

# Water Science & Technology

## Drainage Basin Security – Balancing Production, Trade and Water Use

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# Drainage Basin Security – Balancing Production, Trade and Water Use

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**Organized by Stockholm International Water Institute**



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## Effective subsidies in developing countries

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**Abstract** During the last decades, significant subsidies have been allocated to government-owned water and sewerage enterprises in developing countries. However, water and sewerage coverage is still far from desirable and the poor are particularly affected by the shortage of these services. The truth is that a considerable part of these subsidies have been used up to build huge infrastructure works that would make some construction firms happy, while often decreasing the service costs for the richer. The costs associated of delivering water and sanitation services to the poor are significantly higher, as they often live in slums or irregular urban developments without urban infrastructure. It is possible, and desirable, to improve government's effectiveness through the use of appropriate economic incentives. The Brazilian River Basin Pollution Abatement Program, based on the "output-based aid" concept, is a good example of how this can be achieved. The Program is a success story that shows that the quality of expenditures on sanitation can be considerably improved if governments of developing countries refrain from contracting sanitation infrastructure works and start paying for results, not for promises.

**Keywords:** Output-based aid; sanitation; subsidies

### What should be subsidized?

The international experience demonstrates that the best water and sewerage services are those where the costs are fully paid for by the consumer, through the establishment of tariffs. This includes investment costs and operational costs. Whenever the tariffs are settled below the full service costs, either the tax-payers end up paying the bill, thus subsidizing inefficient service providers or citizens are left with ineffective or inexistent services.

Government intervention through subsidy should occur only in two exceptional cases: i) to support low income citizens that truly cannot pay for the service or, ii) to support the implementation of sewerage treatment plants. Subsidizing low income citizens is widely practised and accepted and requires no further explanations. However, some people question why we should subsidize the establishment of sewerage treatment plants that will benefit both the poor and the rich without any distinction. The central issue here is that, while the final beneficiary of water supply and sewerage collection is the individual, whether rich or poor, the final beneficiary of sewerage treatment is the community as a whole. Too often a vast region suffers the negative consequences of upstream water pollution in their health, economic and recreational activities. This is why the USA approved the Clean Water Act in 1972, creating a program that would support local governments on building sewerage treatment plants.

The well known French experience has been rather inspiring to Brazil and other developing countries. The French government decided, back in the 1960s, to finance the construction of sewerage treatment plants that were selected by the water users, in a given river basin, that would be represented by their respective river basin committee, a sort of *water parliament*. Part of the costs were paid for by the basin's enterprises, water resource users, by enforcing the polluter pays principle. These enterprises would pay in proportion to the water pollution generated by them. The pollution charges were used to create an investment fund to be used according to the basin's community priorities, such as putting in place sewerage treatment plants.

### Have subsidies in developing countries been effective?

During recent decades, significant subsidies have been allocated to government-owned water and sewerage enterprises in developing countries. Water and sewerage coverage however is still far from desirable and the poor are particularly affected by the shortage of these services. The truth is that a considerable part of these subsidies have been used up in building huge infrastructure works that would make some construction firms very happy, while often decreasing the service costs for the richer. Furthermore, the subsidies have been used to compensate for the inefficient operation of some service providers, or in other cases subsidies have been allocated in response to labor union interests. We have learned so far that, in general, subsidies to state-owned water and sewerage enterprises do not contribute to social equity. These subsidies would have been better allocated if conditional on an effective service provision, to benefit those who cannot pay the full costs of the services, thus resulting in greater transparency and effectiveness.

It is worth mentioning that there are public sanitation firms doing an outstanding job in developing countries and largely benefiting their population. These enterprises are often used as examples by those advocating for a public service provision. On the other hand, there are other public enterprises that respond mainly to the political interests of those in power, or to trade union interests, rather than responding to the needs of the users. What really matters in fact is that the service be delivered efficiently and to all users.

Water and sanitation service providers are potential agents for promoting social equity, regardless of their being private or state-owned enterprises. They only need to be steered in the right direction. The sector's biggest challenge is to create subsidies that will provide an incentive for the service suppliers to address the poor population's needs. In fact, the lack of water supply and sanitation in developing countries very often is not due to a lack of human resources, natural resources or lack of institutional setups. They are a by-product of poverty. As low-income populations cannot pay for these services the providers do not have any financial incentive to provide the services.

To make the situation worst, the costs associated with delivering water and sanitation services to the poor are significantly higher, as they often live in slums or irregular urban developments without urban infrastructure. Establishing the required sanitation infrastructure in a slum, where streets hardly exist or do not exist at all, is a complicated and very expensive venture. Providing water supply to a small settlement in the middle of nowhere in the Brazilian semi-arid North-East region may require the construction of many kilometres of pipeline linking the settlement with the closest reservoir.

### Brazilian River Basin Pollution Abatement Program

We assert that it is possible, and desirable, to improve government's effectiveness through the use of appropriate economic incentives. The Brazilian River Basin Pollution Abatement Program – PRODES is a good example of how this can be achieved.

During its first year of existence (2001) the Brazilian National Water Agency (ANA) launched PRODES, which is based on the "output-based aid" concept. PRODES made it possible to implement, in 2001, 17 new sewerage treatment plants (STP). Total investment was about US\$ 46 million, out of which US\$ 17 million were subsidies. The subsidies are to be disbursed throughout the first 5 years of the STPs operational phase, provided that the services are delivered properly and the pollution abatement targets are attained. If these conditions are not reached the funds would be returned to the treasury.

In practical terms, the US\$ 17 million were deposited by ANA in a designated national development bank. As the funds are in the bank, the service provider knows that eventual future budget cuts will not affect his investment. The government on the other hand does not run the risk of paying for a service that in the end is not properly implemented.

PRODES is compatible with ANA's mandate of implementing the National Water Management System (NWMS), as established in the 1988 Brazilian Constitution, further defined in 1997 by Law No 9443. The NWMS establishes a participative and decentralized water resources management. Accordingly, the STPs created in 2001 were decided upon by the respective River Basin Committees. From the year 2003 onwards the Program's funds are being allocated with priority to the basins where the Committees have decided to adopt the polluter-pays principle. That is to say, priority is given to basins where the installed enterprises are willing to be partners in paying for the pollution abatement costs in accordance with their level of polluted effluents.

### National Sanitation Fund

The developing countries deficit in sanitation may be mitigated by increasing and improving the quality of the public expenditure in the sector through the creation of National Sanitation Funds (NSFs). These funds may be created with the government budget that is currently allocated to sanitation public works in the respective country, plus funds obtained through the country's application to an International Sanitation Fund, to be created. The NSFs should *not* be used to pay for building infrastructure nor to buy equipment. They should be allocated to pay for services that have been effectively rendered to the population and only after demonstrated results. In other words, the NSFs would pay for results, not for promises.

The reason for adopting this strategy is that, historically, developing countries have spent most of their sanitation financial resources on constructing infrastructure works that would never become operative or would cease operations much earlier than the predicted useful life. This fact may well be explained by the existence of powerful *lobbies* comprising big constructing firms and equipment manufacturers, while on the other hand there is basically no *lobbies* for the functioning of these infrastructure works. In addition, within the current rationale, builders and manufacturer profits are directly proportional to the cost of the enterprise. The higher the costs, the higher their profits.

Amongst the countries creating a NSF any given community could apply for the funds, provided that they meet certain eligibility criteria subsidies. Particularly, the community should be willing to pay a unit price defined for the service provision, a tariff. This tariff should be compatible with the purchasing power of that specific community. The difference between the community's purchasing power and the real costs of the service would be covered by the subsidies. Ideally, the services should be tendered. Given an acceptable level of quality for the service, the decision on the best bid would be the result of two different factors: i) the lowest tariff or cost imposed on the end users; and ii) lowest subsidy required from the NSF.

Since the service provider would not be entitled to a single cent of the Fund until being fully operating, the initial investment would necessarily come from elsewhere. Whenever a loan would be required, the future cash flowing from the Fund could be traded on the financial market as a guarantee for the loan. For that purpose, the future income in question must be reliable and not subject to changes in governmental moods. It must therefore be traceable as a government deposit in the NSF equivalent to the present value of the cash flow in favor of the loaner. This mechanism would ensure that the government would only lease the services that it could effectively pay for whereas the contracted firm would not be subject to non-compliance risks from the government side. This mechanism also ensures that the service provider would be interested in reducing the overall cost of the infrastructure required for service provision, quite the opposite to the current situation, when profit is maximized with the highest infrastructure costs.

### International Sanitation Fund

The Johannesburg Environmental Summit in August 2002 provided the appropriate forum to channel the international criticisms towards the rich countries' environmental policies, very particularly against the USA. The efforts to convince the rich countries on changing their consumption standards in order to reduce global pollution were considered a failure. In the opposite direction, these countries suggested a joint effort to reduce poverty, thus resulting in the reduction of poverty-related pollution, particularly sanitation-related pollution. **Specifically it was agreed that the global sanitation deficit should be halved by the year 2015.** The current deficit figures are, roughly, 1 billion people without drinking water; 2 billion dealing with filthy ditches resulting from open sewerage disposal, the result of the absence of sewerage collection; and 4 billion dealing with polluted rivers due to lack of sewerage treatment.

Unfortunately, there are no solid grounds upon which we could build any trust in the effectiveness of these "good intentions". First of all because **no implementing mechanisms were identified to put these good intentions into practice.** Secondly, because experience shows that good intentions normally remain as "good intentions" when dealing with international declarations between countries. The Rio 92 Summit can illustrate this point. During the Summit, rich countries agreed upon raising their economic contribution to developing countries, from 0.4% to 0.7% of their GDP. Ten years down the road the referred contribution did not increase; quite the contrary, it was reduced to 0.2% of the GDP instead.

We will not get discouraged however. **This problem can be effectively addressed through the creation of an International Sanitation Fund (ISF)** that would support the achievement of the Johannesburg goals. The disbursement of the ISF would be similar to the one proposed for the National Sanitation Funds, NSFs. One of the biggest challenges to be addressed by the ISF will be the creation of effective and sustainable fund-raising mechanisms. One possibility would be to connect the global pollution, associated with wealth and very high standards of consumption, and local pollution, generally associated with poverty. In this sense, the application of the polluter pays principle should ensure, for instance, that the consumer who is contributing to greenhouse effects would have to feel the effects in his pocket, regardless of where in the planet he is located, since the damage produced is affecting the whole planet. We should not make distinctions between a driver in Washington DC and a driver in Brasilia. They are both producing the same effects.

Let us assume, for the sake of the exercise, that the UN manages to create a contribution of US\$1 per oil barrel destined for the ISF, after deflecting the resistance of the oil producers, who would argue against it with scenarios of decreasing oil demand (and the reduction of the green-house effect); and the resistance of the consumers, who would argue against it foreseeing inflation as a result of raising the oil prices. Assuming that the UN would overcome all these obstacles, the funds raised for the ISF could reach as much as US\$ 25 billion per year.

The establishment of an International Sanitation Fund would create a new services market. It is advisable that this fund could be accessed not only locally but also globally. That would result in new business opportunities for both rich and poor countries. It should also result in the creation of *lobbies* supporting the proposal and therefore increasing the feasibility of establishing the Fund.

### Conclusions

The quality of the government sanitation expenditures can be considerably improved if the government refrains from contracting sanitation infrastructure works and starts paying for the implemented service instead. Government budgets, boosted by the financial flow

resulting from putting in practice the polluter pays principle, both at the national and at the international level, should be used to finance part of these services, provided that they either focus on the poor or, that they are of common, social interest (diffuse beneficiaries). The infrastructure works will end up being constructed anyway, they will cost less however, and their operation and maintenance will be guaranteed.

In short, the present proposal would ensure that governments would pay for results, not for promises.