

Brazil- PCJ Consortium

PCJ- Inter-municipal consortium in the Piracicaba, Capivari and Jundiá basins (PCJ).

SUMMARY

Due to reduction in water quantity and quality, the municipal water utilities and some businesses in the area of the watersheds of the Piracicaba, Capivari and Jundiá rivers (PCJ) formed an Inter- Municipal Basin Consortium (PCJ) to manage a watershed protection fund (1999). So far, contributions to the fund come from the revenue of the water utilities not an extra charge on water users. The idea is to protect the water 'generating areas' (along water courses), improve waste management, water use efficiency, etc. Interesting legislation issues: a) the complications of setting up a scheme where one municipal water utility is required to invest outside its territory, resulting in the creation of the inter-municipal PCJconsortium, and b) this scheme helps landowners rehabilitate graded areas (along the margins of natural water bodies) that were meant to be protected under the national Forestry Code.

MATURITY OF THE INITIATIVE

Ongoing since 1989 (contributions officially began in 1999)

DRIVER

Problems with water quality, especially in dry periods (due to proximity to urban areas and intensive agriculture and industrial activities) and reduction in water quantity due to sedimentation of the riverbed. In the case of Piracicaba in particular, water had to be sourced from the Corumbataí sub basin instead of the main Piracicaba river as due to declining water quality and flow this had ceased to be a viable source.

STAKEHOLDERS

Supply

Private landowners: The money is being used to establish nurseries and for forest restoration along riverbanks and in other crucial areas. Landowners whose land falls into this category are invited to participate in the project (see also Legislation Issues).

Demand

Local government. There are eight cities with approximately 550,000 inhabitants (Piracicaba 360,000); there are sixty-two municipalities in the area of the three basins (of which forty are part of the PCJ consortium); In addition, water supply for 55% of the population within the Metropolitan area of Sao Paulo is sourced from the Piracicaba river (31m³/s), although this is a potential source of demand since they are not contributing at the moment; there are eight municipalities in the Corumbataí sub-basin, but so far only Piracicaba and Santa Gertrudes are contributing.

Municipal water (and sanitation) utility of Piracicaba (SEMAE - *Serviço Municipal de Água e Esgoto*). SEMAE contributes with R\$0.01 (=US\$0.0045) per m³ of distributed/consumed water (only drinking water supply). Industrial and irrigation users are not required to contribute to the PCJ fund, although some of them may do so of their own accord. For more information on the members of the consortium see www.agua.org.br

Intermediary

Trust (local government and businesses) PCJ Consortium – Inter-municipal Basin consortium of the Piracicaba, Capivari and Jundiá rivers (in English): composed of municipalities and private companies.

Facilitator

Unclear.

MARKET DESIGN

Service

Water flow regulation (maintenance of dry season flows); water quality maintenance/improvement; erosion and sedimentation control.

Commodity

Rehabilitation of degraded ecosystems along river banks.

Payment mechanism

Pooled, intermediary-based transaction: Priority areas and amounts to invest are decided among the members of the PCJ (municipalities and businesses within the basins of the three rivers). Each municipality elaborates an annual action plan that is then presented to the PCJ for funding allocation.

Terms of payment

In-kind and one-off: participants receive a reforestation plan (including approval by the relevant environmental authorities and technical assistance) and (native) tree seedlings; plantation and maintenance are responsibility of the landowner; there are no further incentives given after this initial phase. ii) Users: SEMAE contributes R\$0.01 (=US\$0.0045) per m3 of distributed/consumed water, but this does not involve an additional charge imposed on the final users.

Funds involved

With the pooled contributions from state and federal institutions and the private sector, the annual investment amounts to about R\$ 1 million. According to a spokesman, If all municipalities within the basins of these three rivers contributed, this annual amount could double to R\$ 2 million/year. (http://www.riob.org/relob/relob_bpiracicaba.htm). The PCJ consortium also sources funds from national programmes for reforestation and natural resource management (for example the FNMA: National Fund for the Environment, FEHIDRO- Federal Fund for Water Resources).

ANALYSIS OF COSTS AND BENEFITS

Economic

Costs

For the participating users (SEMAE): a contribution of R\$0.01 (=US\$0.0045) per m3; the end users have no extra costs;

Non-participant water users are considered to 'free-riding', as they do not pay for water at all. Although there is no evidence that reforestation will have effects on water quantity.

Benefits.

It is claimed that both middle and end users benefit from avoiding increased water charges (costs of sourcing water elsewhere, or treating it further) but without evidence of the impacts of the reforestation if this cannot be substantiated.

For the provider i.e the participants in the reforestation programmes there are no direct financial benefits, as there is no payment beyond initial support to implement the reforestation plan.

Environmental

Up to this point, reforestation has been targeted at riparian areas, but the objective is to rehabilitate the surviving patches of Brazilian Atlantic Rainforest (Mata Atlântica) still in the area. It is not clear if the objective is for the sake of the water resources or for biodiversity in general. In addition to reforestation of riparian areas, PCJ's action plan includes: organizing a programme to source financing for a liquid and solid waste management scheme, environmental education and technological improvements (to reduce water loss). At this point in time, it is still very early to notice any improvements in the water, but the system is at least expected to avoid any further damage.

Social

For the providers participating in the scheme: the areas targeted by these annual municipal reforestation plans are areas that are "permanently protected" by law, Even if the participants do not receive any post-plantation incentives, they are being assisted to comply with the law. This may be their main benefit



although there is no evidence on whether and to what extent they perceive assisted compliance as a benefit.

For users/providers in the municipality: increased environmental awareness raised by SEMAE environmental education programmes, already ongoing for over twelve years. The actions supported by this scheme target primarily environmental problems; their social implications do not appear to be a concern at this point. Impacts on vulnerable social groups have not been identified and it is stated that this is not an area with particular poverty issues, therefore this has not been of particular concern in the design of the scheme.

LEGISLATION ISSUES

- i) The scheme began unofficially, in Piracicaba, with a contribution of 1% of SEMAE's annual revenue -worth about \$2,500/month in 1998 - to the Municipal Environment Council which comprised representatives from private, NGO and public sectors; at the time, the problem was how to legalize investment from one municipality across the whole watershed. In 1999, a municipal law was passed to overcome the initial legal impediment of having one municipality investing in an inter-municipal unit (the watershed), provided the funds are invested in the management of the watershed. The PCJ consortium was created to amalgamate municipal contributions and manage their investment.
- ii) According to the Forestry Code - federal law 4.771 of 15/09/65, the forests and other natural vegetation formations located along the margins of natural water bodies, such as rivers, lakes or lagoons or man-made water reservoirs, are designated as "permanently protected". Despite this, such areas have suffered degradation, and the offer of the PCJ to help the landowners in their rehabilitation, may be an incentive to participate in the scheme.

MONITORING

Monitoring is frequent but insufficient due to the lack of resources: monitoring of compliance is still one of the main problems and there is a need for additional funding to ensure more effective monitoring.

MAIN CONSTRAINTS

The main difficulties for the implementation and success of this initiative: very limited funds are available (current investment in reforestation is insufficient to ensure that the reforestation/ rehabilitation is achieved within a useful time period – it will take over 100 years at current level of investment) due to low contribution levels and not enough demand captured, . Funds would increase significantly if the scheme could engage demand from the Sao Paulo Metropolitan area, since 55% of its water supply is drawn from the Piracicaba watershed. Also, there is a lack of awareness about the environmental impact of intensive agriculture and industrial activity in the area and lack of evidence on the impacts on water supply and quality of the reforestation programmes. .

The introduction of charges for raw water use for Federal waters (spanning more than one state) in January 2006 and for state waters (in process of implementation) is expected to increase the resources available for management of the resource. It still remains to be seen how much of this will be directed to land management activities.

MAIN POLICY LESSONS

The decentralized management of water resources can be useful as it captures local resources for local needs; ii) in this case, a big part of the problem is non-point source pollution affecting water supplies, although the lack of proper treatment of waste waters also becomes a problem. If contributions from users remain at the level, the initiative is unlikely to remain financially self-sustainable and environmentally effective.



OTHER INFORMATION

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REFERENCES

Landell-Mills, N. 1999. Country Profile for Brazil. IIED. Unpublished Work;

Viana, V.M., P. May, L. Lago, O. Dubois and M. Grieg-Gran (2002) Instrumentos para o manejo sustentável do setor florestal privado no Brasil. Instruments for sustainable private sector forestry, IIED. London.

SEMAE. 2001. *Conservação dos Recursos Hídricos por meio da Recuperação e da Conservação da Cobertura Florestal da Bacia do Rio Corumbataí*. (accessed at 503 www.semaepiracicaba.org.br);

Esquierro, J. (2005) personal communication;

Razera, S. 2005. *A luta pela Agencia na Bacia do Piracicaba*, accessed at http://www.riob.org/relob/relob_bpiracicaba.htm

UN Habitat. Online Article on "Best Practices: Database in Improving the Living Environment. Regional Integration for Availability of Water, Sao Paulo, Brazil " Best Practices Brief, Best Practices for Local Leadership Programme- UN Habitat. Accessed online at <http://www.bestpractices.org/bpbriefs/watesan.html> ;

LINKS

Websites: www.agua.org.br;

<http://www.comitepcj.sp.gov.br>