

# Cloudy waters

After 15 years there's not much to show for Brazil's national water policy.

Photo: Biwa/Getty Images

**Solange Monteiro**, Rio de Janeiro

**B**razil owns about 10% of the world's fresh water—an essential resource for food production. However, water is unevenly distributed across the country: the northern region, where there are the fewest people, has most of the water, while the Southeast, which has two of the largest cities, Rio de Janeiro and São Paulo, is threatened with water scarcity.

With passage of the National Policy of Water Resources (the Water Law) in 1997, Brazil acknowledged that water is a limited valuable natural resource. Since then, water management has begun, with division of watersheds, a plan for water resources, allocation of water rights among consumers in each region and sometimes charges for its use,

and data collection for a national water information system.

However, 15 years later, the results fall short. The institutional framework that the law envisaged was not disseminated throughout the country but was concentrated in the Southeast. Charging for water use, which would encourage sensible consumption and raise funds to improve the watershed, is still the exception. Of watersheds under federal jurisdiction, only four charge for water use: Paraíba do Sul, Piracicaba-Capivari-Jundiaí (PCJ), São Francisco, and Rio Doce. By 2011 the four had taken in R\$209 million. Charges are negligible by international standards.

Marilene Ramos, director, State Environmental Institute (INEA), has tracked the efforts to carry out water policy since its beginning, such as

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*Marilene Ramos*

creation of the Paraíba do Sul River committee, which began charging for water in 2003. “In France, revenues from charging for water use represent 30% to 40% of the investment budget of the watershed agencies,” she says. “Here, the average is 6% to 7%. There, annual water revenue is equivalent to US\$30 per capita; in Brazil, it is not even US\$1.”

**A FEE, NOT A TAX**

For Vicente Andreu Guillo, director, National Water Agency (ANA), revenue collection is inversely proportional to resistance to pay for water use. Laura Stela Perez, technical advisor of the Department of the Environment of the State of São Paulo adds, “There is widespread misunderstanding. Many believe it is a water tax. But how could it be a tax if users are defining what they pay?” For years, Perez has been involved in the rather sluggish debate on water use charges in the Alto Tietê Basin.

ANA’s own study of users in the Paraíba do Sul Basin found that after water charges were established only 25% of respondents took measures to use water more rationally. But Giordano Bruno Bomtempo, an ANA expert, is seeing

signs of change in consumer attitudes. “In the Rio Doce Basin, which established water charges at the end of last year,” he says, “collections are higher than those charged in other basins.” He adds that, “While in the Paraíba do Sul Basin each cubic meter captured costs 1 cent of Brazilian *real*, in Rio Doce Basin it costs 18 cents, and charges for organic matter released into rivers are 7 Brazilian cents per kg/BDO compared to 10 Brazilian cents in the Rio Doce.”

**A COLLISION OF INTERESTS**

In a participatory and decentralized system, each sector will seek to look after its own interests. According to experts, irrigated agriculture, which uses the most fresh water, is the sector that most opposes water charges. “Can you imagine an industry with an interest group so strong that it can bring down a forest code?” INEA’s Ramos asks. “It is very difficult to collect water charges from farmers. France and Germany could not do it either. In France, collection of water charges from the agricultural sector accounts for less than 2% of total revenues.”

Representatives of agribusiness, such as former minister Roberto Rodrigues, argue that irrigated agriculture uses water but does not necessarily consume it: 90% of irrigation water returns to the hydrological cycle, they say. ANA data, however, shows that agriculture takes 54% of total water consumption, of which it consumes 72%; industry takes 17% and consumes 7%; and cities take 22% and consume 9%.

Laura Antoniazi, Rede Agro researcher, says that agribusiness generally works with tight costs and volatile margins, which makes it sensitive to any new charges. “We cannot deny that in Brazil, water is indeed wasted by some crops. But there are also advances. In Rio Grande do Sul rice cultivation—one of the most water-intensive crops—has reduced water use from 15,000 cubic meters per kilogram in the 1970s to 8,000 today,” she explains.

Guillo also sees room to improve efficiency, since the loss of treated water can reach 50%. “Today, industry is working to improve efficiency quickly because it can be directly reflected in productivity gains,” he says. Examples abound, even among heavy users of water. CSN, the national steel company, used to use 10 cubic meters of water per second. Today that has been cut to 5 and CSN is planning to reduce that to 2.

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If companies do not become efficient, the cost of water can shoot up. An example is the new Petrobras chemical plant being built in Itaboraí. Because water supply in the region is insufficient, Petrobras had to make an expensive decision: the company will bring in water from the Alegria water treatment station through a pipeline under Guanabara Bay, an investment costing about R\$600 million. Ramos comments that “Petrobras will also need

to invest another R\$250 million to build a dam on the Guapiaçu river to provide safe water to the expected increase in population at its new plant site.”

The risks of water shortages are stimulating industry to undertake water-saving projects, says Demetrius David da Silva, vice chancellor,



Water shortages are already affecting São Paulo city.

Photo: Ricardo Zigi Koch Cavalcanti.



University of Viçosa, Minas Gerais state. He spent the last two years coordinating a study to establish a coefficient matrix of consumption so that industry can estimate the water resources necessary to expand a given economic sector. “It was only quantitative; we didn’t

study the quality of water returned,” he says. “Nevertheless, it was an important initiative given that the latest data for Brazil was from the 1970s.”

The study was delivered in April to the Ministry of Environment. There has been progress in some areas of water use. The pulp and paper industry, for example, reduced its water use from 200 cubic meters per metric ton of product to between 10 and 46 cubic meters. For iron ore production water use has been reduced from 6 cubic meters to 1 cubic meter. “We are beginning to establish an important relationship with industry, and see that there has been significant progress,” da Silva says.

### ADJUSTMENTS NEEDED

Jorge Peron, environmental expert, Federation of Industries of Rio de Janeiro (Firjan), argues that Brazil needs to not only collect more in water charges, but also improve the way the funds raised are used. He says that from 2004 through 2011, the Paraíba do Sul River watershed collected R\$69.8 million in water charges

Photo: Ricardo Zigi Koch Cavalcanti.



Irrigation of crops consumes a huge amount of water.

plus R\$14 million in other income; yet of the R\$83 million total, so far only R\$25 million has been invested. “Why should we collect more in water charges, when we have almost R\$60 million in cash?” he asks.

To ensure more efficient use of water resources, the ANA and the National Confederation of Industries in February signed an agreement for technical cooperation. The partnership, effective through December 31, 2014, will look into ways to allow water customers to access part of the water charges collected to buy equipment and production processes to make water use more efficient. Currently, collected water charges cannot be transferred to private companies because they are a public resource.

Another key issue in Brazil is how to revise the institutional framework for water management, which is complex and slows the pace of work. For instance, there is an excessive number of watershed committees. France has five; Rio de Janeiro state alone has 9 and São Paulo



Photo: Ricardo Zigi Koch Cavalcanti.

The Doce River basin supplies cities in Minas Gerais and Espírito Santo states.

state 20. Then there is the problem of overlapping jurisdictions when a river crosses more than one watershed or state and federal administrations—something that happens in 50% of cases—and is thus subject to multiple decisions. Ramos argues that the ideal would be to replicate the model of Rio de Janeiro state, where all consumers are charged for use of

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water regardless of whether their region has a watershed committee or agency. The priority should be streamlining, says ANA’s Guillo. “We are seeking to harmonize management of watersheds with the administrative boundaries of each region,” he says.

“Today we have the awakening of a global consciousness that the water issue is really critical,” says Ramos. She points out that the federal government is willing to prioritize sanitation, with several projects included in the Growth Acceleration Program. “Today we have enforcement and fines for industrial pollution, but untreated urban sewage is still a big problem,” she says, noting that, in Rio de Janeiro state, sewage treatment covers only 33% of the population. ▀