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MAPS CÔTE D'IVOIRE: PRIVATE SECTOR DESCRIPTION

Volume II: Private Sector Provision of Municipal Services

FINAL REPORT

*Bureau for Private Enterprise
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ACRONYMS AND ABBREVIATIONS

ASDI	Presumptive Tax
BCEAO	<i>Banque Centrale des Etats de l'Afrique de l'Ouest</i>
BEAC	<i>Banque des Etats de l'Afrique Centrale</i>
CAMA	Central African Monetary Area
EECI	<i>Entreprise d'Electricite de Côte d'Ivoire</i>
GOCI	Government of Côte d'Ivoire
MAPS	Manual for Action in the Private Sector
SMIG	<i>Salaire Minimum Interprofessionnel Garanti</i>
SODECI	<i>Société des Eaux de Côte d'Ivoire</i>
WAMU	West African Monetary Union

A. INTRODUCTION

The goal of the MAPS research is to assist USAID/Côte d'Ivoire in understanding the actual and potential role and importance of the private sector within the overall economy. The opportunities and constraints are understood to include human resources, physical resources, capital resources, and the policy environment. The general role and position of the private sector in the Ivorian economy has been addressed in Volume I, while the private sector's role in the health delivery sector is reviewed in Volume III of this report.

The MAPS team was also asked to provide a description of the opportunities for and constraints to private sector development in the area of municipal and urban service provision. This section of the MAPS Private Sector Description, Volume II, assesses the business opportunity for private sector operators to provide various municipal services. Material used for this assessment included a review of published materials, interviews with local government officials and business operators, as well as site visits to Abidjan, Bouaké, Ferkessedougou and Korhogo, conducted in November 1992.

In brief, it is evident from a simple visual survey that many services regarded as the responsibility of municipalities in the United States and other developed countries are not being provided to most residents of many urban neighborhoods in Côte d'Ivoire. For example, tertiary roads are more often than not neither paved nor drained, with predictable erosion and rutting; storm drains are generally open to the sky and unmaintained; household solid waste collection meets less than half of the need; illegal or traditional dumps in residential areas are the rule rather than the exception; and separation of ground table drinking water and waste water discharge is not controlled.

B. MUNICIPALITIES IN COTE D'IVOIRE

1. Background

The Government of Côte d'Ivoire (GOCI) has as one of its goals, administrative reform through the decentralization of territorial administration and the creation of autonomous municipalities known as communes. In doing so, the GOCI aims to shift its financial and social obligations to the urbanizing population to lower level governments. This involves transferring responsibility for service provision from national to lowest level government, replacing public sector with private sector purveyors of goods and services, and eliminating subsidies associated with public sector service provision.

Another goal of this process of devolution is to distribute growth and investment more evenly among all cities in Côte d'Ivoire. One may either reduce the dominant attraction of Abidjan, or increase the attraction of other cities, for the migrating population.

1.1 Costs and Benefits of City Life

A city is a concentration of human population which supports itself from all work other than primary agriculture. The concentration of workers raises the productivity of modern industry and services, as well as that of the workers themselves. Once concentrated, workers and their families form large markets for the organized distribution of agricultural produce. Urbanization forces the growth of rural productivity. If rural productivity lags the urban, unsatisfied urban demand will be filled by non-local imports. CFA franc exchange rates favor imports and urban areas. One of the benefits and attractions of life in cities in Côte d'Ivoire over rural areas is access to basic consumer goods.

In poorer countries, the motive for locating in urban areas is the search for paid employment. Indeed, a growing population base also creates a growing customer base for increasing amounts and variety of paid employment. While urban areas concentrate great wealth, they also contain great poverty. As urbanization takes place, there is a parallel transfer of poverty from the rural to the urban setting. It is estimated that 50% of Côte d'Ivoire's population lives in cities¹ and that half of all urban children are born to poor families.

The process of establishing a *quartier* in an Ivorian city appears based on the family compound rather than a village-level planning unit. First one family compound is established near a place of work opportunity. Then other family compounds adjoin nearby, until a village is created on the edge of a city. Cities in Côte d'Ivoire appear to be collections of villages or *quartiers* radiating from the central market. Because of this growth pattern, Ivorian cities typically establish themselves and spread without common, *a priori* planning to provide city services on a uniform basis.

Growth in urban productivity, and family wealth, is possible only through the concentration of high quality infrastructure, both physical (e.g., power, roads, water supply, drainage) and social (e.g., education, health facilities). This infrastructure is not distributed evenly throughout any country because of the high costs involved. In the case of Côte d'Ivoire, distribution has been more uneven: most urban infrastructure was purchased for Abidjan, a disproportionate amount for Yamoussoukro, some for Bouaké and other regional centers, and little for the remainder of the country.

Côte d'Ivoire is entering into a development stage which should be characterized by heavy capital investment in infrastructure. The civil works already constructed have to be maintained if the investment is to be beneficial. And, in order to generate the amount of revenues required to pay down government debt and to achieve the goal of more uniform municipal development, additional kilometers of improved and drained roads, bridges, waste water treatment and other public works will have to be added to Côte d'Ivoire's stock. This is a cost that will have to be paid but can potentially be funded in part by the increased GDP

¹ World Bank reports set the proportion closer to 40%.

generated by decreased transaction costs and higher efficiencies permitted by adequate municipal infrastructure.

Cities do not exist only to provide a framework for production. They play a key role in national, regional and international transactional systems measured in their flows of people, finance, information, and commodities, through banking systems, markets and trading networks. It may be safely argued that few economies can grow and prosper without well operated cities at their center.

While Côte d'Ivoire's cities may provide and enable a significant portion of national output, and government revenues², public authorities are unwilling or unable to use these revenues to make cities work. The very anonymity of people collected in a city makes it easy for governments to ignore their specific needs, as these needs are generally very expensive. Moreover, local authorities are frequently robbed of powers and morale by the national government, and burdened with responsibilities unaccompanied by the financial basis or the institutional autonomy needed to fulfill them.

1.2 Municipal Autonomy

National governments often set national prices for basic services such as bus tariffs or water usage fees without regard for cost recovery, leaving the service providers unable to invest in a timely fashion as the market expands. Deficits in service provision grow as budgetary losses increase, so that householders are reduced to paying private suppliers excessive fees for substandard supplementary service.

The great danger is a waste of public resources through poor or non-existent maintenance, followed by an extravagant allocation of (often donor subsidized) capital on new projects. The inability of governments to maintain facilities leads to even greater waste. Older cities often lose up to half their water throughput (and thus also revenues) to leaks in poorly or unmaintained pipes.³ Simple repair of pipes produces more water than new investment in supply. The example of Newark, New Jersey, given below shows that a private service contract with leak detection and repair is amply repaid through savings.

Poor maintenance of roads damages vehicles. The cost of road maintenance is often less than the losses from the depreciated vehicles. There is little bureaucratic pressure to substitute maintenance money for new vehicle purchase as the vehicle losses of the citizenry and business are invisible to the municipal government, as they do not show up on the city's annual budget. Additionally, the high cost structure in Côte d'Ivoire (its statutory minimum wage, or SMIG,

² The residents and businesses located in Côte d'Ivoire's municipalities being the chief beneficiaries and consumers of and payers of taxes on imported goods, and adders of value to the country's agricultural commodity base

³ Harris, Nigel, "The agenda of urban issues," The Courier, No 131, January-February 1992, p 52.

remains the highest in the BCEAO region) and the CFAF exchange rate, favors imports of vehicles over expenditure of money on labor.

2. Municipalities in Côte d'Ivoire

There is only one large city of greater than one million population in Côte d'Ivoire, Abidjan, which consists of ten communes. Until 1980, there were only eight communes, or autonomous, city-level governments, in Côte d'Ivoire. The Municipal Law of 1979 created an additional 29. The GOCI in 1985 planned to create additional communes in cities with populations of 10,000 or more, but the National PDCI Party Congress forced the threshold lower, so that towns with as few as 2,000 residents would legally be constituted a commune. There is reason to doubt the viability of the resulting 56 communes of 2,000-10,000 population when left to their own financial resources. One may also doubt the capacity of the Interior Ministry to supply them with the management and resource skills they lack.

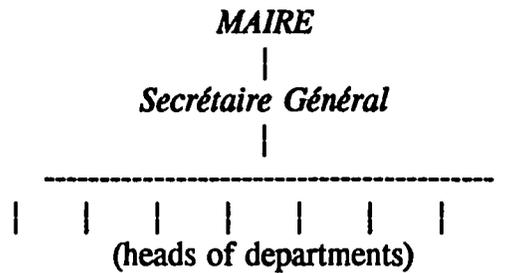
Côte d'Ivoire's urbanizing areas are under considerable pressure. Population and settlement growth is outpacing the provision of such necessary urban infrastructure as graded and drained tertiary and secondary roads, potable water provision and waste water collection, electricity and telecommunications. A greater problem is that the devolution of responsibilities from the central to the municipal government has not been accompanied by a commensurate devolution of the authority required to fund implementation of these responsibilities.

2.1 Governmental Structure

In 1990, in response to public pressure, President Houphouët opened the political system to other parties and authorized multiparty presidential, legislative and local elections. The mayor of a municipality has been popularly elected, if from a short list of candidates, for a number of years. This elected mayor and the population generally benefit from a professionally trained cadre of civil servants. The problem facing the civil service, as well as elected municipal government, is the incomplete process of devolution of powers and authorities from the national to the local level. Municipal officials often are confronted with the contradiction between their heavy responsibility and limited authority and power. The intensity of a candidate to be elected or re-elected has already been measured in traditional forms of pre-election public works programs and promises.

A municipal government in Côte d'Ivoire consists of an elected *Maire* (chief executive) who represents the municipality to higher levels of government, helps set the municipality's political and policy agenda, and oversees the activities of an appointed civil service. Day to day operational affairs of the municipality are managed by a senior civil servant, the *Secrétaire Général*, while technical department heads are responsible for their task areas.

THE STRUCTURE OF A TYPICAL IVORIAN MUNICIPALITY



A complexity of municipal affairs in Côte d'Ivoire is that not all services provided within the boundaries of a municipality are provided and paid for from municipal resources. Decisions on provision of public safety, some civil construction, potable water, electricity, education and health are taken largely elsewhere by public and private national entities.

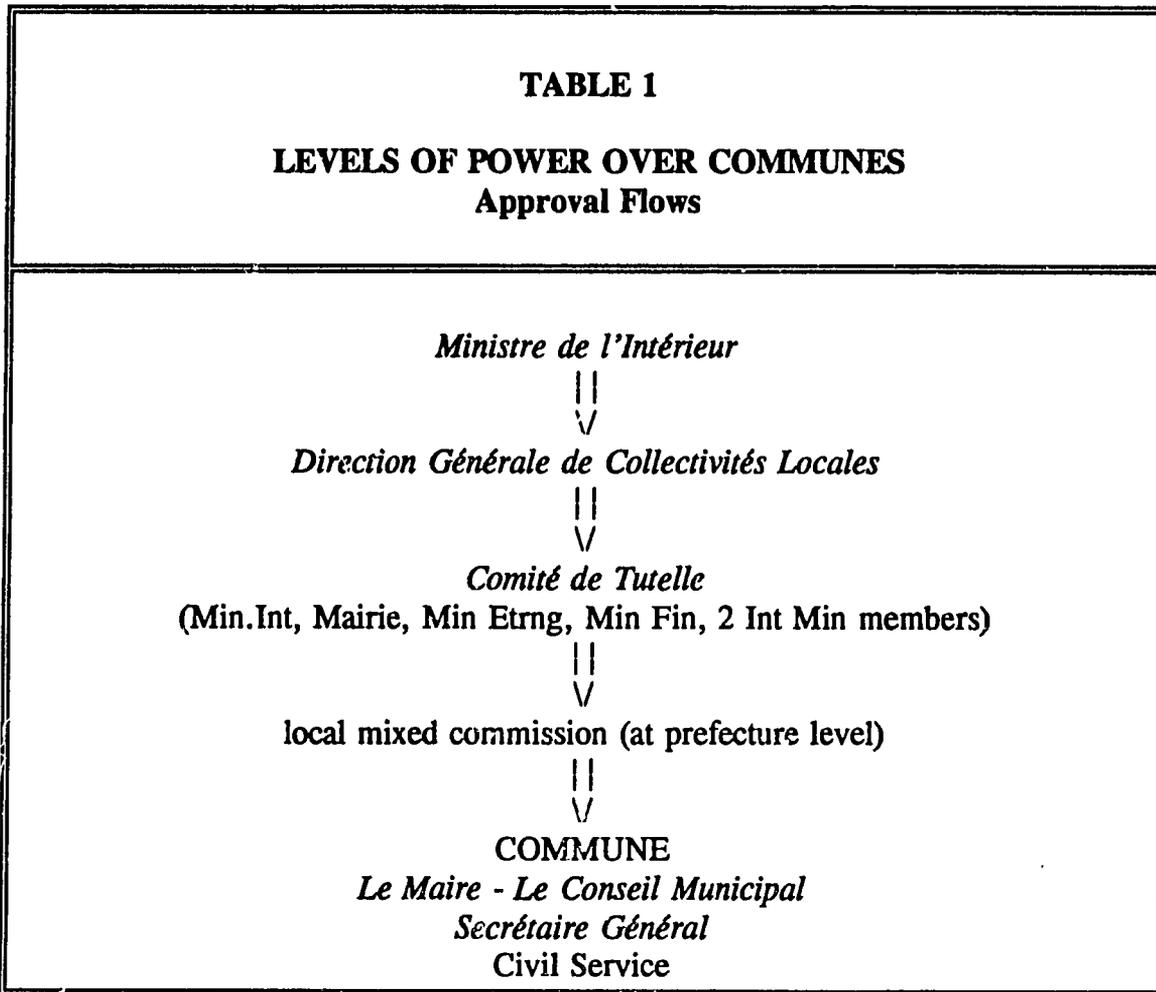
On the other hand, while the maintenance of these services may be the responsibility of the municipalities, they do not have the power to collect and retain in local accounts the revenues to pay for that maintenance. Taxes collected for the municipal account (apparently primarily the daily market fees) by municipal officials⁴ are remitted to the national treasury where they are entered as a credit on the communal account. Practical experience informs municipal officials, however, that the funds at that point may cease to be available to the municipalities.⁵ The World Bank, the IMF and France have been working the GOCI for a number of years to improve the rationality of the tax structure, improve the collection of those taxes owed, and extend equal tax treatment to income from all activities, including property investments.

History and practice suggest that municipalities have the right to enter into contracts. Abidjan and Bouaké both have had contracts with private vendors to provide collection of solid waste. One may wish to consider technical assistance to municipalities to help them understand the full range of their legal powers and how best to marshal their resources to take best advantage of opportunities.

Just as municipal tax revenues are collected from the bottom and sent up, to be returned if and when the central government decides, political and operational decisions taken at the municipal level are referred to the national levels and approval for implementation flows from the top down.

⁴ In Korhogo there are reportedly 45 collectors in the market collecting CFAF 3,000 per month from market stallholders.

⁵ In mid-November 1992, officials of the Commune de Korhogo reported finding about 8.5% of its annual budget, or CFAF 30 million, reported as a credit on its ledger account at the Ministry of Finance without being able to touch the money.



3. Population Mix of Côte d'Ivoire's Urban Areas

A good deal of attention has been attracted by Côte d'Ivoire's citizenship policy. While citizenship is an explicit right, the government withholds citizenship from residents born in Côte d'Ivoire, even when it can be demonstrated that their parents and even grandparents were Ivorian residents. Bouaké, an official of another municipality remarked offhandedly, is the second city of Mali in term of Malian population. The closeness of the link between its residents and the city will determine how much - and at what cost to the city - the non-Ivorian resident may wish to support his city of residence financially. As has been noted elsewhere, the non-trivial nature of this situation may be measured by the magnitude of the annual hemorrhage of remittances sent out of Côte d'Ivoire to Burkina Faso, Mali and elsewhere.

TABLE 2
SHARE OF NON-IVORIAN RESIDENTS IN TOTAL POPULATION

Census 1988	RATIO OF	SHARE	MALES	FEMALES	TOTAL
	Ivor/Non-Ivorian	Non-Ivor.	Share Non-Ivorian	Share Non-Ivorian	All Residents
ALL DEPART.	2.572248	27.99%	30.57%	25.30%	10673937
ABENGOUROU	1.009603	49.76%	52.04%	47.25%	215954
ABIDJAN	1.758134	36.26%	39.06%	33.30%	2424747
ABOISSO	0.894276	52.79%	55.69%	49.64%	225775
ADZOPE	2.781325	26.45%	29.39%	23.47%	237713
AGBOVILLE	2.078452	32.48%	35.18%	29.58%	203341
AGNIBILEKRO	1.001876	49.95%	52.80%	46.96%	84317
BANGOLO	9.581149	9.45%	11.27%	7.62%	79930
BEOUMI	21.91997	4.36%	5.19%	3.59%	90213
BIANKOUMA	11.64422	7.91%	8.98%	6.90%	98195
BONDOUKOU	12.62496	7.34%	8.31%	6.41%	174127
BONGOUANOU	2.437748	29.09%	31.61%	26.65%	224784
BOUAFLE	2.424162	29.20%	31.32%	26.95%	165750
BOUAKE	3.224129	23.67%	25.53%	21.81%	450119
BOUNA	9.901325	9.17%	9.47%	8.88%	135776
BOUNDIALI	11.43959	8.04%	8.75%	7.39%	127767
DABAKALA	24.40118	3.94%	4.99%	2.91%	81741
DALOA	2.175713	31.49%	33.68%	29.09%	359605
DANANE	7.759794	11.42%	13.03%	9.84%	222709
DAOUKRO	3.107416	24.35%	26.29%	22.43%	86457
DIMBOKRO	7.39155	11.92%	12.94%	10.91%	66738
DIVO	1.383424	41.96%	44.48%	39.12%	386906
DUEKOUE	2.498578	28.58%	31.71%	25.16%	102127
FERKESSE-	3.297383	23.27%	24.38%	22.15%	172772

GAGNOA	2.577764	27.95%	30.31%	25.35%	276071
GRANDLAHOU	1.290825	43.65%	46.61%	40.25%	52508
GUIGLO	2.492685	28.63%	31.72%	25.33%	170216
ISSIA	2.329633	30.03%	33.08%	26.74%	195586
KATIOLA	4.607442	17.83%	20.30%	15.21%	130502
KORHOGO	9.441975	9.58%	10.39%	8.82%	389966
LAKOTA	2.727334	26.83%	29.24%	24.20%	116673
MAN	7.108591	12.33%	14.04%	10.60%	294577
MANKONO	13.73933	6.78%	7.91%	5.63%	123265
M'BAHIAKRO	6.576605	13.20%	14.54%	11.96%	102466
ODIENNE	15.32884	6.12%	6.79%	5.47%	169624
OUME	1.888082	34.63%	37.23%	31.70%	141181
SAKASSOU	19.51524	4.87%	5.80%	4.01%	59248
SAN-PEDRO	1.422546	41.28%	43.97%	37.91%	170586
SASSANDRA	1.318394	43.13%	45.61%	40.12%	108065
SEGUELA	4.757759	17.37%	20.06%	14.58%	121149
SINFRA	2.07048	32.57%	35.24%	29.70%	121809
SOUBRE	1.25456	44.35%	47.70%	40.36%	310649
TABOU	1.552476	39.18%	42.57%	34.80%	58102
TANDA	2.967436	25.21%	27.01%	23.48%	203950
TENGRELA	3.528459	22.08%	22.37%	21.80%	54817
TIASSALE	1.602806	38.42%	41.37%	35.05%	133550
TOUBA	11.72018	7.86%	8.30%	7.43%	107829
TOUMODI	5.093724	16.41%	18.77%	14.04%	80687
VAVOUA	1.185667	45.75%	48.38%	42.72%	168233
YAMOOUSSOUKRO	4.857825	17.07%	19.36%	14.84%	281117
ZUENOULA	7.235022	12.14%	13.29%	10.94%	113948

From Table 2, we see that taking all 50 *départements* as a whole, Ivorian citizens outnumber non-Ivorians by a ratio of 2.5 to 1. When we look more closely by *département*, however, we find there are pockets of near equality or even majority non-Ivorian residents. Aboisso, Agnibilékro, Divo, Grandlahou, Sassandra, and Vavoua all have significantly large non-Ivorian populations. This is significant on two grounds:

- a. the interest on the part of the non-Ivorians to pay taxes and fees to a city and country which does not fully support them; and,
- b. the interest of a city to provide adequate municipal services to residents it does not regard as fully worthy of citizenship.

Taking Abidjan as the prime example, we see that the share of non-Ivorians in the total population of Abidjan's ten communes varies from 16% to 54%. When we look at the relation between non-Ivorian male residents to all male residents of each of Abidjan's ten communes, we see that the non-Ivorian males make up the majority of the male population in five.

	RATIO of Ivorian to non-Ivor.	SHARE OF NON-IVORIAN RESIDENTS IN:		
		Total Pop	Males to Total Males	Females to Tot. Fem.
ABIDJAN	1.744455	36.44%	39.11%	33.63%
Abobo	2.693615	27.07%	28.32%	25.78%
Adjame	1.075250	48.19%	52.81%	42.86%
Attiecoubé	1.990311	33.44%	36.29%	30.44%
Cocody	1.464675	40.57%	43.82%	37.26%
Koumassi	1.100201	47.61%	50.33%	44.75%
Marcory	1.013561	49.66%	53.33%	45.85%
Plateau	1.672972	37.41%	39.81%	34.83%
Port Bouet	0.980358	50.50%	50.99%	50.00%
Treichville	0.834774	54.50%	60.18%	48.03%
Yopougon	5.181349	16.18%	18.01%	14.30%

Source: 1988 Census

There are two observations to make. The first is that the variable of socio-economic level of the non-Ivorian residents must be taken into account. Resident foreigners working at the African Development Bank, or a similar agency, are likely to reside in upper income neighborhoods and be relatively well-served with municipal services. The second observation is that Abidjan's population is heavily weighted with non-citizens. Either the country's law on acquiring citizenship is too restrictive, or, Abidjan is viewed by a significant number of its residents as a temporary residence only. In either case, it is difficult to conceive of a strategy, either than user fees, that will give the ten communes the revenue stream they will need to provide services to this population. The private operator of the electric and water utility, and the telecommunications company, already operate on this basis. It remains to be seen whether the remaining service providers can identify a similar strategy.

3.1 Ability and Willingness to Pay for Services

The statistical unit already established in previous studies for USAID in Côte d'Ivoire is the household in the sense of a domestic unit. This runs the gamut from a single person household or a group of single persons occupying a household unit, all the way to a family unit consisting of the nuclear or extended family. The common denominator is that the majority of meals is taken most often within this group at this location, and that the members of the group share in the expenses associated with the dwelling, such as rent, water, and electricity. In Côte d'Ivoire, there is a range of identifiable types of households, which offer insight into economic standing. These are:

- a) Habitat résidentiel de standing, which is usually financed directly by an individual or family (colonial style homes of the Plateau area of Abidjan are examples of this type);
- b) Habitat résidentiel de standing, constructed as a business by real estate companies;
- c) Habitat groupé de type économique, a middle class residence constructed as a business by real estate companies;
- d) Habitat groupé de type évolutif, or the "evolving home", which is constructed on the basis of an administrative allotment of property by the State or on the basis of another legal transfer of title, or by transfer of title which is in the process of being legalized (examples of such neighborhoods in Abidjan include Sagbé, Port Bouet II in Yopougon commune, and the *quartier* Jérusalem in Yopougon-Locodjoro);
- e) Habitat spontané, or the squatter-home, constructed in wood or other permanent material and juridically without identity or legal existence; these are found in the ravines or temporary locations such as Adou Saint Omer in Koumassi, and the *Nouveau quartier* in Port Bouet;

- f) *Villages et campements ruraux*, which differ from squatters' districts in their rural nature, or their relation to extant villages. A rural village does not typically have electricity, piped water or common waste water disposal, but may be located completely adjacent to a city district, as is the case on the western edge of Bouaké.⁶

It is readily observed that the wealthier neighborhoods in Abidjan are the last to lose municipal services, and the least willing to pay user fees. Wealthier people are usually more aware of the relation between the taxes they (are supposed to) pay and the services expected in return. In Côte d'Ivoire, and especially in Abidjan, the wealthier residents are civil servants and businessmen, two classes of employees that has been frozen in incomes, or shrinking in size since the crisis.

In reviewing the results of the International Water Supply and Sanitation Decade (the 1980s), one observer notes that "research and practical experience increasingly show that in many circumstances - far more than had previously been thought - poor people want and are willing to pay for services of a relatively high quality, and they will pay substantially more if the service is reliable."⁷

The typical relation between the poor family paying 10% of household income for a few buckets of water, for lack of other choices, is well known. In the case of Côte d'Ivoire, it remains to be seen what is the true willingness to pay, and the ability to enforce contracts, in the case of water, electric and telephone utility hookups. Learning this information will contribute to efficient project design in the case of USAID, and in setting a correct valuation on the shares of CIE, for example.

The accompanying Table 4, showing the relative participation in tontines, provides some insight into the amount of disposable income available to pay for municipal services, by commune and by household type. Based on the data, it would appear that the relatively small user fees often considered for solid waste collection schemes should not be viewed as important constraints. Rather than ability to pay, one should concentrate on willingness to pay.

⁶ Manou, Annie & Thuan N'Guyen Viet, "*Revenus et Dépenses des Ménages à Abidjan; Principaux Resultats*", Report to REDSO/PMO/RU, Abidjan, July-Sept 1985.

⁷ Briscoe, John, "Poverty and Water Supply: How to Move Forward", *Finance & Development*, December 1992, pp16ff.

TABLE 4

TONTINE & SAVINGS IN COTE D'IVOIRE

TONTINES & SAVINGS IN COTE D'IVOIRE										
A = % of residents participating in a Tontine										
B = average monthly savings in CFAF										
COMMUNE	I		II		III		IV		MEAN	
	A	B	A	B	A	B	A	B	A	B
ABIDJAN	4.65%	5900	9.32%	20558	17.79%	10486	16.59%	8597	14.82%	11801
Port Bouet	0.00%	0	17.59%	12421	0.00%	0	19.51%	9584	18.34%	10427
Koumassi	0.00%	0	58.30%	7414	17.94%	8223	15.22%	8071	14.42%	8105
Marcory	4.76%	5200	10.19%	19455	13.51%	11225	27.27%	12167	11.65%	13483
Treichville	0.00%	0	10.00%	21375	20.00%	12091	0.00%	0	17.20%	13095
Adjame	0.00%	0	7.79%	39893	19.59%	10026	0.00%	0	15.38%	13998
Attecoube	0.00%	0	40.00%	12500	21.62%	1266	21.43%	5167	21.90%	10701
Plateau	23.53%	6250	8.33%	100000	0.00%	0	0.00%	0	17.24%	25000
Cocody	0.00%	0	4.92%	28500	3.57%	5000	12.28%	12929	5.43%	19036
Abobo	0.00%	0	5.71%	35500	16.90%	9505	10.45%	4500	15.57%	9664
Yopougon	0.00%	0	9.52%	21750	18.97%	12986	26.32%	8140	14.18%	15612

I = Residence Prive
 II = Societe Immcbillier
 III = Habitation Evolutif
 IV = Campement & Spontanee
 Source of data: Manou & Thuan, 1985 "Menage ayant une Tontine"
 J.E. Austin Associates, Inc., 1992

C. LEGAL POWERS OF MUNICIPALITIES

The legal powers of the communes are laid down in the 1979 Municipal Law as amended. From practice, it appears that communes and their agents have the power to tax (collection of market taxes) and the power to enter into contracts (solid waste collection contracts in Bouaké and Abidjan). What is not entirely clear is the true degree of autonomy of the communes, especially when we consider the reports of municipal authorities in Korhogo and Bouaké, when they state that all municipal policy initiatives are referred to the Interior Ministry in Abidjan for approval. Additionally, the municipalities are not the custodians of the tax revenues they collect, but merely the agents of the national treasury.

Thus, before one can fully consider the business opportunity for private sector service providers, one must understand more clearly the true ability of municipalities to establish an independent source of revenues and an independent ability to enter into and execute contracts. This point is especially important when one considers the possibility of the communes issuing bonds on the open market to raise capital for major projects.

D. MUNICIPAL SERVICE PROVISION IN COTE D'IVOIRE

Provision of municipal services in Côte d'Ivoire has been characterized as highly inefficient. Prices for most services are among the highest in the world and yet service levels are often poor. The reasons include:

- 1) weak to non-existent regulatory framework;
- 2) over-investment, often with standards ill-adapted to local conditions and poorly planned;
- 3) large backlogs of maintenance; and,
- 4) weak management (including finances) and institutional frameworks.

1. The Services Needed for a City

The Peace Corps has conducted a number of surveys of towns in Côte d'Ivoire to determine which problems the residents consider the most important. One such survey conducted in the town of Soubré in May 1992⁸, found that 38% of respondents believed that garbage was the most urgent problem in their town, followed by lighting, waste water disposal, public safety/crime, drainage, erosion and "other".

⁸ Schultz, Karl, *Rapport de l'Enquete sur le projet de precollecte des ordures ménagères*, Peace Corps, Soubré, May 1992.

Municipal services may be divided into two groups: those necessary for the daily operation of a residence, and those necessary for the smooth running of the city. Residents of a city require and are willing to pay for potable water and sanitary disposal, electricity, telecommunications, and collection of solid waste. In addition, maintenance of public spaces, control of pests, public safety and health, education, and maintenance of roads and bridges, are important to residents, if not directly important to the daily operation of their places of residence.

**TABLE 5
MUNICIPAL SERVICES AND PROVIDERS IN COTE D'IVOIRE**

SERVICE	PROVIDER	REVENUE	STATUS
Electricity	CIE	fee	private
Drinking water	SODECI	fee	private
Trash collection	mairie/ private	tax	public/ private
Health	GOCI / private	tax/fee	public/ private
Police	GOCI	tax	public
Fire	GOCI	tax	public
Road maintenance	mairie	tax	public
Market maintenance	mairie	tax/fee	public
Bridge maintenance	mairie	tax	public
Drainage maintenance	mairie	tax	public/ private
Sanitary sewers	mairie	tax/none	public/ private
Park & public area maintenance	mairie	tax	public
Education	GOCI/ private	tax/fee	public/ private

2. The Impact of Road Paving

On average, 28% of the roads across Côte d'Ivoire are not freely open to traffic. In some towns, such as Soubré, 52% of the roadways are impassable by motor vehicles. It has often been remarked that ease of access, or the cost of the last mile, determines in large measure the degree to which municipal services are offered and consumers are willing or able to pay the true cost of services.

The primary municipal service (in that it enables the efficient provision of most others) is the provision of adequate roadways through neighborhoods and connecting residential and business areas. Road construction costs are measured in terms of market price. In Côte d'Ivoire, the price for the construction of tertiary road in a settled, urban setting is known. While employment in the Construction and Civil Works sector decreased from 6,663 to 3,444 between 1988 and 1990, as of November 1992, 4,446 firms of all sizes, employing 20,188. There are at least three Ivorian-owned civil construction companies competent to bid and complete urban road construction projects.

	Minimum	Maximum
Road Only	45,000,000	47,000,000
Road, surface drainage and waste water mains	70,000,000	90,000,000

Source: USAID/FEDSO/PMO/UD, 1992

The costs of road maintenance are in part dependent on traffic volume and type, and in part independent of such factors. Benefits may be measured in terms of savings in reduced travel time and other transport costs to their users. Benefits may also be measured in terms of the increased value of an urban residence or business which receives adequate municipal maintenance services. Such added value may be measured in reduced illness and accident costs, in change in market value of the property, and in intangible benefits. Most observers of Ivorian cities quickly realize that a key constraint to a more even distribution and growth of economic activity is the atrocious condition of most secondary and all tertiary roads.

In her 1990 analysis of the impact of upgrading activities, Serageldin wrote, "In the interviews carried out by Kimou and Alleby, road paving was singled out as the most important factor in the promotion of economic activity. Following heavy downpours unpaved streets are impassable to wheeler' transportation including bicycles and pushcarts. The operator himself or

hired laborers have to carry supplies from the closest vehicular access point to the store, an unreliable and risky operation. The businesses interviewed invariably mentioned one or more of the following factors as crucial to their operations:

- vehicular access, uninterrupted during the rainy season to guarantee delivery of supplies
- the passage of larger trucks needed to transport bulky supplies, machinery, equipment and products ...
- reduced levels of dust particularly during the dry season [crucial to health and equipment maintenance]
- access by emergency [and municipal service] vehicles."⁹

The condition of the roads are a staple topic for newspaper articles in Côte d'Ivoire, even for the government party's newspaper, *Fraternité-Matin*. The newspaper reported in its Bouaké section in mid-November that the roads in Djamourou are so impassable no vehicle can penetrate the *quartier* any longer. This is an exaggeration, as the private sector mini-bus taxis are seen wherever there is an opportunity for a fare. As will be discussed later, it is primarily municipal service vehicles that are unable to pass these roads.¹⁰

The team observed in Bouaké's Sokoura *quartier* fully blocked storm sewers at a busy commercial intersection on the rue de Sokoura at the *Cinema Liberté*. One small business owner said that he had personally paid CFAF 2,000 to get the drain on his corner clean out. Across the intersection was a pile of muck and a half-finished project from the previous week when the city workers had left. The open-air butcher who plied his trade on top of this clogged sewer (the flies crawled on the meat; the grease, cuttings and waste from his work was dumped into the storm sewer) would only note that the *mairie* was negligent. Tracing the route, it turned out that these sewers actually emptied in the eroded, unpaved street half a block away, downhill. Visual evidence indicated that they discharge their loads of waste water and dead rats into a family courtyard on the north side of the road. In addition to poor maintenance, the issue here, and likely elsewhere, is inadequate planning and design, with immediate health hazards as a consequence.

⁹ Serageldin, Mona, "The Impact of Upgrading Projects on Local Management of Infrastructure and Integration of Informal Sector Activities: The Abidjan Experience", USAID/OHUP by Cooperative Housing Foundation, Silver Spring, MD, July 1990.

¹⁰ *Fraternité-Matin*, *Bouake Au Quotidien*, 10 novembre 1992, p 12; see also, "Ah ces rues!" *Fraternité-Matin*, *Bouake Au Quotidien*, 9 novembre 1992, p 16.

3. Water: Drinking and Waste Water

The private company SODECI (majority owned by the French firm Bouygues¹¹) manages water distribution but not investment, which is in the hands of the State. SODECI has operated successfully and profitably for a number of years. Under an adjustment program in the water sector (WASAL), substantial cuts were made in the prices of water. The industrial rate has been lowered by nearly 25% to CFAF 350 per m³ and, simultaneously, the private extraction fee (the so-called surcharge) to CFAF 179 m³. SODECI charges an industrial rate above the long-run marginal cost estimated at CFAF 261. The company extracts water from a source, installs and maintains the hookups, and collects fees. Rates are fixed at a uniform national price without regard for a given local SODECI's operating costs.

In Korhogo, SODECI counts 4,000 subscribers. As each subscription point serves approximately 18 people¹², SODECI's roles for Korhogo city proper should show some 5,800 private household subscribers, plus an estimated 500 business subscribers, for 100% coverage of all potential users. The present apparent 63% coverage rate for Korhogo is in practice much lower, with real consequences for health care. SODECI officials have determined that there is in Korhogo at least one private, on-site well for each water hook-up. Due in part to the perceived high cost of piped water (greater than the zero cost of well water), and since wells and latrines are not regulated, well water substitution results in depressed SODECI usage and revenue stream, and significant illness from ingestion of contaminated groundwater.

Indeed, SODECI has a public awareness campaign which both warns the public to avoid drinking well water, and, in so warning, confirms the practice. As a poster hung in the Korhogo SODECI branch office warned:

***CONSOMMATEURS, évitez l'eau de puits:
elle ne garantit pas votre santé:***

1. *fièvre typhoïde*
2. *goitre*
3. *cholera diarrhée dysenterie*
4. *bilharziose*
5. *poliomyélite*
6. *ver de guinée*

¹¹ Bouygues Group, a construction and engineering firm based in France, employs 57,500 worldwide, earned US\$10.4 billion in revenue and US\$115 million in net income in 1990.

¹² 2.5 families per lot and 7 people per family/household; source, Korhogo manager of SODECI, November 16, 1992.

Korhogo has no municipal sewerage collection system. One civil servant proposes construction of a lagoon settlement system in the river draining to the east-southeast of the city. The proposal foresees three basins stocked with plants and fish, to control the sanitary problem and create economic opportunity for fish farmers. This proposal was not fully elaborated in November 1992. As there are significant rice paddies and other agriculture downstream, one should be mindful of such dangers as cholera.

There are two dams inside the Korhogo city limits creating reservoirs for municipal potable water supply.¹³ One reservoir catchment area to the north of city center has since become the neighborhood of an unknown number of families living in spontaneous settlements. These people live on unserviced and unplatted lots, and therefore spontaneously dump all of their household waste in the catchment zone. They have also dug latrines that drain into the watertable. When asked whether there is a plan to move them out, a responsible civil servant said that there exists such a plan, which also includes the planting of trees for erosion control. In practice, the team did not observe or hear of any significant removal of families once they had built and occupied such spontaneous neighborhoods. Thus the real issue is the cost to catch up with this urbanization and install full service utilities to these homes.

Like Bouaké and Abidjan, Korhogo's ability to plan, subdivide and transfer its unzoned urban land to private ownership is being overtaken by spontaneous settlement. The officials of Korhogo gave no impression that they had any operating plan to deal with uncontrolled growth, other than to state that the city would clear off the squatters and officially allocate previously occupied land at some unspecified date.

The Commune of Korhogo - Budgetary Power

The Commune of Korhogo in the north of the country is the seat of the *Département* of Korhogo, and therefore is the seat also of the *Préfet* of the *Département*.

POPULATION OF KORHOGO 1988 Census			
ENTITY	TOTAL	o.w. Ivorian citizens	
Departement	389,966	352,620	90%
Commune	173,281	147,346	85%
Ville	105,000	78,750	75%

¹³ These dams were constructed with USAID assistance.

The municipality, or *mairie*, is often popularly held responsible for all that takes place or does not take place within the commune limits. As already noted, the *mairie* is not responsible for the full range of services enjoyed by its residents. The national government (through its agent, the *Préfet*) provides education and health services, as well as capital construction of roads and bridges. The *mairie's* chief responsibilities lie with infrastructure maintenance.

Municipal resources are thin, even when all revenues owed are available. The 1991 annual budget for the Commune of Korhogo is CFAF 350 million, or approximately CFAF 2,000 per capita, or CFAF 14,000 per household unit. It can be estimated that about 50% of that budget goes to pay salaries, 48% pays for use and maintenance of equipment, and 2% for other expenses. By way of comparison, the team was shown invoices for a single medical treatment which included costs of CFAF 7,000-9,000 for medicines alone. Thus, in terms of service provision, the municipal budget is equal to one annual to the doctor, or a day's wages for a casual laborer.

When the team interviewed city officials in mid-November 1992, the Commune of Korhogo had not had sufficient operating funds to buy fuel and parts for at least one month. Maintenance services appear to have been unperformed at least for a month.

In another comparison, when it is realized that the construction of a lineal kilometer of drained urban tertiary road costs at least CFAF 70,000,000, it becomes clear that, if its entire annual budget were paid to a private contractor for this sole purpose, Korhogo would add 5 kilometers of improved road to its infrastructure, but not be able to maintain the rest, or collect refuse or perform any other service expected of it.

A typical spontaneous *quartier* may contain at least 30 kilometers of roads requiring improvement. To this requirement should be added the maintenance and upgrading of older roads. With the urban growth rates already measured, it is difficult to understand how a municipality to perform all the functions required of it.

4. Municipal Solid Waste Management

Assisting Ivorian municipalities collect their solid waste has occupied a number of donors. From studies it appears that the annual per capita urban solid waste production is approximately 0.31 mT. Volume may be closer to 5 liters per capita annually. Other consultants and technicians have previously cited surfacing of roadways as a condition to efficient collection of solid waste¹⁴, as well as the high sand and dirt content (40%) of the collection barrels in urban areas. This sand and dirt comes from sweeping compounds bare and dumping used fuel of charcoal stoves. There is no economic value to be recovered from this

¹⁴ See, Martelli, Toublanc and Micha.

material. All such materials should be dump in a separate container by the households, which could be collected on an infrequent basis to be used as landfill.

Of the remaining 60% of the solid waste, a significant portion appears to be yard trash and vegetation. Again, the municipality has not found economic value in this waste as matters stand. The sole solution (as the climate is an excellent producer of vegetation) is the development of a composting unit, either public or private. This composting unit will first require a market on which to sell the compost. Second, as there is a high "air content" in the material when loaded into a truck, the unit will require a mobile grinder or chipper. This will eliminate much of the "air content", assist in its loading into a truck and prepare the material on site for eventual composting.

Collection of solid waste by municipal services is not a very high priority for the city councils of Côte d'Ivoire, as three examples demonstrate. The first is from Touba, provincial seat of a small (108,000 population) departement of the same name.

Touba

In its third session, the municipal council of the commune of Touba, in the presence of mayor M. Mohamed Lamine Fagida, November 7, 1992, adopted a three-year CFAF 50,000,000 program for the construction of a new city hall. The council also considered the condition of the town, in which the threshold of tolerance for its insalubrity had for many months already been largely passed. It appears that the town's sole garbage truck had been up on blocks for lack of tires. The result was the growth of five mountains of trash. The councilors, having finally decided on the purchase of tires, demanded that contacts be made with great urgency with the city's public works department for the removal of the great heaps which let loose their nauseating odors across the entire town.

In its final action of the meeting, the council approved construction of a cemetery for CFAF 5,000,000, four ponceaux at CFAF 14,000,000, and the support for the youth club at CFAF 994,200.¹⁵

Korhogo

The commune has two tractors and five eight-year old 10T trucks to collect municipal waste. These vehicles have heavy maintenance requirements. According to the municipal Chief of Technical Services¹⁶, the major issue is tires, which blow out under the high temperature and overload conditions to which they are typically subjected. Korhogo's solid waste collection

¹⁵ *Fraternité Matin*, 18.11.92, p.8 "d'une region a l'autre, Touba: Enlever les ordures!"

¹⁶ Nohon Gnepa Louis, Korhogo's *Chef Service Technique*, came to Korhogo from Tiebissou where he had been *Chef Secteur, Ministère Construction et de Urbanisme*. A career civil servant, Nohon has had an internship in Canada near Montreal.

system had been working well for about five-six months, until the municipality ran out of money to buy fuel for the trucks, and, presumably, tires and other parts. In response, the commune simply stopped collections, leaving significant trash piles everywhere. According to Nohon, the typical Korhogo resident produces on average 5 liters solid waste per person per day, or on an annual basis, about 189,000 m³ for the town proper, and 312,000 m³ for the larger commune.¹⁷

Despite the city's evident inability to support financially the operation and maintenance of the rolling stock now available to the city, the head of Korhogo's technical services believes the solution is to follow the example of Abidjan. He proposes that Korhogo acquire for approximately CFAF 50 million from CHAGNON in Varennes, Quebec, Canada, 20 large dumpsters and one truck to service these large dumpsters on a weekly basis. His response to the idea current in Bouaké, to hire local residents and pushcarts to pre-collect garbage, is already operation in Bobo in Burkina Faso.

Bouaké

The Commune of Bouaké has a solid waste collection contract with the private firm, SITRANE¹⁸, worth about CFAF 360 million p.a.. This works out to a fee to SITRANE of CFAF 800 per capita, or CFAF 7,200 per household or business, if coverage were to be 100%. Bouaké's annual garbage production was put at 144,700T in 1991¹⁹, with an annual estimated waste production growth rate of 5%. As the 1991 study determined that SITRANE is providing 37% of its contractual collection obligation, the actual cost to the city for resident served is closer to CFAF 2,150, and cost per household served, CFAF 27,000.

It is evident from the piles of garbage in front of household compounds and along the roadway that SITRANE is unable fully to discharge its obligations. Service frequency has been declining along with the number of vehicles operating. In part, SITRANE's inability to fulfill its obligation is due to the difficulty in picking up along the residential *quartiers'* largely unpaved streets. The team observed one truck and its five-man crew, collect no farther than one block on either side of the paved secondary road that bisects the Dar es Salaam district on the north side of Bouaké. Moreover, the crew picked only that trash that was put into a half barrel, and ignored (as did, evidently, the householders) the heaps on the ground surrounding the barrel.

Certainly, the condition of the largely erosion-rutted, unpaved, ungraded and undrained streets of Côte d'Ivoire's second city is evident to all, including the government party's newspaper. Focussing on Bouaké's Djamourou *quartier*, the newspaper said that the *quartier's*

¹⁷ 5 liters = 0.01 m³ x 365 days x 105,000 pop = 383,250 m³

¹⁸ SITRANE *Société Ivoirien de Transport et Netoyage*: Ivorian ownership, majority owned by a former Mayor of Bouaké.

¹⁹ Source: *Rationalisation de la Gestion des Résidus Urbains à Bouaké, Etude de faisabilité technique et économique, Juillet 1991.*

roads are so impassable no vehicle can penetrate the *quartier* any longer. "Djamourou-Liberté (vers le camp militaire) qui n'ont pas vu de camions-poubelles depuis belle lurette sont devenues de véritables dépôts d'ordure ou les ménagères ne se gênent plus pour déverser le contenu de leurs poubelles." Additionally, the writer believes that "le mairie" does not see that the street lamps no longer work in the neighborhood, probably because its officials never set foot in this neighborhood unless they need votes in an election, or to collect taxes.²⁰

In part, the company's problems are due to a lack of a sufficient number of trucks. Not only are fewer trucks now operating, but the physical area to be served has grown. Of SITRANE's original complement of 50 trucks, 15 were listed as operational in a March 1991 study. In mid-November 1992, the team observed 12 operational and 38 in various states of disrepair, broken down in the company yard, evidently being cannibalized for spare parts or awaiting replacements. These 10T trucks have registration plates starting with the letter B, are therefore at least thirty years old, and long over-due for scrapping. Aside from (perhaps unobtainable parts) their major cost to the firm is likely to be that of tires, at CFAF 100,000+ per tire, or CFAF 800,000+ per six wheeled truck annually.

Another aspect of non-fulfillment is the disposal of what solid waste happens to be collected. SITRANE is known to dump anywhere except in a sanitary landfill, since Bouaké has none. Ad hoc piles of trash may be seen along the rural roads around the city: some left there by SITRANE, others by residents without the intervention of the company.

The response of Bouaké officials to this problem skirts the fundamental issues. One official believed that, were it provided with new trucks and large dumpsters, as was Abidjan, the municipality could operate the whole system without a private contractor. In addition, the mairie claims to be developing a neighborhood solidarity scheme for those households located along unpaved and rutted tertiary roads where no truck can penetrate. These households will be required to pay CFAF 10-30 per pick up by unemployed young men operating pushcarts, who will dump their loads at *centres de collecte*. This scheme follows the ideas current in many developing countries. It fails to begin with proper disposal of the solid waste away from the watertable feeding the SODECI drinking water reservoir. It fails to consider systematic reuse, recycling and composting as a revenue source and a means to reduce the volume of waste to be stored. It also fails, and this most fatally, to consider how the city will pay for the maintenance of new vehicles when it evidently has been unable to pay SITRANE sufficiently for it to maintain and replace its rolling stock.

There are a number of private waste disposal and industry hygiene companies operating in Bouaké. These companies prefer contracting with government because of the savings in transaction costs. The difficulty is that none of these companies, including SITRANE, is being paid. One private firm was interested to hear of the municipality's solidarity plan, allegedly for

²⁰ *Fraternité-Matin*, Bouaké Au Quotidien, 10 novembre 1992, p 12; "Ah ces rues!" *Fraternité-Matin*, Bouaké Au Quotidien, 9 novembre 1992, p 16.

the first time, and wondered why it had not heard of a request for bids. The firm said it was prepared to collect the trash, but also doubted whether the municipality had the ability to pay.

In the opinion of the private contractor, any contract must be with the municipality. Despite all references to the moral and traditional powers of the *chefs de quartier*, these have no legal authority to let a contract. In addition to solid waste collection, the private firms suggested contracts to clean out the storm gutters or sewers²¹, a job for which the commune hasn't the people or the money. The storm gutters clog when they fill with sand and detritus from the eroding, unpaved streets. Some have been clogged so long as to be growing grass and shrubs.

4.1 Models for private sector solid waste collection

In the course of research into the municipal solid waste collection market in Côte d'Ivoire, the team developed pro forma models of the costs and possible revenues under a number of scenarios. It is evident that while a tightly controlled private enterprise could survive, under the typical operating conditions in Ivorian towns, it is not surprising that municipal service units are exhibiting signs of bankruptcy. The next three pages provide one view into the cost structure of such a theoretical company. Additional work is required to refine the model and apply it accurately to three markets: dense urban, provincial center, and rural market town.

²¹ These storm sewers, or *caniveaux*, are U-shaped, concrete-lined drainage ditches, approximately three-feet deep, which parallel some of the secondary roads. In addition to their intended role of channeling road surface water run-off, they are also observed to be the discharge point for household wastewater.

**PRO FORMA
BOUAKE COMMUNAL TRASH HAULAGE COMPANY**

	Total Popul	Number of Homes	Annualized Revenue in CFAF from fee structures scenarios			
			FLAT RATE	M-F	MWF	2xWk
BOUAKE, DEP	624230	83231	432799467	1081998667	649199200	432799467
Bouake, Com	450119	60016	312082507	780206267	468123760	312082507
Botro	73367	9782	50867787	127169467	76301680	50867787
Brobo	54430	7257	37738133	94345333	56607200	37738133
Diabo	35115	4682	24346400	60866000	36519600	24346400
Djebonoua	11199	1493	7764640	19411600	11646960	7764640

	Total Popul	Number of Homes	Annualized Costs in CFAF			- Net Revenue -	
			6K hom/trk Maximum	12K hom/trk Minimum	Best Case	Worst Case	
BOUAKE, DEP	624230	83231	483482365	20013091	1061985575	-50682898	
Bouake, Com	450119	60016	348628869	405629238	374577029	-36546362	
Botro	73367	9782	56824649	66115406	61054061	-5956862	
Brobo	54430	7257	42157450	49050139	45295195	-4419317	
Diabo	35115	4682	27197480	31644233	29221767	-2851080	
Djebonoua	11199	1493	8673917	10092091	9319509	-909277	

J.E. Austin Associates, Inc., 1992

PRO FORMA

ABIDJAN COMMUNAL TRASH HAULAGE COMPANY

Annualized Revenue in CFAF

	Total	Number	from fee structures scenarios			
	Popul	of homes	FLAT RATE	M-F	MWF	2xwk
ABIDJAN, TOTAL	1868425	249123	1295441333	3238603333	1943162000	1295441333
Abobo	399483	53264	276974880	692437200	415462320	276974880
Adjame	199994	26666	138662507	346656267	207993760	138662507
Attiecoube	102475	13663	71049333	177623333	106574000	71049333
Cocody	131976	17597	91503360	228758400	137255040	91503360
Koumassi	228756	30501	158604160	396510400	237906240	158604160
Marcory	146245	19499	101396533	253491333	152094800	101396533
Plateau	11868	1582	8228480	20571200	12342720	8228480
Port Bouet	163839	21845	113595040	283987600	170392560	113595040
Treichville	108204	14427	75021440	187553600	112532160	75021440
Yopougon	375585	50078	260405600	651014000	390608400	260405600

Annualized Costs in CFAF

	Total	Number	6K hom/trk	12K hom/trk	- Net Revenue -	
	Popul	of Homes	Maximum	Minimum	Best Case	Worst Case
ABIDJAN, TOTAL	1868425	249123	1447143742	599025359	2639577974	-151702408
Abobo	399483	53264	309409970	128076025	564361175	-32435090
Adjame	199994	26666	154900553	64118965	282537301	-16238046
Attiecoube	102475	13663	79369552	32853940	144769393	-8320219
Cocody	131976	17597	102218843	42312092	186446308	-10715483
Koumassi	228756	30501	177177470	73340190	323170210	-18573310
Marcory	146245	19499	113270555	46886797	206604536	-11874022
Plateau	11868	1582	9192075	3804934	16766266	-963595
Port Bouet	163839	21845	126897565	52527512	231460088	-13302525
Treichville	108204	14427	83806811	34690683	152862917	-8785371
Yopougon	375585	50078	290900348	120414220	530599780	-30494748

J.E. Austin Associates, Inc., 1992

**PRO FORMA COST STRUCTURE,
COTE d'IVOIRE TRASH HAULAGE COMPANY**

(in CFAF)	Loaded	Budget	Min HR	- - Annualized - -	
Labor	<u>Rates</u>	<u>Rates</u>	<u>Rates</u>	<u>maximum</u>	<u>minimum</u>
Admin	592155	350000	592155	7105861	4200000
bookkeeper	306853	200000		3682238	2400000
driver	145779	100000	145779	1749350	1200000
dumper 1	85051	50000	85051	1020607	600000
dumper 2	85051	50000		1020607	600000
dumper 3	85051	50000		1020607	600000
TOTAL LABOR	1299939	800000	822985	15599270	9600000
Materiel					
truck (each)	600000	600000	600000	7200000	7200000
fuel	179200	179200	179200	2150400	2150400
tires	150000	150000	150000	1800000	1800000
oil etc	25000	25000	25000	300000	300000
parts	200000	200000	200000	2400000	2400000
TOTAL MATERIEL	1154200	1154200	1154200	13850400	13850400
Other					
insurance	30000	30000	30000	360000	360000
vignette	20000	20000	20000	240000	240000
road test	4500	4500	4500	54000	54000
dumping fees	395833	395833	395833	4750000	4750000
(CFA 25 x 190,000 mT)					
TOTAL OTHER	450333	450333	450333	5404000	5404000
TOTALS	2904473	2404533	2427518	34853670	28854400
	monthly	monthly	monthly	annual	annual

NUMBER OF CLIENTS REQUIRED TO BREAK EVEN

# pickups per wk	Fee <u>basis</u>	# clients <u>needed</u>	<u>loaded</u>	<u>budget</u>
Flat	@100/wk	7261	6011	
M-F	@50/pup	2904	2405	
MWF	@50/pup	4841	4008	
2:wk	@50/pup	7261	6011	

J.E. Austin Associates, Inc., 1992

5. Current Recycling and Reuse Activity

An important strategy to reducing the cost of service provision, other than raising fees and taxes to pay for it, is to turn some of the solid waste into marketable goods. There is already direct collection, recycling and reuse of solid waste in Côte d'Ivoire.

5.1 Spontaneous Private Sector Recycling

In addition to re-sellers of bottles and other containers in the public markets, there is at least one large dump and recycling center in Yopougon, along the A3 north of Abidjan town center. These re-sellers are supplied by self-employed, itinerant trash pickers, who appear to be mainly non-Ivorians. It should be noted that these recyclers are self-supporting and were not prompted to their work by donor activity, and therefore may be good indicators of the economic value of Ivorian solid waste.

A Burkinabe was observed on 2 Plateaux pushing a small, garden wheelbarrow working the household pails before the city truck would come. He collected glass (infrequent) and plastic (frequent) bottles with tops, of all types. These were destined for re-use by palm oil women, sellers of herbal remedies against malaria, the motor oil resellers, and other trades. The large Nestle coffee cans were to be sold as containers for paint, and similar liquids. The Burkinabe appeared to be participating in a classic collecteur operation. Independent, itinerant gatherers sell their daily haul to intermediaries who station themselves at known points with small trucks. The collecteur pays cash, an important point. The price this individual Burkinabe expected per item from the neighborhood Ivorian collecteur varied from CFAF 2 to CFAF 5 per item. The gatherer mixed all hard reusable containers in a single plastic sack, which he believed would fetch about CFAF 100-250. In addition to whole, reusable containers, the Burkinabe also collected soft, vegetable garbage which eventually was sold to local pig farmers on a spot price. His daily take could exceed CFAF 1,000. These prices reflect both the to-be-expected low price offered at the bottom of the chain as well as the ample supply produced by an upscale, densely populated urban environment.

This gatherer's territory is informally allocated under mutual agreement of fellow gatherers, all of whom appear to sell to an Ivorian operating with a small truck. He will work all day in the neighborhood. Later, at 2:00 pm on the same day, the trash the gatherer had dumped out to extract valuable commodities was considered to be uncollected and strewn about. That day's trash, and that of the next morning was finally cleaned up by 8:30 am. The janitor who serviced a nearby apartment block, interviewed as he collected the pails, affected not to know anything, about the bottle collector and not to know there was residual value in his trash.

Prices for containers available sorted by type at the Korhogo municipal market revealed a different price structure, reflecting both intermediate mark-ups as well as relative scarcity of certain containers in an economy less well supplied than Abidjan. Korhogo municipal services workers said they believed that itinerant collectors pay households CFAF 10 per glass bottle, which were held apart from the trash either by the mother or household worker. They believed

there to be little interest in plastic bottles, based on the large quantity they found in collected garbage. At the city market however, there were at least four used container dealers, each with a large stock. With caps and without cracks or breakage, these were the buy/sell price ranges quoted by one dealer.

**TABLE 7
USED CONTAINER MARKET**

USED CONTAINER MARKET Korhogo November 1992		CFAF	
CONTAINER	SIZE	BUY	SELL
Awa mineral water	large, 1.5 ltr	15	25
Vegetable oil	0.75 - 1.0 ltr	10	15
Whiskey bottle	1.0 ltr	20	35
Nescafe tin	medium	15	25
Glass jar with screw on lid (mayonnaise)	2.0 ltr	200	300

5.2 Private Initiative in Waste Management

A resident of Abidjan's Marcory commune, living in a seven unit building in a neighborhood of mixed income and some unemployed, reported sometimes having to pay a barrowman CFAF 300-500 to haul away the building's garbage when the city does not. He has not seen rodents in the garbage bin (which is under his first floor balcony) but is bothered by flies and maggots, as well as odor. All refuse is dumped unbagged and unsorted into a typical half barrel. When motivated by the smell and danger to his children who play around the barrel, he has tried to collect contributions from other units in the building, usually with little success. This resident did not hold out much hope for a private contract between his building and a private hauler contract. Chief among the problems he cited is that of irregular income of the building's tenants and resulting problems in making payment.

6. Other City Experiences with Private Contracting

Municipal governments in the United States face the same challenges facing their counterparts in Africa and specifically, Côte d'Ivoire. These challenges include significant socioeconomic difficulties, a declining tax revenue base at a time when higher levels of government have shifted more responsibilities to lower levels, and an aging urban infrastructure.

The Mayor of Newark, New Jersey, the largest city (275,000) in the state of New Jersey reports that his government has tried private service provision and found it successful. While not as large as Abidjan, Newark plays a significant economic role in its area, with the world's third largest airport and second largest seaport in the US. It is a significant insurance and financial center, and home to five colleges and universities and six major hospitals. Unlike Abidjan, Newark has a subway and urban rail system, as well as an urban bus service.

All of Newark's municipally owned infrastructure is managed by the city's Engineering Department, but operated by a mixture of publicly supplied and privately contracted agents. Contracting, or privatization, is defined by the City of Newark as the use of the private sector to deliver services historically provided directly by the government. A larger variety of services are privately contracted in Newark than in any other large city on the US East Coast. Excluding public safety services (police and fire), Newark now spends \$1 in contract services for every \$2 consumed by government service providers.

Newark turns to private contractors mostly for those services which require high levels of investment in specialized capital equipment which may be used only periodically and not year-round at predictable levels utilization, and thus would require carrying an excess complement of workers for part of the year.

Newark's privately contracted, high capital investment services include:

Snow Removal	(100% contracted)
Tree and Stump Removal	(100% contracted)
Tree Planting	(100% contracted)
Tree Trimming	(100% contracted)
Street Resurfacing,	
street & sidewalk reconstruction	(95% contracted)
Leak Detection	(90% contracted)
Salt Spreading	(90% contracted)
Fire Hydrant Reconditioning/Replacement	(80% contracted)
Engineering Design of Capital Construction and	
Rehabilitation Projects	(75% contracted)
Street Sweeping	(67% contracted)
Catch Basin and Sewer Cleaning	(60% contracted)
Street Sign Installation	(50% contracted)
Demolition	(50% contracted)
Computer Data Entry	(50% contracted)
Solid Waste Collection	(33% contracted)
Leaf Collection	(33% contracted)
Illegal Dump Cleanup	(33% contracted)
Vehicle Rental, supplementary	(10% contracted)

Newark's Mayor reports that, street sweeping, for example, is perhaps the most successful private contract the city has let. "Nowhere is there greater public concern than for the cleanliness of the streets," said Mayor Sharpe James. "In Newark, it was once the largest area of public complaint."²²

Newark began its privatization effort in 1983 by awarding a five-year contract for sweeping one-third of the city's 321 lineal miles of local streets. In 1985, it awarded a second contract to sweep a second third of the city. These contracts have been re-awarded since that time. The city continues to sweep one-third of the streets. A benefit to the city is that the contractor is required to maintain its equipment independent of the city's maintenance facilities, which are then free to maintain public safety (and thus higher priority) vehicles. A second benefit was that the private contractor performed its work so efficiently that citizen complaints dropped. A third benefit was cost savings: a study revealed that this contract actually saved Newark \$1 million annually while providing high quality service.

E. MUNICIPAL REVENUE SOURCES

There are three possible sources of revenue for municipal operations. The first is the municipal tax revenue stream. The second are fees levied on users of municipal services. And the third is funds borrowed with privately or publicly.

The primary source of revenue for operations and investments, comes to the municipal governments from the central government. The central government collects its funds from taxes and excises and from donor loans and gifts. In some municipalities in the world, public and private borrowing through bond issues is an addition source of funds.

The issue of municipal revenue sources was discussed at a regional conference on municipal credit held in Abidjan on November 16, 1992. The meeting focussed on the tension between a decentralist policy of governance and an increasingly centralist policy of revenue collection and financial management. Just as happened in the developed world, central governments devolved responsibility for many tasks and public services to lower levels of government.

An important difference, however, is that local governments in developed countries usually have the power to levy, collect and allocate their own revenues. They may also have the authority to borrow and issue securities. In that vein, another key difference is that local governments in older, established countries operate in a policy and legal framework that offers investors a degree of confidence that, at the least, the borrower and the currency in which the debt is denominated will not undergo radical change.

²² Wall Street Journal, December 4, 1992.

1. Stewardship of Present Resources

Prudent management of the financial resources available, and their judicious allocation, would appear to be the primary task of the municipalities in Côte d'Ivoire. Just as locating and correcting leaks in waters pipes offers a greater return than investment in new production of water, eliminating waste in spending is likely to provide municipalities with the greatest immediate gain in operating revenues.

Part of prudent management is timely, preventive maintenance of equipment and infrastructure. The state of disrepair of most municipalities' current rolling stock is not conducive to investor or donor confidence that newly acquired rolling stock will be any better maintained. Another aspect of prudent management is to contract only what can be paid for, and to make payments on time and in full to contractors.

If applied well, these housekeeping measures can lay the basis for a municipality's ability to contract efficiently and obtain needed services. But in view of the limited financial resources available relative to the magnitude of the maintenance task facing all Ivorian municipalities, it would be wise to consider the mechanisms to raise money on the securities market.

2. Securities Market Mechanisms

To issue bonds requires an operating securities market, a demand for this form of investment, and appropriate pricing based on risk. Part of the system already exists. The *Bourse des Valeurs d'Abidjan* (Abidjan Stock Exchange) is operational, lists government bonds and has expressed interest in listing municipal bonds, as well. The exchange was created in 1974 and began operating in 1976. While restructuring and reform is underway, the exchange remains an arm of the Ministry of Finance staffed by civil servants. Its annual operating budget was, before its staff was reduced, was about CFAF 489 million on a staff of 47, or more than CFAF 10,000,000 per employee.

Brokers empowered to trade on the exchange are only those banks named in a GOCI decree: SGBCI, BICICI, SIB, BIAOCI and Citibank. Citibank has stopped all activity and SGBCI accounts for most volume. Banks do act as brokers in other countries, but it must be recognized that it is difficult for a bank to broker transactions which may injure its own deposit or customer base. The cost to the investor is an elevated fee structure by which the banker/broker compensates himself for each opportunity lost to the Exchange.

The Exchange lists private equity and public debt issues. Recently an IPO tested the depth of interest on the part of Ivorians to invest in a listed security. The results of that initial offering may be studied in the table in the Annex 4. As may be seen in the accompanying table, over the period September 10-November 29, 1992, 3,403 small investors bought an average of 63 shares of CIE stock at CFAF 5,500 per share. These were sold through bank branches throughout the country, or at least in the cities where the team observed. It remains to be seen whether this public interest in investing in Ivorian enterprises will be sustained by steady

payment of dividends by CIE. J.E. Austin Associates' research into emerging markets has shown that it is more often the case in emerging markets that investor interest centers on debt issues which offer a high yield over a term measured in weeks rather than years.

The larger institutional buyers had not yet taken positions in CIE as of late November 1992, so it is difficult to know the dimensions of the capital pool available for other securities, such as municipal or industrial revenue bonds. Certainly a CIE or SODECI are the most likely candidates to issue revenue bonds to invest in infrastructure upgrade.

The degree of interest on the part of the potential municipal borrower has been tested to some extent. An official of the Abidjan Stock Exchange reports the Exchange had written twice to mayors, offering the Exchange as a mediator in the raising of funds, but had received absolutely no response as of mid-November 1992. The Exchange now lists public sector bonds, the market for which is reportedly 70% insurance companies and 30% individual investors. Only two borrowers are issuing bonds in Côte d'Ivoire: the *Fonds National d'Investissement* (whose oldest issue still traded is a 7% 1981 tax-free bond selling at about 73.9% of face value) and the *Caisse Autonome d'Amortissement*. Liquidity is something of a problem. In trading 17 November 1992, only one issue out of 40 listings was traded: a 13% 1989 CAA bond denominated in units of CFAF10,000, sold 17 units at 80.6 - the current low for 1992. There are no private bonds listed on the Exchange.

3. Investor Confidence and Choice

While municipalities could benefit from the ability to raise money for capital investment, investors may be leery of such securities. In the first place, foreign investors are limited in their freedom of action on the Abidjan Exchange. This makes it difficult to attract the logical pool of investment capital: the large country and regional funds. There is no country or regional fund specialized on any African country or region -- or on the continent as a whole. The list of publicly traded country funds is contained in Annex 1.

Investors therefore are limited to Ivorians. If they are sophisticated, they will look for the bond issuer's cash flow, record of meeting obligations on time, and plan to pay back its creditors. Because of the CFAF zone's relation with the French Franc, Ivorian investors have a number of possible investment vehicles, which include all those available in France. The guaranteed rate of convertibility of the CFAF with the French Franc is said to limit exports (an ultimate source of investment funds as well as revenues) and promote imports. Moreover, the cost of capital is relatively low in Côte d'Ivoire. "In a fixed exchange rate system which so closely links the CFAF countries and France, one would expect that lending rates in the African countries would rather exceed those of France - considering the higher scarcity of capital in the developing countries and the higher underlying risk premium. Yet, credit seems to be cheaper in the CFAF countries. This would favor capital-intensive production in the Zone, to the

detriment of labor-intensive production ...²³ It should be noted that while the cost of credit may be cheaper in Côte d'Ivoire, in practice it is not being extended and therefore is economically expensive. The real lending rate in Côte d'Ivoire was negative until 1981, and then barely 7% through 1989. The savings rate, however, has hardly been positive in the whole decade of the 1980s. GDP declined by 8% in the period 1987-1990.

TABLE 8 - COMPARATIVE INTEREST RATES	1988		1989		1990		1991	
	CI	Fr	CI	Fr	CI	Fr	CI	Fr
Money Market	8.72	7.52	10.07	9.07	10.98	9.85		9.49
Deposit Rate	5.25	5.01	6.42	5.92	7.00	6.68		
Lending Rate	13.58	15.65	15.08	16.01	16.00			
Govt Bond Yield		9.06		8.79		9.96		9.05

Source: International Monetary Statistics, 1992

4. BCEAO's Role in Ivorian Municipal Borrowing

The CFAF Zone is divided into two regional groupings: the CAMA, or Central African Monetary Area, and the WAMU, the West African Monetary Union. The *Banque des Etats de l'Afrique Centrale* (BEAC) in Yaoundé is the central bank for the CAMA (Cameroon, Central African Republic, Chad, Congo, Equatorial Guinea and Gabon), while the *Banque Centrale des Etats de l'Afrique de l'Ouest* (BCEAO) in Dakar is monetary authority for the WAMU (Benin, Burkina Faso, Côte d'Ivoire, Mali, Niger, Senegal and Togo). CFAF bank notes, while freely exchangeable with French Francs, and interchangeable within its regional group, CFAF notes are not interchangeable between the CAMA and WAMU.

Looking at the policies of the BCEAO relevant for Côte d'Ivoire and its municipalities, the BCEAO restricts the amount of outstanding credit to any member government to 20% of that government's tax receipts in the preceding year. This means that any municipality wishing to go to the securities market for a loan will have to compete directly with the borrowing needs of the central government. Other than Abidjan, it is difficult to see which municipality will have the political and economic clout to gain access to Côte d'Ivoire's limited window of borrowing.

The BCEAO does not permit direct advances to governments to be outstanding for more than 240 days. The amount of Treasury bills which commercial banks can hold are not allowed to exceed 10% of their average private deposit liabilities during the preceding year. The

²³ Union Bank of Switzerland, Economic Department, "The Future of the CFA Franc - A Case for Currency Adjustment or More?", Occasional Paper, Union Bank of Switzerland, Zurich, February 1992.

BCEAO provides credit to member governments, refinances commercial bank credit, and extends short-term agricultural and export credits. The BCEAO also assigns credit ratings to companies operating within its currency purview. It thus is perhaps the one and only arbiter in any municipal bond credit rating scheme.

The BCEAO sets interest rates for all countries under its supervision alike, and has followed a policy of encouraging economic expansion by keeping interest rates low - around 13% nominal. The problem for issuers of bonds is complex. Although Côte d'Ivoire's nominal and real (inflation adjusted) lending rates are low, they fall short of similar rates in France²⁴.

Thus, while a borrower might be cheered by the prospect of relatively cheap credit, an Ivorian investor or lender may find it more attractive to convert surplus CFAF to French Francs and to place them in financial instruments issued and serviced in France, rather than in Côte d'Ivoire. In fact, convertibility of the CFAF means that (holding constant for currency export control mechanisms) the Ivorian borrower is competing with all borrowers in all currencies, and in all conditions of stability and investor confidence, into which the CFAF may be converted via the French Franc. In operational terms, this means that the city of Bouaké is competing with Antwerp and Rotterdam for municipal bond buyers.

In addition to the misallocation of resources due to an imperfect match between CFAF and French Franc monetary and fiscal policy, much credit in CFAF countries appears to have been allocated on political grounds, particularly to public enterprises. Among the effects of this policy in Côte d'Ivoire has been the closing of four public sector banks, and a shortage of credit for private borrowers.

5. Institutional Bond Buyers

One might expect financial institutions to be among the purchasers of municipal bonds. Indeed, Côte d'Ivoire's insurance companies have provided 70% of the market for national government bonds. In view of their own financial health, as described previously in Volume I of this Report, it may be doubted that banks in Côte d'Ivoire will provide much of a market. Local Côte d'Ivoire banks are now borrowing on their Paris correspondents, and thus are in heavy overdraft on Paris. The private banks are primarily financing traders, while the Central Bank cannot service GOCI borrowing requirements. Domestic debt is estimated at CFAF 1.050 trillion. Working against the purchase of municipal debt instruments by banks is the GOCI's typical response to its own shortfall; the GOCI levies taxes on the banks and private businesses through withholdings on all sorts of transactions. One example is a 15% GOCI tax (withheld at source) on local bank borrowings from Paris. One may wonder whether the bond transaction will be left entirely tax-free, let alone subsidized.

²⁴ Inflation in France was 0.3% in October and 0 in November 1992, according to INS figures. The November year-on-year rate was 2.1%, down from May's year-on-year rate of 3.1%.

F. APPROACHES TO MUNICIPAL SERVICE PROVISION

(The reader is encouraged to review MAPS Volume V: Private Sector Strategy Recommendations for a more thorough analysis of municipal service strategy recommendations.)

Learning from the experiences of municipalities in many parts of the world, services are likely best to be provided through a mix of public and private agencies. Some public service provision will be required in those parts of a market which are unattractive to private operators and for which the subsidy private operator would demand outweighs the in-house cost of service provision. Additionally, the public service provider can be organized in such a way that the unit providing the service can measure its P/L standing against private service providers.

1. Market Driven Attitude

A first step would be to assist the technical services departments of municipalities to structure themselves on a customer-responsive basis, and to empower line workers to contribute their operational suggestions for service improvement. Part of this work will be to understand the market's evident difference in perception of the value of various utilities.

1.1 Market's Perception of Utilities

There are two basic classes of utilities. The first class includes all those utilities which we value and purchase as operational components which make possible other valued activities. Clean water for drinking and cooking, electricity for illumination and powering of appliances, telecommunications to maintain contact with friends and associates over long distances, and even roads, fall into this first class.

The second class of utilities includes all those which remove the residues of other activities, largely those which support the healthy function of the human body. Removal of used cleaning water, human waste, unconsumed food elements, unused packaging, broken or inoperable equipment and materiel, and dead animal and vegetable material, fall into this second class.

While there is high demand and willingness to pay for access the first class of utilities, while perceived as necessary, the second class is not perceived as adding value but rather as removing nuisance. The social attitudes of clients - and those hired to provide such services - determines efficiencies.

In Côte d'Ivoire we have already seen the electric and water utilities privatized. The success of SODECI and CIE under the management of Bouygues remains to be seen. Certainly Bouygues has positioned itself to profit from the revenue to be thrown off by begun primary utilities. Bouygues has also made a first test of the Ivorian market's interest in long-term investment in the electric utility CIE in part through its IPO. The other part of that test will be

CIE's ability to provide universal coverage at market rates, to collect 100% of its revenue, and to pay responsible dividends to equity holders.

Provision of potable water and electricity, goods which clients seek for the value they add to daily life. Channeling and disposal or transformation of waste water should be closely linked to the provision of potable water. It is, after all, the reverse of the same coin. Yet, SODECI does not appear to be at all involved in the provision of waste water services. A 6% provision in the water utility bill - ear-marked to pay for waste removal - does not appear to be transferred to the service provider. The negative impact of neglecting waste water (erosion of roadways, and needless contribution to disease) has already been described.

1.2 Priorities

A first priority for each municipality in Côte d'Ivoire should be the creation and implementation of a waste water program. The control of run-off and the channeling of waste water could be integrated. Since we have seen that household use of piped water is price sensitive, and that well water and latrines are often substituted for western uses of piped water, storm water surface run-off from roadways may make a significant contribution to maintaining adequate water through-put to flush pipes and canals.

The use of storm water surface run-off from roadways to flush sanitary sewers will be counterproductive, if the roadways remain unsurfaced. Silting of present caniveaux demonstrates on a small scale the likely outcome of installing sanitary sewers without surfacing roads in urban areas.

A second priority for municipalities in Côte d'Ivoire should therefore be the surfacing of their urban roadway infrastructure, starting with roads built on the steepest grades and the most eroded. This program will exhaust each municipal budget long before the need is met. Therefore, a system of user fees, or a road or fuel tax, may be considered as a dedicated source of building funds.

A third priority for municipalities in Côte d'Ivoire should be a plan to collect, recover value, and dispose of solid waste. As there is demonstrated direct economic value in the present inventory of solid waste, this service clearly can be of interest to private sector service providers. As has been discussed, the private operator will be interested only under three conditions:

- a) a clear franchise is offered
- b) a market for the product exists
- c) there is high level of confidence of compensation

In those locales where these conditions cannot be met, one solution for the municipal authorities is to declare that responsibility for household waste rests with its generator. A combination of provision of neighborhood recycling and dumping points, and strict enforcement

of the civil code - with high monetary or social fines strictly collected - may be a solution. In Port Bouet, the commune promulgated an ordinance that requires each household to pay for pre-collection of household waste. The commune has a number of *agents d'hygiène* empowered to enforce the ordinance. As all residents are required to pay the pre-collection fee, it is not possible for the poorest to pay in the form of service and use their disposable income for more pressing needs, such as primary feeding. The other problem in Port Bouet is the high cost to the municipality of enforcement²⁵.

Another problem with this approach in Côte d'Ivoire is the observed lack of interest on the part of Ivorians to collect other people's waste and the role of children in the disposal of each household's waste. Foreigners man the collection vehicles and participate in informal trash-picking. It will be difficult for municipal authorities to trace the responsible head of household who sent a child to dump illegally.

1.3 Economic Self-interest

While in theory it is pleasant to consider the positive aspects of human social behavior, visual evidence in all countries indicates that compliance with anti-littering and anti-dumping regulations is far less than 100%. For that reason, a municipality may be better advised to identify the economic opportunity in solid waste, and rely on the self-interest of a private operator to provide a solution.

The value of reusable containers is known and can be monitored. The value of soft vegetable waste to piggeries is known and can be measured more accurately. The value of nutrient replacement through application of composte is known and can be determined more precisely by market segment.

If the secondary income sources, in addition to user-fees, available to providers of the second class of utilities can be established more accurately, one might expect to identify contractors ready, willing and able to provide the services required by municipalities. The overall economic impact of profitable utilities is likely to be greater than that of the provision of manual labor jobs in precollection schemes.

1.4 Policy Environment

Given the poor record of municipalities in meeting their financial commitments, an early priority is to assist in getting their management in order. Few responsible contractors will bid on, or try properly to fulfill, contracts when the contractor is known - or suspected - to default. Non-payment of invoices is little more than extracting credit from service providers when the credit market denies access to legitimate credit. Municipalities must so order their affairs as to invite competition among providers of credit.

²⁵ See Schultz, letter to Deputy Mayor of Soubré on feasibility of precollection of household waste; Peace Corps, 1992.

In addition to the municipality's own policies, it will have to develop an enforcement capability. Since self-interest must also know its boundaries, municipalities should consider the construction of a sanitary landfill where all solid waste that is not recycled or re-used will be dumped against a fee per unit of weight or volume. A system of fines and imposed responsibility for waste found elsewhere may motivate the private operator to be diligent in his work. This method of transferring enforcement responsibility to those economically most interested, may be one solution for the cost-of-enforcement problems experienced by the commune of Port Bouet.

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ANNEXES

1. **Publicly Traded Country and Regional Funds**
2. **Overview of Emerging Stock Markets, 1991: Africa**
3. **Commune de Korhogo: solid waste collection operational plans**
4. **Commune de Korhogo: analysis of municipal budget**
5. **CIE - Cie Ivoirien d'Electricité: IPO public sales**

Annex 1: Publicly Traded Country and Regional Funds

OVERVIEW OF EMERGING STOCK MARKETS, end 1991						
MARKET	Market Capit US\$m	MrktCap/ GDP %	Av. daily Val.Trd US\$m	VT/Cap %	Number Listed Companies	PE ratio IFC Index
Eur/MidEast/Africa						
(IFC Index:)						
Turkey	15703	16.27%	34.7	0.22%	134	0.22
Greece	13118	21.77%	9.89	0.08%	128	11.20
Portugal	9613	16.92%	11.5	0.12%	180	14.50
Jordan	2512	64.25%	1.76	0.07%	101	10.65
Nigeria	1892	5.41%	0.04	0.00%	142	9.74
Zimbabwe	1394	26.25%	0.31	0.02%	60	0.08
(not in IFC index:)						
Kuwait 1989	9932	42.19%	6.55	0.07%	52	
Egypt 1990	1835	5.53%	0.48	0.03%	573	
Morocco	1528	6.06%	0.19	0.01%	67	
Kenya	638	8.46%	0.04	0.01%	53	
Cote d'Ivoire	567	7.45%	0.07	0.01%	23	
Tunisia	500	4.51%		0.00%		
Botswana	300	11.11%		0.00%		
Ghana	80	1.28%		0.00%		
Cyprus (from April 1992)						
Namibia (from 1991)						
Latin America						
Argentina	18509	19.85%	19.53	0.11%		
Brazil	42759	10.33%	54.14	0.13%		
Chile	27984	100.70%	7.63	0.03%		
Colombia	4036	9.82%	0.87	0.02%		
Mexico	98178	41.29%	127.4	0.13%		
Venezuela	11214	23.23%	13.39	0.12%		

Source: Emerging Markets Factbook 1992
International Financial Statistics Yearbook, 1991

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Annex 2: Overview of Emerging Stock Markets, 1991: Africa

EMERGING MARKETS: Publicly Traded Country and Regional Funds								
	DATE	NAV	Price	% Diff	DATE	NAV	Price	% Diff
Argentina Fund	12/11	9.63	11.50	19.42%	10/23	9.35	9.50	1.60%
Asia Pacific	12/11	12.69	14.88	17.22%	10/23	13.72	14.00	2.04%
Brazil Fund	12/11	12.83	11.50	-10.37%	10/23	13.75	14.88	8.18%
Brazilian Equity Fund	12/11	8.18	7.83	-6.78%	10/23	8.80	8.88	0.85%
Chile Fund	12/11	31.97	29.50	-7.73%	10/23	33.15	29.25	-11.76%
China Fund	12/11	13.94	13.38	-4.05%	10/23	14.20	13.75	-3.17%
Emerging Mrk Tele Fund	12/11	12.79	12.88	0.66%	10/23	12.80	12.63	-1.37%
Emerging Mexico Fund	12/11	16.85	17.88	6.08%	10/23	17.57	18.75	-4.19%
Greater China Fund	12/11	12.99	11.75	-9.55%	10/23	13.67	13.63	-0.33%
India Growth Fund	12/11	16.35	15.13	-7.49%	10/23	17.99	17.00	-5.50%
Indonesia Fund	12/11	8.05	9.25	14.91%	10/23	9.22	8.88	-3.74%
JardineFlemingChinaFund	12/11	14.51	14.50	-0.07%	10/23	15.06	13.75	-8.70%
Korea Fund	12/11	10.14	13.50	33.14%	10/23	10.42	14.63	40.36%
Korean Invest.Fund	12/11	9.40	10.38	10.37%	10/23	9.66	11.5	19.05%
Latin America Disc Fund	12/11	13.52	12.13	-10.32%	10/23	13.49	11.38	-15.68%
Latin America Income Fund	12/11	13.39	13.38	-0.11%	10/23	13.38	14.63	9.30%
Latin America Equity Fund	12/11	15.50	14.00	-9.68%	10/23	14.56	13.25	-9.00%
Latin American Inv Fund	12/11	24.48	22.75	-7.07%	10/23	23.85	23.00	-3.56%
Malaysia Fund	12/11	16.47	16.13	-2.09%	10/23	16.52	13.88	-16.01%
Mexico Equity Inc Fund	12/11	17.71	16.75	-5.42%	10/23	15.89	14.38	-9.53%
Mexico Fund	12/11	24.83	23.25	-6.36%	10/23	24.79	22.13	-10.75%
Portugal Fund	12/11	9.18	7.75	-15.58%	10/23	9.62	9.00	-6.44%
ROC Taiwan Fund	12/11	8.85	9.50	7.34%	10/23	8.81	8.75	-0.68%
Scudder New Asia	12/11	15.06	14.88	-1.23%	10/23	15.38	14.38	-6.53%
Scudder New Europe	12/11	9.05	7.75	-14.36%	10/23	9.21	8.63	-6.35%
Singapore Fund	12/11	10.77	9.63	-10.63%	10/23	9.85	9.63	-2.28%
Taiwan Fund	12/11	19.58	18.88	-3.60%	10/23	19.57	19.13	-2.27%
Templeton EmMrkt	12/11	11.66	15.63	31.75%	10/23	11.97	15.50	29.49%
Thai Capital Fund	12/11	11.60	10.25	-11.64%	10/23	11.68	10.13	-13.31%
Thai Fund	12/11	20.39	18.75	-8.04%	10/23	19.81	18.25	-7.87%
Turkish Inv Fund	12/11	4.49	5.25	16.93%	10/23	4.74	5.50	16.03%
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Annex 3: Commune de Korhogo: Solid Waste Collection Operational Plans

N° 03 /MK/STM/92.

A jour



NOHON GNEPA

Objet : Groupe d'enlèvement des ordures ménagères.

NOMS	GROUPES		CHAUFFEURS	
	A	B	A	B
22 CI3	- COULIBALY Souleymane N°3 - SORO Tiébena - DIARRASSOUBA Navigué	- SORO Ninogo - SORO Deleureu - SORO Tchelefele	- SILUE Sékou	- TUO Karna Pascal
51 CI3	- SORO Seungale - SORO Nigneniguin - SORO Ouagnigué	- YEO Manadeu - YEO Terna Théophile - Fofana Abdramane	- SORO Ali	- COULIBALY Yalamissa
35 CI3	- Manadeu CISSE - YEO Kerina - KONE Detié	- COULIBALY M'béen - COULIBALY Drissa - SORO Lamine	- KONATE Manadeu	- YEO Baba
1 CI3	- SORO Niyala - YEO Kassinibin - N'Gole COULIBALY	- SILUE Nanga - COULIBALY Sékou - SORO Deté	- YEO Kele	- COULIBALY Yacouba
93 CI3	- COULIBALY Souleymane N°1 - COULIBALY Kelèhè - SORO Dramane	- SORO Kele - SORO Yacouba - YEO Yéréva	- YEO Yébésseuleu	- YEO Kasso
VEUR N°4	- COULIBALY Lamissa - SORO Pôga - SORO Kouheua	- Sekou SACKO - YEO Neuvoungagna - SORO Patogona	- KONATE Yaya	- SORO Navigué
VEUR N°6	- Massalatchi ARZIKA - SORO Nivihen - SORO Drissa	- SORO Nazétamin - YEO Ouariguévele - COULIBALY Vanara	- SORO Tiéparna	- COULIBALY Manadeu N°3

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NOTE DE SERVICE

N° 07 /MK/STM/92.

Objet : Programme d'Accotement
Rechargement Défrichage
pose de panneaux signali-
sations routières.

		Zones	QUARTIERS
Juin	20 - 30	1	Accotement - Réchargement - Défriche- ment : Axe tribune - Tribunal-Résidence du Maire - Air-France - Boulangerie Dergan - Feux Tricolore - Institut d'hygiène - rond-point - Gendarmerie - Avenue Tolbert
Juillet	1 - 15	1	IDEM
Août	16/7 au 16/8	2	* Route Abidjan - Cinéma Dergan * Résidence Maire - Sinistré
Septembre	17/8 au 30/9	3	Route Lycée Houphouët
Octobre	1 - 31	4	Route rond-point Mairie - Lycée Moderne carrefour Boundiali-Mosquée-Cinéma
Novembre	1 - 15	4	Idem
Décembre	16/1 au 31/1	5	Route tribune - Tegueré Direction Douane

LE CHEF DU SERVICE TECHNIQUE



NOHON GNEPA

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SERVICES TECHNIQUES

N° 06 /MK/STM/92.

NOTE DE SERVICE

Objet : Programme d'entretien
et de plantation d'espaces
verts.

		Zones	QUARTIERS
Juin	15 - 30	1	Jardin OLM - Place du rond point de la Mairie - Route d'Abidjan - Rond-point résidence Maire - Route STM
Juillet	1 - 31	1	Résidence Chef de l'Etat - Service Technique Mairie - Bureaux de la Mairie - Hôpital Central
Août	1 - 31	2	Route bois sacré Route Motoragni - Marché delafosse - Route principale (Résidentiel)
Septembre	1 - 30	2	Maternité Petit-Paris IDEM
Octobre	1 - 31	3	Justice -, quartier 14 - Hôpital Résidence chef de l'Etat.
Novembre	1 - 30	4	Jardin OLM - Route Abidjan - Divers rond - Points
Décembre	1 - 31	4	IDEM

(1) et (2) : Défrichenent - Plantation - Aménagement

(3) et (4) : Défrichenent - Aménagement

LE CHEF DU SERVICE TECHNIQUE



NOHON GNETA

4/8

N° 07/MK/STM/92

NOTE DE SERVICE

Objet : Programme de création et
d'entretien de caniveaux.

		Zones	QUARTIERS
Juin	20 - 30	1	Curage caniveaux banafore et construction dalles.
Juillet	1 - 15	1	Construction dalles Banafore
	15 - 31	2	Construction caniveau sinistré
Août	1 - 31	2	Construction caniveau sinistré
Septembre	1 - 30	3	caniveau voie Air-France - Dergram - Centre-ville
Octobre	1 - 31	4	Aheussabougou - Delafosse
Novembre	1 - 30	4	Aheussabougou - Delafosse
Décembre	1 - 31	4	Aheussabougou - Delafosse

LE CHEF DU SERVICE TECHNIQUE



NOHON GNEPA

N° 04/MK/STM/92

NOTE DE SERVICE

Objet : Programme d'enlèvement des ordures ménagères.

		ZONES	QUARTIERS
LUNDI	6 H 00 - 12 H 00	1	Koko Ahoussabeugu
	12 H 00 - 18 H 00		
MARDI	6 H 00 - 12 H 00	2	Petit-Paris Barafere
	12 H 00 - 18 H 00		
MERCREDI	6 H 00 - 12 H 00	3	Soba Sinistré
	12 H 00 - 18 H 00		
JEUDI	6 H 00 - 12 H 00	4	Air-France Quartier 14 Centre-Ville Est
	12 H 00 - 18 H 00		
VENDREDI	6 H 00 - 12 H 00	5	D... Résidentiel Centre-ville Ouest
	12 H 00 - 18 H 00		
SAMEDI	6 H 00 - 12 H 00		Ramassage, pneus, batteries, branches etc... Balayage voirie et prestations extérieures.
	12 H 00 - 18 H 00		
	Groupe N° 1 Groupe N° 2		6 H 00 - 12 H 00 12 H 00 - 18 H 00

Remarque : Ce programme impose 6 H / jour de travail au lieu de 8 H / jour.
 En conséquence, il inclut les jours fériés. Deux bennes assureront le deuxième passage / semaine dans chaque zone.

LE CHEF DU SERVICE TECHNIQUE



INCHON GNEPA

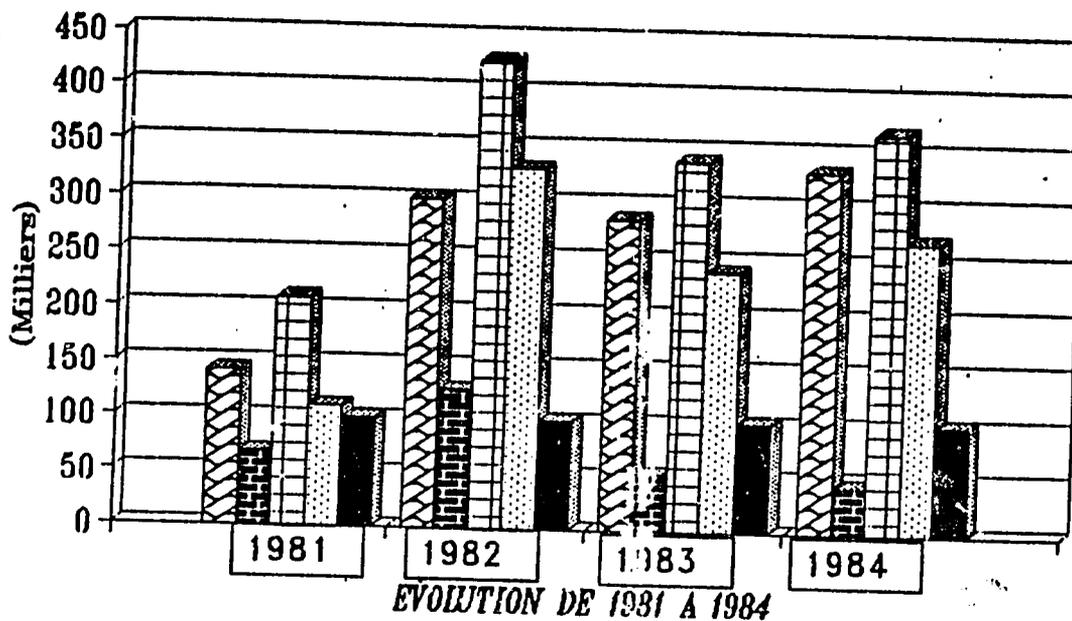
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Annex 4: Commune de Korhogo: Analysis of Municipal Budget

BUDGET DE LA COMMUNE DE KORHOGO

PREVISIONS BUDGETAIRES

EN MILLIERS DE FRANCS CFA



FONCTIONNEMENT
 INVESTISSEMENT
 TOTAL BUDGET

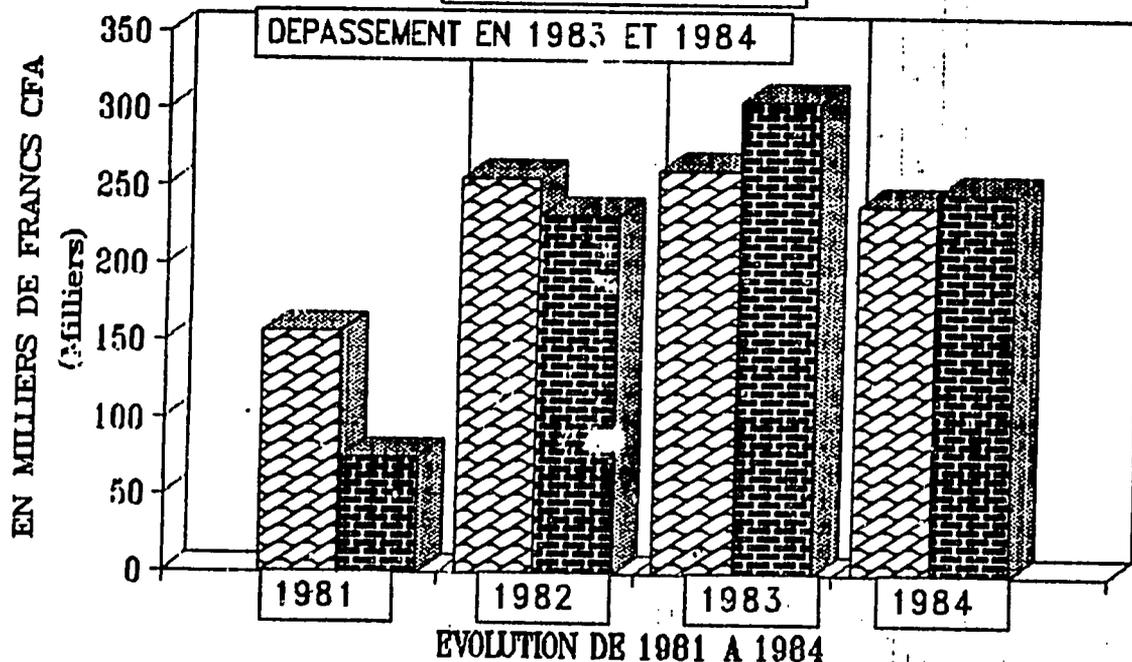
PART COMMUNE
 PART ETAT

A . DEM

BUDGET DE LA COMMUNE DE KORHOGO

RECETTES ET DEPENSES

DE 1981 A 1984



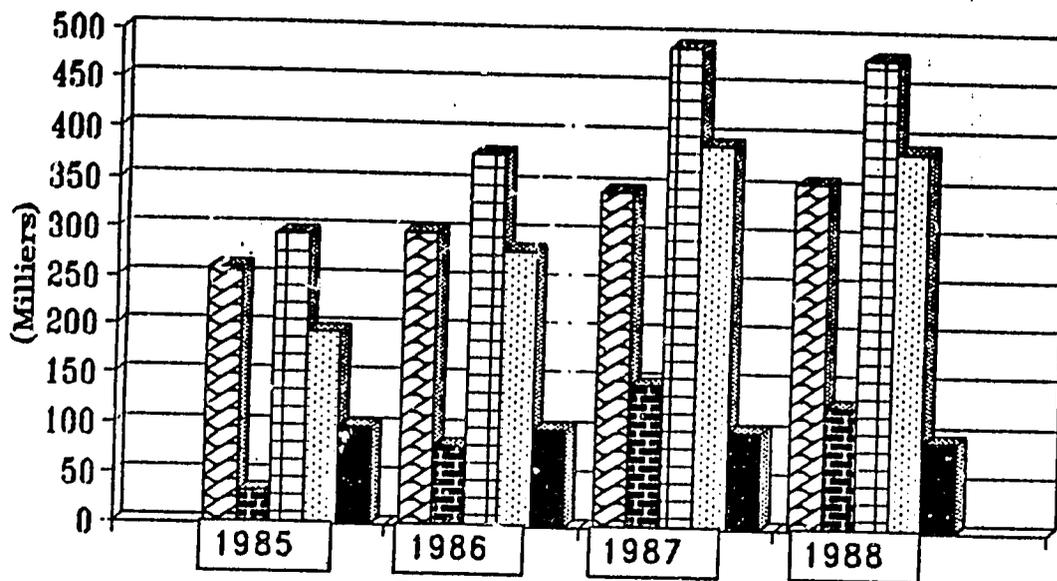
RECETTES REALISEES
 DEPENSES EFFECTUEES

A . DEM

BUDGET DE LA COMMUNE DE KORHOGO

PREVISIONS BUDGETAIRES

EN MILLIERS DE FRANCS CFA



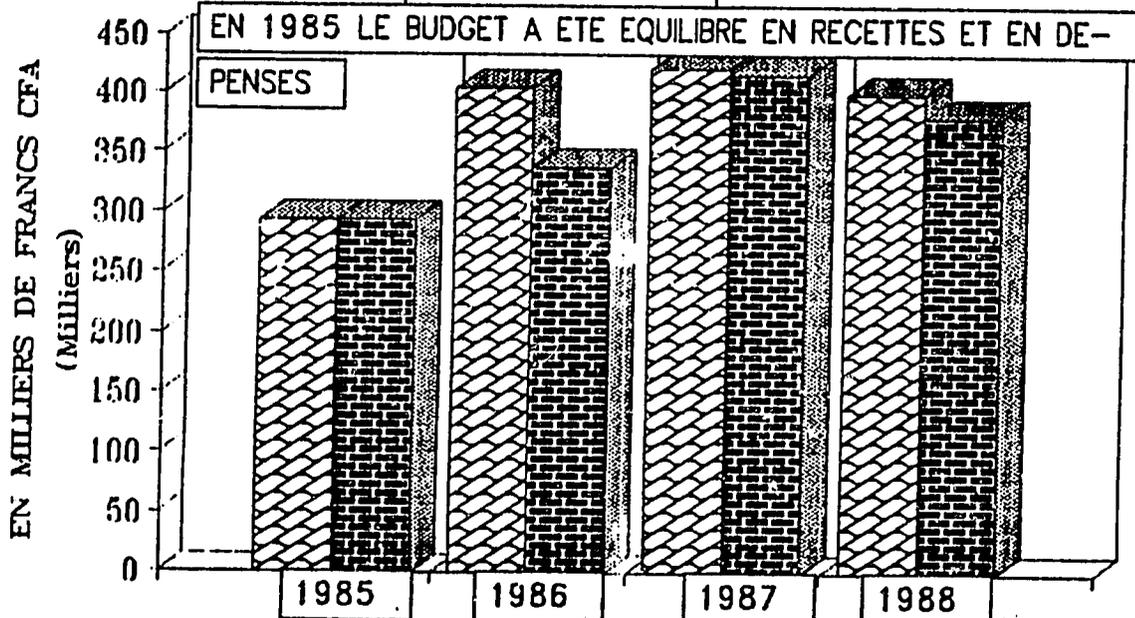
EVOLUTION DE 1985 A 1988

FONCTIONNEMENT
 INVESTISSEMENT
 TOTAL BUDGET
 PART COMMUNE
 PART ETAT
 A . DEM

BUDGET DE LA COMMUNE DE KORHOGO

RECETTES ET DEPENSES

DE 1985 A 1988



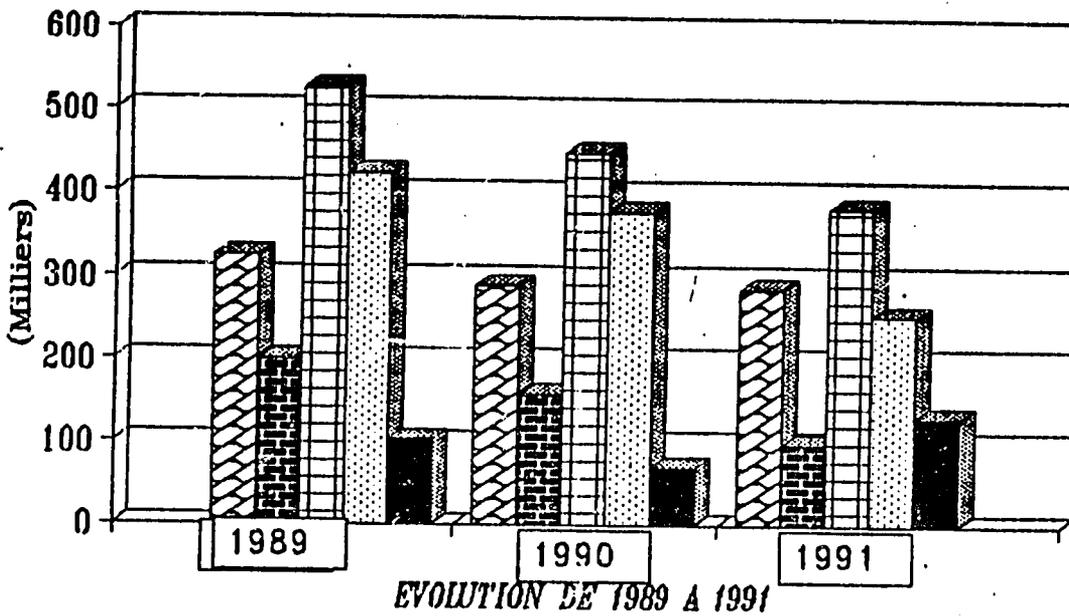
EVOLUTION DE 1985 A 1988

RECETTES REALISEES
 DEPENSES EFFECTUEES
 A . DEM

BUDGET DE LA COMMUNE DE KORHOGO

PREVISIONS BUDGETAIRES

EN MILLIERS DE FRANCS CFA



FONCTIONNEMENT
 INVESTISSEMENT
 TOTAL BUDGET

PART COMMUNE
 PART ETAT

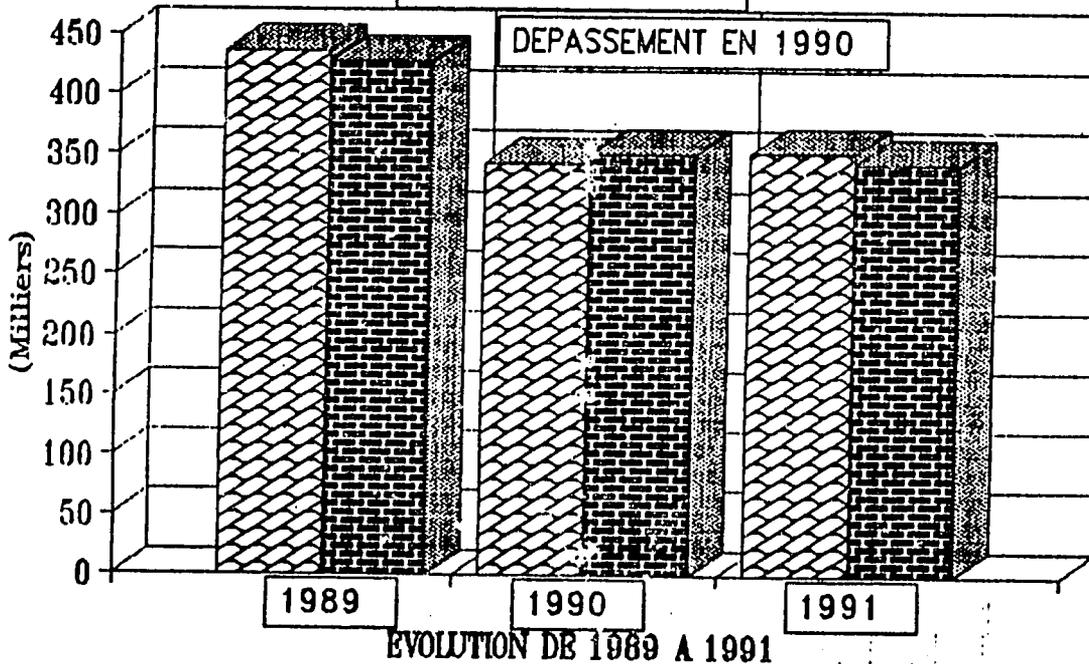
A . DEM

BUDGET DE LA COMMUNE DE KORHOGO

RECETTES ET DEPENSES

DE 1989 A 1991

EN MILLIERS DE FRANCS CFA



RECETTES REALISEES
 DEPENSES EFFECTUEES

A . DEM

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Annex 5: CIE - Cie Ivoirien d'Electricité: IPO Public Sales

Cie Ivoirien d'Electricite			
IPO, public sales September 10–November 29, 1992			
Classification of Buyers	CFAF	# units @ 5500	Share
TOTAL	1183646000	215208	
Liberal professions	62909000	11438	5.3%
Planters, rurals	7001500	1273	0.6%
Civil servants	439802000	79964	37.2%
Private salaried	196522500	35731.3	16.6%
Commercants, etc	31119000	5658	2.6%
Others: students, unemployed etc	446292000	81144	37.7%
Total number buyers	3403		
Mean investment	347824 CFAF		
Mean # units per buyer	63		
If 49% was subscribed, then:			
units to be sold	435645	shares	
Total valuation	2959110000	CFAF	
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