

# **PARAGUAY COUNTRY PAPER**

**TRANSFER OF TECHNOLOGY CONSULTATIVE**

**PROCESS (DECISION 4/CP4)**

**LATIN AMERICAN AND THE CARIBBEAN**

**UNFCCC REGIONAL WORKSHOP**

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**SAN SALVADOR, EL SALVADOR**

## **I- INTRODUCTION**

The Government from the Paraguay, worried by the thematic of the Climatic Change, it has ratified the Convention Marco of the United Nations for the Climatic Change (CMNUCC) November 4 1993 and ratified the Protocol of Kyoto in date July 27 1999 and he/she has committed to fulfill the commitments assumed in the mark of the Convention, including the remission of the National Communication, prepared in the article 12° of the one mentioned document.

Paraguay is located in the center of South America, limiting with Argentina, Brazil and Bolivia. It possesses a territorial extension of 406.752 km<sup>2</sup> approximately with a population of 5.213.772 inhabitants (Statistical of Julio, 1994). The rate of population growth ascends to 3,1% (Est. 1994), the population's composition is characterized to be mestizo (Spanish and Guarani) with the population's of indigenous origin 5%. The official languages of the country are Spanish and Guarani.

The Paraguay River divides the country in two regions very differed environmentally. The Western Region denominated Chaco also constitutes a wide dry alluvial plain (400mm/anual), occupying a surface of 246.925 km<sup>2</sup>, that which represents 60% of the national territory where is seated so alone 2% of the total population of the country.

The Oriental Region understands great part of the basins of the rivers Paraguay and Parana, has a surface of 159.827 km<sup>2</sup>, with a régime of rains of 1.200 to 1.600 mm/annuals. It represents 40% of the national territory and it is inhabited for almost 98% of the total population of the country.

### **Economy**

The economy of the Paraguay is based mainly on the agriculture. This sector together with the forest activity represents 25% of the GDP, it uses to near 45% of the manpower of the country and it provides of a stock for the export of products among which is the Soya, the cotton and the sugar cane mainly. Other such items as corn, tobacco, vegetables and fruits as well as originated products of the cattle sector.

From 1981 the acting of the economy has been in certain erratic way, the main factor of this behavior resides in the finalization of the Hydroelectric Itaipú, the negative effect of the climate in cropping and the low prices in the exports of the agricultural products. In 1987 the national economy experiences a light improvement due to the good climatic conditions and the invigoration of the prices of the exports of the agricultural products.

In the year 1990 Paraguay had a level entrance average per layer of US \$1.240, that which located it as a country in development.

In 1991 troughs the Asuncion's Treaty, Paraguay passes to be part of the Common Market of the South (MERCOSUR), together with Argentina, Brazil and Uruguay.

The sector energy squatter an important place in the economy of the country, keeping in mind the big hydroelectric of Itaipu and Yacyreta that are seated on the Parana river.

The primary consumption of energy constitutes 43% of the consumption of energy of the country while 57% remainder is of secondary type.

## **Environment**

The Government of the Republic of the Paraguay, considers of great importance the protection of the environment, and it is part of a number of International Agreements of environmental character, including, the United Nations Convention of Biological Diversity, the Convention of Fight against the Desertification and Drought, The Montreal Protocol, the Convention of Basel and the Framework Convention of Climate Change (UNFCCC).

The Government from the Paraguay has ratified the United Nations Framework Convention of Climate Change February 24 1994, the Kyoto Protocol July 27 1999 and has committed in fulfilling the commitments assumed in the framework of the Convention including the submission of the Initial National Communication according to the Article 12° of the Convention.

In 1996 the process of integration of the topic Climate Change has begun under the structure of the Secretary of State of Natural Resources and environment Likewise, Paraguay begins the application of international support through the interim financing mechanisms of the Convention, the GEF, for projects related to the Climate Change.

At the moment another international initiative of implementation exists in Paraguay related to the climate change. Paraguay is participating of the second phase of the Program of Training for the Climate Change CC:TRAIN - UNDP/GEF project implemented by the Institute of the United Nations for Investigation and the Professional Formation (UNITAR), together with other countries like Cuba, Peru, Ecuador and Bolivia, in Latin America. The Project counts with an global amount of 2,7 million American Dollars for the implementation of the same one in the 17 participant countries.

CC:TRAIN is a program created to attend the developing countries to implement the United Nations Framework Convention of Climate Change (UNFCCC). Is designed to establish a National Team in the participant countries for the formulation of a national strategy of implementation and their national communication (Art. 12, UNFCCC), which reinforced the execution of the commitments assumed in the Convention by the country and the opportunities of harmonizing the considerations related to the climate change with the national objectives of development.

With CC:TRAIN, Paraguay has established a interinstitutional and multisectorial National Team which is responsible for the activities related to the climate change. Likewise, in the mark of this National Team work technician's group has been constituted for the elaboration of the Greenhouse Gases Inventory for the year 1990. As for the works related to the Analyses of Mitigation, and Vulnerability and Adaptation they began later to the first results of the Group of Inventory.

## **Institutions related to the environment**

The government organizations in Paraguay that are related with the thematic of Climate Change include: the Ministry of Agriculture and Livestock through the Undersecretary of State of Natural Resources and environment, the Ministry of National Defense through the Address of Meteorology, the National University of Asuncion and the University of Pilar and the Joint Implementation Office (Decree 6754/99)

## **II- TECHNOLOGY NEEDS AND TECHNOLOGY NEEDS ASSESSMENTS**

It is difficult to quantify how much climate-relevant equipment and assessments is needed or to be "transferred".

Our country needs are specially in agricultural and livestock clean and efficient industry's technologies for our products.

Center of diffusion of clean technologies of the MERCOSUR that monitoring the global spectrum of offer of clean technologies, they identify those that could be applied according to the productive system of the country and it negotiates or it looks for means to finance the adoption and profitability of the incorporation of the same ones

Monitoring and inspection and quantification of the indexes and advances reached in the reduction of pollutants to the climate change.

Consultancy partly of legislation, to design centers and consultancy's to qualify in the functions of the diffusion center for people that will control the processes.

Asses to create a database with similar approaches to share and to exchange information.

Capacity of absorption, understanding and execution of clean technologies: these capacities don't exist we have to strengthen the infrastructures of the offer's that exist in the market and internalize this type of technologies.

- \* Environment Protection,
- \* Plants of treatments, urban waste in general.
- \* Use these clean technologies is very expensive, incentives for adoption of this technologies are extremely required

## **Fire Program Assessing:**

There are incentives in reforestation and afforestation, for cattle raising, and is a common practice to burn natural fields, very lingering periods of droughts and extreme conditions; damages existing natural grasslands, where burn are very significant.

National capacities doesn't exist to assist emergencies, conscience doesn't exist about the damage that cause to the environment, guarantees doesn't exist (insurance against fires) for afforestation and reforestation.

All this is translated in the lack of technological capacity to assist this problem, they also lack laws, regulations, norms so that the society understands these topics.

Environmental Emergency's

Environmental index of emergency to go into effect.

### **III- CAPACITY BUILDING NEEDS**

Enabling government and NGO's technicians and institutional capacity about the best approach for renewable and non renewable energy.

Improvements on Researching and developing Technologies to produce clean and sustainable energy sources.

Enhance skills and capabilities can also occur in the areas of policy development, technology transfer, market intermediation, tax policies, macroeconomic policies and property right.

### **IV- BARRIERS TO TECHNOLOGY TRANSFER**

Barriers to technology transfer arise at each stage of the process and vary with sectors. The most important barriers in developing economies that could impede the transfer of Technology's to mitigate and adapt to climate change are:

- \* Lack of politics to internalize clean technology's over productive sectors through laws, rules, general norms usage and quality control and quality standards.
- \* Lack of data, information, knowledge and awareness, especially on "emerging" technologies;
- \* High transaction costs;
- \* Lack of access to capital, in particular due to inadequate financial strength of smaller firms,
- \* Risk aversion and business practices in financial institutions including Multilateral Development Bank's that favour large projects,
- \* Trade barriers: high tariffs and/or quantity controls;
- \* Insufficient human and institutional capabilities;
- \* Inadequate vision about and understanding of local needs and demands;
- \* Lack of supporting legal institutions and frameworks, including codes and standards for the evaluation and implementation of environmental sound technologies;
- \* Lack of full-cost pricing, which internalizes environmental and social costs.
- \* Executions levels of crediting are very bureaucratic, there are not available on time.

## **V- POSSIBLE ACTIONS AND INITIATIVES TO REMOVE BARRIERS**

The possible actions to be taken from way to eliminate barriers are those of strengthening institutionally to communication centers, as the Center of Diffusion of clean technologies at regional level as that of the MERCOSUR, as well as the one of strengthening to the organisms and government and not government human resources in charge of legalizing, to normalize, to investigate and to execute the derived project's of the implementation of new technologies.

Incentives to take place with clean technologies that encourage the managers to invest in efficient and environmentally sustainable technologies.

Intensive training about the opportunities of the adoption of clean technologies for the country.

To carry out a lobby at all levels, of promotion in directly bound institutions to the implementation and diffusion of clean technologies.

Fiscal incentives that help to all different productive sectors to invest in new technologies.

Financial incentives for small and medium companies that facilitate the effective implementation of new technologies to the country.

To strengthen the capacity of the populations self-management, with respect to the offer and demand of their own necessities and the national ones.

Mechanisms of execution of transparent and dynamic projects; opportune that allow financial resources to give answer to the small problems and micro-project's that all together make a national problem.

## **VI- OPPORTUNITIES FOR INVESTMENT AND PRIVATE SECTOR PARTICIPATION**

The sectors that can be favored by investments in clean technologies are especially those of transport, energy, change of use of the earth, residuals, agriculture and cattle raising, conservation of biological diversity.

The participation of the private sector is crucial for good acting of the implementation of any technology type, since the executor part and receiving part, will be through the private productive sector and the one that will invest its physical and human infrastructure in development and implementation of the transferred technologies.

Milk and meat industry, fruit-bearing, horticultural industries, forages and grains production's.

To create mutual funds where both sectors participate in the structuring, design, and obtaining of financial resources to assist projects generated in local governments, associations, cooperatives and others, in the vision of building the sustainable development, by means of the accumulation of these efforts to regions that conform each country, for they exist it different funds for the conservation, cattle sector and forest, agricultural, development of basins, prevention of the urban contamination, debt exchange and others.

Potentialities of forest species to be plants in Paraguay

Quality control of technologies in the National Institute of Standards and Technologies (INTN).

Center of Diffusion of Forest Technology.

Centers of recycling of chemical substances, gases and many others.

Prices of investment are very low depends of the incentives (Law 60/90 of protection of the investor).

Sustitución de combustible fósil por Alcohol Carburante: Mano de obra para plantación de caña de azúcar.

Renewable or not traditional energy: Aeolian and Solar energy

Hydroelectric Energy; improve and reinforce the use of hydroelectric energy

## **VII- ONGOING AND PLANNED TECHNOLOGY TRANSFER ACTIVITIES**

Implementation of the Montreal Protocol in Paraguay

### **Objectives**

Gradual elimination of the exhausting substances of the ozone layer.

### **Foam Sector:**

Implementation of a project of technological re-conversion for the substitution of the Freon 11 in the production of rigid and flexible foams, it is in their it finishes implementation phase.

The project consists on the foamy agent's substitution (Freon 11) for the methyl chloride that has the same foamy property but it doesn't affect the ozone layer.

To the national companies of which three were of production of flexible foams and one of rigid foam; in the case of the flexible foams they adjusted the ventilation system to adapt it to the new used product, in the case of rigid foams, the company

was beneficiary with new teams of last generation technology, it finishes through a donation of the United Nations, and adapting the old machinery to the necessities of the new products.

### **Coolant sector**

Implementation of the Law N° 3980, for which is approved the regulation of control of exhausting substances of the ozone layer and the use of alternative technologies.

The project is in a stage of elaboration of the handling plan of coolant; which will consist on the substitution of the gas Freon-12 for the gas R-22 for the case of teams of conditioned air and refrigerator's; and the gas 134-to for the case of conditioned air of vehicles.

### **Methyl bromide**

It is a product used in the fumigation of agricultural products as the cotton and the tobacco for export, since due to high to be able to biocide and exhausting of the layer of ozone; in our country at the moment has been substituted by the aluminum phosphor with similar properties but not exhausting of the ozone layer.



## **VIII - CONCLUSION**

This evaluation of the situation of the country with regard to the possibilities of technology transfer and implementation of the article 4.5 of the United Nations Framework Convention of Climate Change (UNFCCC) is very favorable and of real necessities, since we have the infrastructure and the necessary channels for the development of clean technologies.

The government is looking for the possibility to offer the investors the biggest guarantees and comparative advantages at level of the MERCOSUR where to be able to develop and to implement economically competitive technologies that help to the region, in such a sense subsidies and incentives should be facilitated regarding national and foreign investments in the frame of the implementation of clean technologies through the Article 4.5 of the UNFCCC.

Today in our day country is in a situation where the private sector and the sector publish they unite to develop political economic of effective integration of all the productive sectors of the country in the mark of a crossed cooperation, since it is through the training and invigoration of the private sector in the processes of mitigation of the climatic changes that he/she helped without place to doubts to arrive to a combined solution of the global environmental problems.

## **XI- BIBLIOGRAPHY**

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