

**Water and  
Sanitation  
Program**

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

# Independent Water and Sanitation Providers in Africa

Cotonou BENIN

**West and Central Africa  
Region**

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on behalf of the  
Federal German Ministry  
for Economic Cooperation  
and Development



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# The importance of private independent operators in the potable water network

## Non-existent in water production...



The Benin Water and Electricity Company (SBEE) is a state company that holds the monopoly in potable water production supplying Cotonou.

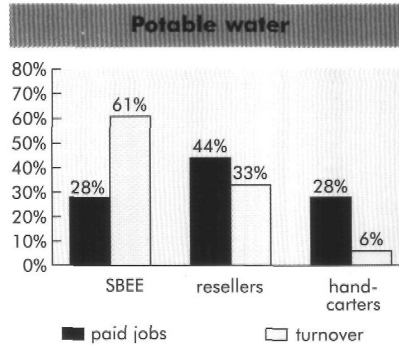
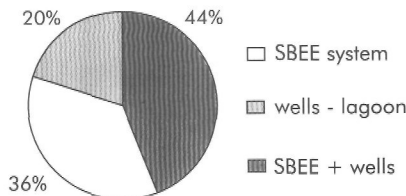
Sixty-four percent of Cotonou families supplement their water supply from the SBEE and sometimes get all their supply (consumers too far from the network) from wells and lagoons.

## ...but essential in water distribution

The SBEE supplies 35,000 customers in Cotonou through direct piping. Water distribution is mainly provided through connected resellers (50,000 families) or handcart vendors (3,000 families).

The increase in the SBEE's customers only concerns those people living in built-up areas or at least near the existing network.

Population serviced by type of water source



Poorer families in Cotonou inhabit mainly unhealthy zones that have not been built-up and where only private independent providers operate.

## A small part of the total sector turnover, but high employment

Global turnover in the potable water network is 4,200,000,000 FCFA. The SBEE provides approximately two-thirds although it only supplies one-third of the families directly.

Some 800 connected resellers and 500 handcart vendors represent more than 72% of remunerated jobs in the potable water network, whereas the

SBEE employs a quarter of all personnel in the sector. Water resale is often a solution to unemployment at the investor's level (the connected resellers' children and other family members).

# The considerable importance of private providers in the sanitation sector

## In sanitary installations, construction and maintenance



There is no sewer system in Cotonou. Open-air large and small canals are not very effective.

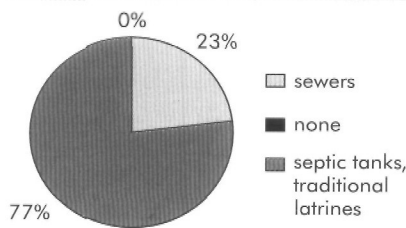
Most families evacuate their waste



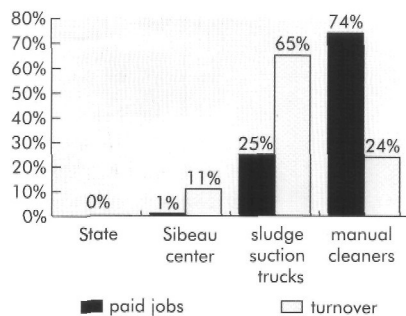
and excrement through independent facilities built by specialized masons.

Out of the 77% that have a collection system, more than half use cleaners, the others empty the waste in concessions or in the countryside. Private providers mainly manage water evacuation (Urban Street Services of Cotonou only manages 10% of the market).

### Population serviced by equipment



### Sanitation



### Turnover and employment

With a turnover of 400 million FCFA per annum, sludge suction trucks and the SIBEAU treatment station service only 10-15% of the families.

The large majority of families use manual cleaners (family operators)

whose turnover is no higher than 200 million FCFA.

Manual cleaners represent three-quarters of remunerated employment while the "modern" part of the network (sludge suction trucks and treatment plants) represent one-quarter of all personnel (about 100 jobs).

## FROM A SIMPLE RESALE VENDOR TO THE "PROFESSIONAL" STANDPIPE VENDOR

In the absence of public standpipe vendors, many SBEE customers resell their water through their private household connections. This is not illegal. Some have extended their network and installed standpipes more or less near their concession. True entrepreneurs, they consider water distribution a profession. Using internal resources (personal or family savings) their idea is to make a quick profit on an investment of a few hundred thousand FCFA (70,000 FCFA per household connection and 1,000 FCFA per meter of laid piping).

A professional solderer living in a built-up area laid 800 meters of piping in 1992 from a household connection, to supply a neighboring area. His important initial investment, 300,000 FCFA of personal money and 200,000 FCFA loaned by his parents, was quickly amortized. His monthly turnover varies between 35 and 2,254,000 FCFA according to the season.

Standpipe managers are not bound by contract to the SBEE who sell them water at the highest price. In this context of insecurity (risk of expropriation and absence of a contract) and without technical qualifications, these entrepreneurs choose minimum non-durable equipment (for breakages/leaks) meant to become quickly profitable.

# Offer of services adapted to the specific demand of the non-connected population

## Private providers in direct relation with their clientele

Potable water operators	Types of services and areas of intervention	Price FCFA/m <sup>3</sup>
<b>Connected resellers</b>	<ul style="list-style-type: none"> <li>Water sold from a private connection linked to the SBEE mains</li> <li>Good quality potable water supplied with continuous service (cistern to stock water)</li> <li>On the limits of outskirts without standpipes</li> </ul>	800
<b>Large-scale connected resellers</b>	<ul style="list-style-type: none"> <li>Water sold from a standpipe supplied by an extension from a private connection</li> <li>Good quality potable water supplied with continuous service (cistern to stock water)</li> <li>Price varies according to investment (length of the installed system), risks (leaks and theft of water) and intensity of competition</li> <li>In areas not serviced by the mains</li> </ul>	700 to 1,000 (900 on average)
<b>Handcarts</b>	<ul style="list-style-type: none"> <li>Home water delivery (by wheelbarrow)</li> <li>Potable water supplied in 20 l. cans</li> <li>In areas not serviced by the mains</li> </ul>	1,500

Many connected customers resell their water to their neighbors in response to the heavy demand by households for quality water sold in small quantities. To gain and keep their clients, these vendors propose continuous service (water stocked in cisterns to keep the waiting time down).

Home delivery by handcarts saves a lot of time for households living far from the mains. Well water for domestic use complements bought and delivered potable water.



Sanitation operators	Types of services and areas of intervention	Price in FCFA
Toilet seat manufacturers	<ul style="list-style-type: none"> <li>• Toilet seat sale for cement lavatories</li> </ul>	14 to 25,000/seat
Manual cleaners	<ul style="list-style-type: none"> <li>• Complete cleaning of traditional latrines, septic tanks and pits, method chosen by low- and middle-income families</li> <li>• On-site burial of sludge</li> <li>• Price varies according to the client, pit size and means of sludge burial</li> <li>• In all areas</li> </ul>	40 to to 50,000/cleaning
Sludge suction trucks	<ul style="list-style-type: none"> <li>• Liquid cleaning of big pits with high effluents volume by spiro truck (6-12 m<sup>3</sup> cistern)</li> <li>• Sludge removal and treatment at the SIBEAU plant</li> <li>• Cash on delivery, fixed price (imposed by USV) but higher for areas far from the treatment plant; payment by instalments for the Government</li> <li>• In areas with paved roads</li> </ul>	27,500 to more than 37,500/cleaning
SIBEAU plant	<ul style="list-style-type: none"> <li>• Treatment by lagooning sludge collected by truck</li> </ul>	3,500/trip

Families turn mainly to manual cleaners to empty their pits. Sludge suction trucks can only handle a limited number of cleanings due to the limited capacity of the SIBEAU plant.

Their fees are lower but have to be paid upfront and their services are not adapted to small pit models.

To gain clients, truckers place advertising boards at kiosks, for an average of 1,000 to 1,500 FCFA.

### FROM A STONE-BUILDER OF LATRINES TO THE MANUFACTURER OF TOILET SEATS — TOWARDS GREATER SPECIALIZATION?

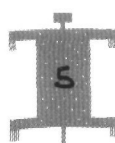
A stone mason or a BTP enterprise usually builds septic tanks when a house is under construction. Some artisan companies have started to manufacture toilet seats, sold between 14,000 to 25,000 FCFA. This activity, in full expansion, does not require an important initial investment but rather a high cash flow in order to purchase and stock necessary materials and accessories. An artisan from the Agia neighborhood has an annual turnover of 5 to 10 million FCFA. He cannot keep up with the demand and has had to hire new apprentices. This activity indicates a possible specialization in the sanitation sector.

### A SPECIFICITY OF COTONOU: A TREATMENT PLANT BY LAGOONING

Population mobilization due to the "wild" disposal of sludge by road services and some private truckers has induced a long-term solution to be sought. In 1994, an entrepreneur acquired a hundred million FCFA from an investor to build a treatment plant on land rented from the state on an emphyteotic lease.

Today, the SIBEAU plant is used by all emptying structures authorized by the cities of Cotonou and Porto-Novo (9 private, 3 public) representing a 21-truck pool.

The choice of a treatment plant by lagooning had to respond to the specificities of Cotonou's sanitation system (mainly watertight pits for concentrated waste) at low investment and maintenance costs. This technological choice constituted a first response to the problem of waste treatment. The fact that this unique center is saturated hinders sludge suction truckers' activities.



## Facing offers from public utilities

### Water services not adapted to the needs of the underprivileged population



The supply of potable water in Cotonou is provided by the Benin Electricity and Water Company (SBEE), a state company that holds the monopoly in water distribution in urban zones. It comes under the Ministry of Mines, Energy and Hydraulics and is responsible for the installation, management and maintenance of equipment. Only large construction projects are bid out.

The network only extends to built-up areas and neglects the population in peri-urban districts. In the areas serviced, the SBEE has abandoned official standpipes, poorly managed by local authorities and then by private managers. But household connections, even when subsidized, (18,000 FCFA instead of 70,000 FCFA for a normal connection) do not respond to the particular needs of the underprivileged population who prefer individual water sales.



Connected customers provide this service to their neighbors from their own household connection. These clandestine "standpipers" who sometimes make important investments (laying of pipes and standpipes), are affected by a 2-level pricing that penalizes large consumers, and by an 18% sales tax (340 FCFA/m<sup>3</sup>).

### And a sanitation service open to private operators

The sanitation sector is divided thus: Ministry of Environment, Housing and Urbanism (MEHU), Ministry of Health and Ministry of the Interior, Security and Territorial Administration (MISAT). The sector was opened to private operators in April 1995 by an inter-ministerial decree that regulated collection, removal, treatment and cleaning, to respond to ever-increasing demand.

## Perspectives of development for private operators' activities

### Cotonou, a city on the lagoon with almost a million inhabitants



Cotonou is built on a stretch of waterfront land 4 to 6 km wide, between the lake Nakoue and the Atlantic Ocean. The soil is relatively permeable and heavy rains cause flooding. Almost 34% of the urban space is below sea level.

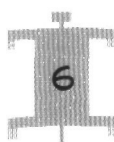
The majority of Cotonou's present 1,100,000 inhabitants originally came from inland. Twenty percent of the population lives below the poverty threshold (117,400 FCFA in 1994). Areas prone to flooding are densely populated due to heavy demographic growth and the presence of numerous wetlands. Without proper urban planning, most of the population has settled haphazardly in non-built-up areas.

#### Types of services and areas of intervention by the SBEE

Water sale only in central areas by private connection; connection, bi-monthly invoicing, 2-level tariffs

#### Sale price FCFA/m<sup>3</sup>

Tariff level to the connected customer  
138 (0-10 m<sup>3</sup>/month)  
290 (>10 m<sup>3</sup>/month)



## Constraints to overcome

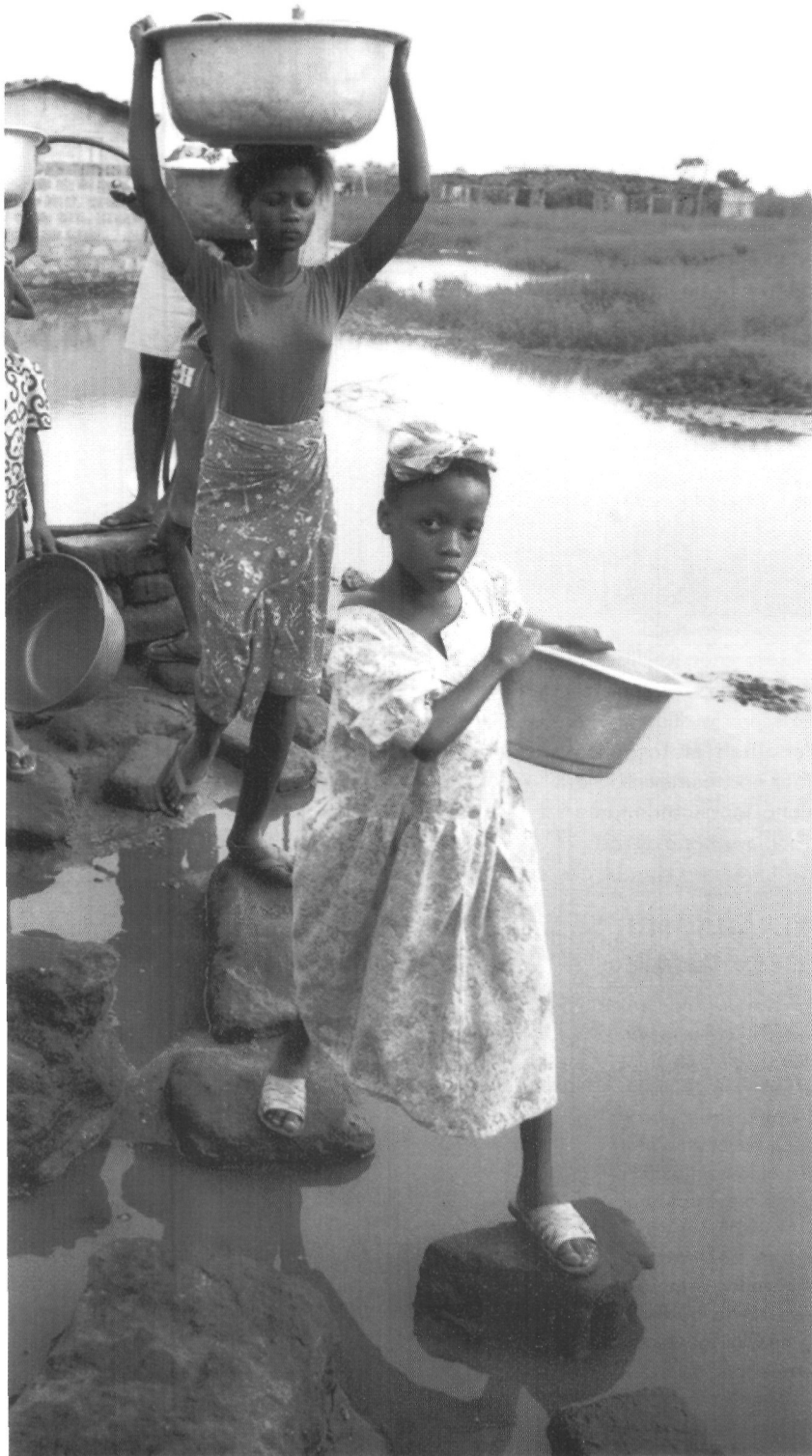
Development of private operators' activities is hindered by various factors:

- Non-recognition of connected resellers by the SBEE leads to a penalizing pricing policy, resulting in expensive water whose high cost is passed on to the consumer.
- Legal insecurity surrounding non-built-up areas (risk of expropriation) deters investments by water operators. They expand the network with low cost investments that are quickly profitable.
- The non-recognition of manual cleaners leads them to operate relatively clandestinely.
- Management problems due to lack of follow-up.
- Sometimes inappropriate (under-powered SIBEAU plant) and poorly mastered initial technological choices (standpipe operators lacking technical knowledge).
- Lack of resources to standardize facilities, purchase or renew equipment (sludge suction trucks).

In spite of these constraints, private operators demonstrate a spirit of achievement, an individual and team entrepreneurial attitude that it seems possible to develop.

### UNORGANIZED WATER RESELLERS...

All connected resellers work informally, but given the importance of certain investments in standpipe facilities, development seems likely. Reduction in the price of water remains to be negotiated with the SBEE, this would call for resellers to organize as a group. They would have to be officially recognized and given security concerning their investments in non-built-up areas before they could renew facilities in compliance with technical standards.



### ...BUT A TRUE CLEANERS' UNION

In the area of sanitation, manual cleaners still work informally. On the other hand, 12 business owners whose sludge suction trucks work with SIBEAU formed the Union of Cleaning Structures (USV). This union, with by-laws and rules of association, financed by membership dues (150 FCFA per trip), was formed in July 1995 to:

- establish cleaning prices to limit competition
- organize common action and exchanges for taxation, maintenance and equipment renewal
- solve the problem created by the saturation of the SIBEAU plant
- dialogue with the Municipality and Administration.

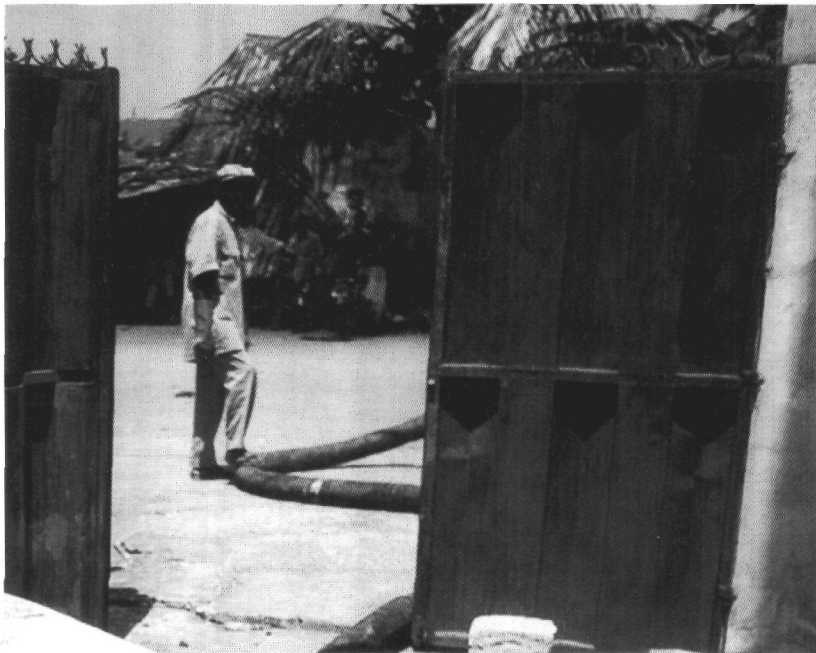
### Some proposals

After the conference in Bamako (September 25 to 29, 1999) the following priorities were established:

- Identify independent operators in zones not or poorly sanitized and supplied with water.
- In the water sector, negotiate standpipe tariffs for water resellers and change legislation; in the sanitation sector, examine all health and environmental issues.

- Organize information seminars for independent operators and bankers to communicate loan possibilities and the potential of WSS.

- Give legal status to independent operators organized in associations; create a dialogue area that would allow independent operators to be recognized and establish a regional platform for WSS sector professionals.



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The Water and Sanitation Program is an international partnership to help the poor gain sustained access to improved water supply and sanitation services. The Program's main funding partners are the Governments of Australia, Belgium, Canada, Denmark, Germany, Italy, Japan, Luxembourg, the Netherlands, Norway, Sweden, Switzerland, and the United Kingdom; the United Nations Development Programme, and The World Bank.

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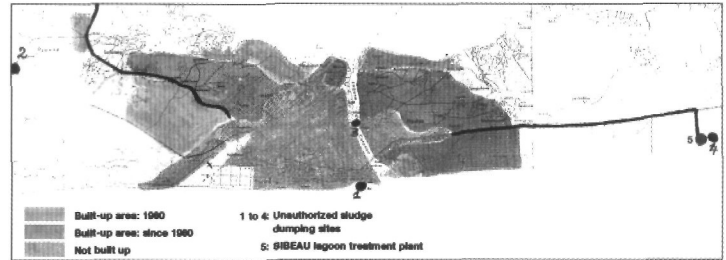
# SEPTAGE SUCTION TRUCK

## Cotonou - BENIN

Cotonou: population 1,100,000 - 1,000 CFAF = US\$ 1.60

### BOX: SANITATION IN COTONOU

- In the absence of a piped sewerage system, 77 percent of households drain wastewater and deposit human waste into on-site traditional latrines and septic tanks.
- These facilities are serviced and maintained by manual latrine cleaners and privately operated suction trucks; the city sanitation department covers only 10 percent of the market.
- Some 23 percent of households make no provision for wastewater and excreta disposal.



Amount of Business: 1 to 5 pit/truck.  
 Average cost for a second-hand spiro: 11,000,000 Cfa

### SEPTAGE SUCTION TRUCKS COVER THREE-QUARTERS OF THE MARKET

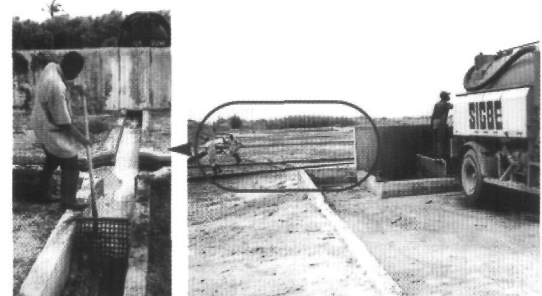
Suction trucks with a capacity of 6 to 10 m<sup>3</sup> carry out the removal and transport of septage to the sewerage treatment plant run by a local private company, SIBEAU.

- They pay cash: CFAF 27,500 per load
- Each truck earns CFAF 11 million (400 trips), with the heaviest volume occurring during the rainy season.
- A quarter of those working in the sanitation sector are employed by this activity.

### SIBEAU'S TREATMENT PLANT, OPERATING AT CAPACITY

The SIBEAU plant, constructed in 1994, processes waste naturally by lagoon treatment through a series of ponds. It was constructed in 1994 by an entrepreneur who invested several hundred million CFAF.

- Twelve officially registered sewerage services bring their waste to the SIBEAU plant, of which nine are privately run and three are run by public authorities.
- SIBEAU has its own fleet of 21 suction trucks, whose activity is limited by the capacity of the plant.



Liquid waste moves through three ponds before its discharge into the sea.

### THE UNION OF SEWERAGE SERVICES, PROFESSIONAL ORGANIZATION

The Union of Sewerage Services was constituted in June 1995, complete with official status and bylaws, at the initiative of SIBEAU. The organization has

- agreed on a common tariff structure in order to discourage indiscriminate dumping,
- organized common efforts regarding taxation and vehicle maintenance and replacement,
- worked out a plan for expanding the SIBEAU plant capacity, and
- maintained an ongoing dialogue with the city and central government authorities.



Truckers pay the dumping fee at the SIBEAU treatment plant.



There is competition from unregistered trucks, who dump waste indiscriminately.



# RESELLERS OF HOUSEHOLD TAP WATER

## Cotonou - BENIN

Cotonou: population 1,100,000 - 1,000 CFAF = US\$ 1.60



Women (with help from their children) are often in charge of water resale as a secondary income source, since their primary source of income is often located close to home.

### FROM WATER RESELLER TO STANDPIPE OPERATOR

Reselling water from a private connection can be:

- a source of supplemental income for a family who resells to a few neighbors, or
- a full-time career for those who add a private standpipe (CFAF 70,000) and local distribution pipes (CFAF 1,000/meter).

#### PROFILE OF A LARGE-SCALE RESELLER IN VOSSA

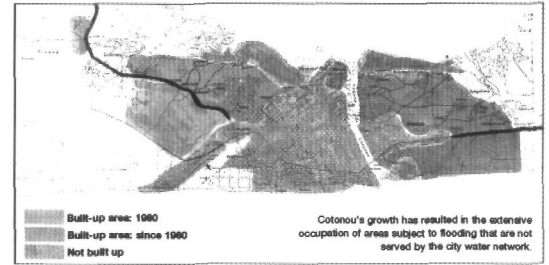
Since 1992, water has been distributed to the unauthorized Filifadji area of Cotonou by a resident of the neighboring Vossa subdivision. He has installed 800 meters of pipe connected to a meter serving this adjacent property..

### IMPACT ON SERVICE OF WATER TARIFF STRUCTURE AND LACK OF TENURE

Because they have no official status, the household resellers receive no discount for larger purchases of water.

- On the contrary, they pay a higher rate of CFAF 340/m<sup>3</sup> under a progressive two-level tariff system, plus 18 percent value added tax.
- they resell at CFAF 850/m<sup>3</sup>, with the selling price dependent on the number of clients, level of investment, and the extent of competition.

Lacking a contract with SBEE, and under the risk of expropriation because of lack of land tenure in unauthorized settlements, they chose to limit investment to equipment that will quickly pay back its cost.



Cotonou's growth has resulted in the extensive occupation of areas subject to flooding that are not served by the city water network.

### THOSE WITH TAPS SELL WATER TO THOSE WITHOUT

The Benin Water and Electricity Company (SBEE) delivers water only via individual household connections that serve 32 percent of households in planned and resettled urban areas.

In the absence of public standpipes, resale of water from individual household taps is the source of water for:

- 46 percent of families, generates nearly a third of overall water sales, and
- employs 800 people, or
- 44 percent of those employed in water provision.



Water resale in Vossa: Large barrels are used to store drawn water in order to cut down on client waiting time.



Low-cost water distribution equipment isn't always the most durable.