Policy and advocacy work lead by the National Environmental Council (CONAM)
- Public consultation and participatory strategies
- Awareness raising campaigns
- Development of Strategic alliance among civil society, producers, farmers, indigenous, etc.
- Public and Private partnership
- Creation and improvement of current participatory tools for dialogue.
- The current Chaco Board under the IADB Project for supporting regional initiatives in this ecoregion.
- Opportunities in Paraguay to combine biodiversity conservation, landscape preservation and social-cultural aspects
- The identification of IBAS-KBAs (Important Bird Areas and Key Biodiversity Areas) at the country level and the need to provide incentives for conservation and sustainable livelihoods
- Gap Analysis and Ecoregional Assessments in order to identified gap in ecosystem representation

b) What major programs or policies are in place at the national, and the state or other subnational level?

A series of actions were taken by the Government of Paraguay (GOP). This includes the adoption of the National Environmental Policy, which prioritized the conservation of natural resources; the development of the National Strategy and Action Plan for the Biodiversity Conservation; passage of the Zero Deforestation Law (2524/04); strengthening of the Secretariat of Environment (SEAM); and the decision of the Ministry of Agriculture and Livestock (MAG) to implement a specific natural resource management program. As a result of these actions by the GOP, deforestation rates in 2005 and 2006 were significantly reduced. The aforementioned Zero Deforestation Law prohibits any activities of land use change and/or conversion of areas with forest cover in eastern Paraguay (the law and its application by SEAM has reduced deforestation to levels under 20,000 hectares per year). Furthermore, the law, in effect through 2008, provides a more conducive environment to continue implementing instruments that would support biodiversity conservation in the PAF.

Other initiatives

- SINASIP national system on protected areas
- SINAVISI national system on wildlife service
- National Forest Board
- Also, the creation of the INFONA is part of a national policy aimed to reform, adequate and improve the political and regulatory framework for the forest sector.
- In order to promote and take advantage of the private sector a National Forest Board was created, this board works closely with the former SFN and other institutions.
- Forestation and Afforestation promotion law 536/95, currently this law is not operative due to lack of resources
- Eastern Region Environmental System
- Western Region Environmental System
- Debt for Nature Swap,
- Payment for Environmental Service Law
- Water Resources Law
- Tradable rights
- Forest adequacy plan
- Land environmental planning for the Chaco Region

Recently there has been an upsurge in private conservation initiatives that has also been stimulated by the NGO sector. These initiatives not only involve strengthening and promoting establishment of new reserves with private landowners but include land purchases by the NGOs themselves. These purchases have been made in the Pantanal, Dry Chaco, and UPAF ecosystems for creating private conservation areas. These organizations include Guyra Paraguay, IDEA, and FDSCh. The land purchased by these organizations has added over 30,000 hectares of new reserves over the last five years supported almost entirely through international donations.

6. What is the current thinking on what would be needed to reduce deforestation and forest degradation in your country? (e.g., potential programs, policies, capacity building, etc., at national or subnational level):

We identified four main issues as cornerstones with a strong participatory approach for any national and subnational plan aimed to reduce deforestation and degradation. These four are a) policies, b) decentralization, c) capacity, and d) incentives.

The development and consolidation of coordinate and harmonized sectorial policies, including the reform of inadequate schemes.

a) How would those programs address the main causes of deforestation?

- Reform will increase efficiency of current monitoring and control procedures.
- Decentralization will empower local governments in order to acquire a key role in the protection: conservation and sustainable use of forest resources.
- Strengthening the institutional and technical capacity will transparent forest management
- Attractive incentive mechanisms will encourage forest conservation against land use conversion

We should also emphasize that any of these actions should take into account different circumstances that prevails in the country (especially the social and cultural characteristics of indigenous and rural communities, also producers which own large forest areas).

b) Would any cross-sectoral programs or policies also play a role in your REDD strategy (e.g., rural development policies, transportation or land use planning programs, etc.)?

There few programs that could catalyze REDD activities:

- Non deforestation Law
- Environmental Service Law
- Water Resources Law
- Forest adequacy program
- Rural development programs
- Quinquennial Plan for the Bali Road MAP, Environmental Secretariat and National Climate Change Program

c) Have you considered the potential relationship between your potential REDD strategies and your country's broader development agenda in the forest and other relevant sectors? (e.g., agriculture, water, energy, transportation). If you have not considered this yet, you may want to identify it as an objective for your REDD planning process.

REDD process should be in hand with current and futures development programs, these is the reason to establish a broad participatory approach for the REDD strategies, which should reflect the need of the forest sector, environment including small land owners and indigenous communities and mainstream biodiversity conservation in the forested landscapes and associated carbon stocks

d) Has any technical assistance already been received, or is planned on REDD? (e.g., technical consulting, analysis of deforestation or forest degradation in country, etc., and by whom):

So far there is no direct technical assistance that have been received for REDD. Although, the donor community has played an important part in the management and protection of tropical forests and biodiversity in Paraguay. Some of the first initiatives in the national parks were supported by the Food and Agriculture Organization of the United Nations (FAO). The donor community continues to play an important part in the support of environmental protection. The major donors in the sector of tropical forests and biodiversity throughout the years have been GTZ (German Technical Cooperation), Japanese International Cooperation

Agency (JICA), UNDP (primarily through the Global Environment Facility), FAO, European Union and USAID. The French GEF and World Bank GEF window have provided important resources for the Fundación Moisés Bertoni to work in the Mbaracayú Biosphere Reserve. The primary donors in forestry have been FAO, GTZ and JICA, while the leaders in biodiversity have been primarily USAID and UNDP.

Presently, the IADB is supporting an institutional strengthening program for the SEAM. The program has put in place a reengineering process and new leadership in SEAM. This program is likely to be extended in the near future.

The German Institute of Geosciences (BGR) supported to their counterparts institutions in Paraguay through a capacity building program aimed to the application of GIS and remote sensing tools for environmental management.

Another BGR support activity, the ORDAZUR, project is providing a strong support aimed to strengthen the SEAM GIS Department (DGGA), which is charge to monitor the environmental assessment studies of land use and forest management plan, forest fires and illegal logging activities and also the development of thematic maps such as geological, hydrogeology, soil, among others.

German Cooperation Agency GTZ, provides a strong support regarding natural resources sustainable use. On this regard, we can mention the development of the National Environment Strategy for the Protection of Natural Resources (ENAPRENA), its main outcome was the elaboration of a manual aimed to monitor the management of tropical and subtropical forest of Paraguay. This initiative arose as one of the first aimed to promote the development of the environmental and forest policy in Paraguay

Guyra Paraguay, an NGO working closely with the National Climate Change Program and SEAM has strategically developed a REDD strategy which will allow this initiative to expand in the demonstration scope.

7. What are your thoughts on the type of stakeholder consultation process you would use to: a) create a dialogue with stakeholders about their viewpoints, and b) evaluate the role various stakeholders can play in developing and implementing strategies or programs under FCPF support?

The REDD technical advisor committee will lead all consultation process in order to give a broad participatory approach. Other strategies that have been used and will be used in future stakeholder consultation are mentioned in section 6a.

a) How are stakeholders normally consulted and involved in the forest sector about new programs or policies?

Through public consultations and with meeting at the National Environmental Council, congress sessions, National Forest Board, Regional workshops, Raising awareness campaign including capacity building programs, and through community involvement in association with leading NGOs at the field level.

b) Have any stakeholder consultations on REDD or reducing deforestation been held in the past several years? If so, what groups were involved, when and where, and what were the major findings?:

Working groups for the development of the non deforestation law, which includes a couple of public consultation lead by national congress, this discussions involved broad public which included most of the affected sectors (timbers producers, small rural landowners, indigenous communities, private sectors, academic sector, governmental institutions and the productive sector including the soya producers and cattle ranching producers). This consultations where held trough the all 2004 and 2005.

Another important initiative led by NGO's includes the Social Pact whereby the conservation community has come to the table with the large-scale farmers, a group 54 small holders, and governments (national and local) to find ways to reduce conflicts and environmental damage of agricultural activities. In addition they have collaborated on strengthening local governments in environmental issues and consolidation of national parks. Likewise, in 2005 during the preparation of the Second National Communication, 15 workshops were carried out with the attendance of NGOs, Press, Climate Change National Commission, and Environment Secretaries of National Governments, civil servants of the Secretariat of Environment and representatives of the National Congress. In these consultations were discussed the implications of the raise of emissions from deforestation

and land use change, and therefore it should be adopted urgent mechanisms. In addition, from year 2006 -in which several workshops has been held in the countryside, particularly in areas where a major pressure on forest were detected -, 4 regional committees were created in the following departments: Paraguari, San Pedro and Caaguazu (in the Eastern Region) and Presidente Hayes (in the Chaco Region).

c) What stakeholder consultation and implementation role discussion process might be used for discussions across federal government agencies, institutes, etc.?

The REDD technical committee will be in charge to develop the consultation and will be develop a series of technical meeting with governmental offices.

d) Across state or other subnational governments or institutions?

This task will be developed with the support of local NGO and local authorities.

e) For other stakeholders on forest and agriculture lands and sectors, (e.g., NGOs, private sector, etc.)?

Technical workshops conducted by the REDD technical advisor committee conducted jointly with Rural Association of Paraguay, and leading NGOs working in the sector.

f) For forest-dwelling indigenous peoples and other forest dwellers?

For this activity a joint program will be elaborate with the INDERT and Indigenous organizations and grass root levels organizations.

8. Implementing REDD strategies:

a) What are the potential challenges to introducing effective REDD strategies or programs, and how might they be overcome? (e.g., lack of financing, lack of technical capacity, governance issues like weak law enforcement, lack of consistency between REDD plans and other development plans or programs, etc.):

The reforms currently underway in the forest sector and the harmonization with other sectors are critical for the establishment of any incentive including REDD, we envisage the fully inclusion of the REDD in the following actions:

- National plan that includes a strong capacity building for key stakeholders about the implications and the potential of the REDD activities in the national and subnational strategy for Sustainable Development.
- Insert the REDD strategy in decentralization plans
- Mainstream REDD activities as a synergy with any other positives incentives' strategies currently under way or to be implemented in the future.
- Strategic alliances among the academic sector, research institutions, international technical cooperation, local and international NGO's, producers, etc.

This actions will also be linked with the outlined in section 6a.

b) Would performance-based payments though REDD be a major incentive for implementing a more coherent strategy to tackle deforestation? Please, explain why. (i.e., performance-based payments would occur *after* REDD activities reduce deforestation, and monitoring has occurred):

One of the major constraints that Paraguay faces is lack of incentives to confront the current land use trends. On this regard any incentive mechanism that provides a benefit for conservation activities including forest conservation, will become attractive for land owners as long as the procedures to access benefits including monitoring activities could be implemented in an effective, transparent and cost effective manner.

The REDD financial mechanism will be part of a broader mechanism which seeks the development of financial incentives mechanisms, such as environmental services, this mechanism will address one of the main barriers that constraint the implementation of conservation activities, also REDD activities should be streamlined with the future forest policy that the INFONA should work with its National Forest Council.

What complementary programs do you have in place, or would like to implement, to support strategies to reduce deforestation and/or degradation (e.g., rural development or transportation planning programs, etc.)?

The SEAM will insert the REDD into its Pay for Environmental Services scheme in order to assure the successful implementation of conservation activities.

9. REDD strategy monitoring and implementation:

a) How is forest cover and land use change monitored today, and by whom? (e.g., forest inventory, mapping, remote sensing analysis, etc.):

INFONA

When applying for a permit for a forest management plan and/or land use plan, it is required forest inventories (for commercial extraction), mapping and remote sensing imagery analysis with high resolution data, to quantify the remaining forest and the amount to be deforested with a permit. This information is only for individual owners and properties. The INFONA, through this mechanism, oversees the fulfilment of the 25% forest reserve and other legal requirements under the Forestry Law 422.

SEAM

Under the scheme of the Environmental Impact Assessment Law 254, SEAM has to verify the fulfilment of all legal requirements for forest, like the 25% percent forest reserve. SEAM also requires a remote sensing analysis for each project. SEAM also carries out when possible broader analysis, usually at regional scale (Departments and Municipalities) to quantify forest land cover.

INDEPENDENT ANALYSIS

Local NGOs have done many studies during recent years, especially to help government institution regarding forest monitoring. Remote sensing analysis is carried out with coarse resolution imagery like MODIS. This has been useful to quantify almost real time detection of illegal clearance at a regional scale (deforestation over 100 ha). Analysis with higher resolution imagery also is carried out when free images are available. Normally, the deforestation is reported different governmental institutions (INFONA, SEAM, Environmental Attorney) to carry out intervention in the field.

FOREST ENGINEERING CAREER

The academic institution of Forest Engineering has carried out studies for forest cover since the 1980s, this are usually the broader analysis. Although, during recent years there has been little involment due to budget problems.

b) What are the constraints of the current monitoring system? What constraints for its application to reducing deforestation and forest degradation? (e.g., system cannot detect forest degradation of forest stands, too costly, data only available for 2 years, etc.):

As a basis to implement any monitor system a strong and reliable national forest inventory is required, which the country currently lacks, and in order to start any REDD activity the development of a national forest inventory is key. With regard to forest monitoring, currently no institution is able to monitor forest degradation. There are no methodologies and the potential cost could be very high.

One of the main problems that most institutions interested in forest cover monitoring with remote sensing data face is budgetary constraints to access high resolution image analysis fast enough. Even though SEAM has a good remote sensing and GIS team, there are not enough team members to do analysis in a period short enough to do interventions on the field as a complementary task.

The INFONA needs to consolidate its Remote Sensing department in order to coordinate any land use change activities. Only low trained staff is available.

This situation is the same when verifying information provided by forest inventories presented at the INFONA. National forest inventories that would address not only commercial wood but also carbon stock assessment are very costly. Currently the INFONA is looking for international finance for this and even if it is started, information will not be available for a least two year.

c) How would you envision REDD activities and program performance would be monitored? (e.g., changes in forest cover or deforestation or forest degradation rates resulting from programs, using what approaches, etc.)

Remote Sensing Monitoring

The use and analysis of remote sensing imagery will be part of the REDD activities. This tool will be used to monitor deforestation. For this, daily coarse resolution images such as MODIS (250 m to 500 m resolution) will be used to detect deforestation that are larger than 100 ha, this images are free and available online, this methodology has been used in Paraguay during the last few years. This process will be done in coordination among all institution working in REDD. Local government (municipalities and departmental) will be part of the monitoring process and will be trained to work in their region. The future implementation of the National System on Forestry Information (SNIF) Sistema Nacional de Información Forestal) will be an important instrument when available for the distribution of information across all institutions. The SNIF will provide a net to coordinate and share spatial data generated by different member of REDD. The next step for the activities is the use of high resolution images such the CBERS IIB of Brazil, which is available free and online. CBERS's have a 20 meter spatial resolution and a 28 days temporal resolution, allowing detection of 1 ha deforestation. This information must be available to any stakeholder for quick response by central institutions, the District Attorney and local governments.

Information also will be generated by the SEAM and INFONA. These institutions will be generating maps for the whole country every 2 or 4 years depending on data available and REDD targets. The approach for this should be a supervised classification of high resolution images (Landsat, Alos, CBERS, and SPOT).

Another important part of the monitoring activities is the improvement of the control of maps and imagery presented for studies like the forest management and land use plans and their Environmental Impact Assessments. For this, central institutions like the INFONA and SEAM should be in close relation with local government where projects are going to be carried out. Again SNIF could play a major role in implementation of these activities.

10. Additional benefits of potential REDD strategy:

a) Are there other non-carbon benefits that you expect to realize through implementation of the REDD strategy (e.g., social, environmental, economic, biodiversity)? What are they, where, how much?

It is expected to enhance the current quality of life for rural and indigenous communities also improving biodiversity conservation status of its surrounding forests, through the development of sustainable and predictable financial sources from REDD activities, This will also be applied for the larger private and public protected areas.

b) Is biodiversity conservation being monitored at present? If so, what kind, where, and how?

The Biodiversity monitoring is currently being developed by the NGO sector, for a particular case, Guyra Paraguay is working in IBAs/KBAs monitoring land-use changes in 57 sites. This experience being developed with SEAM will be enhanced within this program taking advantage of current expertise.

c) Under your early ideas on introducing REDD, would biodiversity conservation also be monitored? How?

Yes through an ecological assessment, carrying out biodiversity assessments in key sites to be expanded to REDD pilot areas with the support of the NGO sector.

d) Are rural livelihood benefits currently monitored? If so, what benefits, where, and how?

The Ministry of Agriculture and Livestock through the Census of the Bureau of Agricultural Statistics (DCE) is carrying out the inventory of agricultural resources of the country. This is done through the registration of all farms for the period between July 2007 and June 2008.

The information that is being gathered relates to: number of farms and producer, hectares, crop types, type and number of live stock, milk produced, tools used, and access to market, technical assistance and financing.

The purpose of this census is to provide the government, productive institutions and others useful information to improve the agriculture and livestock sector with the formulation of policies, plans and projects.

e) Under your early ideas on introducing REDD, would rural livelihood benefits also be monitored? How?

Is expected to monitor rural livelihood benefits thru by linking the current tools implement by Ministry of Agriculture and Livestock through the Census of the Bureau of Agricultural Statistics (DCE) with specific indicators that could measure the impacts of REDD activities.

11. What type of assistance are you likely to request from the FCPF Readiness Mechanism?

- **Identify your early ideas on the technical or financial support you would request from FCPF to build capacity for addressing REDD, if you are ready to do so. (Preliminary; this also could be discussed later.)**
- **Include an initial estimate of the amount of support for each category, if you know.**
- **Please refer to the Information Memorandum and other on-line information about the FCPF for more details on each category:**

Create and consolidate the REDD technical committee

Capacity building for its members

Support and mainstream REDD in undergoing national process aimed to reform the current regulatory framework of the forest sector and any other sectorial development strategy (rural, water resource, etc)

a) Setting up a transparent stakeholder consultation on REDD (e.g., outreach, workshops, publications, etc.):

Development of several outreach and technical workshops regarding the REDD are needed for at least 24 months in order to create the technical capacity and basic knowledge about REDD for key stakeholders including indigenous, peasants, large land owners and policy makers.

In order to reinforce these activities outreach materials will be generated as REDD handbooks for key stakeholders.

b) Developing a reference case of deforestation trends: Assessment of historical emissions from deforestation and/or forest degradation, or projections into the future.

The following activities planned to be implemented are summarized in the following chart:

Objective	Main outcomes
Assessment of Historical emissions due to deforestation and degradation	<p>Base Line Development</p> <ul style="list-style-type: none"> Development of a national forest Inventories using FAO FRA 2010 methodologies <ul style="list-style-type: none"> Permanent sample plots installing Development of local allometric equations Adaptation of IPCC GPG, 2003 <p>Integration and harmonization of available information on deforestation (satellite imagery)</p> <ul style="list-style-type: none"> Implement or design methodologies for degradation estimates <p>Development of references scenarios, an adjustment factors</p> <p>Design of interactive system within the SNIF</p> <p>Capacity building for the Special REDD monitor Task Force</p>

c) Developing a national REDD Strategy: Identification of programs to reduce deforestation and design of a system for providing targeted financial incentives for REDD to land users and organizations (e.g., delivery of payments, governance issues, etc.):

The REDD technical advisor committee will work jointly in current process and mainstream the activities outlined in section 6 (a), (b) and (c), regarding the financial aspects it will be developed once the REDD technical committee is consolidated.

d) Design of a system to monitor emissions and emission reductions from deforestation and/or forest degradation:

The system will be based as was detailed in section 9 c

e) Other?:

12. Please state donors and other international partners that are already cooperating with you on the preparation of relevant analytical work on REDD. Do you anticipate these or other donors will cooperate with you on REDD strategies and FCPF, and if so, then how?:

Several donors and international partners have expressed an interest to support REDD related activities and these include the World Wildlife Fund (WWF), UNDP, IDB, TNC and Bird Life. Also other international organizations such as OEA, CATIE, ECLAC, ONF etc.

Some of these institutions only collaborate on the preparation of submission for the negotiation process, in this regard Paraguay had lead the last two submission on REDD on behalf of several Latin American countries.

Currently we have the support of FAO in order to build capacity for the environmental law process and to create the national forest profile for the CDM.

BGR supported to their counterparts institutions in Paraguay through a capacity building program aimed to the application of GIS and remote sensing tools for environmental management.

The ORDAZUR project is providing a strong support aimed to strengthen, the SEAM GIS Department (DGGA). Which is charge to monitor the environmental assessment studies of land use and forest management plans, forest fires and illegal logging activities and also the development of thematic maps such as geological, hydrogeology, soil, among others.

GTZ provides a strong support regarding natural resources sustainable use and on this regard we can mention the development of the National Environment Strategy for the Protection of Natural Resource (ENAPRENA) which main outcome was the elaboration of manual aimed to monitor the management of tropical and subtropical forest of Paraguay This initiative arose as one of the first aimed to promote the development of the environmental and forest policy in Paraguay .

13. Potential Next Steps and Schedule:

Have you identified your priority first steps to move toward Readiness for REDD activities? Do you have an estimated timeframe for them yet, or not?

The first planned step is the creation and consolidation of the REDD technical advisor committee which will have the task to design and coordinate the national REDD strategy at national and sub-national level , which is expected to start its activities by mid September, 2008.

14. List any Attachments included (Optional: 15 pages maximum.)

1. REDD Technical Advisor Committee Ministerial Resolution
2. List of participants: May 21th, 2008 – R PIN Presentation in the frame of the Conference Carbon Finance in the National Parliament
3. Map: Changes in the subtropical forest cover of Paraguay during the 1990s
4. Map: Paraguay Ecoregions and Protected Areas
5. Map: Paraguay Protected Areas, Forest Cover and Deforestation
6. Donors and international agencies in activities related.
7. Overview of the national protected area system

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