



Water and Sanitation Program

An international partnership to help the poor gain sustained access to improved water supply and sanitation services

Africa Region



Water, sanitation and hygiene are vital components of sustainable development and the alleviation of poverty. Across Africa, political leaders and sector specialists are generating new momentum in these important areas. This Field Note, together with the others in the same series, constitutes a timely contribution to that work. It is intended principally to help politicians, leaders and professionals in their activities. As the Water Ambassador for Africa, invited by the African Development Bank and endorsed by the African Water Task Force and the African Ministerial Conference on Water (AMCOW), I commend it to your attention.

Salim Ahmed Salim
Water Ambassador for Africa



Urban Water Supply Innovations in Côte d'Ivoire: How Cross-Subsidies Help the Poor



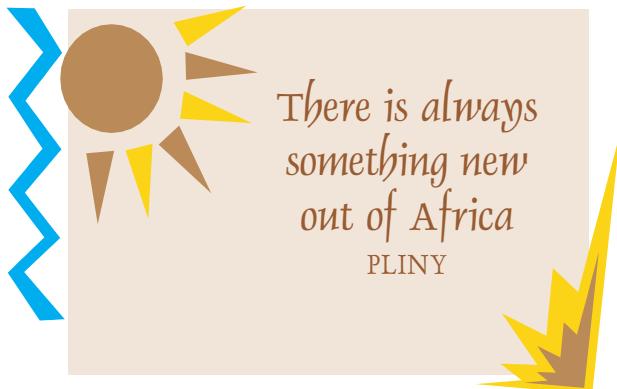
Young customer at tapstand in Abidjan.

Summary

Many African water utilities have little capacity or motivation to invest in services for poor people. They concentrate their financial resources on maintaining the main elements of their infrastructure and on daily running costs. In such a situation, investing in low-income areas such as small towns or peri-urban settlements is not a priority, and most of the programmes serving them are externally funded through loans or grants from donors.

The situation in Côte d'Ivoire is very different. The water services in small towns and peri-urban areas are much better than in its neighbouring countries, while Abidjan, the largest city, has a high household connection rate and good service. The main reason is that the government provides strong policy guidance and a clear separation of the roles of the various organisations involved, while the water services themselves are managed by a private company (SODECI) that has the managerial and financial strength to implement the government's pro-poor aims.

SODECI applies three mechanisms to help the poor: subsidised household connections (in effect a recognition of water as a social good), a rising block tariff, and licensed water resellers in informal settlements. The subsidy for the household connections comes from a surtax on water bills administered by a public-sector fund. This internal cross-subsidy avoids dependence on external funding sources, and can be maintained in the long term. The rising block tariff is another type of cross-subsidy from large consumers to small. Since the tariff is fixed across the country, it also boosts the finances, and hence the services, in the small towns from the stronger economic base of Abidjan. The licensing of resellers in informal settlements enables SODECI to exert an indirect influence on the cost and quality of service in such places, in which its own contract forbids it to work directly.



Background on SODECI and its policy for serving poor people

Société des Eaux de Côte d'Ivoire (SODECI) is a private company providing water in all the cities and towns of Côte d'Ivoire, including over 600 small towns with populations of 1,000 to 20,000 each.¹ SODECI works under a concession contract, managed by the government's Water Directorate, which provides regulation and is responsible for tariff setting and negotiation. In reality the contract resembles a lease contract, because it does not require the company to invest directly in capital works. Instead, a surcharge on water sales finances a water development fund (FDE) controlled by the Water Directorate, to which SODECI can apply for capital finance.

SODECI is a reliable company with excellent performance indicators, both on technical issues (good water quality, low leakage) and on financial issues (good billing rate, strong investment capacity). This good performance is probably linked with its progressive human resources policies, for example vocational training and profit sharing with employees. The city of Abidjan, with 3.3 million inhabitants, accounts for 48% of SODECI's customers and 65% of its turnover (which totals US\$50 million per year) because the city houses the majority of large-scale industrial, administrative and domestic consumers. This city thus constitutes the core of SODECI's activity and the basis of its financial viability. However, a significant proportion of Abidjan's low-income population live in informal settlements, established illegally on non-residential land. For 10 years, the municipal authorities have considered, but have not implemented, official recognition of these areas.²

¹ SODECI belongs to the same group as the electricity utility (SDEI). These two companies have a total sales turnover (for water and electricity in the whole country) of US\$300 million/year and a staff of 4,600 people.

² The most detailed survey of these areas was carried out in 1990. It counted 72 informal settlements, accommodating 380,000 people (18% of the population of Abidjan) in 7.5% of its area.

Since the start of the concession contract and the establishment of FDE in 1987, SODECI has implemented a clear policy for serving poor people. The three main elements of the policy are: to increase the connection rate among poor families through cross-subsidy; to make the water tariff affordable to low-volume users; and to extend a reasonable level of service into informal settlements.

How SODECI applies its policy to serve poor people

Subsidised connections

SODECI's strategy of subsidised connections covers the low-income areas of both the large cities and the small towns to which SODECI provides water. It complements SODECI's long-established promotion of individual household connections; these are much more numerous in Côte d'Ivoire than in its neighbouring countries, including those with higher populations such as Ghana (see figure 1).

SODECI implements this strategy by charging a connection fee to middle- and low-income customers of only US\$40. This is much lower than the actual cost to SODECI of the connection (US\$150). The difference between the actual cost and the fee is financed by FDE, which in turn obtains its money from a surtax on the water bills.

This system is very effective. Although similar subsidised connection policies exist in other African cities such as Dakar and Cotonou, they generally use subsidies funded by external support agencies. So those policies are not based on the viability of the company itself but depend completely on external factors. In such cities, the number of subsidised connections tends to be small and they mainly benefit the middle class (a clear trend in Cotonou, for example).

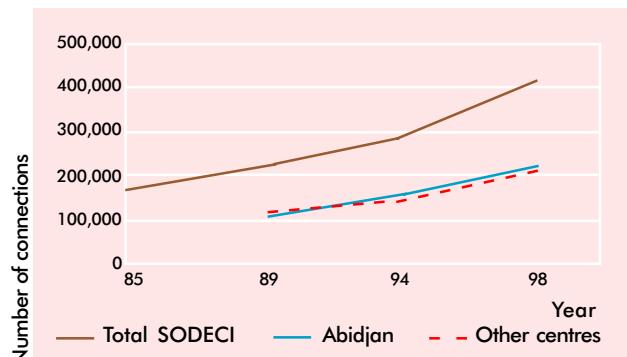
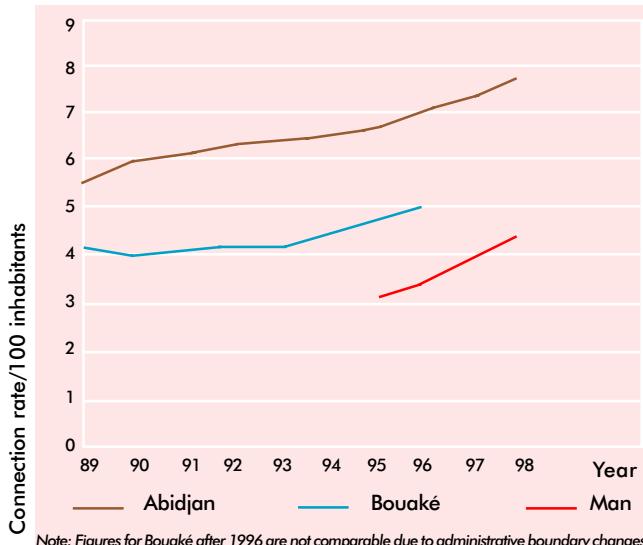


Figure 1: Number of household connections managed by SODECI in Abidjan and in other cities.



Note: Figures for Bouaké after 1996 are not comparable due to administrative boundary changes.

Figure 2: The growth of the coverage rate (measured as the number of connections per 100 inhabitants) in Abidjan and two other cities within SODECI's concession.

In contrast, the success of SODECI's subsidised connections policy comes from its reliable, internally generated funding source. To date this has enabled the company always to meet the demand from people eligible for such connections. Thus, household connection in Abidjan and other cities is not a premium service, restricted to medium- and high-income families, but a basic service.³ The rate of coverage has regularly increased for 10 years (see figure 2). In Abidjan SODECI now serves 2.7 million people through household connections and another 0.3 million people through water resellers (described later), leaving only 0.3 million people who obtain their water by other means such as public tapstands or dug wells.

This subsidy strategy applies to household connections but not to consumption charges. The unit consumption per

head of population connected has in fact decreased slightly over the past 10 years because poorer families, who consume less water, have become connected. The subsidies for household connections have thus fulfilled their role to bring an affordable service to

a larger part of the population. A household connection is a service appreciated by the users because they save time previously spent fetching water from more distant sources, but they limit their consumption to suit their domestic budgets.



Figure 3: The increase, over 40 years, in the number of towns supplied by SODECI.

The Water Development Fund (FDE)

Implemented in 1987 (during the concession control negotiations), FDE is supervised by a government body, not by SODECI itself. It makes capital available to SODECI for agreed and monitored purposes, notably the financing of the subsidised connections. It is funded from a surtax paid by the customers, and thus constitutes a cross-subsidy between current customers and new customers.

FDE devotes approximately 30% of its annual budget to network construction and extension in small towns and peri-urban areas. This financial mechanism enables SODECI to implement a dynamic policy of service development in small towns using money raised by FDE from the large cities, especially Abidjan. It now supplies over 600 small towns (see figure 3) — many more than the water companies in the nearby countries (Mali, Guinea, Ghana, Sierra Leone, Burkina Faso). Thus the level of service in small towns is remarkably good in Côte d'Ivoire, because FDE provides a cross-subsidy mechanism from the largest city.

³ One side effect is the decline of public tapstands. For a long time, public tapstands constituted the main supply for the poor in Abidjan. However, subsidised household connections have largely superseded them and now less than 300 public tapstands are still in use, accounting for less than 0.5% of the city's consumption.

Limitations of the subsidy policy

The eligibility criteria for subsidised household connections are not very restrictive. The subsidy is available to any household (but not to property investors or landlords) with less than five taps. The large majority of families in Abidjan fit these criteria and hence it is not surprising that subsidised connections represent more than 90% of total connections since 1987 (see figure 4).

Thus the strategy is not targeted at 'the poorest of the poor'. A more targeted strategy would require stricter access criteria according to family incomes or the people's physical location.

Another limitation is that the subsidised connections are available only to families who can show legal land tenure (as owner-occupiers or legal renters). So it is not available to the inhabitants of informal settlements, who are some of the poorest people in the country and should logically constitute one of the main targets of the subsidised connections strategy.

The rising block tariff structure

SODECI, in common with many water companies in Africa (see figure 5), applies a rising block tariff in which the unit charge increases as the user's consumption increases. This tariff structure has two objectives: to cross-subsidise small consumers (presumed to be poor) from large consumers, and to reduce wastage of water.

The disadvantages of this type of tariff are well known and have been analysed in many publications. First, the largest consumers, who could contribute most to the financial health of the company, tend to supply themselves



Figure 4: Subsidised and paying household connections, per year.

from less expensive sources. Secondly, the very poorest people, who are not connected, tend to buy water from their neighbours or at a public tapstand; the accumulation of many small consumers on one connection can move that customer's bill into the higher unit rates.

In SODECI's case, these two well-known disadvantages are mitigated by two characteristics that constitute the keys to success for an increasing block tariff:

- **The moderate unit tariff at the higher consumption rates** (significantly less than that charged in Burkina, Morocco or Senegal), which encourages the large consumers to remain connected to SODECI's service rather than seeking their own sources.
- **The very high coverage rate** which reduces the number of small consumers per connection, making it unlikely that multiple usage will take an individual connection into a higher tariff block.

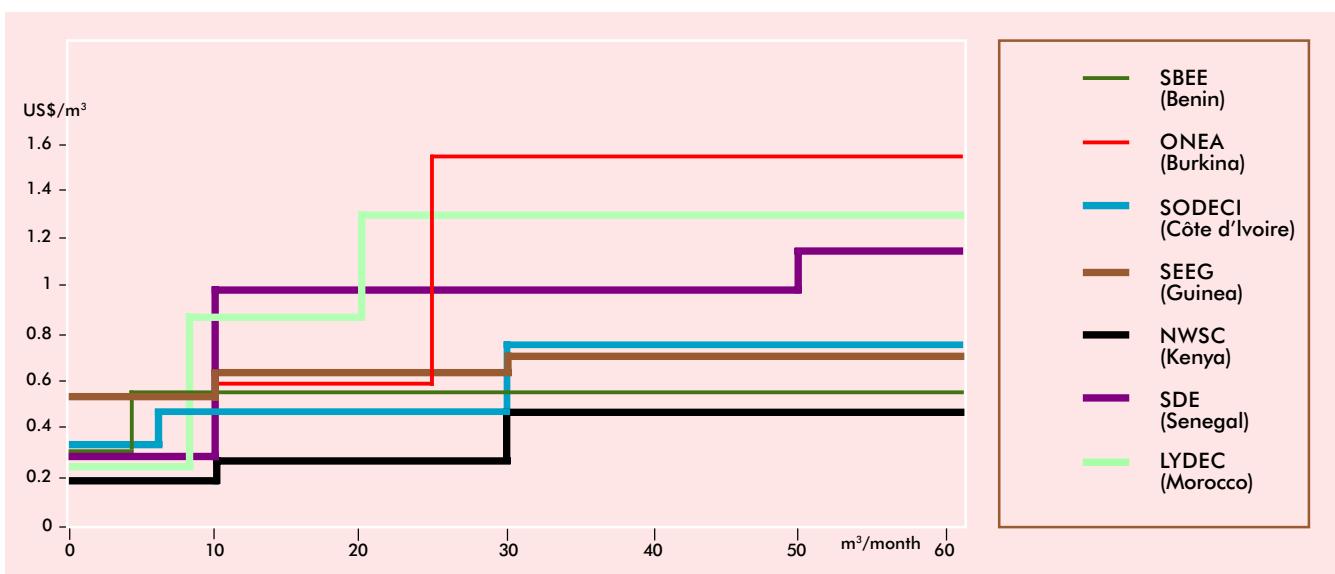


Figure 5: Tariffs of some large African water companies using increasing block tariff principles.



Purchasing water from a public tapstand.

Licensing of the water resellers in informal settlements

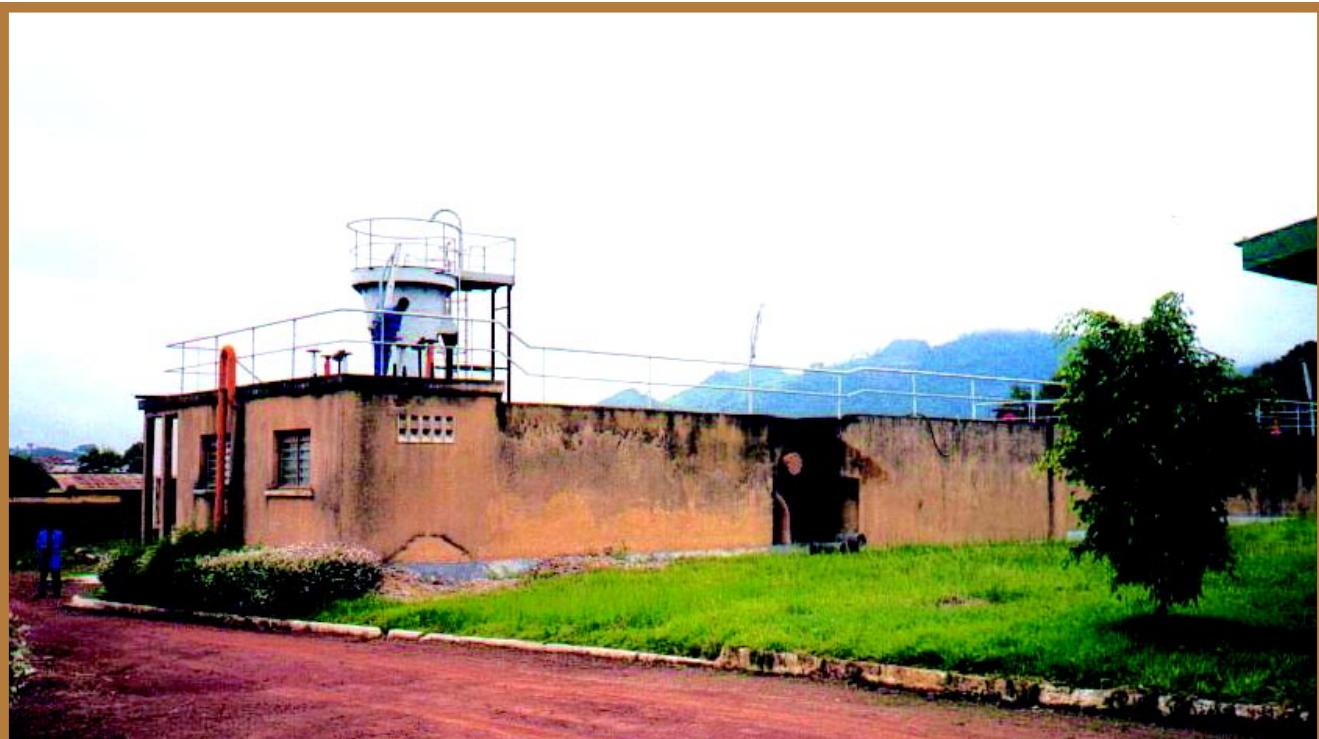
In most large African cities, supplying informal settlements is a major problem for the water utilities. Their service contracts with the government or municipality often exclude those areas, because their existence is not officially recognised even though a significant proportion of the population lives there. Those people generally obtain their water through a system in which customers with household connections resell water to those without them. This practice is normally illegal but tolerated. SODECI decided to formalise it by issuing special licences to the resellers, of which about one thousand have been signed. Its aim in doing so was to improve the water supply to those areas in which SODECI itself is not allowed by the government to operate.

SODECI's strategy of licensing resellers encourages small-scale providers to invest in network extensions where an unmet demand exists. This does not weaken SODECI's own financial viability, because it sells them water at its normal tariff while their licences reduce the risks of

non-payment through a large deposit and monthly invoicing. The resellers pay for all the investments inside the informal settlements and recover their costs through their water sales to the users. There is, however, a problem of inequity in that the users, who generally comprise the poorest families, effectively pay for the network twice. They fund SODECI's investments through the resellers' payments to SODECI and the network extensions made by the latter through their price mark-up.

These resellers do not benefit from any special treatment. SODECI simply invoices them according to the normal increasing block tariff, which effectively penalises those who resell large quantities — and hence their customers. Moreover, the licensed resellers must pay a large deposit (approximately US\$300) which constitutes a real obstacle to entry into this business. This is why many resellers remain undeclared as such and are invoiced as simple domestic customers. Indeed many Abidjan water resellers have formed a trade association⁴ which is pressing SODECI for a fixed unit tariff, which would favour these larger consumers, and a reduced deposit.

⁴ AREQUAPCI: Association des revendeurs d'eau des quartiers populaires de Côte d'Ivoire.



Cross-subsidy between Abidjan and small towns helps to support high-standard water treatment stations.

Factors contributing to SODECI's success

Increasing coverage is in SODECI's own interests

The urban water services in Côte d'Ivoire have been delegated to a private operator since 1956.⁵ The private operator was able to develop a demand-responsive approach, keeping pace with the growth of the urban population. As a commercial company, it is in SODECI's own interests to connect as many customers as possible. So it promoted the system of subsidised connections in order to increase its customer base among low- and middle-income families.

The cross-subsidy mechanism is well managed

The success of the subsidised connections strategy, under which the current customers cross-subsidise new subscribers, depends on the strength of the government's administration of FDE. In fact the government has fulfilled this regulatory role efficiently: analysing the annual accounts of SODECI and of FDE, making funds available from FDE to SODECI,

and directing SODECI's investment policy to achieve sustainable improvements in the overall service.

SODECI has a large enough customer base to finance new connections

The effectiveness of FDE as a tool to finance subsidised connections depends on the relative numbers of existing and new customers. In Abidjan, for example, the surtax paid by over 200,000 existing customers can easily finance the 15,000 new annual connections. On the other hand, this mechanism would be less viable in a city (such as Bamako, Kinshasa or Niamey) where few customers are connected. In such places the new customers have to contribute more to their connection costs.

Abidjan's informal settlements are small

Abidjan is SODECI's largest supply area. There are 72 listed informal settlements in Abidjan, but they are generally small in size, because the city was more systematically planned than most other large African cities. It is thus possible to supply each informal settlement with only a few hundred metres of pipe extended from the existing network. The good condition and high water pressure of the existing piped network also help the cost-effectiveness of such extensions.

⁵ In most other African countries, the principle of private-sector participation in the water sector has only been adopted during the last 10 years.

Lessons

While acknowledging that there are some factors (described above) that make the situation in Côte d'Ivoire particularly favourable, there are certain key principles that can apply elsewhere:

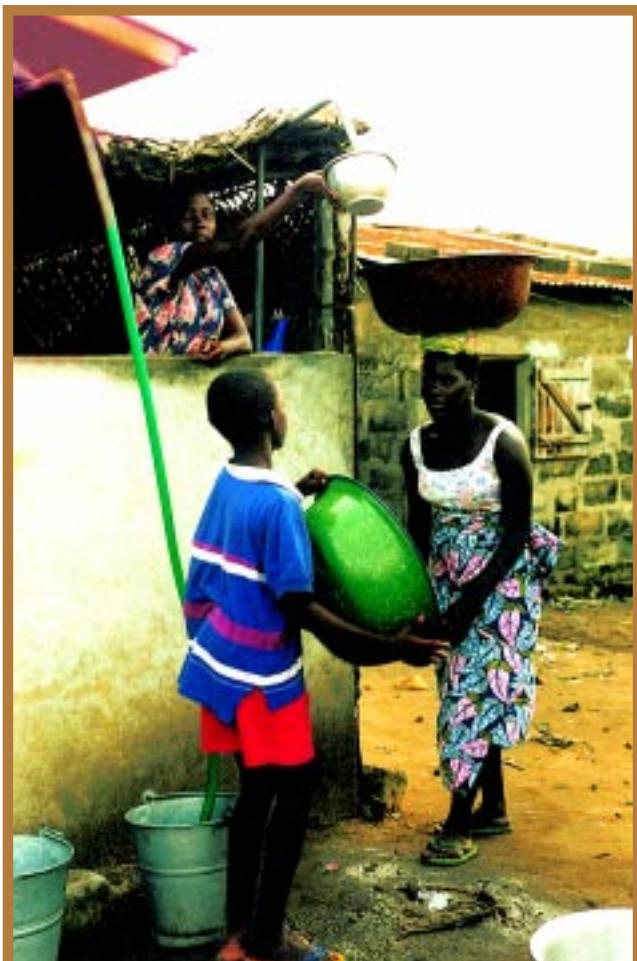
Effective co-ordination of several different pro-poor strategies increases their total effect

While some other water companies have applied individual pro-poor strategies with some success, the key to SODECI's approach is the simultaneous and co-ordinated application of three mechanisms. This increases their combined effectiveness:

- Sustainable financing of FDE (through the surtax on water bills) subsidises thousands of new connections per year.
- The rising block tariff allows those poor families who do obtain a connection (thanks to the subsidy) to receive a good-quality service at a low price.
- The licensing of the resellers ensures a minimal service in informal settlements in which SODECI's contract prohibits it to invest directly.



Coin tapstand managed by a reseller.



Resale of water in informal settlement.

Cross-subsidies can sustainably serve the poor

The cross-subsidy principle is a powerful tool to promote household connections for low- and middle-income families. Following this policy, Abidjan has attained the highest connection rate in sub-Saharan Africa (other than South Africa): 10 household connections per 100 inhabitants. Such a consistent and massive financial flow from one category of customers to another has few equivalents in Africa.

The same cross-subsidy principle applies in using operating profits from Abidjan to provide good services in the small towns through the equitable tariff structure. SODECI's contract specifies the same tariff in all the cities and towns, whatever their size. But its unit operating costs are higher in the small towns. Therefore SODECI's business in Abidjan (where it makes a profit of US\$6 million per year) supports its business in the small towns (where it loses US\$5 million per year).

In order to supply the poor, a water utility must be effective and financially strong

Supplying water and sanitation to poor people is difficult work for a water utility, because they generally have low consumption and often live in areas that are difficult to access. Only a well-managed and competent utility can provide this service, using good technical and commercial staff. As to finance, a water utility needs sufficient investment capacity to apply pro-poor strategies such as subsidised connections, because these involve advance expenditure by the utility. A financially weak company, on the other hand, cannot develop a viable pro-poor investment strategy because it depends on external funds that it cannot control.

This managerial and financial strength of the utility company is more important than its public or private

ownership. In the debate over private-sector involvement in water utilities, the concern of serving the poor is often used as an argument to keep the water company in the public sector. However, the example of SODECI shows that the best service for the poor in West Africa is provided by a company that was privatised a long time (46 years) ago and which has reached a high level of performance and investment capacity.

Strong political leadership is essential for the poor to benefit from the involvement of a private company

Private companies exist to make profits, not to serve the poor. However, the involvement of a private company in water supply can achieve both these objectives if the political leaders, who decide the conditions within which the company operates, have the interests of the poor at heart.

For example, SODECI is a private company that aims to make a profit, whereas FDE is a public-sector fund with social aims. The overall system makes use of their relative strengths and roles to serve poor people effectively. The cross-subsidy has been sustained over many years because the surtax is set and controlled by FDE. The rising block tariff is also publicly set, but serves SODECI's commercial interests as well as those of the poor. The clarity of all these arrangements gives SODECI the confidence both to achieve its commercial aims and to serve poor people.



SODECI strategy to reach low-income groups is supported by cheap and good groundwater resources.

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