

6. LEARNING FROM THE ARGENTINE VOLUNTARY COMMITMENT

Daniel Bouille and Osvaldo Girardin

Introduction

An unprecedented event took place at the Fourth Conference of the Parties (COP 4) to the United Nations Framework Convention on Climate Change (UNFCCC) in 1998 in Buenos Aires. The host-country president, Carlos Menem of Argentina,¹ announced his government's commitment to establish a voluntary greenhouse gas (GHG) emissions target for 2008 to 2012 and to formally commit to this target the following year during COP 5. This was the first time a developing (non-Annex I) country had agreed to meet a quantified GHG limitation target.

However, the two principal legal instruments of the climate change regime—the Climate Convention and the Kyoto Protocol—have not established provisions for voluntary emissions targets. This poses numerous questions for the future of climate negotiations. How should voluntary commitments be incorporated into the UNFCCC and Kyoto Protocol? What are the advantages and disadvantages of voluntary commitments for countries not immediately obligated to take targets, particularly in light of reticence on the part of industrialized countries to implement initiatives to meet their own commitments? What are the economic and environmental implications of the Kyoto Protocol mechanisms—specifically, the Clean Development Mechanism (CDM)—for a country making a voluntary commitment, considering the uncertainties about the size and impact of the carbon market for a developing economy?

This chapter synthesizes and analyzes the process through which Argentina developed its voluntary commitment, focusing on the technical aspects of the proposal, the likelihood of effective implementation, the target definition process, and the level of participation of different actors in this process.

Section I of this chapter examines the national and international context in which the commitment process took place. Section II explains the different target types (i.e., fixed and dynamic) and emission reduction levels considered by Argentina. This section also explores whether the target methodology would be useful to other developing countries. Section III focuses on the main implications of adopting this target within the framework of the Climate Convention and Kyoto Protocol, as well as the relationship to development priorities in Argentina. Section IV presents conclusions and lessons learned.

I. The Decision: Process and Justification

To understand why Argentina proposed a voluntary commitment, it is necessary to examine both the international and domestic pressures facing the COP 4 host country.

International Context

Since the Climate Convention's adoption in 1992 industrialized (Annex I) countries have pressured developing (non-Annex I) countries to make quantified emissions commitments.² In July 1997, the U.S. Senate adopted the Byrd-Hagel Resolution, which placed two conditions on any U.S. ratification of a binding protocol: The agreement must not threaten the U.S. economy, and "key developing countries" had to take on binding targets to limit emissions during the same commitment period.³ The Kyoto Protocol's adoption in December 1997 further increased the pressure on developing countries to agree to emission limitation targets.⁴

Why did Argentina propose a voluntary target to limit GHG emissions? Argentina's foreign policy during the Menem Administration aimed at developing a closer alliance with the United States, which was evidenced by deepening bilateral relations and support of U.S. international policy. Argentina's adoption of a voluntary target to limit GHG emissions must be understood within this context, in which pressures on developing countries to voluntarily commit were combined with Argentina's foreign policy goals. Within the context of bilateral negotiations, this entailed a significant alliance with U.S. foreign policy in diverse forums and, regarding climate change, the Argentine proposal appears to be designed to explicitly support the U.S. position.

President Clinton's official visit to Argentina in October 1997 represented a major milestone in cementing this relationship. Presidents Clinton and Menem signed the Presidential Declaration of Bariloche, which pro-

posed cooperation between the United States and Argentina on environmental matters, including global climate change.⁵ This declaration underscored the need to establish a realistic and obligatory target based on flexible cost-effectiveness criteria, as well as the need to mobilize private sector resources for economic development projects in developing countries. These “joint implementation” (JI) projects would permit the reduction of GHG emissions. Both parties recognized that the response to climate change must be global and that all countries (developed and developing) should be involved.⁶

During the Kyoto negotiations (COP 3), Argentina’s representatives agreed to promote voluntary commitments for developing countries in the Protocol.⁷ However, there was no consensus on the so-called Article 10, which called for such voluntary commitments. Specifically, the Group of 77 (G-77) and China—the main developing-country negotiating bloc—found this provision categorically unacceptable. The proposal to include voluntary commitments was revisited the next year during COP 4,⁸ although in the end it was not included in the conference agenda or discussed during the meetings leading up to the conference (UNFCCC 1998). Again, this opposition was led by the G-77 and China.^{9, 10}

Argentine delegation officials later stated that they did not expect that their proposal on voluntary commitments would be accepted. However, they wanted to ensure that it was discussed as a way to free up negotiations and overcome the arguments against ratification of the Kyoto Protocol presented by Annex I countries.¹¹ From the start, the proposal’s political and legal feasibility was dubious, since it required an amendment to the Protocol, which was not widely supported and not legally possible given that the Protocol had not yet entered into force.

Domestic Context

Domestically, the only actors in Argentina who entirely supported the adoption of an emissions target were those represented by political and technical officials who both made the decision at the highest levels and designed the proposal, as well as some civil society individuals. These actors, within the then-Secretariat of Natural Resources and Sustainable Development (SRNDS), strongly backed the announcement, development, and adoption of the target. The main argument they presented was that the voluntary commitment would open up the possibility of gaining access to all the flexibility mechanisms of the Kyoto Protocol. This misunderstanding about the accessibility of all the mechanisms to a developing country may have been the main error in the call for a voluntary target.

In internal discussions, national authorities argued that Argentine competitiveness in one of the Protocol's flexibility mechanisms, the CDM, was limited vis-à-vis the large non-Annex I emitters, such as India and China. However, two other mechanisms, emissions trading and JI, could provide access to markets in the medium to long term. By adopting a voluntary commitment, Argentina sought to gain access to emissions trading and JI—which were designed exclusively for Annex I countries—to attract investment, create new employment, and improve local environmental conditions without losing its non-Annex I status.¹² The magnitude of such investment was, however, unknown. This proposal became known as the “third way.” Some Annex I countries, such as Canada, expressed interest in it, although recognizing that the rules for this third way had yet to be negotiated (Government of Canada 1999).

It is unlikely that the Argentine proposal stemmed from sustainable-development interests. Rather, Argentina was mainly interested (however erroneously) in accessing all of the mechanisms to overcome what was perceived as an obstacle to developing countries in the Protocol, and thus gain access to the derived business opportunities. In addition to the private sector, some NGOs were interested in adoption of the emissions target. The NGOs believed that the commitment of Argentina, an important country in the region, could be helpful to other developing countries in evaluating voluntary target taking.

The main national actors that were consulted for this evaluation of Argentina's decision¹³ viewed the adoption of the commitment as an isolated measure. They believed the target was not part of an integrated plan linking climate change to other local, regional, and global environmental issues, nor was it part of a strategy for general and sectoral policies. Rather, most of them agreed that the Menem Administration's position was motivated by the aforementioned desire to establish a close alliance with the United States in terms of international policy. If there was a plan, it was based on vague principles and proposals regarding the advantages of avoiding conflict with the United States and developing actions that showed that Argentina was a strategic ally in international policy.¹⁴

At the time, academics and some industry sector representatives expressed their reservations about the establishment of a voluntary emissions target for the first commitment period. They did not see the point of such action when most of the main Annex I countries still had not made any significant advances in compliance with the Kyoto Protocol and had not even ratified it. They also did not agree with the decision to link the target to an aggregate indicator such as gross domestic product (GDP),

given the large share of Argentine emissions coming from the livestock sector. The growth of this sector depends more on international prices and exchange rates than on GDP growth. Also, the supply structure of the Argentine energy sector had a low carbon intensity.

Establishing the Target

The process of quantification and adoption of the emissions target had two phases. First, the decision for Argentina to adopt a target was made at the highest levels of government without consulting other interest groups or even other areas of the government. It was made behind closed doors and within the President's closest circle. Second, with the promulgation of Decree Number 377/99 on April 16, 1999, work on the target type and quantification began through creation of the National Commission for the Elaboration and Proposal of a Greenhouse Gas Emissions Target. The Commission fell under the purview of the SRNDS of the Presidency.

The SRNDS, headed by Maria Julia Alsogaray, was the clear leader in this process, as it had the highest political backing and represented the position closest to that of the Clinton Administration. Participation by other government entities varied significantly. Those most engaged were the Secretary of Foreign Relations and Latin American Affairs (in the Ministry of Foreign Relations, International Trade, and Culture); the Energy Secretary and the Secretary of Agriculture, Livestock, Fisheries, and Nutrition (both within the Ministry of the Economy and Public Works and Services); and the Secretary of Science and Technology (in the Ministry of Culture and Education). The other government entities involved¹⁵ did not participate in any significant manner, as was the case for representatives of provincial governments, indicating the lack of climate change and environment-related issues on the agendas of diverse public entities at all levels—national, provincial, and municipal.

The private sector participated through an Advisory Committee, made up of representatives from the business sector, science, and academia (both public and private), as well as from NGOs specializing in issues linked to the Commission's goals.

A technical team was formed to carry out baseline studies to elaborate targets for various sectors, principally the calculation of the GHG inventory for 1997, the elaboration of socioeconomic scenarios and sectoral emissions, and the identification of mitigation options. The technical team presented the partial and final results of these studies to the Commission and the Advisory Committee in different meetings. Their comments and suggestions were incorporated into the studies in some cases.

II. Taxonomy of the Target

Argentina's target aimed to maintain net anthropogenic GHG emissions (measured in tons of CO₂ equivalent) at a level that did not exceed the quantity defined as the "National Emissions Target." This target was expressed by the equation $E_p(t) = K * \sqrt{GDP(t)}$, where the emissions target is equal to a constant ($K = 151.5$) multiplied by the square root of GDP (at 1993 prices), averaged over the 5-year commitment period. If implemented, the target would deliver an emission reduction between 2 and 10 percent (relative to business as usual, BAU) depending on actual GDP growth and other factors affecting the base scenario.

Between March and August 1999, the technical team advising the Commission and Advisory Committee carried out studies to support the definition (i.e., the type), quantification (i.e., the magnitude), and decision to reach the mitigation target in compliance with Decree 377/99. They began formulating the target with an elaboration of the business-as-usual, or base, scenarios. First, based on information on GHG emissions in 1990 and 1994, they developed a simplified inventory for 1997. Second, they developed future socioeconomic scenarios (i.e., GDP projections). The agricultural sector (including livestock) required special consideration. In 1997, it accounted for more than 40 percent of Argentina's total emissions, and its growth is not dependent on GDP changes but rather more closely tracks exchange rates and international prices (Argentine Republic 1999).¹⁶ Thus, activity-level projections were developed separately for the agricultural sector for the 2008–12 period. This exercise produced nine scenarios reflecting the entire spectrum of different emission possibilities given different GDP and agricultural sector assumptions (see Table 6.1).

To identify ways of reducing emissions, the technical team carried out mitigation studies in the energy, agriculture, forestry management, and waste sectors. These studies produced absolute and relative estimates of potential reduction or increase in sequestration of GHGs, all essential information to define the voluntary commitment.

The Commission chose the type and level of target on the basis of information from inventories, emission projections, product research (sectoral and aggregate), and mitigation-options studies considering both magnitude and feasibility.

In deciding which approach to use and in determining the level of the target, the Commission considered the following key factors: (1) the behavior of the agricultural sector (for the reasons noted above), (2) the need to avoid creating an obstacle to sustainable development, and (3)

Table 6.1. Estimated Greenhouse Gas Emission Reductions for Argentina Under Three Different Targets, 2008–2012

Growth Scenarios for GDP and Agriculture	Change in Emissions Relative to Baseline Scenarios			
	BAU Emissions, annual mean value MtC	Fixed Target MtC (percentage)	Intensity Target MtC (percentage)	Square Root Target MtC (percentage)
Low GDP – Low Agro	95.6	-4.82 (-5.0)	8.03 (8.4)	1.89 (2.0)
Medium GDP – Medium Agro	105.2	4.81 (4.6)	4.64 (4.4)	4.85 (4.6)
High GDP – High Agro	122.3	21.87 (17.9)	-0.24 (-0.2)	11.54 (9.4)
Low GDP – Medium Agro	96.0	-4.38 (-4.6)	8.48 (8.8)	2.33 (2.4)
Low GDP – High Agro	102.4	1.96 (1.9)	14.82 (14.5)	8.67 (8.5)
Medium GDP – Low Agro	104.8	4.37 (4.2)	4.19 (4.0)	4.41 (4.2)
Medium GDP – High Agro	111.6	11.16 (10.0)	10.98 (9.8)	11.20 (10.0)
High GDP – Low Agro	115.5	15.09 (13.1)	-7.03 (-6.1)	4.76 (4.1)
High GDP – Medium Agro	115.9	15.53 (13.4)	-6.58 (-5.7)	5.20 (4.5)

Source: Derived from Argentine Republic (1999).

Notes: The “reference case” scenario is in bold. **Abbreviations:** BAU (business as usual), MtC (millions of tons of carbon equivalent).

the need to avoid generating “hot air.”¹⁷ Table 6.1 shows the nine scenarios used in the Argentine target analysis, as well as the three different types of emissions targets considered. Each scenario represents a particular set of assumptions about growth in GDP and the agricultural sector.

In any of the above scenarios, emissions are expressed by the equation¹⁸

$$E_{\text{BAU}(t)} = \alpha * \text{GDP}(t) + \beta * A(t) \quad (1)$$

where $E_{\text{BAU}(t)}$ is the emission level resulting from a lack of mitigation strategies (i.e., BAU), $A(t)$ is the indicator of agricultural activity (prices and access to international markets), and α and β are indicators of the intensity of emissions.

By multiplying the emission intensities (α and β) by activity levels (GDP(t) and A(t)), the equation yields a business-as-usual emission level, expressed in tons of CO₂ equivalent.

The reduction of emissions can be expressed as

$$RE(t) = E_{BAU(t)} - E_{p(t)} \quad (2)$$

where RE(t) is the reduction of emissions and $E_{p(t)}$ is the emission level permitted to meet the target.

$E_{p(t)}$ can be defined in various ways. In Argentina's case, the Commission initially evaluated two possible kinds of target:

1. A fixed target expressed as an absolute reduction.
2. A dynamic target based on an index of emission intensity.

The fixed-target option required a "reference scenario" to effectively monitor compliance with the commitment. In the Argentine case, this reference scenario is median GDP growth and high activity in the agricultural sector. The fixed-target approach implies defining the volume of permissible emissions ($E_{p(t)}$) and setting it as a ceiling for all scenarios.¹⁹ It was estimated that reductions of up to 10 percent could be achieved in this scenario, where total GHG emissions were equivalent to 111.6 million tons of carbon equivalent (MtC). The third column of Table 6.1 shows the results of adopting a fixed target under each of the nine scenarios considered. However, the adoption of a fixed target could entail two difficulties. Low-growth scenarios might generate phantom reductions ("hot air"), while high-growth scenarios would require very sharp emission reductions (in percentage terms).

Given these disadvantages, the Commission considered another option: a dynamic target, expressed in emission intensity (i.e., the ratio of emissions to GDP). Internationally, various emission intensity proposals have been developed, including one by the Bush Administration in February 2002. A target based on emission intensity is attractive because it does not entail limits on growth and also assumes "growing efficiency" in the socio-economic system, thus generating additional benefits. Therefore, given a gradual percentage reduction of the intensity coefficient, the absolute magnitude of allowable emissions (and hence reductions) then depends on the level of activity.

In the Argentine case, the problem with an emission intensity target is related to the emissions from the agricultural sector which, as noted, tend

to change in response to factors other than GDP. A target linked solely to GDP could introduce a serious risk of non-compliance. If GDP turned out to be relatively low, while agricultural activity turned out to be high, trying to comply with the target would exert significant socioeconomic pressures. At the same time, important changes in the GDP's structure could have devastating effects on the emissions commitments or on achieving greater efficiency. In this case, the risk of generating "hot air" is low, while greater GDP growth would facilitate compliance with the commitment. On the other hand, if the intensity of emissions is established as a fixed relationship with respect to the reference scenario, the result may be permissible emissions that generate hot air (if GDP growth is high, and agriculture activity is low). The fourth column of Table 6.1 shows the results produced by this alternative.

In developing countries, variations in the GDP's sectoral structure make it difficult to adopt dynamic commitments based on an aggregate economic measure such as GDP. Other difficulties involve the difference in the intensity of emissions of these sectors, as well as the links to and dependency of certain sectors on international markets.

Given the difficulties posed by Argentina's economic and emissions structure, technical experts explored other options for a dynamic target and developed a proposal based on an emissions index and square root of GDP. According to Barros and Conte Grand (1999), "The adoption of an index that utilizes the square root of the GDP means that the index itself empirically adjusts to the evolution of past Argentine emissions, as well as projected future emissions." In other words, the Commission selected the index to meet the objective of defining a formula that both accurately accounted for past emissions and produced reductions of up to 10 percent of future emissions.

The equation was formulated as follows:

$$E_{p(t)} = K * \sqrt{GDP(t)} \quad (3)$$

where

$$K = (1 - \rho) E_{BAU(t)}^R / \sqrt{GDP^R(t)},$$

ρ is equal to the percentage of emission reductions with respect to the reference scenario E^R , and $E_{BAU(t)}^R$ is the emission level in the reference scenario.

This equation can be applied to any of the nine scenarios of growth in GDP and agriculture, but probably is only relevant to Argentina. In the

case of Argentina, $\rho = 0.1$ and the resulting emission reductions varied between 2 and 10 percent, while total emissions grew between 22 and 44 percent, relative to 1997 levels. The intensity of emissions would be reduced between 12 and 25 percent compared to 1997, depending on the socioeconomic scenario (Barros and Conte Grand 1999).

The Argentine formula is an option tailored to match local circumstances, particularly regarding the agricultural sector. It could not be applied in other countries except as a model for adapting emission intensity to a specific situation based on relevant criteria.

The reference scenario (medium GDP growth and high agricultural sector growth) results in a 10 percent reduction in emissions compared to the BAU emission level. This target would allow Argentina to comply with the commitment (based on identified mitigation options), generate tradable gains, and avoid the creation of hot air.

The equation, its formulation, and its K value were chosen not on principle but on output, as some authors and expert observers have argued. It is difficult not to subscribe to this point of view given that the technical experts were tasked with finding a formula that accomplished the following:

- Reflected the historical evolution of emissions and their relation to GDP.
- Achieved a 10 percent (approximate) reduction with respect to the most probable or desirable scenario (shown in bold in Table 6.1).
- Guaranteed that under no scenario would hot air be generated.
- Guaranteed that under no scenario would the percentage of emission reductions be greater than 10 percent.

The formula taking the square root of GDP as the variable is the one that meets all these conditions, as long as the constant parameter (K) is 151.2.

The volume of allowable emissions for the reference scenario (10 percent (ρ) reduction in relation to BAU) was predetermined. Given the results of economic and agricultural scenarios, K and the relation with $E_p(t)$ that guarantees a 10 percent reduction from the reference case while generating positive values that do not exceed 10 percent for the rest of the scenarios, were thus established. The incorporation of additional scenarios based on other hypotheses could lead to different values for K and a different relation to GDP. Therefore, the equation could be adjusted and used for a series of specific hypotheses and not just for the Argentine case, as can be inferred from the spectrum of scenarios and the combination of possible options for GDP's evolution and agricultural-sector activity levels.

III. Implications of the Adoption of Emissions Targets

Linking the Target to the UNFCCC and the Kyoto Protocol

As discussed, neither the Kyoto Protocol nor the UNFCCC contains provisions for voluntary commitments, such as the one presented by Argentina at COP 5. Argentina's announcement did not include a strategy for legally operationalizing its target within the international negotiation process. Yet, the voluntary commitment itself was conditional on an action by the COP "to present a new alternative that empowers non-Annex I countries, which like Argentina would like to adopt an emissions target, to participate in the mechanisms established in Articles 4, 6, and 17 of the Kyoto Protocol" (Barros and Conte Grand 1999). Two possible options for making the commitment operational included an amendment to the Kyoto Protocol or the consideration of other legal instruments (i.e., another Protocol) possibly involving another negotiating phase. Neither option was promising.²⁰

The only way for Argentina to take a target that would grant it access to the mechanisms was by joining Annex I of the UNFCCC and Annex B of the Kyoto Protocol. In addition to access to JI, emissions trading, and the "bubble" (Article 4 of the Protocol) mechanisms, this could entail some advantages, such as additional "flexibility" similar to that accorded to economies in transition. Yet the drawbacks were significant, and would entail a long delay. Procedurally, entry into Annex I would require amending the Convention (Article 16) or declaring Annex I status under Article 4.2(g). The Protocol would also have to be amended for Argentina to join Annex B. Article 21 of the Kyoto Protocol states that amendments to Annex B (such as accession) must be adopted at a meeting of the Protocol Parties, which cannot occur until after the Kyoto Protocol enters into force. This requirement would entail a considerable delay for the effective application of the amendment and undermines the argument that Argentina's commitment was presented as a way to contribute to the ratification of the Kyoto Protocol.

Overall, the benefit of accession to Annexes I and B is not evident. In addition to the above difficulties, inclusion in Annex I also implies exclusion from the CDM, which is the only mechanism that allows credit accumulation before 2008.²¹ Moreover, gaining Annex I status may lead others to question Argentina's receipt of foreign aid as a developing country. Proposing an amendment would also be politically problematic, since other developing countries opposed voluntary commitments. Many analysts believed that international negotiating conditions for developing countries

would worsen if discussions were to begin on possible amendments to the Protocol and Convention.

Fortunately, the officials who formulated this target did not contemplate this option. The difficulties and uncertainties associated with existing options motivated Argentine officials to explore an entirely new approach, which they called the “third way.” Voluntary target taking was seen as a potentially more attractive route for developing countries to enjoy some of the advantages of the Kyoto Protocol, without losing their status as non-Annex I countries.

The officials who set Argentina’s target believed it was possible to lead a group of countries interested in establishing emission limits over a long period of time. However, these officials did not take into account that this would significantly change the Kyoto Protocol architecture, and that their idea could not be implemented without a radical modification of the treaty or an agreement on a new protocol. It implied a “flexibility of the flexibility mechanisms” to allow these countries to have access to all three mechanisms, not just the CDM. The hope that a subgroup of countries within the Kyoto Protocol and the UNFCCC would take on voluntary commitments (and perhaps establish another Annex) never materialized. Even if other countries were interested, there was still no procedure for altering the architecture of the Protocol prior to its entering into force.

The idea was not properly developed or explored in depth. Since there are no prior experiences in the UNFCCC or the Kyoto Protocol with this type of approach, it would require considerable effort to develop and implement within the framework of international negotiations. In the end, the voluntary target was shelved. The COP has neither accepted nor rejected it.

Long-Term Development Priorities

It is not very easy to identify the consistency between Argentina’s development priorities and the setting of the emissions target. There are at least three reasons for this inconsistency.

First, the decision to commit to limiting emissions was based on international political objectives, without an analysis of the national economic impact. Second, the government’s development priorities and policies have never been explicitly and systematically defined in strategic plans and planning processes. This has meant that climate protection and sustainable development lack any identifiable policy linkages. Third, within the context of a prolonged economic crisis, the progressive weakening of state institutions aggravated this situation, particularly among institutions dedicated to environmental matters.

Argentine officials hoped that the adoption of a target and the possibility of participating in the Kyoto mechanisms would help create new sources of employment, attract and channel investment into diverse sectors, and produce spin-off benefits for the entire economy. Yet, the lack of a detailed, systematic evaluation of all potential effects of the voluntary commitments makes it very difficult to determine whether the target is consistent with Argentina's long-term interests or to evaluate the conditions under which such a commitment could benefit the country.

Most of the relevant actors agreed that the adoption of an emissions target was not a national priority. This was true at the time, and is even truer today, with the deepening of the economic recession and the financial crisis that has followed in Argentina. In the past 2 years this crisis has dramatically changed priorities in Argentina, compared to the 1990s. However, the actors consulted still believe it makes sense to gradually adopt policies and measures that naturally lead to limiting emissions, as long as doing so does not affect economic growth.

Generally in Argentina, there is little public awareness of environmental matters. This is true in political, technical, and business circles; in the media; and in particular among opinion-makers, as well as among the general public. Achieving the target would entail not only creating greater awareness in the population but also developing a political agenda and an environmental strategy on climate change. Meeting a commitment would require strengthening the institutions that foster participation, a problem of public policy in general, not only environmental policy. Although civil society should potentially play a fundamental role in defining policies related to climate change—such as elaborating mitigation proposals and turning these proposals into norms, standards, and planning—no procedures to assure its participation are in place.

The complexity and ever-evolving nature of the UNFCCC negotiation process make it difficult for sectors such as academia to systematically follow and monitor the negotiations, as they do not have the necessary financial support. The result is that the academic sector's relationship to this process is intermittent, which blocks the possibility of greater participation in the process.

Until the population's everyday subsistence problems are resolved, it will be very difficult to raise public awareness of climate change or improve public participation in the elaboration and definition of policies. Only then will the average citizen have the time and space to reflect on issues that do not seem urgent when compared with meeting basic daily needs.

Taking Advantage of Opportunities in an Eventual Emissions Market: The Tradeoff between Mechanisms and Targets

Future opportunities for non-Annex B countries have been discussed in meetings and in documents on the flexibility mechanisms and on the future markets for trading GHG emission credits. Although countries could benefit by taking advantage of the Kyoto mechanisms and taking “early action” on climate change, they differ in their capacity to influence emission reductions markets and thus benefit from the mechanisms.

In this sense the opening of a global market to trade emission credits would create opportunities for the large suppliers (e.g., China, India, and economies in transition). Together these countries could supply more than 80 percent of the demand. The remaining 20 percent could be distributed among 130 other countries, including Brazil, Mexico, Indonesia, Malaysia, and Korea.²² It is also undeniable that “hot air” will serve to depress price levels, and consequently reduce the range of viable mitigation options for developing countries such as Argentina. Due to higher mitigation costs in Argentina, low market prices mean that Argentina would not be able to take advantage of opportunities to reduce emissions through the CDM, with the possible exception of carbon sinks. So-called no-regrets mitigation projects are one option for Argentina, although many believe that no-regrets options will be harder to get approval for under the CDM.²³ These options, however, would be available if Argentina had access to the rest of the Kyoto mechanisms.

Argentina would have to assume the costs for all actions resulting from voluntary commitments. Emission reductions in compliance with the voluntary commitment cannot be traded (as they are a part of the commitments assumed). The most rational approach to compliance would be to carry out the cheapest measures first, or those with a negative cost, and take advantage of the most favorable situations. Keeping in mind the “no regrets” concept, it would be worthwhile to voluntarily reduce only those emissions that imply assuming an incremental cost that is negative or zero. Yet, Argentina’s voluntary commitment was so ambitious as to eliminate the possibility of generating surplus emission reductions. A lesser commitment would have meant a greater available surplus. The real benefits of making such a commitment stem from the possibility of trading the surpluses.

To be economically rational, the price anticipated from the eventual sale of offsets in the market should be higher than the cost of generating the emission reductions. This includes both the possibility of using no-regrets measures, as well as the possibility of taking other actions and en-

acting measures with positive costs (again, so long as these costs are less than the selling price of offsets in the market). The act of making a voluntary commitment should be based on an exhaustive evaluation of diverse possible scenarios and of the evolution over time of the variables involved to ensure that no economic losses result.

To evaluate whether a non-Annex I country should carry out early mitigation actions, the government should compare the opportunity cost of sacrificing the cheapest mitigation options today with the cost of having to carry out more expensive mitigation options in the future (as the result of commitments that may have to be made down the line). Obviously, these calculations involve high levels of uncertainty due to the behavior of diverse variables. They should be based on discounting the cost of future actions and comparing them with present mitigation actions that could be implemented.

IV. Final Considerations

Argentina's experience in proposing a target yields valuable lessons for others considering a voluntary target. A developing country contemplating making such a commitment should carefully and cautiously evaluate the target's type and level, as well as the conditions set for real compliance. The most salient considerations should include the following:

Need for thorough technical assessment. In the specific case of Argentina, the decision to adopt emissions targets was eminently political. More technical and economic studies were needed to support such a decision. The few studies done on Argentina's potential participation in an emissions market, and the magnitude of this market, did not provide serious arguments on which to base the adoption of the target. In Argentina's target evaluation exercise, resources and political will were needed to mobilize and enhance the existing capacity. Developing countries considering target taking should ensure they have adequate and proven methods, methodologies, and modeling capacity to ensure proper analysis.

Argentina's target proponents underlined the positive effects that "early action"—that is, target taking—would bring. Early action was expected to provide (1) access to more modern, cleaner technologies; (2) the possibility of qualifying for entry into more environmentally demanding markets; (3) development of the institutional capacity necessary to implement such initiatives; (4) greater knowledge of technologies; (5) accelerated development; and (6) a reduction in the costs of all these factors. However, these advantages or benefits were not quantified or estimated.

Energy-intensive industry flocked to Argentina in the 1980s, which could occur again in the future, considering the country's natural resource endowment. The transfer of energy-intensive manufacturing activities to developing countries is thus an important issue that should be included in an assessment. The assessment should also evaluate the relevance and applicability of emission reduction measures undertaken by other countries to its own domestic setting. The transferability of the measures may be limited as each country's circumstances are different. Countries should not assume that what works in one context would work in their own.

Need to carefully consider country-specific emissions conditions. Although target proponents were careful to select a type of target appropriate to Argentina's circumstances, the wisdom in volunteering a target at all, given Argentina's GDP and energy structure, may be questionable.

As a result of the institutional and regulatory reform of Argentina's energy system and the country's dependence on international markets, there is a close tie between the prices of energy and agricultural products and the evolution of the prices of these "commodities" in international markets. The uncertainty of future price scenarios and their impact on the internal activity level of the sectors with the greatest emissions creates an additional difficulty for a possible emission-limitation initiative. Even within a legal and regulatory framework, the volume of emissions depends, in Argentina's case, on exogenous factors that internal policies do not control. A low level of activity in the agricultural sector would imply that emissions grew at a lower rate than GDP, while a high level of activity in this sector would imply a rise that is more than proportional to GDP growth. Neither of these scenarios would reflect increased or decreased efficiency; they would be a function simply of GDP structure.

In the 1990s, the institutional and regulatory structures of Argentina's energy system were transformed. The resulting changes included alteration in behavior during the decision-making process (new actors), growth in economic efficiency with a subsequent impact on prices, the introduction of technologies (which, although more efficient, emit more than the technologies they replaced), and the substitution of primary energy sources. The impact of these changes has been an increase in GHG emissions as a result of greater energy consumption and greater penetration of natural gas in electricity generation, as gas has been substituted for non-emitting sources, such as hydropower and nuclear. Although these changes are recent, initial evidence suggests that emissions in key segments of the energy sector, such as electricity generation, will grow, increasing emissions

intensity as well as the absolute level of energy consumption and thus impeding implementation of the proposed reductions target.

Need to be conservative in economic projections. Argentina's adoption of an emissions target was based on expectations of a more favorable future economic situation. Despite the nine emission projections undertaken, it is clear that, given the current economic collapse in Argentina, these projections were based on overly optimistic assumptions. Developing-country caution in making commitments in the short term and, particularly, within the context of volatile emerging markets and a lack of sustained economic development over prolonged periods, seems justified given the Argentine experience.

Need to leave room for growth. Argentina, like other developing countries, has development needs that could be sacrificed through the implementation of target taking. Energy consumption depends on the demand for services and for energy use related to greater comfort, mobility, communications, and entertainment, among others. In many developing countries, a high percentage of the population cannot meet even its basic energy needs, making it logical that growth in income will also mean a concomitant rise in energy consumption. As a result, increase in income per capita could mean a non-linear increase in energy consumption per capita. A proposal to reduce emission intensity, therefore, could become an impediment to improving the population's welfare since this might translate into limits on the ability to satisfy energy needs.

For target taking, analysis should have taken into account the structure of Argentina's GDP and its vulnerability to significant cyclical shifts. Moreover, the industrialization process, even when based on efficient technologies, implies growth in emission intensity, as industry makes up an increasing share of economic production relative to other, less energy-intensive, sectors. Over the past 15 years, Argentina has gone through a process of deindustrialization that must be reversed in order to address the country's main economic and social problems (including unemployment, poverty, inequity, trade deficit, and external debt). The recovery of industrial growth is likely to increase emissions. This example is relevant to many developing countries that, like Argentina, are experiencing economic deterioration, rising poverty, low GDP levels, and increasing inequity. The reversal of this process could have an impact on emissions intensity.

Need for realistic assessment of technology and emissions-related markets. In a developing country such as Argentina, the greatest potential for

improving efficiency depends on incorporating technologies developed by industrialized countries, which are delaying compliance with their emission reduction commitments, and thus slowing the pace of technological development. Stable, or even lower, fuel prices are anticipated, which do not provide an incentive for the development and incorporation of more efficient technologies, particularly if they require significant additional investments.

Need for domestic policy relevance and buy-in. It is not enough to make voluntary commitments within the context of international pressure, particularly when those commitments imply actions and policies affecting all productive sectors and civil society. The absence of a broad and democratic debate and the lack of support from different social actors for the target demonstrate that its implementation would face numerous obstacles. At best, the commitment will become a voluntary posture that will never really be put into action.

While it is true that the social, economic, and environmental dimensions are interconnected, in reality issues such as short-term material and social welfare are a much higher priority for civil society. In Argentina, members of civil society (with the exception of environmental interest groups and academics) have hardly participated in discussions on environmental issues, and representatives of productive sectors and the government in general have also shown little interest. This clearly shows that the environment is the concern of a small group of actors with a certain level of knowledge and understanding of the climate problem's importance, rather than a national priority. Environmental issues are becoming even less of a priority in the wake of country's deepening economic and social crisis.

Although the effort to include broader government and public participation in the target-taking exercise was insufficient, it represents a first attempt toward gathering disparate sectors and actors in such an exercise. The process clarified the need to set a national long-term strategy combining climate concerns and economic development. As such, the effort in Argentina was worthwhile and unusual for a developing country.

Need for long-term view. The selected actions also need to fit within the framework of long-term state policies. Otherwise a change in administration will yield policy changes that do not provide continuity. Argentina's announcement was made in the context of short-term politics and was not linked to longer-term sustainable development policies. The best evidence of this is the lack of agreement, even among state entities respon-

sible for relevant sectors. This reality is clearly evident in the lack of concurrence and support from the energy sector.

Need for realistic understanding of international order. It is important to reemphasize that the administration, at the time it made the commitment, tried to portray Argentina as a country that shared the reality of industrialized countries, rather than emphasizing its status as a developing country. Other actions, such as applying for entry into the OECD and rumors of incorporation into Annex I, all reinforced this discourse. Perhaps this posture was based on the belief that the country was an important international player.²⁴

As regards international negotiations on climate change, neither the Convention nor the Kyoto Protocol contemplates this type of commitment. This presents serious obstacles and a significant negotiation challenge, as any modification of the Kyoto Protocol is perceived as threatening by many developing countries concerned that change would lead to more unfavorable conditions for them. While searching for answers to a global problem, everything seems to indicate that it is advisable to stay within the framework of agreements and consensuses reached and to avoid creating conflictive situations. Many observers viewed Argentina's proposal as an attempt to destroy the consensus inside the G-77 and China or, at least, as more of a confrontational position than a conciliatory one. In addition, Argentina's close alliance with the United States entailed serious problems in its relationships with its natural allies, such as the main trading partners in the MERCOSUR regional integration agreement.

The national circumstances of each Party imply that proposals and formulas cannot easily be adapted to each country's situation. Perhaps just certain key elements could be identified that should be included in the design of any voluntary commitment. The adoption of different targets that take into account the different national circumstances of each country could make the participation of developing countries easier, even if it makes the monitoring and verification of the commitments more complex. It could be more attractive for some developing countries to make voluntary commitments in order to take advantage of certain business opportunities resulting from the Kyoto Protocol, as long as these can be positively linked to each country's development strategy.

Some authors maintain that the principal error in Argentina's proposal is that it rests on trying to gain access to mechanisms reserved for the Annex I/Annex B countries, while also retaining access to the CDM. This would imply opening up discussions on the Kyoto Protocol's modification

or the possibility of creating other instruments that other key developing countries would not support.

Finally, the lack of serious initiatives from Annex I countries and donors is the context in which Argentina's proposal and proposals from other developing countries should be analyzed. The actions of these actors have not encouraged developing countries to participate in the process. The pressure of certain Annex I countries on developing countries to commit seems paradoxical: Those that are pressuring have already agreed to obligatory quantified targets, and yet many are not taking concrete actions to comply. Thus, for a developing country to seriously consider taking on a target, industrialized countries must overcome their resistance to implementing the reductions needed to meet the commitments to which they have agreed.

The need for a serious and viable plan to integrate developing countries into the quest for climatic sustainability is a permanent and open challenge. It will not be resolved through isolated formulas, indices, or commitments that are difficult to verify and monitor. Such measures would lack the necessary international consensus and, thus, would have dubious impact on solving this problem.

In the end, the Argentina proposal was inconsistent, unworkable, and lacked policy coherence and domestic support. It provides, however, an excellent case study about how a developing country—with its own mix of political, economic, social, and environmental forces—grappled with the complex challenge of non-Annex I states to participate meaningfully in the Kyoto Protocol. So conceived, it may begin to serve as a repository for “how to” and, equally important, “how not to” undertake international and domestic policy discussions about the adequate articulation to the global effort to prevent climate change.

Notes

1. Dr. Carlos Saúl Menem was President of Argentina from July 1989 through December 1995 and from December 1995 through December 1999 (second period). During his entire mandate, Engineer Maria Julia Alsogaray (President of COP 4 in Buenos Aires) was in charge of the Secretariat of Natural Resources and Sustainable Development (government environmental agency in Argentina). This secretariat is a ministry and is directly dependent on the executive branch. Alsogaray was in charge of all environmental matters and had a very close relationship with the President, receiving preferential treatment.
2. New Zealand also presented a proposal at an opportune moment, asking for commitments from all Parties. During COP 4, developing countries had heated

- discussions with the United States, when it tried to force them into making voluntary commitments.
3. Even before the Kyoto Protocol, U.S. industries launched a campaign to convince the public that a strong agreement on climate change would increase prices of all goods and that countries such as China, India, Mexico, and South Korea would become “free riders,” while U.S. industry would lose its competitive edge.
 4. On December 10, 1997, when celebrating the agreement reached in Kyoto, the U.S. President stated that important challenges remained, particularly in ensuring meaningful participation of developing countries in mitigation efforts. He said that industrialized countries had already taken firm steps in terms of emissions mitigation by accepting quantitative commitments, noting that, “We do not accept binding obligations unless key developing countries meaningfully participate in this effort.” On August 12, 1997, then-Vice President Al Gore reiterated that in order to ratify the treaty and send it to the Senate, developing countries would have to participate in a significant manner. The problem is that “meaningful participation” is a vague concept that has not been defined, allowing the U.S. to reject any efforts by arguing that they are insignificant.
 5. Declaration of Intention of the Governments of the Republic of Argentina and the United States of America on Cooperation for Sustainable Development, Joint Implementation and Jointly Implemented Activities to Reduce Greenhouse Gas Emissions. Signed on October 16, 1997 in the city of San Carlos, Bariloche by Guido Di Tella (then Argentine Foreign Minister) and Madeleine Albright. *Diario Clarín*, October 17, 1997, Buenos Aires; *Diario Río Negro*, October 17, 1997, Viedma, Río Negro, Argentina. It should be kept in mind that this declaration was signed before COP 3 and the establishment of the Kyoto Protocol.
 6. The Bariloche Presidential Declaration. *Diario Río Negro*, October 17, 1997.
 7. Argentina explored this alternative and led a consultation group made up of Latin American countries during the seventh meeting of the Ad Hoc Group on the Berlin Mandate (AGBM7). However, these consultations on a new proposal did not produce any concrete results.
 8. The president of COP 4 was Engineer María Julia Alsogaray, who was also the Secretary of Natural Resources and Sustainable Development of Argentina.
 9. See CSE (1998). As an example, the Brazilian delegation declared that it would not accept the inclusion of voluntary commitments on the agenda of the COP 4 meeting, and G-77 and China both supported this argument. These countries expressed their views in the conference with the Indonesian ambassador (chair of the G-77 and China at that time). See Ministry of Science and Technology (1999), <http://www.mct.gov.br/clima/ingles/negoc/interv6.htm>. The Brazilian position was ratified during various public presentations by its delegations. For example, see United Nations (1998), <http://www.un.int/brazil/speech/98d-2com-clima.htm>. It is important to consider Brazil’s position on this matter and to keep in mind that it is Argentina’s main trading partner in MERCOSUR, along with Uruguay and Paraguay, and that the productive structures of both countries are integrated (particularly the automotive sector).

10. It should be recognized that María Julia Alsogaray's intention was extemporaneous, since this matter had already been decided in 1997 and was revisited just before COP 4. It was not politically feasible to present this issue once again in November 1998.
11. Castellini (1998). It was argued that the creation of commitments was not the original intention and that these commitments were not meant to be obligatory. The idea was to permit countries to do so if they wished, and voluntary commitments were intended just to limit emissions, not eliminate emissions. However, the proposal was not even discussed.
12. See Gobierno de la República Argentina (1999) concerning the Argentine situation, and Zhang (2000, 2001), referring to the global situation.
13. The actors consulted include individuals from academia, NGOs, business, government, and interest groups, as well as the officials responsible for the design and development of the target.
14. Diverse military actions, such as the immediate participation with peace-keeping forces and support for the Gulf War (sending of military aircraft), as well as votes in various international forums, are all notorious examples of this alliance.
15. In addition to the government bodies mentioned in the text, the Commission included the Secretary of Economic and Regional Programming; the Secretary of Industry, Commerce, and Mining; and the Secretary of Transport, all within the Ministry of the Economy and Public Works and Services.
16. The level of agricultural activity is strongly influenced by the international meat and grain market. As a result, emissions produced by this activity do not depend on the behavior of local economic variables but on the expected international context for future prices of primary products.
17. As Table 6.1 shows, the method of the square root target in all the cases (scenarios) guarantees a positive emission reduction, both in absolute value and in percentage, in comparison with the BAU scenario.
18. Barros and Conte Grand (1999).
19. In this case, the emissions permitted during the commitment period total 100.4 million tons of carbon equivalent.
20. This issue was analyzed in Gobierno de la República Argentina (1999), based on a paper by Embree and Wilkinson (1999). Also see Girardin (2000).
21. This is the main reason for the insistence on maintaining access to the CDM.
22. MIT (1997), cited in Gobierno de la República Argentina (1999) and Girardin (2000).
23. Although there are many documents on this topic, we recommend Reid and Goldemberg (1999).
24. Another telling example is the pretension to mediate in the Middle East conflict.