INDEPENDENT FINAL EVALUATION MISSION OF CLIMATE CHANGE ENABLING ACTIVITY

PART I: BASIC INFORMATION

Country: Uruguay

Project Number: URU/00/G31

Name: Institutional Strengthening for the Elaboration of Uruguay‘s Second National Communication to the United Nations Framework Convention of Climate Change

Initial Date: November 2000

Duration: Three years

Executing Agency: Ministry of Housing, Territorial Regulation and Environment

Consultant: Dr. Vicente Barros

Report date: 14 February, 2005

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1. Objective

The overall aim of the evaluation is to assess the URU/00/G31 Project, hereafter the Project, on the basis of its objectives, activities and outputs as defined in the Project Document. The goal of the Project was to strengthen the technical and institutional capacities of the Ministry of Housing, Territorial Regulation and Environment to enable the Government of Uruguay to elaborate its Second National Communication (SNC) to comply with its obligations under the United Nations Framework Convention of Climate Change (UNFCCC)

2. Overview

The Project has successfully achieved its objectives, namely to produce the Third National GHG inventory, to develop a program of general measures for mitigation and adaptation, to prepare and present the SNC to the Conference of the parties of the UNFCCC on time, to strength the interest, awareness and technical capacity at the national level, and to facilitate actions leading to institutional strengthening.

As a result of the Project, Uruguay (From now on the Country) has a better understanding of Climate Change and it has new results that identified aims and tools to contribute to its sustainable development. A considerable number of new public and private decision makers and their technical advisors, public officials and civil society organizations were exposed to the problems of Climate Change as they participated in different aspects of the Project.

The Project has enhanced the capacities and increased the number of experts that can deal with the multiple and complex aspects of the adaptation to, and mitigation of Climate Change, as well as with the GHG national inventories.

3. Third National GHG inventory

3.1 General Comments

The Project developed the 1998 GHG inventory complying with the objective of the Project Document. In addition, the Project also produced the 2000 GHG inventory.

In both cases, the gasses reported were carbon dioxide, methane, nitrous oxide, NOx, carbon monoxide, volatile organic components different from methane and sulfur dioxide. In addition, in the 2000 inventory was reported the emissions of HFC and SF_6 and it was reported a null emission of PFC.

The sectors reported in both inventories were energy, industrial processes, agriculture, the use of land change and forestry, and wastes. Other sectors reported, but not added to the national emissions, were international bunkers, carbon dioxide produced by biomass burning, and emissions and sequestration of carbon dioxide from soils affected by agriculture because of the large uncertainties involved in its estimate.

The methodology used was the recommended by the IPCC in its revised version of 1996. The emissions of these inventories were compared with the 1990 and 1994 inventories that already have been

calculated or were revised with the same methodology for the Initial National Communication to the UNFCCC, but whenever there were changes in data, they were recalculated.

In both inventories, there was made a qualitative assessment of emission uncertainties discriminated by gasses and sectors Most of the uncertainties came from data quality and from the lack of knowledge about how the emission factors represent the national conditions.

In the 1998 inventory, but even more in the 2000 inventory, the emission profile responds to the special circumstances of the Country. The large amount of cattle in relation with the population and the high proportion of hydro power in the energy matrix explain why, in terms of equivalent emissions, methane is far more important than carbon dioxide. Also, the rapid expansion of commercial forestry during the 80s and 90s with still small harvest until the year 2000, together with a relatively modest use of hydrocarbons in the energy sector explains the negative net emission of carbon dioxide in the 2000 inventory.

3.2 Specific aspects

a) Were the IPCC methodologies used?

As explained before, the methodology used for the 1998 inventory was the 1996 IPCC revised version, and the same was done in the case of the 2000 inventory in compliance with the paragraph 8 of the UNFCCC/CP/2002/7/Add.2. It was also applied the IPCC Good Practices Guidance and special care was taken to asses data from key sectors.

b) What difficulties were encountered in applying the methodology?

One of the more important difficulties was that basic data do not generally appear aggregated as required by the GHG inventory. This happens with the National Energy Balance (NEB) for some sectors. However, in most of the cases, personal communication with the personnel in charge of the NEB permitted to get the data aggregated as needed. There is however more complex difficulties with the estimate of the agriculture energy consumption in the NEB.

Energy emission calculated from the reference and first tier method does not differ considerable in the 1998 inventory, however, they differ 14 % in the 2000 inventory. This apparent difference is explained by the artificial way in which energy losses in the transformation process from fuel to electricity were computed in the NEB.

In the industrial sector there was some weakness with the data of certain industries, in which there is not an annual actualization of their production indexes. Other problem arose when different technologies were used in the same industrial sector. In this case, it was necessary to estimate an averaged pondered emission factor since the information was only aggregated by sector.

In agriculture, the main problem was the lack of national emission factors for methane emissions from bovines. This acquires relevance, since this sector dominates the national GHG emissions. Research to asses these emission factors is already in progress, but national experts consider that total emissions will not be considerable different when the new emission factors will be utilized instead of the defaults

values used in the 1998 and 2000 inventories. Considering expert judgment, the emission factors from IPCC default tables were used for meat cattle. For dairy cattle, the Poland emission factor was chosen after considering that the production system of that country had some resemblance with the local system.

In the use of soil change sector, there was not available information about the mass balance of the native forest, and therefore it was assumed in equilibrium. This assumption was shared by experts of the public forestry sector on the basis that there is a very strict law that preserve the native forest which was accompanied by an effective control since the earlier 80s. However this assumption is not shared by other experts because the law does not prevent the competition by commercial species in small relicts of the native forest. In any case, the equilibrium assumption is a first guess forced by the lack of basic information, which is not too far from reality. More acceptable seems the assumption of no abandon of lands to forest regrowth, because this is not a common practice in Uruguay, where the agricultural system has a large percent of cattle rising.

In the forest sector of commercial species it was not possible to cross harvest information from the public and the private sector in order to reduce uncertainties. This was of relative low importance as wood harvest was still small during the 1998 and 2000 years

The lack of actualization of data was also felt in the waste sector where the coefficient of waste per capita was calculated in 1996 and was not updated.

c) Is the inventory report complete and well documented?

The inventory was complete, except for the emissions of solvents and a few industrial sub sectors. The reason for these omissions was the lack of basic data. However, the emissions of all these sectors are estimated as irrelevant, given the small size of these activities in the Country.

Both inventories are well documented. The 1998 inventory was published in Spanish in August of 2001 by the Ministry of Housing, Territorial Regulation and Environment of Uruguay under the title of "National *Inventory of GHG Net Emissions; 1998. Comparative Study of Net GHG emissions for 1990, 1994 and 1998 "*. It has 250 pages including an executive summary of 35 pages. It documents the methodology, the source of data and the sector circumstances. It also includes the IPCC working sheets.

The 2000 inventory was included in the SNC, which was also published by the Ministry of Housing, Territorial Regulation and Environment of Uruguay. It covers 158 pages and describes the methodology, results aggregated by sectors and gasses, the evolution of emissions since 1990 and it has an annex with the IPCC working sheets.

d) It is possible to reconstruct the calculations?

Since all the IPCC working sheets were published, it is not only possible, but even very easy to reconstruct the calculations.

e) Was the manner in which the inventory was undertaken professional?

The Inventory was undertaken by experienced professionals, with adequate expertise profiles. They conducted a systematic work procuring data from different sources and made adequate assumptions, when needed, in accordance with the methodology flexibility. When necessary, they made consultations with specialist, or even with the productive actors to improve their own judgment. For instance, in the case of agriculture emissions by fire, the percentage of material set to fire resulted from an extensive consultation with farmers.

f) Were the outputs produced in a timely fashion?

Yes, the Project Document scheduled ten months for the GHG inventory activity from the beginning until the publication. This was exactly accomplished as the Project started in November 2000, and the publication of the 1998 GHG inventory was made in August 2001

g) Is there a cadre of professionals available and knowledgeable about inventory to carry out the work of future inventories?

Yes, in the Unit of Climate Change of the Ministry of Housing, Territorial Regulation and Environment of Uruguay and in academic institutions there are a number of experts, now acquainted with the inventory techniques that can carry out future inventories.

4. Program of General Measures for Mitigation and Adaptation (PMEGEMA)

4.1 General overview

The purpose of the PMEGEMA is to elaborate a coordinated set of policies and measures that will contribute to the adaptation to and the mitigation of Climate Change contributing to the sustainable development.

The general approach was to work with public, private and civil institutions to build the necessary consensus for the identification and development of adaptation and mitigation measures. Sixty institutions and 130 representatives of them participated of this process during the lapse time of the Project. The work was conducted in sectorial groups corresponding to agriculture including forestry, biodiversity, coastal resources, water resources, fisheries, human health, waste, energy and transportation. For each of these sectors, there was also a consultant to elaborate en detail the adaptation and mitigation measures.

The adaptation measures proposed were 13 and the mitigation 17. Another 4 measures of general and intersectorial nature were also developed. Mitigation measures follow a common methodology to analyze cost that were expressed in USD per ton of carbon dioxide avoided. They are described in detail and include the initial investments, the social, environmental and fiscal impacts. Adaptation measures follow a similar approach including the costs of their implementation and their social, environmental impacts. It follows a list of these measures grouped by sectors.

Adaptation measures to Climate Change

Agriculture

- To improve seed banks by producing genetic material adapted to the most likely climate scenarios
- To promote sustainable soil management, including non tillage techniques and other measures directed at soil conservation and improved usage practices

Biodiversity

- Monitoring the changes of main ecosystems
- Delimitation, implementation and management of protected areas
- Productive diversification

Coastal Resources

- To promote management of the coastal area in an integrated manner
- Establishment of a systematic monitoring system for surge and beach profiles
- Study of degraded coastal areas with the purpose of coming up with the solutions that are required

Water Resources

- To incorporate climate change variable in specific hydraulic projects, modifying design standards and increasing safety margins. Elaborate environmental education programs to inform about potential impacts of climate change on water resources
- To formulate and promote an effective national water policy enabling the integration of climate change variable

Fishery Resources

- Monitoring of oceanographic variables , breeding grounds, distribution, abundance and catch capacity of fishery species and verification of water-bloom episodes
- Sea farm sowing of lagoons with shrimp post larvae and subsequent harvesting
- Increment controls to prevent residual water dumping in coastal areas

Human Health

- Education, information and communication to the population so as to prevent diffusion of diseases due to climate change problems

Measures for Mitigation of Climate Change

Agriculture including Forestry

- To further C capture through planted forests
- Improvement of animal diet extending seeded pasture and improved fields

Waste

- Substitution of anaerobic ponds of industrial effluent treatment for intensive anaerobic processes
- Operation of a new sanitary landfill in Montevideo and Canelones including a plan for training national technicians

Energy

- To promote improvement of efficiency at domestic and commercial use equipment
- To set up standards and energy-efficiency regulations linked to construction materials and buildings
- Implementation of an Energy audit program in the industrial and services sectors
- Improvement in lighting system efficiency in residual and service sectors
- Efficiency improvements in street lighting
- Expansion of energy supply on the basis of better use of renewable non-conventional energy
- Installation of an eolic park
- Production and consumption of biodiesel

Transportation

- Optimization of the urban transportation system of Montevideo
- Utilization of compressed natural gas in cars and taxis
- Utilization of compressed natural gas in buses and trucks

- Use of liquefied petroleum gas in cars , taxis, buses and trucks
- Use of bicycles and construction of bicycles lanes in Montevideo

Intersectorial and general measures

- Institutional strengthening concerning climate change matters
- Development of diffusion and information program, public sensibilization and education in the matter of climate change
- Improvement of capacity for development and transfer of ecologically rational technology
- Promotion of systematic research and observation

In many cases, adaptation measures are necessary, even without the context of climate change. However, in the scenarios of climate change, the identified vulnerabilities will became even greater. Therefore, these measures reflect the need for action to prevent further deterioration of environment and to support sustainable development in any scenario of climate change.

The proposed mitigation measures have a wide range of costs per ton of avoided carbon dioxide. In some cases, the measures have negative costs and are likely to be implemented without difficulties. Other measures with near competitive costs in the carbon market are likely to be implemented during the next years while others, more costly, will be delayed on time or will require some further redefinition.

For a variety of circumstances and opportunities, measures of mitigation and adaptation that require external funding has different time of elaboration. Nevertheless, there are already some projects submitted or being in process of being elaborated for submission, as it is explained later.

The measures were summarized in a publication of the Ministry of Housing, Territorial Regulation and Environment of Uruguay, both in English and Spanish in a 120 pages publication under the title of "Program of General Measures for Mitigation and Adaptation to Climate Change in Uruguay¨ in February 2004.

The success of the inter institutional cooperation at the PMEGEMA has lead to the idea, well advanced in the Uruguayan administration, to develop the PRONAVEN, the national voluntary program for emission reductions and other initiatives, as a permanent inter institutional activity to further contribute to the analysis and development of policies and measures of mitigation and adaptation to Climate Change and to strengthen the related national institutions and activities.

4,2 Specific aspects

a) Which methodology was used? Was it appropriated?

The methodology followed the general guidelines of three documents:

- Steps in Preparing Climate Change Action Plans: A Handbook. Version 1.0 prepared for the USCSP. Ron Benioff and John Warren 1996
- Vulnerability and Adaptation Assessments. An international Handbook. Version 1.1 prepared for the USCSP. Ron Benioff, Sandra Guill and Jeffrey Lee 1996
- Handbook of Methods for Climate Change Impact Assessment and Adaptation Strategies, Version 2.0 prepared for the UNEP. Jan Feenstra, Ian Burton, Joel Smith and Richard Toll 1998

For climate, a basic scenario, corresponding to the period 1970-1999 period, was adopted. Then 10 incremental scenarios were defined for the monthly mean temperature varying $+2^{o}$ C and $+4^{o}$ C and precipitation varying 0 and minus and plus 10 and 20 percent with a time horizon to the year 2050. Two socio economic scenarios were considered corresponding to the SRS A2 and SRS B1 scenarios of the IPCC 2001 Report for Uruguay. They were conveniently adjusted in their population growth to reflect the historical trends of the Country. Future costs and investments were brought to present with an interest rate of 5 %.

All measures were analyzed following the same economic guidelines in order that their cost of implementation and in the case of the mitigation, the cost of the avoided carbon dioxide ton were comparable. The measures were described following also a standard format, which includes also the initial investments and the social, environmental and fiscal impacts.

The methodology was appropriated to the regional circumstance because regional current climate representation by global climate models was very bad at the time the Project started, especially in precipitation but also in temperature. Thus, the use of incremental scenarios was the best option. In many cases, especially in mitigation and in adaptation measures of non regret type, the different climate scenarios did not make differences.

Time horizon for the measures varies according to the nature of the sector and of the measure itself. Thus, in certain cases like in water resources because of the short time horizon, only the scenario that resembles more the current trend was considered. In mitigation, most of the measures were proposed for a horizon of no more than twenty years, which is correct considering the fast evolution of technology and of economic variables.

b) What difficulties were encountered in applying the methodology?

The general methodology was more according to the mitigation studies than for adaptation. Thus, adaptation measures follow a vulnerability assessment that was made using specific methods depending upon the system analyzed.

A general difficulty, almost shared by all sectors and for all methodology, is the lack of enough available basic data of the natural systems. In some cases, this data did not exist, but in others as in the case of climate, the availability of them was difficult, sometimes because not all data was digitized, or because they are sold at expensive prices.

Another difficulty in the implementation of the part of the methodology, which includes a considerable interaction with public institutions, private sectors and NGOs, was the lack of awareness about climate change and its consequences in the Country. This was a general difficulty, but it was especially worst with public officials.

c) Is the Programme Report complete?

Yes, though it is only a summary of the comprehensive and detailed technical reports produced by the experts

d) Did the analysis lead to the production of a number of fundable projects, for GEF or other sources of financing?

Yes, as a result of the PMEGEMA there are various projects that are being prepared or submitted to different sources of international funding.

In mitigation, there is a portfolio of projects resulting from the PMEGEMA activity that includes:
- Montevideo Landfill Gas Collection and Upgrade to Pipeline Quality Natural Gas
- Canelones Cañada Grande III landfill Gas Collection
- Afforestation for obtaining long-lived wood products and bioenergy
- Production of biodiesel from oil grains and animal fat
- Intensification of livestock production combined with afforestation

For the implementation of the measures identified for the Transport sector in the PMEGEMA, it has been planed to ask for the World Bank funding assistance, under the Program the World Bank has to reduce emissions from Latin America and the Caribbean cities.

There is also a Project in preparation with the World Bank on Energy efficiency where it is expected to include a Climate Change component, which contains several measures proposed by the PMEGEMA.

Adaptation measures resulted from PMEGEMA developed in three initial Projects that are already in analysis at the UNDP for its presentations as PDF A Projects to GEF.
- In the Water Resources sector: Development of an effective water policy and promotion of integrated water resource management
- In the Agricultural sector: promote sustainable soil management.
- In the Coastal Resource sector: Assessment and restoration of coastal areas

It is intended that the three PDF A projects will converge in a medium size GEF Project with pilot areas of demonstrative actions.

e) Were the outputs produced in a timely fashion?

Yes, the Project Document scheduled 26 months for the PMEGEMA activity from the beginning until the preparation of the report for the SCN. This was accomplished as the Project started in November 2000, and the Report was ready before May 2004.

f) Is there a cadre of professionals available and knowledgeable about mitigation /adaptation to carry out future works?

Yes, in the Unit of Climate Change (UCC) of the Ministry of Housing, Territorial Regulation and Environment of Uruguay and in academic institutions there are a number of experts, now acquainted with the knowledge about mitigation and adaptation to carry out future works The number of experts that participate of the PMEGEMA in relation to the population of the Country is eloquent of that; they amount to 17, and only one was from outside of the Country. In addition many of the 130

representatives from the 60 organizations are professionals of high level that should be consider as potential manpower for future activities in connection with PMEGEMA.

5. Preparing and presenting the SNC to the Conference of the parties of the UNFCCC

5.1 General Comments

The Project permitted the preparation and presentation of the SCN to the UNFCCC. Since the beginning of the preparation, the UCC organized processes of participation and consult with respect to the main contents of the SCN that assured a national consensus.

5.2 Specific aspects

a) Which guidelines were used? Is the content of the SNC in accordance with these guidelines?

The SCN was prepared in accordance with the guidelines approved by the Conference of the Parties in its eighth session (Decision 17/CP 8). Uruguay was the first developing country that presented its SCN following these guidelines.

b) Is the SNC complete?

Yes, the SNC includes an executive summary, six chapters and tree annexes. It has an introduction explaining the context and the process of consultation, a comprehensive, but focused chapter on the national circumstances, the inventory of year 2000, describing methods and results by sectors and gasses, the measures taken to comply with the UNFCCC including the PMEGEMA, the program on mitigation and adaptation and the PRONAVEN, the national voluntary program for emission reductions, and other initiatives. Other relevant information is reported in the fifth chapter like transfer of technology studies, research and systematic observation, education, capacity building and measures to increase awareness. The last chapter deals with obstacles and financial, technological and capacity needs.

The summary tables of GHG emissions of the 2000 inventory are presented in one annex. The second annex includes the IPCC working sheets for calculating GHG emissions and the third annex lists the acronyms. In all, the SNC publication has 323 pages.

c) Are the SNC chapters properly developed? Is all the information presented in appropriated manner?

Yes. The chapters are informative and well balanced with summarized but substantive information. The SNC is well written in a language that facilitate the reading and with illustrations, graphics and tables well designed that easy the presentation of considerable information.

d) Was it submitted on time?

Yes, the project ended in November 2003 and the SNC was presented in May 2004 during the 20th meeting of the subsidiary bodies of the UNFCCC

6. Strengthening the interest, awareness and technical capacity at the national level to respond to the UNFCCC

a) What national activities for public awareness and education were carried out under the Project? Were they well planned and managed?

The UCC of the Ministry of Housing, Territorial Regulation and Environment of Uruguay conducted multiple actions that resulted in the strengthening of the interest and awareness about Climate Change These actions were of different features like the massive publication of key documents (Second National Communication, 1998 GHG inventory, Measures Recommended by the PMEGEMA and The National Strategy for the CDM Application in Uruguay), six workshops that contribute to disseminate key instances of the Project, elaboration, edition and distribution of booklets and posters about issues related to Climate Change and the UNFCCC, creation of a website of the UCC and of another national website for the Conventions on Climate Change, Biodiversity and Desertification, multiple conferences and interviews disseminating the UCC activities, and a cycle of five workshops on the MDL

Most of these activities resulted from planned steps of the Project and were successfully developed. Others, as interviews and some conferences were in response to the press or other demands.

b) Were training activities developed?

The UCC increased the capacity of its personnel and of other areas of the national administration. Its technicians participated in training activities in different courses and workshops abroad, in the US, Denmark, Costa Rica, Switzerland and Argentina.

c) What capacity remains following the closure of the Project?

There is a well trained group of professionals, both in the UCC, in other sectors of the National Direction of Environment (DINAMA) at the Ministry of Housing, Territorial Regulation and Environment and in other institutions of the national administration, who was strengthened and increased in number during the Project. .

d) Does it appear to be a solid basis for carrying out future work?

Yes, there is, not only the personnel capacity described in the preceding point, but institutional maturity and a record of successful work related to Climate Change during many years.

7. Institutional Arrangements

7.1 General Comments

The strengthening of the UCC technical capacity -an objective the Project- permitted successfully executing not only this Project, but also others related with the Country's obligations with the UNFCCC. The strengthening of the UCC allowed to act as executive agency of these projects, coordinating their

elaboration, management and execution, and to act as center of dissemination of knowledge about Climate Change and the technologies and know how required for adaptation and mitigation.

The purpose of PRONAVEN was to promote and facilitate the investments and adoption of technologies that contribute to the reduction of net CHG emissions through a program of coordinated measures. After the successful experience of inter institutional cooperation with the PMEGEMA, the PRONAVEN is now envisioned as an instance of multi institutional coordination at high level. Considerable elaboration and consensus was built in this direction during the Project.

7. 2 Specific aspects

a) What national organizations, institutions and agencies now exist to carry out further work on climate change? How were these involved in the elaboration of the SNC?

The Ministry of Housing, Territorial Regulation and Environment has the primary national responsibility in environment. Its dependence, the DINAMA, design and executes the policies and measures and controls their application. Within DINAMA, the UCC is the focal point for activities related to climate change at national and international level.

Outside of the UCC, there are a considerable number of public and private institutions, both administrative and academic like the University of la Republica and the National Institute of Agricultural Research (INIA) that could collaborate with future GHG inventories or adaptation and mitigation projects, as they have done with the SNC

b) What was the nature and level of the interaction between the local institutions?

The UCC, and when corresponding DINAMA made the high level arrangements for cooperation. This was not only related with data and other information required, but also with active participation of professionals in the sectorial commissions of the PMEGEMA and in the Project workshops

8. Recommendations for future work

8.1 Inventory

Given the importance of the Energy sector, it would be convenient that future projects will include a specific task to make the aggregation of the NEB compatible with the GHG inventory requirements.

Methane emissions from bovine cattle are by far the most important of all the emissions of the country. A systematic approach to the composition of these cattle by age, type of production and quality of food can reduce uncertainty. This will be possible for future work since, recently, it was developed a model of the bovine cattle of Uruguay at the INIA. This will also take better advantage of the national factors estimated by the ongoing research on emission factors of this sector.

As the harvest of commercial species in the forestry sector is becoming of importance, it will turn out important to cross information from the public and the private sector of this sector, in order to reduce uncertainties in a key fraction of the national emissions.

8.2 Follow up on PMEGEMA activities

Since many of the adaptation and mitigation options are for a twenty year horizon, it will be convenient to develop a likely climate scenario from the ensemble of GCM outputs of the recent climate experiments ran for the forth IPCC Report and the current climate trends.

Since energy prices and the outlook of the offer of oil have changed since the end of the Project, It will be convenient to review the calculations of avoided costs of carbon dioxide. To this respect, it would be suitable to have the calculations for each mitigation measure in a computer program to permit its actualization as variables change.

Mitigation measures that resulted in high avoided carbon costs and are quite complex, as in the case of the setting of standards and energy-efficiency regulations linked to construction materials and buildings, should further explored to reshape its features and scope.

ANNEX 1

During its stay in Montevideo, the consultant had 2 hours meetings with the following personnel to learn and discuss about details of specific Project activities.

Luis Santos (General aspects)
Mariana Kasprzyk (General aspects and inventory)

Virginia Sena (Inventory: Energy, Industrial processes and Waste)
Walter Baethgen (Inventory: Agriculture, Use of Soil Change and Forestry)

Cecilia Ramos (PMEGEMA: Process of elaboration and Human Health)
Pedro Barrenechea (PMEGEMA: Process of elaboration, economic aspects and Coastal Resources)
Eugenio Lorenzo (PMEGEMA: Water Resources)
Rossana Gaudioso (PMEGEMA: Energy)
Elizabeth González (PMEGEMA: Waste)
Bethy Molina (PMEGEMA: Biodiversity)

Further information was obtained at request from Luis Santos, Mariana Kasprzyk, Virginia Sena and Pedro Barrenechea.

There was also a meeting with Gerardo Honty, director of the NGO Uruguayan Center for Studies on Appropriate Technologies and representative of the NGO Environmental Network, who participated in the PMEGEMA activities. He contributed with a view over PMEGEMA from the Civil Organizations point of view.