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Water as a strategic global resource: economic and political implications for Latin America and Brazil*

John Wilkinson**

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Just as water underpins life it is also the precondition for most economic activity. For the greater part of the last century, however, both of these functions were largely taken for granted in the industrial world and any major challenges or shortfalls seen as amenable to human engineering in the form of dams and fluvial transposition.

The Rio '92 Summit and the adoption of the global objectives of the Millennium Goals marked a turning point in attitudes to water and have now placed the human right to water at the centre of the global political agenda. In a similar way, the surge in demand for primary commodities which has accompanied the continuous and rapid growth of the emerging economies, has highlighted the central role of water as an economic good. Growing evidence of the effects of climate change in the form of more frequent and serious floods and droughts has further confirmed the importance of access to and control over water.

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Water, however, is a singular product and is not interchangeable in the way that all other commodities, in principle, are. And if, like other commodities, it has a fixed and finite supply, water exists in a variety of inter-related forms subject to a reproduction cycle which makes its availability temporarily and geographically variable. Water's pervasive role in economic activities and its centrality for human reproduction mean that more than any other good it is subject to multiple and often conflicting claims. As a basic necessity of human existence, efforts to condition its availability on market criteria have met with sustained opposition. Above all, it is the perceived scarcity of water as an economic and human resource which has now placed hydro-politics at the centre of the global agenda.

The distribution of fresh water sources is a decisive factor governing the emerging politics of water. Latin America, with 8% of the world's population has 31% of fresh water supplies, although within the region these are very unequally distributed. The world's semi-arid lands, on the other hand, with a third of the globe's population have access to only 8%. In addition, future population growth, projected to increase by 50% up to 2050, will be largely concentrated in these regions. Direct trade in water can only marginally mitigate these distributional inequalities. Water is heavier than petroleum making costs prohibitive.

Cooperation and more critically conflicts arise most obviously among the same types of users, as in the case of farmers up and downstream of river waters. Increasingly, however, in a context of both greater scarcity and increasing social and economic differentiation, the potential for conflicts and the need for cooperation arise from the demands of different users. Six types (at least) of water use can be identified: 1) agriculture, especially irrigation, 2) industry, 3) human, especially urban, consumption,

4) production of energy, 5) means of transport, and 6) leisure activities. To this we should add the function of river run off water into the sea in the renovation of ecosystems. On a global average, some 70% of fresh water is appropriated by agriculture in the form of irrigation, industry is responsible for 14%, with domestic consumption absorbing the remainder. Clearly these averages vary sharply both between and within countries. In a global context characterized by rapid industrial /urban growth and water scarcity it is not surprising that water has become a key arena of conflict, at local, national, regional and global levels.

On aggregate Latin America is the most water favored continent in the developing world. This is expressed in the predominance of hydroelectricity in the composition of its energy generation. It is also evident in the profile of its principal, globally competitive economic activities, mining and agriculture, which are both heavily water intensive. Nevertheless, water availability is primarily concentrated in the South of the continent with water scarcity being most pronounced in Mexico and the Caribbean. Many regions in the South, however, also suffer from water shortage and 25% of the continent is now characterized as semi-arid or arid. Geographical problems affecting access are compounded by huge inequalities in income distribution.

Latin America's key economic export sectors are land-based rural activities but of the developing continents it is by far the most urban, with almost 80% of its population in cities. Urban water services, therefore, in a context of rapid urbanization and sharply polarized living standards, have become a central challenge and source of conflict.

The politicization of access to water and the emergence of water markets are reflected in the campaigns and mobilizations which characterize both proponents and opponents of water markets.

While the privatization promoted in the '90s has proved not to be the solution, it has often been unjustly identified as the problem. In fact, with the withdrawal of private firms, as in the case of Bechtel in Cochabamba, the basic problems of adequate and healthy urban water supply in Latin America's cities have been shown to persist.

While in no way comparing with the tensions and conflicts which transborder flows of water pose in other regions of the world, Latin America is not immune to the challenges of hydropolitics. The most dramatic of these is the recurrent conflict over Mexico's access to the water from the Colorado river. On the other side, mining activities, which require large quantities of water, particularly in the Andean countries are leading to the formalization of agreements on transborder flows. Transborder Treaties are already in place for the joint management of the Southern Cone's River Plate Basin and the rivers of the Amazon region.

Brazil has developed a legislative framework attuned to global concerns both with regard to water as a basic human right and to the economic value of water deriving from its increasing scarcity. In practice, however, water is very unequally located with only 6% of its availability in the Southeastern region which has to support 42% of Brazil's population. Brazil's legislative framework, on the other hand, is strong on principles but weak on detailed regulation and implementation which leaves great uncertainty with regard to governance and responsibility. Almost 80% of Brazil's fresh water is in the Northern Amazon region subject to increasing restrictions on its use by international opinion.

Currently Brazil's agriculture is overwhelmingly dependent on rainfall and/or inefficient systems of irrigation both of which are now called in question either by climate change or the perspective of water

charging. If Brazil is to maintain its position as the world's most competitive agricultural commodity exporter and ensure domestic food security, in addition to greater exploitation of its waterways for transport, efficiency in the management of water resources will become increasingly central.

Climate change will significantly affect the regional availability of water for Brazilian agriculture. EMBRAPA has elaborated projections for the impact of climate change on Brazil's principal crops. Over the medium to long term, soy is seen to be the crop which will most suffer from climate change. Sugarcane, on the contrary, is the crop most favored by such changes. A range of other crops including beans and manioc also become more vulnerable, particularly in the Northeastern region.

A greater awareness of water scarcity is evident at the consumer level with the emergence of a range of water saving products and water measurement systems. The National Water Resources Plan for 2012 promises to firmly anchor policy within a perspective of confronting climate change through the development of water ecosystem zoning in combination with the adoption of water footprint criteria for decisions on the sustainability of economic activities. Nevertheless, the debates over the New Forest Code, which involves proposals for reducing areas of forest preservation near rivers and lakes, suggests that there is still a very wide gap between academic, public policy and citizen awareness and the immediate interests of powerful economic lobbies.