

ARGENTINA

Sustainability in Industry and Agriculture: A Mixed Record

Daniel Chudnovsky

In the early 1990s, Argentina introduced a series of structural reforms liberalizing the economy and promoting foreign direct investment (FDI). Have trade liberalization and FDI contributed to environmental improvements or have these changes come at the expense of the environment?

There are two major theories about trade's effect on the environment. The first, a *win-lose* scenario, posits that trade liberalization leads to economic growth, which, while increasing incomes, also results in an increasing *scale* of economic activity and, therefore, greater environmental degradation. This effect might also be compounded by a *composition* effect, in which countries specialize in more environmentally damaging industries.

The second scenario, on the other hand, is a *win-win* scenario, in which trade strengthens both economic performance and environmental quality. The improvements stem from a more efficient allocation of resources, greater diffusion of environmentally friendly technologies, and rising incomes, which, according to the Environmental Kuznets Curve hypothesis, should actually contribute to progress in environmental quality.

In the case of Argentina, an examination of environmental management practices in manufacturing and the growth of soy production suggest that the results have been mixed. Some progress has been made in the agricultural sector as a result of the adoption of transgenic soy, while in the manufacturing sector environmental improvements have been scattered. These outcomes could be improved by changes in national and regional policies and institutions.

Context

The reforms of the 1990s included the liberalization of trade and investment, as well as a massive privatization program and the Convertibility Plan, in which the peso was pegged to the dollar. These reforms were followed by several years of strong economic growth.

In 1999-2002, the country entered a profound crisis in which GDP declined by more than 20 percent, the country defaulted on its large external debt, the peg to the dollar was abandoned, and unemployment and poverty reached record highs. The country has since resumed economic growth thanks to favorable international commodity prices. However, sustainable growth, employment, and poverty remain key challenges for the country.

In its efforts to address some of these economic challenges, Argentina has been active in the trade negotiations in the FTAA and WTO, with the primary goal of gaining market access for its exports and with concerns over concessions being demanded in the liberalization of services. While Mercosur has foundered in recent years, Argentina finds itself in an emerging alliance with Brazil over several important issues, particularly the issue of subsidies in agricultural trade.

Environmental Management in Manufacturing

One way to assess the environmental impact of liberalization is to examine the importance of highly polluting industries in manufactured exports. In the case of Argentina, trade liberalization does not seem to have generated either a cleaner or a dirtier composition of exports. Both before and after liberalization, Argentina's pattern of exports has been dominated by medium and highly polluting industries, as defined by their toxicity to humans. In 1990, these sectors accounted for 72 percent of the total manufactured exports; in 1997, such industries still represented 69 percent of the manufactured exports.

At the same time, however, fewer of Argentina's exports were subject to international environmental requirements: Mercosur increased in relative and absolute importance as a market for Argentine exports, while developed countries declined in importance until 1999. This reduced pressure to improve environmental standards.

Nevertheless, some firms improved their environmental management practices, in many cases as a result of increased competition. A survey of 32 large firms and 120 small and medium enterprises (SMEs) in 1997 operating in various sectors in Argentina suggests that cost-reducing strategies often included environmental improvements, particularly through better use of resource inputs and waste products.

Easier access to environmental technologies and processes, consumer pressures, and – in the case of transnational affiliates – global corporate policies also contributed to improvements in environmental management. In general, better environmental performance tended to be associated with firms that were larger, export-oriented, affiliated with foreign companies, and that had newer facilities. Despite some improvements in some firms, however, spillovers to other stages in the production chain were weak, and a lack of domestic innovation capacity limited the ability of firms to respond to idiosyncratic environmental challenges.

Overall, environmental performance remained well below the highest international standards. While trade liberalization did not seem to have resulted in declining environmental quality in the manufacturing sector, neither did it appear to have improved it.

Expanding Soy Production

Unlike the manufacturing sector, the agricultural sector saw improved environmental conditions as a result of trade liberalization. This occurred primarily through the widespread adoption of no-till cultivation practices and transgenic glyphosate-tolerant soy. Glyphosate-tolerant soy now constitutes over 90 percent of total soy production, which has itself increased dramatically – from 10.9 million tons in 1990/1991 to 35.0 million tons in 2002/2003. This generated nearly 200,000 jobs during the 1993-1999 period. Soy has become the country's leading export.

Several factors have contributed to this rapid adoption of the transgenic soy, which has not been replicated in the case of other transgenic crops, such as Bt corn and Bt cotton. Costs are lower than for conventional crops, with significant savings in farm management. Unlike in many other countries, there has been broad public support for the adoption of transgenic crops. Likewise, Argentina has not encountered any rejection of the transgenic soy, exported as oil and beans, in its export markets.

In addition, the cost of the seeds to farmers in Argentina has been relatively low. The glyphosate-tolerant gene was first introduced to Argentina when the developer – Monsanto – licensed it to another company. Consequently, when Monsanto sought to patent the gene in Argentina, it was unable to do so, since it had already been released. The company was therefore unable to charge a fee for the technology or restrict the use of the seed, keeping the price low. There is also an active black market for seeds, with 35-50 percent of seeds sold uncertified. In addition, farmers in Argentina have the right to save seeds for their own use. At the same time, the cost of glyphosate has declined as a result of competition among producers. So unlike most transgenic crops, benefits have accrued primarily to farmers rather than to the seed companies. According to one study, GM soy farmers captured over 80 percent of the gains from the technology, compared to less than 20 percent for Bt corn and cotton.

Environmental improvements resulting from these developments have taken two principal forms. The first is a dramatic increase in the use of no-till cultivation practices, which benefit soil fertility and carbon sequestration. The number of hectares under no-till cultivation rose from approximately 300,000 in the 1990/1991 season to over nine million hectares in the 2000/2001 season. Second, while the use of glyphosate has increased significantly, there has been a simultaneous decrease in the use of more toxic herbicides. Consequently, the adoption of transgenic soy has represented a win-win scenario thus far.

There are, however, long-term concerns. First, soil fertility may be unfavorably affected by excessive reliance on a single crop, as has happened since 2001, pushed by high international prices. The Pampas will lose fertility if farmers do not institute regular crop rotations. Second, there are indications

that soy expansion is driving the agricultural frontier into ecologically sensitive areas. Third, research on the long-term impacts of the combination of transgenic soy, glyphosate, and no-till cultivation has been inadequate. Finally, increasing consumer attention to the issue of transgenic products may eventually have adverse impacts on Argentine soy exports.

Conclusion

The experiences of the manufacturing and agricultural sectors in Argentina thus far hold several policy lessons for expanding trade while improving the environment. In particular, while it is critical to keep the economy open to international flows of technology and investment, this must be complemented by the development of endogenous innovation capacity, both for technological development and for the adaptation of environmental indicators and processes to local conditions. To this end, it is important that WTO negotiations extend Article 8 of the WTO Agreement on Subsidies and Countervailing Measures, which permitted certain types of subsidies, including support for research, adaptation to new environmental requirements, and assistance to disadvantaged regions. It is also important to encourage international cooperation and financing for strong institutions and endogenous innovation capacity in developing countries.

International environmental standards and consumer preferences tend to drive environmental management practices. As Argentina's export portfolio includes more trade with Mercosur countries, that trading bloc's environmental policies will play an increasing role in the behavior of Argentine firms. So will consumer preferences abroad, and Argentina's current dependence on GM soy makes the country particularly vulnerable to growing sensitivity around GM products.

Overall, Argentina's experience with trade liberalization shows that, without building adequate institutions and public policies to deal with pervasive market failures such as those related to environment and innovation issues, sustainable development is not possible. While some stringent environmental regulations are in place, enforcement tends to be very lax. Without both regulations and enforcement capacity, there is still the chance that environmental conditions will not worsen, as apparently happened in the cases of GM soy and among large firms improving their environmental management. But these are exceptions that are unlikely to be repeated.

The original Brasilia Discussion Paper is available at:
<http://ase.tufts.edu/gdae/pubs/rp/DP03ChudnovskyJuly04.pdf>