

Research Article

DIFFICULT ACCESS TO DRINKING WATER IN PRECARIOUS NEIGHBOURHOODS IN THE COMMUNE OF YOPOUGON : STRATEGIES AND ADAPTATION OF HOUSEHOLDS IN GBINTA

^{1,*} DAKOURI Guissa Desmos Francis, ²BROU Kamenan Marcel, ²OUATTARA Drissa, ³DIABY Bassa

¹Maître de Conférences, Institut de Géographie Tropicale, Université Félix Houphouët-Boigny, Abidjan, Côte d'Ivoire.

²Maître-Assistant, Institut de Géographie Tropicale, Université Félix Houphouët-Boigny, Abidjan, Côte d'Ivoire.

³Doctorant, Institut de Géographie Tropicale, Université Félix Houphouët-Boigny, Abidjan, Côte d'Ivoire.

Received 12th March 2023; Accepted 13th April 2023; Published online 25th May 2023

ABSTRACT

Gbinta is a neighbourhood in the commune of Yopougon where households are repeatedly confronted with the problem of drinking water. The objective of this study is to highlight the coping strategies of households to obtain drinking water. The methodological approach adopted to achieve this consists of desk research, interviews and a field survey. In the absence of a database, the principle of information saturation, a non-probabilistic method by Pires (1997), was used to constitute the sample. This methodological approach made it possible to collect information, the processing of which led to the following results. A population dominated by informal workers (51%). According to 77.5% of the households surveyed, this population obtains its drinking water informally because of the very high cost of connection to the SODECI network, according to 61% of households. Finally, 72% of households said that they were not at all satisfied with their drinking water supply system because of the poor quality of the service.

Keywords: Supply, Water, Gbinta, Drinking, Precarious, Yopougon.

INTRODUCTION

Water is a major problem for the populations of sub-Saharan Africa. Indeed, the situation in the region remains characterised by difficult access to this resource, poor management of supply points and high connection costs (Makpénon M., 2011). The area is experiencing unprecedented urban population growth and accelerated urbanisation. Unfortunately, this rapid urbanisation is accompanied by a profound social imbalance, which affects the countries' economy, their environment and basic infrastructure, particularly drinking water services. This can be seen in Côte d'Ivoire.

Côte d'Ivoire has undergone significant demographic change since the first general census in 1975. The population increased from 6,709,600 inhabitants in 1975 to 108,156,694 in 1988, i.e. an annual growth rate of 3.8%, and then to 153,666,672 in 1998, i.e. an annual growth rate of 3.3% over the period 1988-1998. Today, with the 2014 General Population and Housing Census (RGPH), the Ivorian population is estimated at 22,671,331 in 2014 with a 2.6% growth rate and could reach more than 25 million inhabitants in 2021. This population growth has led to poorly controlled urbanisation and a shortage of drinking water throughout the country, especially in the major cities, notably Abidjan, the economic capital. Abidjan is undergoing very rapid urbanisation. Indeed, population growth is galloping, with an estimated 4,707,404 inhabitants, i.e. 20.8% of the total population (INS, 2014). This galloping urbanisation has led to the proliferation of precarious neighbourhoods and the agglomeration of poor populations in these disadvantaged areas (Atta K. *et al.*, 2013). This situation of precariousness exposes it to social problems including difficulties in accessing drinking water as well as the deplorable environmental conditions in which these populations live.

Yopougon, one of the communes of the city of Abidjan, which is home to a large industrial zone, has a large number of precarious neighbourhoods. These disadvantaged neighbourhoods develop in servitude and/or dangerous areas and are located outside the commune's urban development plan (Kra, 2014). The Gbinta neighbourhood is a perfect example of this, and is located in the immediate vicinity of the natural drainage channel in the catchment area of the Uniwax cloth factory. This canal is the largest natural watershed in Yopougon, with a very steep slope, and is used to collect and evacuate wastewater and rainwater. This district does not benefit from any urban development programme of the commune, nor even from basic infrastructures such as drinking water and health services. The objective of this study is to highlight the drinking water supply methods of households in the precarious Gbinta neighbourhood.

MATERIAL AND METHOD

Synthetic aspect of the study area

Located in the west of the city of Abidjan between 5°20'56" north and 4°00'42" west, Yopougon is the largest commune in terms of area and population of the city of Abidjan. It covers 153.06 km², i.e. 9.05% of the surface area of the city of Abidjan (1697 km²) and contains 22.75% of the Abidjan population. It is bordered to the west and north by the sub-prefecture of Songon, and to the east by the communes of Attécoubé, Treichville and Port-Bouët (Dakouri *et al.*, 2019). Yopougon is characterised by a highly contrasted urban fabric, with low, medium and high standard neighbourhoods, as well as precarious housing generally made of salvaged materials (UNICEF, 2001). In the largest catchment area of Yopougon (Uniwax basin), a natural canal with very steep slopes collects and drains wastewater and rainwater. The immediate vicinity of the canal is home to many precarious neighbourhoods, including : Doukouré, Yaoséhi, Mami Faitai, Yamoussoukro, Niangon Continu and Gbinta (Figure 1). These are located outside the commune's master plan. These areas are

*Corresponding Author: DAKOURI Guissa Desmos Francis,

1Maître de Conférences, Institut de Géographie Tropicale, Université Félix Houphouët-Boigny, Abidjan, Côte d'Ivoire.

forbidden to be built on and are therefore not taken into account in the commune's urban development programmes. The virtual absence of basic infrastructure in these areas is seriously detrimental to the population (Dongo K. et al., 2008).

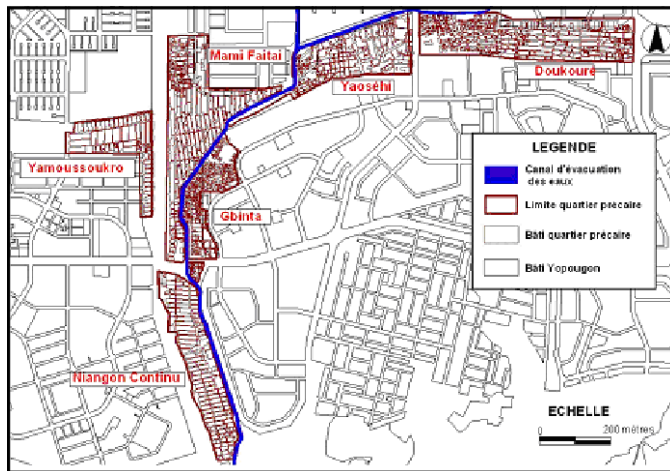


Figure 1: Location of the study area

Source : Kouassi Dongo et al. 2008

Method and technique of data collection

The data collection method combines both documentary research and a field survey. The documentation was based on works and articles available on the net and in the libraries of the Institute for Research and Development (IRD), the University of Félix Houphouët Boigny and the Training and Research Unit (UFR) of Human and Social Sciences (SHS). This documentation was supplemented by data taken from websites. In addition, a series of interviews were conducted with the central chief of the district, the directors of the technical department of the Town Hall and of the Société de Distribution d'Eau en Côte d'Ivoire (SODECI). Several visits were made to the sites. Indeed, these visits allowed to see the reality of the living conditions and the modes of supplying drinking water to the households of the Gbinta district. Thus, several requests were addressed to households on the basis of a questionnaire. For the constitution of the sample, in the absence of a database, the principle of information saturation, a non-probabilistic method of Pires (1997), was used. This method consists of continuing the interviews within each target group until the information saturation threshold is reached, which is the threshold at which the responses provided within a target group no longer vary. Thus, 94 heads of households surveyed in the neighbourhood constituted the sample.

All these interviews and field surveys made it possible to collect information on the distribution and management of the urban periphery in the supply of drinking water. The processing of this information led to the following results.

RESULTS

These results highlight firstly the prevalence of informal water supply to households, secondly the costs of access to drinking water and thirdly the quality of services offered to households in Gbinta.

The socio-professional profile of residents in Gbinta

Created in 1970 as part of a project to balance the urban sprawl of the city of Abidjan, Yopougon is one of the planned communes. Unfortunately, the various political-economic and military crises, immigration and the rural exodus have favoured the creation of

spontaneous neighbourhoods that do not fit in well with the urban planning principles in force. These are home to the most deprived and vulnerable social strata. As shown in Table 1, they include students, pensioners, workers and those who work in all activities in the informal sector. An analysis of this table shows that more than half, or 51%, of the inhabitants of Gbinta work in informal activities, followed by workers who represent 33%. Pensioners and students represent 10% and 6% of the inhabitants respectively.

Table 1: Socio-professional distribution of Gbinta residents

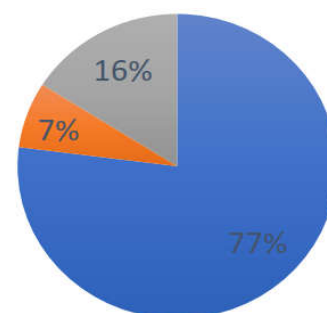
OCCUPATION	Percentage
Student	6%
Pensioner	10%
Working in the informal sector	51%
Employee	33%
TOTAL	100%

Source: Our field surveys, 2021

Furthermore, the level of income of heads of household in Gbinta is very low and does not allow for a good standard of living. Income from meagre remuneration linked to benefits, pensions, family assistance, etc., and varying from 20,000 to 100,000 francs per month, testifies to the precariousness of the living conditions of households.

Informal water supply in Gbinta

Drinking water is useful for everyone, yet it is difficult to access in the so-called precarious neighbourhoods. Having water nearby and in the immediate future is a concern for everyone. The difficulties of access to drinking water are recurrent in the neighbourhood, and households instinctively develop strategies to survive in order to obtain drinking water. Thus, given the low standard of living of the people in the precarious Gbinta neighbourhood, households essentially use three (3) means of supply (Figure 2) that enable them to have drinking water on a daily basis. These means include individual or formal subscriptions, informal or collective subscriptions using sub-metering or parallel connections and supplies from sales outlets.



- Informal subscription
- Formal subscription
- Procurement from resellers

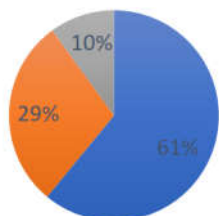
Figure 2: Distribution of households by drinking water supply in Gbinta

Source: Our surveys, 2021

As shown in Figure 2, the vast majority, 77.5% of households in Gbinta surveyed, obtain their drinking water informally, compared to 16% who obtain it from retail outlets and only 7% whose subscription is formal and individual.

Reasons for the predominance of informal drinking water supply in Gbinta

Gbinta, a spontaneous neighbourhood bordering the large gutter known as the UNIWAX canal, is home to the weakest social strata, as it has neither infrastructure nor basic social facilities. Thus, most households develop informal strategies to obtain drinking water. This is explained in Figure 3 by the very high cost of connection to the SODECI network, according to 61% of households, and 29% who feel that they have no choice because they have found this way of obtaining water in the district.



■ High connection costs ■ Mode already established in the neighbourhood ■ Irrelevant

Figure 3: Reasons for informal procurement by households in Gbinta
Source : Our surveys, 2021

Apart from the connection to the informal network, the cost of which varies between 5,000 and 10,000 francs depending on the distance, households pay a fixed monthly amount as consumption costs. These fixed costs are not related to the volume of water used, which is difficult to quantify, but are rather a function of the size of the household. Thus, depending on the number of people in the house, households have to pay a monthly amount that varies between 1500 and 5000 francs. Otherwise, the water supply is interrupted. In detail, Figure 4 shows that in Gbinta, 44% of households surveyed with between 1 and 4 people pay between 1500 and 2000 francs per month to the resellers.

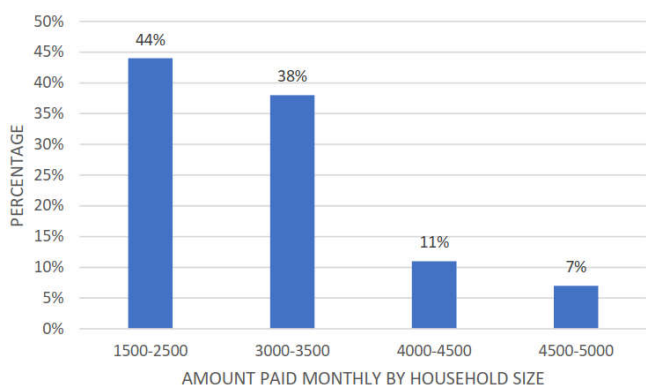
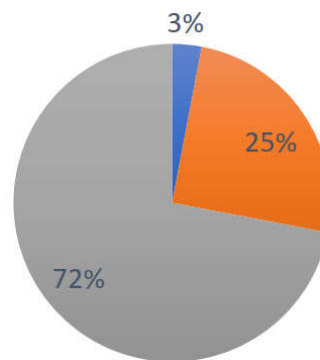


Figure 4 : Distribution of the amount paid monthly by household size
Source : Our field surveys, 2021

These households spend less on water consumption. Households of 5 to 7 people, which represent 38% of the respondents, pay between 3,000 and 3,500 francs per month. Households of 8 to 10 people, representing 11% per month, pay between 4000 and 4500 francs. Households with more than 10 people, which accounted for 7% of respondents, paid 5,000 francs per month to pay resellers for water consumption. All these payments are made to intermediaries appointed by the resellers who own the meters and who remain unknown to the customers, at the latest on the 5th of the following month.

A poor water supply service

In Gbinta, the water supply service is discontinuous because of the large number of households served by a meter. The daily problems experienced by households are numerous and can be summed up by the almost permanent drop in water supply and untimely cuts. Thus, as Figure 5 shows, 72% of households say that they are not at all satisfied with their drinking water supply system because of the water supply service, which they consider to be poor.



■ Good ■ Acceptable ■ Poor

Figure 5: Household perceptions of the quality of the water supply service

Source: Our field surveys, 2021

DISCUSSION

Characteristics of a precarious neighbourhood

A precarious neighbourhood is one whose existence is not guaranteed over time. Furthermore, a neighbourhood is said to be precarious when it does not respect and does not benefit from urbanisation plans. Also, these areas are not serviced, i.e. they do not have adequate development structures, an insufficient water and electricity supply network, and almost non-existent roads (Dongo, 2006). The definition of precarious neighbourhoods is numerous and varied, as the term depends on environmental, socio-economic and country-specific conditions. Some countries call it in different ways, for example in Tunisia it is called a popular neighbourhood, in Brazil the favela. On the other hand, the French development agency (AFD) uses the notion of precarious neighbourhood more often, which makes it possible to consider all forms of exclusion : urban exclusion, that is to say poorly served and badly connected neighbourhoods (Barthel, 2017). It is also the habitat that targets an area with insufficient access to water, sanitation or the housing structure is very weak with some unsound building materials and is overcrowded (Dakouri, 2013). Also, precarious neighbourhoods are defined as unrecognised neighbourhoods often located outside municipal boundaries that are progressively integrated into the urban fabric (Harouna, 2011).

Problems of accessibility to drinking water in precarious neighbourhoods

Accelerated urbanisation and demographic growth

The phenomenon of the demographic evolution of cities is very increased in the world but more accentuated in the developing countries and especially in our African societies. This growth is due to economic development, the potential of these cities and the crisis that African countries have experienced, all of which has led to strong

internal and external migration (Philippe, 1997). Indeed, there is a strong migration from rural to urban areas as well as between countries themselves because of the infrastructure and natural assets that some countries in the sub-region have. This urban concentration will increase the need for infrastructure in the water supply and sanitation sectors (Jean-Louis, 2006). All this makes Akoina (2009) say in his study that the population of Africa will continue to grow if nothing is done to maintain this scourge. This galloping growth is not without consequences on the economy of these African cities, the basic infrastructures, the environment and also on the living conditions of the populations. Indeed, when the population grows, it implies more demand, more consumption, which will lead to great pressure on already scarce resources (AfDB, 2015). This rapid urban growth and the shortage of drinking water are closely linked. Indeed, the demographic pressure of the city of Abidjan has an impact on the environment as well as on basic water services. This leads Koukougnon *et al.*, (2015) to argue that uncontrolled urbanisation and the socio-political crisis are at the root of the water deficit and the inability of water services to supply the city. This rapid urbanisation, as Coulibaly (2009) points out, favours the emergence of precarious neighbourhoods lacking formal water supply and sanitation services, thus exposing the population to health risks. This is confirmed by the work of Kafando, (2004) who maintains that in cities, people's lives are increasingly exposed to health risks due to informal water supply and sanitation behaviour.

A neighbourhood without infrastructure and equipment for drinking water supply

The absence of a subdivision and a cadastral plan makes it difficult to carry out any development that complies with planning and urban development standards in the area used for the study. Gbinta is a disadvantaged neighbourhood with no socio-economic infrastructure and facilities, and the majority of the population is very poor. Their low incomes do not allow them to pay the cost (160,000) of a connection to the formal network of the Société de Distribution d'Eau en Côte d'Ivoire (SODECI). Thus, in the absence of the urban public drinking water service, coupled with the financial precariousness of the inhabitants and the absence of other sources of water supply, a mechanism that Moretto (2010) quoted by Koukougnon (2015), describes as informal arrangements and strategies, is put in place to enable the populations to benefit from drinking water. These informal networks remain the starting point for building the water service in Gbinta. Connecting houses to the network and buying water in retail outlets are the ways in which households gain access to drinking water. As Dongo *et al.*, (2008) show, this strategy involves supplying the local population with drinking water from retail water vendors who are installed in an anarchic manner and in unsanitary conditions. This is why, in this same perspective, Tia *et al.*, (2015) note in his study that the problem of supplying water to the populations of the commune of Abobo is due to the unavailability of the water resource.

CONCLUSION

Access to immediate drinking water is an essential need for all. It is for this reason that it is necessary to have it available. In Gbinta, a precarious neighbourhood without infrastructure or equipment is home to low-income populations. Thus, in order to have drinking water, most households get it from private individuals by connecting to the SODECI network in a clandestine manner through parallel connections or by buying it in retail outlets in the neighbourhood. The cost of connection to this informal water distribution network, which experiences frequent drops in pressure, varies between 1,500 and 5,000 francs per household, depending on size.

REFERENCES

- Akoina Aguide Blaise.2009. Population, facteur de développement en Afrique. Mémoire de Licence, Institut Supérieur de Philosophie et Sciences Humaines Don Bosco, Lomé, 122p.
- Atta Koffi, Gogbe Téré, Koussi Patrick Juvet.2013. « Problème environnementaux et risques sanitaires dans les quartiers précaires d'Abidjan : Cas de Yaosehi dans la commune de Yopougon ». Revue de Géographie Tropicale et d'Environnement. EDUCI. Vol. 0, n°2, pp.35-44
- BAD.2005. Approvisionnement en eau potable et assainissement en Afrique : conclusions, leçons et bonnes pratiques pour de meilleurs résultats. Evaluation Indépendante du Développement (IDEV), www.idev.afdb.org, 74p.
- Barthel Pierre-Arnaud.2017. Quartiers précaires : 3 milliards d'habitants en 2050. La conférence iD4D, Agence Française de Développement. <https://ideas4development.org>
- Bosson Ebi Joseph, Loba Akou Don Franck Valéry, Konan Kouamé Pascal, Koukougnon Wilfried Gautier, Coulibaly Sidiki Youssouf.2016. « Analyse du mode d'accès et mode conservation d'eau dans les quartiers défavorisés : l'exemple de « Jérusalem » à la riviéra palmeraie (commune de Cocody, Abidjan) ». Les lignes de Bouaké-la-Neuve, n°7, pp. 105-127.
- Coulibaly Alassane.2009. Approvisionnement, consommation d'eau potable et assainissement en commune I du district de Bamako : le cas de Bankoni et de Djélibougou. Thèse de Medecine. Université de Bamako, 80p.
- Dakouri Guissa Desmos Francis, Boka Abéto Constance, Ehon Ayawovi Fafadzi Charlotte, Tape Bidi Jean. 2019. Caractéristiques socio-économiques des vendeurs de Garba et état environnemental des Garbadromes à Yopougon (Abidjan-Côte d'Ivoire). Annales de l'Université de Moundou. Série A-Faculté des Lettres, Arts et Sciences Humaines (FLASH), vol. 6 n°1, pp.125-145
- Dakouri Guissa Desmos Francis. 2013. Les activités économiques et la dégradation de l'environnement dans la commune d'Adjamé (Abidjan-Côte d'Ivoire), Thèse unique, Institut de Géographie Tropicale, Université Félix Houphouët Boigny d Cocody-Abidjan, 336p.
- Dongo Kouassi, Fernand Koffi Kouamé, Brama Koné, Jean Biémi, Marcel Tanner et Guéladio Cissé.2008. « Analyse de la situation de l'environnement sanitaire des quartiers défavorisés dans le tissu urbain de Yopougon à Abidjan, Côte d'Ivoire ». Vertigo-la revue électronique en science de l'environnement, Volume 8 Numéro 3, mis en ligne le 21 décembre 2008, consulté le 16 avril 2023. URL: <http://journals.openedition.org/vertigo/6252>; DOI: <https://doi.org/10.4000/vertigo.6252>
- Dongo Kouassi., 2006. Analyse des déficiences dans la gestion du drainage urbain et des déchets solides et liquides dans les quartiers précaires de Yopougon (Abidjan, Côte d'Ivoire) : Approche cartographique-SIG, Modélisation et socio-anthropique. Thèse Unique. Université de Cocody, 287p.
- Harouna Younsa Hassane.2011. L'accès à l'eau potable et à l'assainissement dans les quartiers précaire de Niamey : Cas de pays-bas (commune IV). Maîtrise de Géographie. Université Abdou Moumouni de Niamey (Niger), 72p
- INS.2014. Répertoire des localités. Recensement Général de la Population et de l'Habitat. Ministère du plan, 512p.
- Jean-Louis Olivier.2006. « Le défi d'eau en Afrique ». Annales des mines, pp.11-19
- Kafando.Yamba.2004. Environnement urbain et problèmes de santé à Ougadougou : cas du quartier de Cissin. Mémoire de maîtrise de Géographie Université de Ouagadougou,128p

- Koukougnon Wilfried Gautier, Memel Frédéric Arnel et Aloko-N'guessan Jérôme.2015. « Réponses étatiques à la crise de l'approvisionnement en eau potable dans la métropole abidjanaise ». Revue des sciences sociales du PASRES, 3e année, n°7, pp. 47-59.
- Kra Kouadio Eugene.2014 « Election et développement locale, de l'espoir à l'illusion : l'exemple des quartiers précaires de yopougon ». Revue de Géographie Tropicale et d'Environnement, EDUCI, n° 1, pp. 83-95.
- Makpénon Michel.2011. « Crise de l'eau et politiques de privatisation en Afrique ». Dossier spécial sur la gestion de l'eau en Afrique, intitulé Politiques de privatisation et crise de l'eau en Afrique, préparé en collaboration entre Pambazuka, le magazine pan-africain en ligne, Ritimo et le Transnational Institute. <https://www.partagedeseaux.info>.
- Moretto Luisa.2010. « Coproduction du service d'eau et recomposition de l'espace intra-urbain dans la périphérie sud de Caracas », In Espaces et sociétés, n° 143, pp. 81-99. DOI : 10.3917/esp.143.0081
- Philippe Antoine.1997. Urbanisation en Afrique et ses perspectives. Programme FAO, 21p.
- Pires Alvor., 1997. La recherche qualitative. Enjeux épistémologiques et méthodologiques, Montréal : Gaëtan Morin, Éditeur, 405 pp.
- Tia Lazare, Séka Ghislain Seka.2015. « Acteur privés et approvisionnement en eau potable des populations de la commune d'Abobo (Côte d'Ivoire) ». Revue canadienne de Géographie Tropicale. Vol. 2, n°2, pp.15-28. URL : <http://laurentienne.ca/rcgt>
- UNICEF.2001. Enfants en circonstances extrêmement difficiles. Intervention en milieu urbain pauvre. Rapport d'étude, 18p.
