

greenhouse gas emissions will grow at a higher rate than in the developed economies. Despite this, in recent decades Argentina has made a considerable effort to achieve clean economic growth. Large public and private investments have been earmarked to boost efficiency in the energy sector, replacing more polluting sources with others that are non-polluting or have lower relative emissions (e.g. natural gas and hydroelectric power instead of oil and coal). In the present decade, the country has undergone sweeping structural changes which, in addition to achieving high growth rates, made for a marked reduction in the intensity of greenhouse gas emissions as compared to GDP. The intensity of emissions, measured as the ratio between emissions (in thousands of tonnes of coal equivalent) and GDP (in millions of 1993 Arg\$), were reduced from 0.33 in 1990 to 0.28 in 1997, i.e. by 24.34%. The energy sector has already achieved very high levels of efficiency and therefore additional reductions in greenhouse gas emissions will chiefly require major efforts in other sectors.

Even so, Argentina, sharing the global concern over the serious ecological, social and economic consequences of climate change and adhering to the principle of common but differentiated responsibility, believes it is necessary to continue adopting new measures which, adapted to its specific situation, will help to reduce greenhouse gas emissions.

One of the greatest challenges in designing goals for the reduction of greenhouse gas emissions for developing countries is to allay risk and uncertainty by constructing targets that will make it possible to reduce emissions without abandoning the goal of sustainable socioeconomic development. Over the last two decades, the Argentine economy first experienced a long period of stagnation followed by one of steady growth, which was interrupted on account of the impact of external recessions that undermined the factors of economic growth. In the 1980s, growth in GDP was close to zero and was sometimes even negative, while from 1990 to 1997, GDP grew at an annual average of 7.3%. This upturn was the consequence of domestic policies, sweeping structural reforms that helped to reverse the earlier cycle of stagnation, and the transmission of external factors that economic liberalization helped to reinforce. Macroeconomic projections for 2008-2012 performed to design the emissions goals point to a wide gap between the scenarios for higher and lower growth in GDP. As a consequence, the projections for greenhouse gas emissions also vary widely, with high levels of uncertainty regarding future emissions.

In Argentina's case, uncertainty regarding future greenhouse gas emissions is driven by the specific features of the agricultural sector in the structure of the economy and in the structure of greenhouse gas emissions, since agriculture's future depends largely on international markets. Although agriculture contributes less than 7% of GDP, the emissions it generates account for 40% of the total. Historical series indicate that changes in the agricultural product and in sector emissions are not correlated with GDP or with total emissions. A large part of the uncertainty regarding future emissions by the agricultural sector lies in the fact that the Argentine cattle herd has recently been declared free from foot-and-mouth disease and can therefore be sold on markets where Argentine exports had previously been banned.

Therefore, it would be inadvisable for Argentina to adopt a fixed goal for greenhouse gas emissions that is not linked to the evolution of its economy. Although the adoption of a relatively undemanding target could reduce the risk of non-compliance, it would also imply a high probability that little or no mitigation of greenhouse gas emissions would be required. On the other hand, a more demanding target could be risky since under certain economic conditions, it might be beyond the country's capacity to mitigate the greenhouse gas emissions that a tougher goal would call for.

Accordingly, one alternative to a fixed goal is a dynamic goal based on some ratio between emissions and GDP. Owing to the relatively large share of total emissions generated by the agricultural sector and based on lower forecast growth in emissions, Argentina's greenhouse gas emissions would be approximately proportionate to the square root of GDP. Therefore, a dynamic goal based on a measurement of intensity that links emissions to the gross product - even though not directly but on the basis of the square root - appears to be an optimum method of attenuating uncertainty while at the same time guaranteeing an effective reduction in emissions.

The goal for emissions would be expressed as $E + I \cdot P$, where emissions (E) are measured in tonnes of