

United Nations Framework Convention on Climate Change  
Transfer of Technology Consultative Process  
Latin American and Caribbean Regional Workshop  
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**Bolivian Country Paper**

Andrés Trepp del Carpio /<sup>†</sup>

**Introduction.**

The objectives aimed with the presentation of the country papers at the UNFCCC Regional Workshop on Technology Transfer can be listed as follows:

1. To specify updated information on technology and transfer of technology for each country in the Latin American and Caribbean region with a view to facilitating the exchange of information;
2. To get ideas on priority technology needs and transfer of technology activities;
3. To identify initiatives which could be considered example mechanisms of technology transfer;
4. To recognize ideas regarding key elements of a framework for meaningful and effective actions to enhance implementation of Article 4.5 of the Convention , and
5. To identify possible elements of a framework for meaningful and effective actions to enhance implementation of Article 4.5 of the Convention.

Thus, the country papers can be considered as a basis for the identification of these elements and the source of conceptions for the implementation of Article 4.5 of the Convention.

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<sup>†</sup>: Member of the Board of the National Council on Climate Change. Consultant for the Energy Sector.

The present Bolivian Country Paper will concentrate on the last three points listed above considering that the first two are already, and quite extensively, treated in documents such as the “Bolivian National Communication to the UNFCCC” and in the “National Action Plan on Climate Change: Energy, Forestry, Agrarian and Livestock Sectors”<sup>/1</sup>.

### **The Interpretation of Article 4.5 of the UNFCCC.**

Article 4.5 of the Convention says literally that “...The developed country Parties and other developed Parties included in Annex II shall take practicable steps to promote, facilitate and finance, as appropriate, the transfer of, or access to, environmentally sound technologies and know-how to other Parties, particularly developing country Parties, to enable them to implement the provisions of the Convention. In this process, the developed country Parties shall support the development and enhancement of endogenous capacities and technologies of developing country Parties. Other Parties and organizations in a position to do so may also assist in facilitating the transfer of such technologies. ... ”

This Article fixes precisely *what to do* in transfer of technology matters, but says nothing about *how to do it* and *where to do it*. The Transfer of Technology Consultative Process that is taking place in this Latin American and Caribbean Regional Workshop, tries to answer mainly the first question as it is clearly suggested in the proposed outline for the country papers.

### **Technology Needs and *what to do* in Transfer of Technology.**

As stated above, the “Bolivian National Communication to the UNFCCC” and the “National Action Plan on Climate Change” specify for the energy sector on one side and for the Agriculture, Forestry and Livestock Sectors on the other side, the information on

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<sup>/1</sup>: The first document exists as a draft version issued on August 1999. The second one was published in 1999.

technology and technology transfer needed for Bolivia as a result of the greenhouse gases (GHG) inventory and as an outcome of the study of mitigation measures. On the other hand, these documents give also ideas on institutions and organizations on climate change that could be involved in the National Action Plan, and also provide guidelines for all mechanisms designed to implement mitigation options through the convenient development and adoption of technologies. Additionally, the National Action Plan points out a wide variety of opportunities for international cooperation to support its implementation and identifies a number of projects that require international support. (See pages 41 to 49 and 121 to 123 of the Bolivian National Action Plan on Climate Change, attached to this document).

### ***How to do Transfer of Technology.***

The proposal of the Government of Bolivia regarding the building of national capacities gives ideas of how to do the transfer of technology and defines why to do it.

Bolivia, like most developing countries, has limitations to accomplish the commitments determined through the UNFCCC and of those that can come out of the Kyoto Protocol, specially the rules related to start up the mechanisms of the Protocol.

The Fifth Conference of the Parties was very clear in establishing the technological, scientific, human resources and financial differences between North and South. It is very difficult for the developing countries to access the scientific ground information because of the lack of adequate technical infrastructure. This hinders in most cases the development of complete National Communications and to identify clearly and utterly the technology needs.

It is important for the Non-Annex I countries to obtain in real terms (and not only on the paper) the necessary support to strengthen their national institutional and human capabilities in scientific and technological infrastructure and knowledge. Most studies and

assessments of climate scenarios are based on global models that in many cases do not reveal the real impact of climate change in a regional or local level, and that generally do not expose the degree of vulnerability they are submitted as a consequence of the lack of knowledge and means to find adaptation and mitigation options.

Bolivia, in this context is a highly vulnerable country. It falls into seven of the nine characteristics for adverse effects pointed out in Article 4.8 of the Convention, which shows that it deserves an important attention in building up capacities.

In the field of institutional national capacities, it is of vital importance to implement and to improve systems of systematic observation of the environment. Bolivia does not own remote observation systems that would enable, for instance, to detect and evaluate in real time, the effects of deforestation, burning of forests or make new generation local weather forecasts.

Besides fixed period projects, it is urgent to implement and finance long term processes that would enable the countries to follow continuously both, the Convention and the Kyoto Protocol.

On the other hand, it is also necessary to count on the appropriate support in order to develop National Action Plans for the socioeconomic sectors that are strongly influenced by the impacts of the Global Climate Change.

In the field of scientific research, Bolivia requires a decisive support to the Universities and Research Centers in order to reduce in related and specific areas the wide knowledge gaps that exists. In the same way, it is imperative a decisive support of international, multilateral and bilateral agencies to diffuse at all levels, through formal and non formal education, the causes and effects of the climate change.

Resources and equipment are needed to accomplish the routine inventory of the emission of antropogenic GHG, to carry out vulnerability and adaptation analysis, to find mitigation options, identify technology needs and to implement mitigation measures.

The challenge imposed by the Kyoto Protocol implies that countries like Bolivia must develop organized institutional technical, scientific and educational structures able to approach the different issues to go into a fair game of opportunities between all Non-Annex I Parties of the Convention.

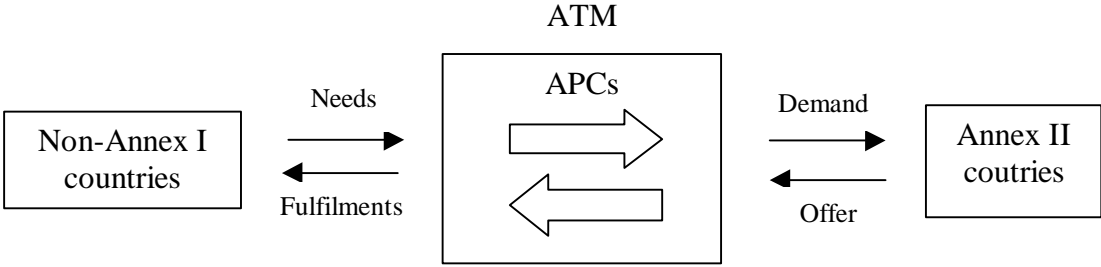
As can be seen from the discussion above, the problem of how to transfer technologies is quite a wide problem that must be tackled inside each country and that deserves great attention, effort and as well as human as financial resources, that will allow them to begin the process of interaction between the Annex II and the Non-Annex I countries in the specific field of implementing the different previsions of the Convention.

#### ***Where to do the Transfer of Technology.***

Considering an hypothetical situation that once this workshop has concluded, certain Non-Annex I country has identified a list of needed technologies and that it has overcome all barriers that could hinder its transfer, and that it has even established an appropriate institutional and administrative infrastructure that could guarantee an effective action towards the mitigation of determined adverse effects of climate change. In spite of this, it is clear that this country will not be able to succeed in his purpose, unless there exists somewhere a mechanism that allows an effective interaction with Annex II countries in terms of the spirit of Article 4.5 of the Convention.

Perhaps, the mechanism should be thought as making part of the UNFCCC and as a subsidiary specialized organism whose principal function should be to link both Parties. This means that it is necessary to establish an effective double way of communication in the sense of an ATM (an “Automatic Transaction Machine”, or better, as an “Active Transaction Mechanism”) to which a developing country may enter with a specific and

assessed technological need in the form of a “Debit Card” (not quite as a “Credit Card”, as the nature of support and financing it is not still clear and well defined, but a sort of “Transaction Card”). The mechanism should be able to process inputs of the developing countries and canalize them through “Accelerated Process Channels (APC)” to an appropriate database lying on the other end, where an Annex II country could respond to the requirement in the way of a flux of technologies and funds in order to assist the developing country. In the return journey, the APC should be able to process the offer or bid so as to fulfil the need entered by the applicant. The transfer of technologies should not be limited to the trade of obsolete technologies of the Annex II countries. The transfer should take place as a function of the results that are pursued for the environment and not to fulfil some commercial interests of the Parties. In both processes, both Parties should be represented so that the balance between them could be maintained. The processes should be very simple and agile and avoid long and heavy chains of committees and decision instances, as well as rigid and headstrong procedures that lead to nothing. The process should not be confused as a part of the Kyoto Protocol because the transfer of technology should not be subject of the market and should fall outside the scheme of environmental commerce. Graphically, the model of an Active Transaction Mechanism for the transfer of technology could be as follows:



Of course, this is a very basic idea of a model, that should be developed and build up if it awakes some interest. But, in any case, a mechanism of this nature should be conceived and implemented very soon so that the adverse effects on the world climate, which are stronger by the day, can be reversed. The planet certainly cannot wait and be satisfied with the selfish interests of some Parties.