

City profile

Brazzaville

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Brazzaville is the capital and the largest city (estimated 1.2 million in 1995) of the Congo. Its rapid growth, both in population and in urban area, is mainly due to the oil booms of 1972-74 and 1979-84 which raised the GNP considerably and turned exports from agriculture and timber to the energy sector. But only a small part of the greatly increased public expenditures was employed in Brazzaville's infrastructure and the extension of public services. Over the last decade, the oil boom finished, the capital has suffered from the Congo's deep financial crisis, worsened by the difficult transition from a one party to a multiparty government and by the devaluation of CFA franc. Urban management and planning has not improved and Brazzaville is now experiencing increasing environmental problems with a serious impact on human health. Copyright © 1996 Elsevier Science Ltd.

Brazzaville is a young city, having begun its existence on the 10 September 1880, when Pietro Savorgnan di Brazzà (a French explorer of Italian extraction) and the Makoko of the Téké (the local sovereign) signed a treaty which put the latter's states under the protection of France. The N'Tamo territory, where the Congo River, having flowed over 4000 km across the heart of the continent, forms a lake (Stanley Pool) and then flows into the Atlantic ocean after 500 km of rapids, was thus handed over to become French territory.

The city, built four years later, served a twofold purpose. First, it became the French answer to Léopoldville which the Belgians, thanks to the efforts of Henry Morton Stanley (an American of English extraction), had built on the opposite side of the Pool. Second, it provided a crossing point by bridge from which to move up river towards the inland area of the continent.

The French sovereignty over the territories to the west of the Congo river was sanctioned by the Berlin

Conference (1884-85). Brazzaville was therefore to become a capital first (1903) of the *Congo français* and then (1910) of the *Afrique équatoriale française - AEF*: a federation including Gabon, Central African Republic and Chad (2504 000 km²). Because of its geographical position, this is the natural point of transfer between river and land for intercoastal traffic and this function was reinforced by the inauguration (1924) of the *Congo-Océan* narrow-gauge railway, connecting Brazzaville to the port of Pointe-Noire.

Role in the national settlement system

Having gained national independence (1958), Brazzaville remains the country's political centre, but it is no longer the obligatory connecting point between the inland areas and the coast, as it once was during the period of the *AEF*. Chad and Central African Republic found, in fact, alternative routes through Zaire and the Cameroon. Gabon, also having constructed

its own railway system, freed itself from the *Congo-Océan* to transport manganese from its southern regions to the Atlantic coast. Similar direct movement of traffic occurs mainly between Pointe-Noire and the regions to the south of the capital, where timber (Kouilou and Niari), minerals (Bouenza and southern Pool) and agro-industrial products (Niari and Bouenza) can be found.

The beginning of offshore oil drilling marked the shift of the Congo's economy to one of mono-production (78% of the exports in 1992). Two oil booms (1972-74 and 1979-84), favoured by the stable exchange rate of the US dollar and the high value of crude oil, pushed up the GDP per capita to US\$1110 (1985) and positioned the country among the lower middle-income economies. A long period of crisis, however, was to follow after 1985, as changing external conditions combined with the transitional struggle of the single Marxist-Leninist party to a parliamentary democracy (1991) and the recent devaluation of the CFA franc (1994).

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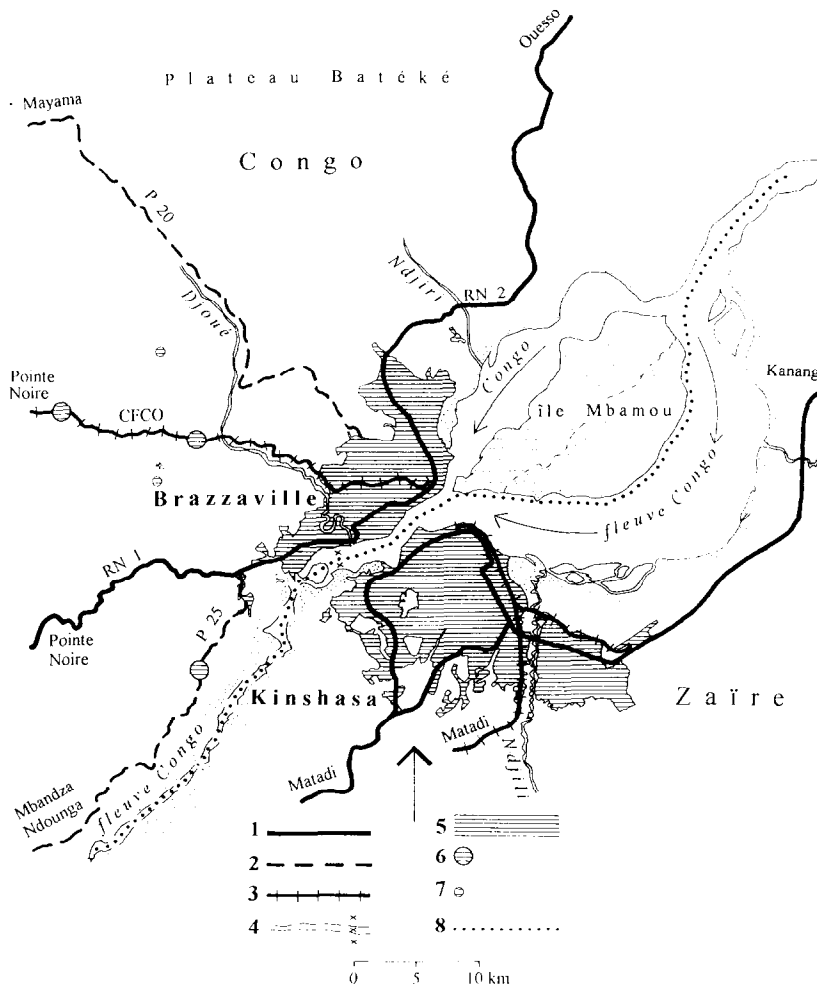


Figure 1 Brazzaville, Kinshasa and Stanley Pool: 1 = national paved roads, 2 = secondary unpaved roads, 3 = railways, 4 = not navigable stretch, cataracts (crosses), 5 = urban area (built-up and plotted-out), 6 = centres with populations (1984 census) 1000 to 2000, 7 = 500 to 1000, 8 = international boundaries. Sources: Carozzi, 1995 (Brazzaville urban area); Pain, 1984 (Kinshasa urban area).

The Congo is one of the least densely populated sub-Saharan countries (five inhabitants per square kilometre), but it is the most urbanized: 61% of the population live in centres with over 5000 inhabitants (1984). The national urban framework (four towns and 19 secondary urban centres with between 5000 and 20 000 inhabitants) is well articulated for a country with fewer than 2 million inhabitants, but it is strongly concentrated in the southern regions.

A third of the national population lives in Brazzaville. The economic importance of this town is even greater: 42% of non-agricultural employment

is concentrated here (Ministère des finances du plan et de l'économie, 1992), above all in the tertiary sector (43% of all companies), and in particular in the public administration and commercial sectors. Brazzaville is also the main market in the country. Goods pour in from all over the north, from Zaire and even from the coast. Moreover, 35% of all companies in the secondary sector (general construction, foodstuffs and textiles) are present in the capital (Ministère du plan et de l'économie, 1989).

In spite of all this activity, Brazzaville can certainly not be seen as a metropolis. This is made evident by

following the two main roads leading out of the city: the nearest urban centres are 77 km to the south (Kinkala –9500 inhabitants) and 312 km to the north (Gamboma 11 000 inhabitants). Clearly the areas covered on the way are not entirely depopulated, but the sparsely scattered villages rarely have more than 500 inhabitants.

Location and physical constraints

The urban area measures 177 km² (Ministère des travaux publics de la construction, de l'urbanisme et de l'habitat, 1992) and is divided into seven administrative districts. Three alluvial terraces link on various levels the vast Batéké highlands to the north (70 000 km²) and the right bank of the Congo River to the south. A dozen tributaries of the great river cut through deep valleys.

The four districts which form part of the lower terrace (Poto-Poto, Moundgali, Ouenzé and Talangai) are subject to frequent flooding during the rainy season (1370 mm from October to May) due to the shallow water table (Banque Africaine, 1988) and the very poor drainage system.

The other three districts (Baongo, Makélékélé and Mfilou) take up part of the intermediate terrace and are split by the Mfoa torrent. They are subject to massive erosion along the densely inhabited river banks. The soil of the terraces is a 95% sandy layer over 100 m deep. This makes it very permeable, not compact and, due to the fine grains, a poor building material. Its low mineral content makes it unsuitable also for agriculture use (Schwartz, 1986).

The western suburbs, which have developed over the past 15 years on the right bank of the Djoué River, are on the highest terrace. The soil is mainly sandy (51%) but contains a considerable amount of clay (37%) and is therefore useful for soil block production as well as cultivation, although it is nevertheless subject to erosion.

Population

Brazzaville has had a rapidly increas-

ing population since the mid-1940s (second only in rate of growth to Luanda and Douala), when the vast public works development programme contained in the *Plan de développement de l'AEF* (1947–57) called in labour from the countryside. The dimension of this growth is summarized in three population censuses (1960, 1974 and 1984), which record the doubling of the inhabitants every 10 years. If growth has continued at the same rate to the present day, the city should now have 1.2 million inhabitants.¹ Census figures do not reveal the outgoing population, and so do not show balance of migration. It is only known that the incoming population in 1984 was 4.3% of the total population, and that natural increase was said to be 2.4% (3.4% births and 1% deaths).²

Land use

Little up to date information is available on the physical growth of Brazzaville compared with the rapid rate of urbanization. Aerial photos were taken in 1957, 1964, 1978 and 1983. Remote sensing would be the only way to observe current growth, but this source has not yet been used for the Congo capital. However, a recent study (Carozzi, 1995) based on aerial photos from 1964 to 1983 has ascertained that during this period urban area growth was slower (doubling every 12 years) than population growth, and housing output was concentrated in the central districts (Poto-Poto and Bacongo) and semi-central districts (Moungali and Ouenzé), leaving one-third of the urban area (peripheral areas of Mfilou, Makélékélé and

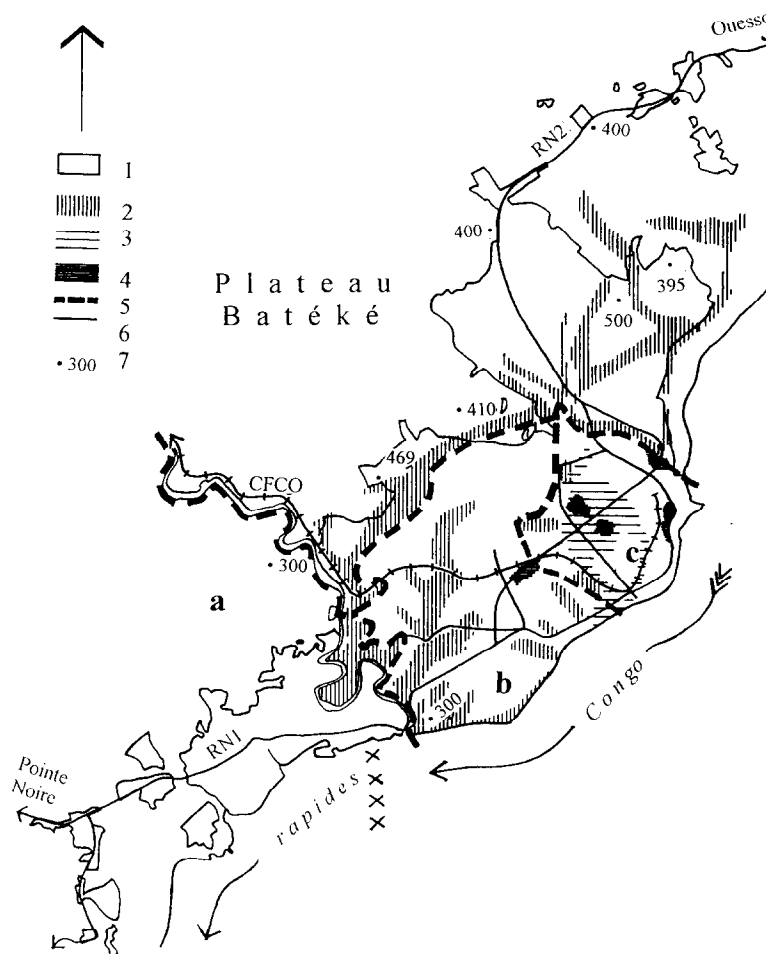


Figure 2 Brazzaville site characteristics: 1 = urban area (built-up and plotted-out), 2 = slopes 1 in 10 and steeper gradient, 3 = water table 0–2.5 metres below soil surface, 4 = areas that flood, 5 = terraces limits (a: higher, b: medium, c: lower), 6 = main paved streets, 7 = heights in metres.

Source: Banque Africaine de Développement, 1988.

Talangaï districts) parcelled out but undeveloped. At the same time the city has become more residential; infrastructures, community facilities and park land have reduced in surface occupied from 47 to 30%. This is mainly due to the invasion of unfenced areas: river banks, land properties of public sector entities, parks and urban forests (Forêt de la Patte d'oie, Forêt de la Tsiémé). At present no information is available on the social groups that have invaded land in Brazzaville.

Private customary landlords (*chefs de terre*) are the leaders of land development. Municipality and central administration take second place, having directly parcelled out little more than 3.7 km² of the 61.5 km² of re-

sidential areas which have emerged over the 20 years examined.

Only public sector plotting schemes are provided with main streets paved, storm drainage system, lamp posts and some community facilities such as churches and schools. Drinking water and electricity are supplied only on application by dwellers. In private plotting schemes streets are unpaved, without drainage system, and community facilities are absent except for a plot for a church. The invasion type of residential use totally lacks infrastructure and other facilities.

In 1983 the *Code domanial et foncier* nationalized land and banned land transactions. The activities of the private customary landlords continued in

¹A forecast which assumes an exponential growth of population (compound interest method). Under the hypothesis of linear growth (linear regression method) the population would be 828 000 (figures are from: Larosa and Larosa, 1965; Auger, 1974; Ministère du plan, 1984).

²A quarter of the incoming population is from abroad (mainly Zaire, and on a lesser level, from Central African Republic and Mali). The remaining three-quarters come from rural areas (65%), particularly from the Brazzaville region (Ministère du plan, 1984). Births and deaths may have been underestimated, as confirmed by the CNSEE.

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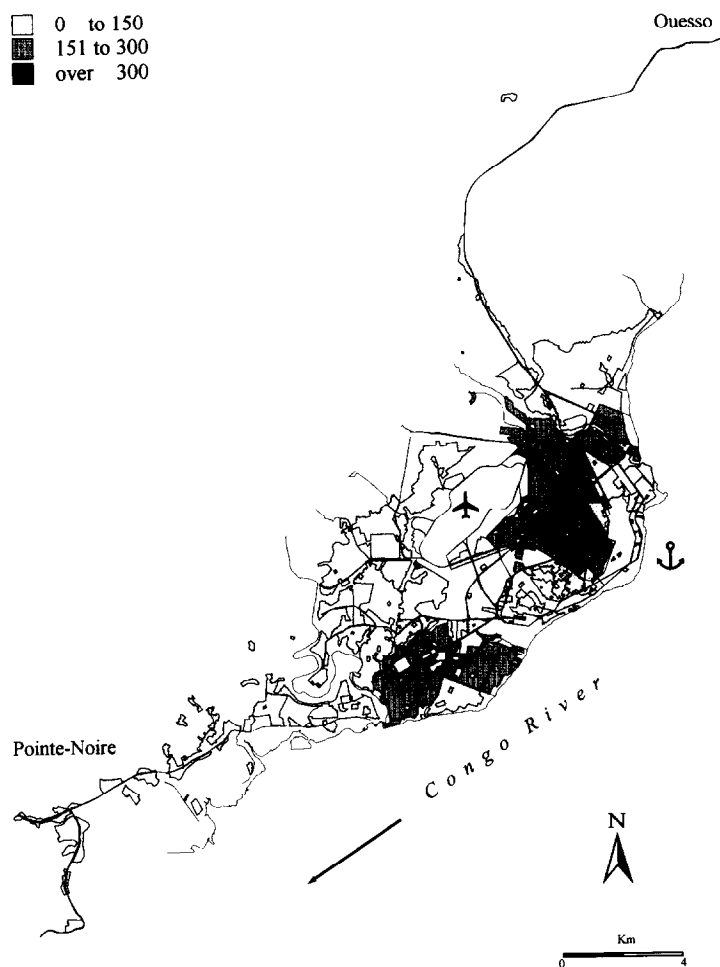
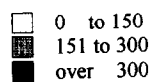


Figure 3 Brazzaville demographic density (persons/hectare) according to 1984 census

Source: Carozzi, 1995.

the shadow of the law for almost 10 years until, with the fall of the Marxist-Leninist regime, the constitution of the new republic (1992) renewed private land ownership and rights of succession of invasion. Public land remains illegal, but it is common in Brazzaville. Figure 4 shows the physical growth of Brazzaville from 1964 to 1983.

Housing

The street plan in popular districts of Brazzaville does not take account of the tortuous hilliness of the area. A rectangular network defines blocks of 10–14 building plots and is superimposed without differentiation on the frequent unevenness of the terrain.

Unlike other African capitals, the housing stock of Brazzaville is very uniform: there are fewer than 1500 public housing apartments, and most other dwellings are generally single storey.

A building plot is 360–600 m² and construction follows a more or less standard plan. Any variations are dictated by the owner's financial resources and interests, for example the type of fencing (constructed in perforated concrete blocks masonry rather than wooden fencing or simple hedging); the number of dwellings and their use (one dwelling with one owner instead of many rented dwellings, as would generally be the case in central districts); and the use of the roadside (with or without a stand sell-

ing basic groceries). There is a narrower range of building materials than in the other cities of the Congo. A concrete floor, sometimes tiled, perforated concrete block masonry, and a corrugated roof on a stright wooden beams are found in two-thirds of the household dwellings, rising to 78% if fired brick masonry and concrete roofs are included (Ministère du plan, 1984).

This kind of dwelling is a product of the recent oil boom and much increased incomes. In 1974, only a quarter of the families in the capital lived in 'durable' dwellings (Ministère du plan, 1975). The prevalence now of perforated block walls in Brazzaville contrasts with the situation in Pointe-Noire, Dolisie and Nyaki where timber is readily available; it reflects, as well as the lack of economic alternatives, a desire by the inhabitants of the capital to modernize their dwellings. The tolerant attitude of local authorities towards illegal construction tends indirectly to encourage investment in durable materials, since there is a little fear of enforced removal or demolition.

The spread of durable dwellings has, however, been accompanied by increasing difficulties in gaining ownership: between 1974 and 1984 household owner-occupiers decreased from 51% to 43%, mainly due to an increase in building costs. The strong pressure exerted on the capital by population growth has caused an increase in the demand for urban land and consequently in plot costs (Ziavoula, 1986).

The widespread use of perforated concrete blocks made housing output dependent on cement production. During the second oil boom the only cement manufacturer in the country, which was in Loutété (190 km from the capital), could not guarantee constant production, and the railway was unable to transport to Brazzaville on a regular basis. The shortfalls in supply had to be overcome by importation, thereby incurring higher costs. The use of concrete blocks also restricted the possibility of self-help construction to 20% of households, while the remaining 80% had to make use of overseers, resulting in extra costs.



Figure 4 Brazzaville growth 1964–83

Source: Carozzi, 1995.

Finally, access to bank loans for construction became restricted. Figure 6 shows different stages of building.

The net result of these events was a drop in owner-occupier households and also the increasing prevalence of unfinished construction, as can still be seen in all the peripheral districts such as Mfilou, Makélékélé and Talangaï. Research has confirmed that the average construction period from start to finish has been six years (Moutsara, 1986).

Infrastructure deficiencies

The quality of the habitat cannot be measured only by the solidity of the dwellings or by the percentage of owner-occupant households. Access to electricity, safe water supply, solid

waste collection and disposal, sanitation, sewer systems and drainage are equally valid aspects to be considered. In the Congo (urban municipalities included), drinking water and electricity are supplied by two public companies: Société nationale de distribution d'eau – SNDE and Société nationale d'électricité – SNE. The municipalities provide street and drainage maintenance (Direction de la propreté, Direction de l'aménagement urbain). Over the last few years solid waste disposal and transport have been provided by the private sector, and recently this has also included education and health services.

During the second oil boom, the infrastructures did not improve as much as housing stock. Between 1974 and 1984, families with direct access to

water mains only increased from 29% to 38% and those with access to electricity mains from 12% to 17%, while those living in accommodation with septic tanks decreased from 34% to 27% (in Brazzaville there is no piped sewerage system even in the city centre). Huge differences still exist in 1984 from district to district: from 65% to 3% in safe water access, 29% to 2% in electricity access and 53% to 8% in septic tank (Tiepolo, 1993). At the end of the 1980s, only 12% of the plots in the semi-central districts were positioned near roads with storm drainage.³

Solid waste collection is non-existent outside the central districts.

Infrastructure extension

The serious effects of substandard infrastructures on the health of urban dwellers (gastroenteric and respiratory diseases) and on the environment (deforestation for cooking fuel, groundwater contamination, soil erosion) should be enough to persuade the municipality to make infrastructure extension a top priority over the next few years. Infrastructure extension is expensive due to incessant city growth, and the severe municipal budget deficit (8.8 billion CFA francs in 1992) combines with scarce public interest in investing in this sector.

It is sufficient to note that from 1973 to 1989 municipal expenditure for street and parks maintenance, solid waste collection and disposal, dropped from 40% to 12%, of which 90% is needed to cover staff salaries (Mairie de Brazzaville). Infrastructure extension is also a complex operation because it requires a comprehensive policy in order to be efficient. Each network interacts with the others: in order for the drainage system to work waste collection must be functional (litter is often disposed of in the drainage system) and this in turn requires adequate access for vehicles in all the districts. However, the coexistence of

³Evaluation of 6450 plots from the Bacongo, Poto-Poto and Moungali districts (Ministère des travaux publics de la construction, de l'urbanisme et de l'habitat, Direction de l'urbanisme et de l'habitat, 1988–92).

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Figure 5 Brazzaville eastern districts in 1994 aerial photo

central and local administration and of public and private operators in infrastructure networks often gives rise to lack of coordination and maintenance.

Community facilities

The demand for community facilities has not been satisfied by the supply, as the current state of schools testifies. From 1989 to the present day, the state has allocated increasingly fewer funds to this important sector (44% of the 1984 Brazzaville population are under 14, and 95% of these attend school). The consequences on maintenance and equipment available in schools are evident and have reached a point where, with the collapse of the single party system and the expansion of the market economy, private schools have multiplied.

Physical planning

Urbanization and building output is under the control of the Ministry of Public Works and the Brazzaville municipality. The former is involved in this sector through the Direction générale de la construction, de l'urbanisme et de l'habitat – DGPUH and the Direction générale du cadastre et de la topographie – DGCT, and has the task of preparing the *Schéma directeur d'urbanisme – SDU*, the *Plan directeur d'urbanisme – PDU*, controlling land development (*permis d'occuper* and *titre foncier*) and housing output through building permits (*permis de construire*).

The latter is involved through the Direction de l'aménagement urbain – DAU and the Direction de la gestion foncière urbaine et de la réglementation – DIGEFUR, and has the task of planning (plot layout of municipal land) and controlling the use of land (in the areas which are sensitive to future land invasion), as well as, along with the ministry, covering the areas of land development and housing output (*permis de occuper* and *de construire*).

The *SDU*, prepared in 1978 and adopted in 1980, envisages 90 km² for a planned total population of 850 000 in 2000 and provides a general organization within the municipal bound-



Figure 6 Different stages of plots developing in the Mfilou suburbs of Brazzaville

Source: ACA, Paris.

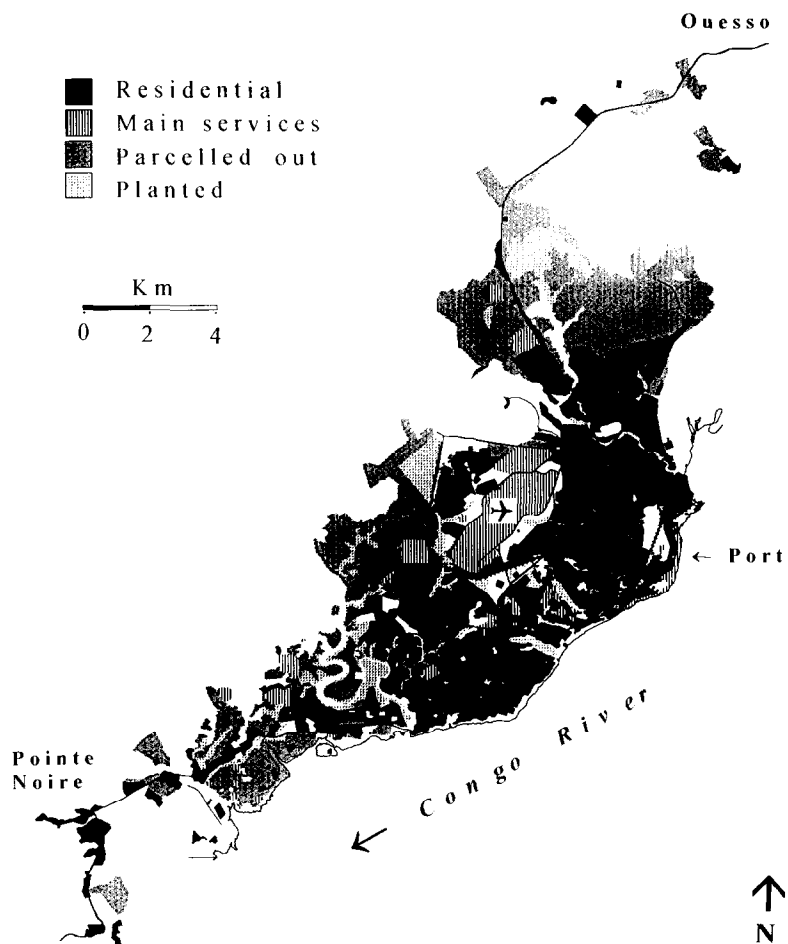


Figure 7 Brazzaville land use in 1983 according to last aerial photos

Source: Carozzi, 1995.

ary, indicating the main streets and location of public services, areas at risk requiring protection or dominant functions of the urban network.

The *PDU* (1983) gives more detailed indications on main public service locations (concentrated in poles), zoning, streets to be improved etc. The preparatory efforts of the *SDU* and the *PDU*, the socioeconomic investigations, the basic map making and the creation of the Centre de recherche et d'études techniques de l'habitat – CRETH have been an important phase in the physical planning of Brazzaville, because this has filled in the gaps both with regard to the knowledge of the process of urbanization and legal provisions, and the necessary administrative apparatus to govern it.

In spite of this, the *SDU* and *PDU* have not managed to influence the

process of urbanization. First of all, neither document has ever been approved and consequently they have no legal status. Second, knowledge of the operation of the land market (supply of land and plots) was not sufficiently taken into account in the preparation of physical planning. Since its creation (1955) the land register has never been updated, with the result that less than 2% of plots are registered and, up to two years ago, this did not even allow public land to be identified or located.⁴

Finally, the economic resources de-

⁴The Conférence nationale souveraine (acts no. 105, 157 and 200) initiated the listing of the construction and land properties of public sector entities (*armée*, Agence transcongolaise de communications, *enseignement*, Hydro Congo, *justice*, Office national des postes et télécommunications, *santé* and *université*).

icated to urban planning and construction management are modest compared to the breadth of the problems to be faced, and these resources has dwindled to zero as the economic crisis has advanced.

Land and building control

Much of what was said about planning is valid for land and building control. Land registration and building authorization is complex, long and expensive enough to distance citizens from the competent organizations, involving as it does obtaining the *permis d'occuper*, the *permis de construire* and the *titre foncier*. The *permis de construire* alone requires 41 administrative steps and not less than 500 000 CFA francs, which is exactly how much a 400 m² plot would cost. No wonder, therefore, that only 17 700 *permis* have been issued from 1963 to 1992, which means that 85% of Brazzaville housing stock was built without any authorization.⁵

On the other hand estimation and assessment of housing output is impeded by a large number of institutional land developers who do not always notify the Public Works Ministry or municipality of their activities. Given the weakness of housing output control, prosecution of land invasion is ineffective.

The SNE, SNDE and cadastre, although the most likely organizations to be informed of housing output, are not motivated to report any infringement of the law where found. In the current economic crisis, they are virtually forced to self-finance themselves by allocating services to the private sector and, therefore, they have a direct interest in extending service networks (SNE, SNDE) or regularizing plots (cadastre), wherever they may be. Figure 7 shows Brazzaville land use in 1983.

Future development

One of the current reforms concerns

⁵This calculation is based on an assumption of 148 400 dwellings of which 23 021 are not durable and therefore not subject to *permis de construire* (Ministère des travaux publics de la construction, de l'urbanisme et de l'habitat, 1992).

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financial and administrative decentralization to the regions and their urban municipalities. High hopes have been placed on this reform, but there are also many risks, including that of it being yet another redefinition of central and municipal organization charts to distribute influence among the political forces, rather than a departure point for real reform of the administrative apparatus.

Two sectorial plans, the *Stratégie nationale du logement* and the *Plan national de l'environnement*, have been prepared simultaneously which, if carried out, will directly affect the urban habitat, although these plans have not yet produced any concrete results. On the contrary, the local tax reform has not yet gone through, and it is useful to keep in mind that the absence of land records prevents any property taxation, reducing public resources and, consequently, the budget of the urban management offices involved.

Acknowledgements

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