

Ouagadougou 2050, Embracing the Everyday at the Scale of the Greater Territory

Context document



les ateliers

maîtrise d'œuvre urbaine

Context document, Ouagadougou, Embracing the Everyday at the Scale of the Greater Territory
International Urban Planning Workshop, 1–15 March 2019, Ouagadougou

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Les Ateliers de Cergy is a non-profit association created in 1982 at the behest of the urban planners involved in the creation of the New Town of Cergy-Pontoise. Today, it is an international network of professionals, academics and decision-makers tied to the field of urban planning. Focused on the practice of urban development, the association organizes workshops envisaged as spaces for collective design and creativity. In France and elsewhere, these workshops provide project managers with an international perspective and illustrated proposals highlighting territorial strategies and urban development projects. By bringing together different professions and cultures, they also offer the opportunity to question ways of learning and exchange at the highest levels.

At the request of the Ouagadougou City Council, Les Ateliers de Cergy will be hosting a workshop in the city from 1 to 15 March 2019.

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The workshop, a tool for territorial development

The Ouagadougou workshop will be organized according to the original methodology of Les Ateliers de Cergy. For 2 weeks, professionals from different countries and fields of expertise will meet in Ouagadougou.

After a few days of discovering the territory and meeting key actors, they will work together in multidisciplinary teams in order to propose strategies and project proposals for the territory.

These professionals will be accompanied by a local committee of partners who will comment on and complete the proposals during various moments of exchange.

At the end of the workshop, a jury chaired by local authorities will highlight the best proposals from each team.

The workshop is a platform for non-commercial exchanges. All participants and persons involved in the process are volunteers and unpaid. There is no prize or contract to win. The objective is to participate in the collective construction of a vision for the future of the city of Ouagadougou.

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PART 1 : Ouagadougou and its context



PART 1 : Ouagadougou and its context

A Radical Context Rich in Potential

The city of Ouagadougou is the capital of Burkina Faso, a country in West Africa that is subject to the unique context of the Sahel. The capital had no fewer than 2.8 million inhabitants in 2015. This number is growing by 7.2% each year, one of the highest population growth rates in the world. The capital finds itself in a unique environmental, economic and social context that is full of challenges as well as resources to face the future.

The Sahel, its climate and territory: A tale of extremes

The name Sahel comes from Arabic (sah'l), meaning plain, flat land, flat ground. The Sahel is a territorial band marking the transition from the Saharan zone in the north to the savannah of the Sudanese territory in the south. This part of Africa, “about 5,500 kilometres long and 400 to 500 kilometres wide”¹, stretches from the Atlantic to the Red Sea. The Sahel climate is composed of two seasons: a dry season that lasts between eight and nine months (from September to April or May) and a rainy season that occurs during the remainder of the year. During the dry season, the clear and minimally cloudy skies accompanied by continental trade winds (such as the harmattan) dry out the territory; whereas, during the rainy season, rainfall abounds and regenerates the vegetation.

Despite constraining climatic conditions, “the Sahel is neither a physical nor a human desert. Vegetation, people, animals and activities have adapted to this difficult environment, to the harsh

climatic conditions, as well as to the fluctuating availability of water”². Nevertheless, this area remains extremely vulnerable; and, between 1970 and 1990, the region suffered numerous droughts that destabilized human settlements for the long term. The Sahel is classified as one of the poorest and most fragile regions in the world and must now cope with a growing population (“in fifteen years’ time, the population will have increased by 60%”³), but also climate change, which is making living conditions increasingly difficult and unpredictable. The situation is worsening due to the extreme nature of the climate: the dry seasons are getting warmer and the wet season’s rainfall is getting more abundant and violent.

² op. cite BOST

³ Angely, Christophe. (2017, April 21). Histoire vivante: Sahel, une bombe à retardement. Interview by Marie Malagardis for La Liberté. Retrieved from <https://www.laliberte.ch/dossiers/histoire-vivante/articles/sahel-une-bombe-a-retardement-388270>

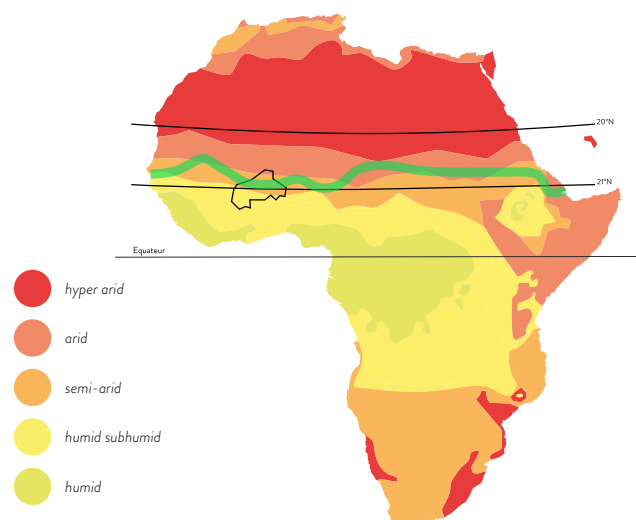


Fig 1 : Map of the different climate zones and the Great Green Wall

¹ Bost, François. (n.d.). SAHEL. In *Encyclopædia Universalis*. Retrieved 23 December 2018, from <http://www.universalis.fr/encyclopedie/sahel/>

The Great Green Wall, an intergovernmental initiative

Climate change and the spread of the Sahara into fertile lands (nearly one million hectares of forested areas are lost each year) lead to significant environmental, social and economic effects on the Sahelian territory. With this in mind, African countries are coming together, via the African Union, around the creation of the Great Green Wall of Africa project.

The initial project is intended to create a large green corridor, 15 km wide and 7,800 km long, that will cross Sahelian Africa from east to west, from Dakar to Djibouti. As such, it will cover approximately 120,000 km² of land. The continental strategy is to protect, restore and valorize local opportunities in order to drive rational and sustainable economic development in the arid regions of the Sahel, but also to implement assisted natural regeneration through the development of ancestral and experimental agricultural techniques for water management in arid areas.

West Africa, an entity of diversity

The region of Western Africa consists of the following 16 African countries: Benin, Burkina Faso, Côte d'Ivoire, Gambia, Ghana, Guinea, Guinea-Bissau, Cape Verde, Liberia, Mali, Mauritania, Niger, Nigeria, Senegal, Sierra Leone and Togo.

The precolonial history of this part of Africa reveals a multiplicity of kingdoms and ethnic groups. Ancient West Africa was divided into three main categories: Western Savannah peoples, Central Savannah peoples and Forest peoples.

- The first category, the peoples of the Western Savannah, is divided into 4 subgroups :

The Mandé peoples (from the Malian Empire) occupied the vast majority of the region, including the upper reaches of the Niger and Senegal rivers. Within this subgroup are the Bambara people.

The Gur group (previously called Voltaic following the French name Voltaïque) is found to the south of the Niger Bend. Within this subgroup are the Mossi people.

The Western Atlantic-speaking peoples are settled in the middle and lower reaches of Senegal.

- The second group, the peoples of the Central Savannah, is divided into 2 main subgroups:

The Hausa Kingdoms emerged between the Niger Bend and Lake Chad.

The state of Kanem developed to the north and east of Lake Chad.

- The third group consists of the Forest peoples.

Populations (ancestors of the Akan, Yorùbá, Igbo, etc.) that were formerly grouped under the name of Kwa are located in the east.

The small subgroup known as the Kru peoples is located in the west.

This overlapping cultural imprint creates a cultural multiplicity reflecting the identity of today's Africa.

With the arrival of Western settlers at the beginning of the 20th century, trade expanded to coastal territories with the establishment of colonial trading posts, opening up the region to the ocean and the world. Today, the majority of West Africa's population is located in the south, in coastal cities and regions with tropical climates conducive to the cultivation of exotic foodstuffs that are highly sought-after on the world market. The impact of colonization has produced radical changes in the lifestyles of West African people. Nomadism and migration were borne from the human condition to survive in the territory, while a shift to sedentary lifestyles led people to settle in fixed locales and find other means of subsistence and housing. "People have migrated considerably, [whether] under the double effect of internal dynamics linked to the expansion of human settlements or through external dynamics, as when Europe, via the slave trade and then colonization, became the central engine of history."

Today, migration is significant in West Africa. There are several reasons for these displacements, such as economic needs. However, most often, they are the result of tensions between countries. Moreover, they are always linked to the natural environment. "According to the United Nations, sub-Saharan Africa was estimated to have 16 million migrants in 2010, which is undoubtedly a gross underestimation given the importance of

illegal migration."⁴ The ease with which populations migrate is linked in particular through the network of assistance from families and communities in the region: "parents and friends are all points of support, or at least references, for travelling across the area"⁵. In addition, Matthew Taylor, in his article on the consequences of climate change, makes reference to these eco-refugees, which are individuals or groups who are forced to leave their homes temporarily or permanently because of an environmental disruption (natural- or human-induced) that has endangered their lives or seriously affected their living conditions⁶.

4 Pourtier, Roland. (2014). *Afriques noires – Héritages et mutations*. Hachette Supérieur.

5 *ibid*

6 Taylor, Matthew. (2017, November 2). Climate change "will create world's biggest refugee crisis". *The Guardian*.

Economic alliances of West Africa

The West African subregion has two intergovernmental organizations that bring together a number of the countries in the region.

West African Economic and Monetary Union (UEMOA): It includes eight countries including Burkina Faso, Mali, Togo, Benin, Côte d'Ivoire, Guinea Bissau, Niger and Senegal. Created in 1994, the objective of this alliance is to strengthen economic activities between its countries through an open and competitive market and a streamlined and unified legal framework.

Economic Community of West African States (ECOWAS): It is composed of all the West African countries in the south (except Mauritania). Its objective is to promote the cooperation and integration of an economic and monetary union in West Africa.

According to IPCC observations, the climate and consequently the environment of West Africa have changed over the past 40 years, as can be seen in the following maps.

Between 1980 and 2010, there was an increase in droughts and floods in the West African subregion.

“Regional climate trends over the past 40 years in the Sahel show an overall increase in temperatures, frequent and severe droughts, more frequent and intense flooding and a general trend of increasing rainfall.”⁷ West Africa’s fragility is directly linked to its climate and environmental changes, which are likely to increase in the future. Adaptation to climate change must be a priority, in addition to addressing the continent’s other urgent problems: malnutrition, desertification, schooling, access to basic facilities, etc.

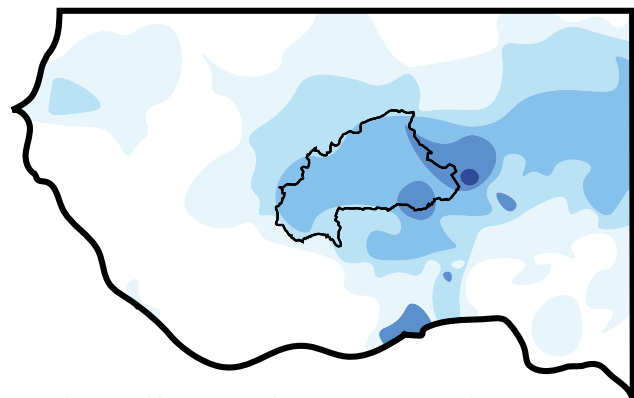


Fig 2 : Number of flood episodes (between 1985 and 2009)

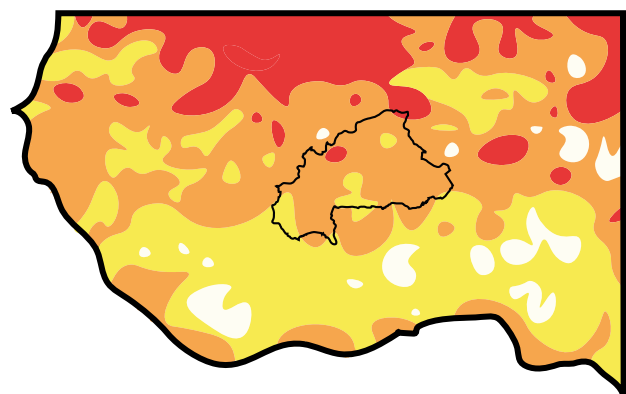


Fig 3 : Number of seasons affected by drought (between 1987 and 2009)



7 2013 IPCC Report on the Sahel

Yacouba Sawadogo, “The Man Who Stopped the Desert”

In Burkina Faso, people are changing the situation. Despite difficult conditions, some inhabitants like Yacouba Sawadogo are turning their daily lives into a fight to transform their environments.

Winner of the “Alternative Nobel Prize” on 24 September 2018, Yacouba Sawadogo is a Burkinabe farmer who has (against all expectations in his native village) revegetated part of the Sahel in the Yatenga Region (in northern Burkina Faso). By improving on the traditional zai technique (a practice of digging a hole into dry soil and filling it with dung, in order to plant millet or sorghum), “he has grown nearly 90 species of trees and shrubs on arid, degraded and barren land that was deemed unsuitable for cultivation”. Interviewed by the newspaper *Le Monde*, Yacouba described his journey: “God has given me knowledge of the earth. For me, it was obvious that traditional techniques had to be used to restore soil fertility and eliminate famine.” The farmer experienced famine between the 1970s and 1980s and developed a way out. “I had to work the land, the one that feeds and heals. She was the one who could save us.”¹.

Interviewer par le journal *le Monde*, Yacouba explique son parcours : « Dieu m’a donné la connaissance de la terre. Pour moi, c’était une évidence, il fallait utiliser les techniques traditionnelles pour rendre au sol sa fertilité et éliminer la famine ». Le fermier a connu la famine entre les années 1970 et 1980 et a développé un moyen d’y échapper. « Il fallait que je travaille la terre, celle qui nourrit et qui soigne. C’était elle qui pouvait nous sauver ».

Yacouba’s act of “ecological bravery” to restore the vegetation of the Sahel is not an isolated case. The Food and Agriculture Organization of the United Nations (FAO) has identified a multitude of local actions to revive Sahelian lands. These actions, on a human scale and carried out by communities and inhabitants, are a source of pride and hope for the future of the region.²

1 Douce, Sophie. (2018, December 12). Au Burkina Faso, Yacouba Sawadogo, le cultivateur qui a “repoussé le désert”. *Le Monde*. Retrieved 25 December 2018, from https://www.lemonde.fr/climat/visuel/2018/12/13/au-burkina-faso-yacouba-sawadogo-le-cultivateur-qui-a-repousse-le-desert_5396993_1652612.html

2 Food and Agriculture Organization of the United Nations (FAO) website: <http://www.fao.org/home/fr/>

Burkina Faso, “The Land of Honest People”

A contrasted natural environment

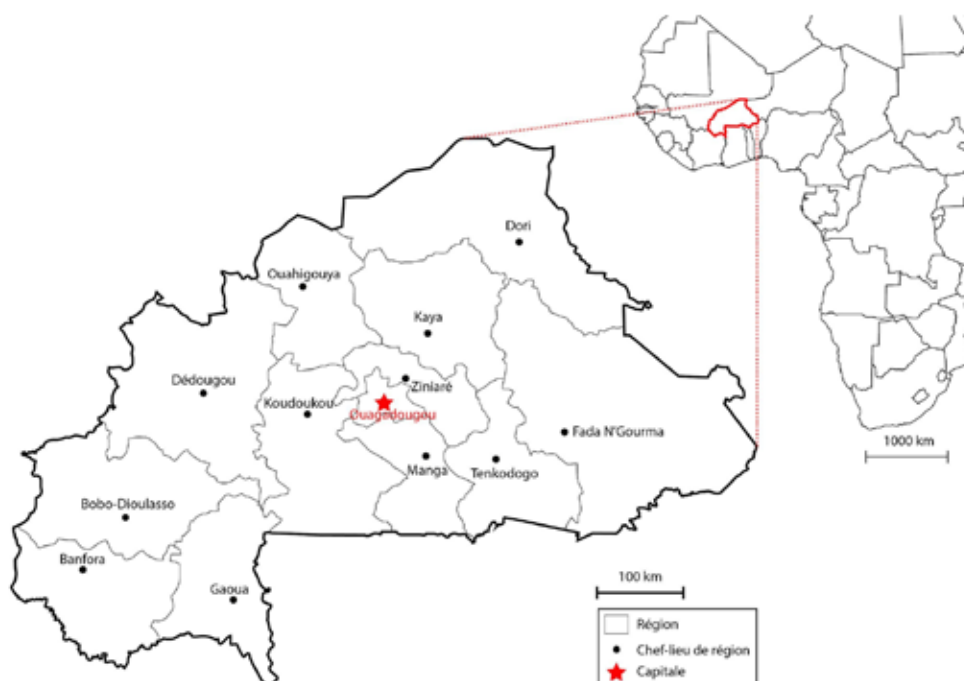
Burkina Faso is a West African country crossed by the Sahel region. Surrounded by Niger, Mali, Togo, Côte d'Ivoire, Benin and Ghana, it is landlocked and therefore has no direct access to the sea. The territory is generally flat, with an average altitude of 400 metres. There is a sandstone massif in the southwest of the country, whose highest point, Tenakuru, stands at an altitude of 749 metres.

The country's former name (given by French settlers), the Upper Volta, comes from the three rivers that cross it: the Mouhoun (Black Volta), the Nakambé (White Volta) and the Nazinon (Red Volta). The Mouhoun is the only permanent river in the country along with the Komoé which flows across the southwest. The distribution of other watercourses depends exclusively on the cycle of the rainy season: variations in rainfall therefore have a direct influence on the rivers and the populations that rely on them.

Three major river basins cross the territory:

- The Volta
- The Komoé
- The Niger

Fig 1 : Burkina Faso, context



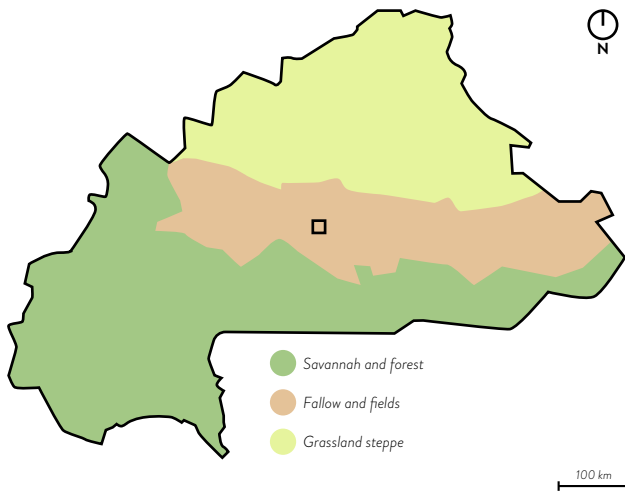


Fig 2 : Vegetation cover in Burkina Faso. Burkina Faso’s vegetation varies according to the country’s climate zones. In the north, the Sahelian climate tolerates a grassy steppe vegetation, while in the south the tropical climate favours a more lush savannah and forest vegetation.

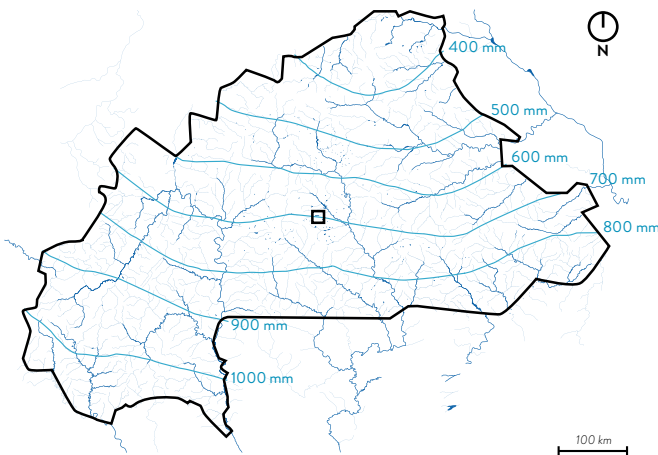


Fig 3 : Watersheds and waterways of Burkina Faso. Burkina Faso’s hydrographic network is extensive and covers the whole country, but only a few rivers are supplied by spring water. The landscape varies from one extreme to another depending on the season: from very green and humid during the rainy season to very dry and arid during the dry season.

A solid economy and population for the future

In Burkina Faso, agriculture accounts for 32% of the country’s GDP and employs 80% of the working population. This mainly concerns livestock, but also, especially in the south and southwest, sorghum, millet, maize, peanut and rice crops. The country is Africa’s second largest cotton exporter. Mining production, such as copper, iron, zinc and especially gold, is very common in Burkina Faso.

Despite its great potential, it is one of the ten least developed countries in the world, with a reported human development index of 0.402 in 2015.¹ To benefit from international trade, Burkina Faso is a member of several African economic alliances such as the African Union, the Economic Community of West African States (ECOWAS) and the Organization for the Harmonization of Business Law in Africa (OHADA).

The country’s atypical demography could prove to be a force for the future: “Estimated at 2,135,000 in 1890, 4,432,647 in 1960 and 19,034,397 in 2016, Burkina Faso’s population could reach 37 million by 2040, according to the Institut National de la Statistique et de la Démographie.”² Burkina Faso’s population density is 51.8 inhabitants per square kilometre (in 1985, it was 29 inhab/km²). The Burkinabe population is young; the average age is 21.7 years (70% of the population is under 25 years of age).³

Many ethnic groups (Mossi, Samo, Fulani, Gurunsi, Bobo, etc.), religions (Muslims, Catholics, animists, etc.) and cultures (traditional, modern, etc.) live together in the same territory. There are no fewer than 60 different spoken languages, even though French is the official language. The majority of religious observants are Muslims (60%), followed by Catholics (19%), animists (15%) and Protestants (4%).

1 UNDP. (2015). Human Development Report 2015: Work for Human Development. Reviewed 5 January 2018, from http://hdr.undp.org/sites/default/files/hdr_2015_statistical_annex.pdf
 2 SNADDT document: National Scheme for Adaptation and Sustainable Development of the Territory
 3 ibid

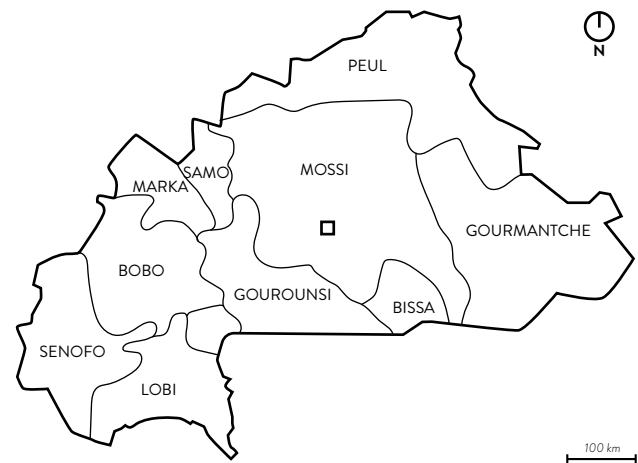


Fig 4 : Schematic map of the main ethnic groups of Burkina Faso

Culture and festivities as the driving force behind urban life

A culture of artistry is highly present in Burkina Faso, found on every corner of the street in local craft shops, but also in the many music festivals (SOKKO Festival, International Festival of Urban Cultures Waga Hip Hop, Festival Jazz à Ouaga, etc.), cinema festivals (FESPACO: Pan-African Film and Television Festival of Ouagadougou, Festival Ciné Droits Libres), theatrical events (Recreatrales, International Festival of Theatre and Development, International Festival of Theatre and Puppets, etc.), and an internationally recognized traditional arts expos: The Ouagadougou International Crafts Fair (SIAO), which has its own venue in Ouagadougou.

Crafts (textile art, sculpture, leather work, pottery, etc.) are well represented in Burkina Faso. Today the country is globally renowned for the expertise associated with its traditional crafts, which has also been recognized as part of its intangible cultural heritage.

The capital, Ouagadougou, is a young city — characterized by ethnic diversity and cultural plurality — and is one of the most dynamic in Africa. All these assets earned it the title of Cultural Capital of Africa, awarded by the Observation of Cultural Policies in Africa in 2009, as well as UNESCO's "Creative City" in 2017.

An unbalanced urbanization

The establishment of towns and villages in Burkina Faso is defined by access to water: dwellings and activities are (most often) concentrated around a reservoir that collects rainwater during the rainy season.

The urbanization of the territory is extremely skewed. The majority of the population and urban facilities are concentrated in the country's two major cities: Ouagadougou and Bobo-Dioulasso.

The road network is also concentrated in these two cities and then extends to other regions. The total length of the country's roads is equivalent to 61,367 km, but only a few portions are paved.

The railway linking the port of Abidjan (Côte d'Ivoire) to Kaya (Niger) passes through Ouagadougou. Another line connects the capital to Bobo-Dioulasso via Toussiana, Banfora and Niangoloko (517 km). The average speed is 50 km/h for passenger trains and 30 km/h for freight trains.

Thirty-three (33) airports are located throughout the country, but only the airports in Ouagadougou and Bobo-Dioulasso have paved runways.

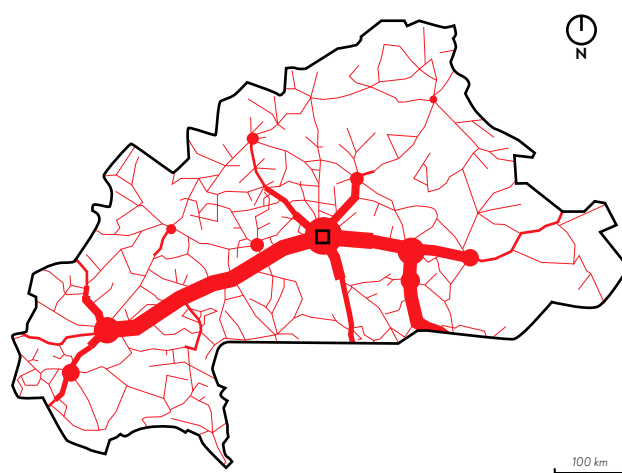


Fig 5 : Road and rail circulation rates (Heavy land traffic)

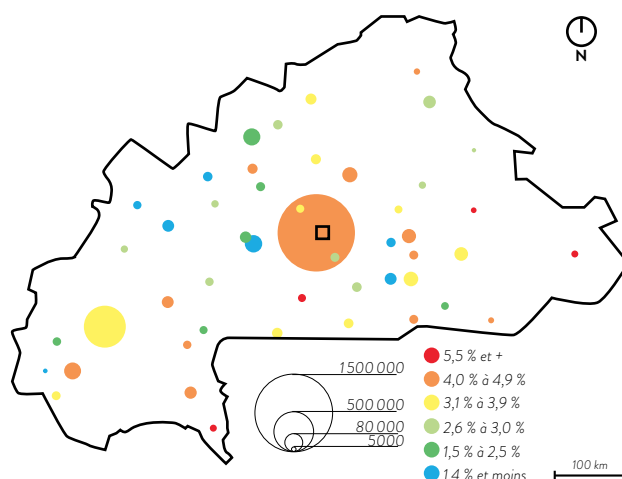


Fig 6 : Population growth rate in cities between 1996 and 2006

A multitude of national policies

Faced with current and future challenges, the country is implementing a multitude of national policies.

The national land-use development policy⁴ is based on the guidelines set by the SNADDT: the National Land-use and Sustainable Development Plan. It with the objective of development that this plan has been integrated. Through a detailed and holistic analysis of the territory, the idea is to identify territorial mechanisms in order to either stop them if they are harmful or to consolidate them if they are virtuous. The long-term goal for Burkina Faso is as follows: “By 2040, Burkina Faso will be a nation of solidarity, ensuring spatial planning and socio-economic growth based on national potential, with a view towards harmonious and sustainable territorial development that reduces inter- and intra-regional disparities.”⁵

PNA: The Plan National d’Adaptation aux changements climatiques (National Adaptation Plan for Addressing Climate Change). Submitted in February 2014, the PNA aims to adapt the infrastructure and housing sector (SIH) to climate change. “The overall objective is to increase the resilience of people and the built environment to climate change in order to achieve sustainable development. The general objective of the plan is to increase the sustainability of housing, infrastructure and social and community facilities, thus increasing the security of people and property.

The three main objectives are: to promote access to decent housing for disadvantaged social groups through rental housing, support for self-construction and the construction of

social housing; to achieve useful and resilient social and community facilities; as well as to build infrastructure for roads, stormwater management and wastewater drainage, through good design/ implementation and proper maintenance; to turn Burkina Faso’s cities into hubs of economic growth and sustainable development in order to reduce urban poverty.»⁶

⁶ Report on the PNA Infrastructure and Housing project, conducted by Valérie Fabienne Sanou.

⁴ Decree No. 2006-362/PRES/PM/MEDEV/MATD/MFB/MAHRH/MID/MECV from 20 July 2006: Adoption of the National Land-Use Development Policy.
⁵ 2017 SNADDT Report

Ouagadougou, a capital in the making

Ouagadougou, the political and administrative capital of Burkina Faso, is located in the centre of the country in the Kadiogo Province and Central Region. The city covers an area of 51,800 ha, with a population of 3 million inhabitants.

city, the evolutions that have followed since their arrival to the current territory of Ouagadougou up to present day.

The history of its first settlers allows us to better understand the current morphology of the

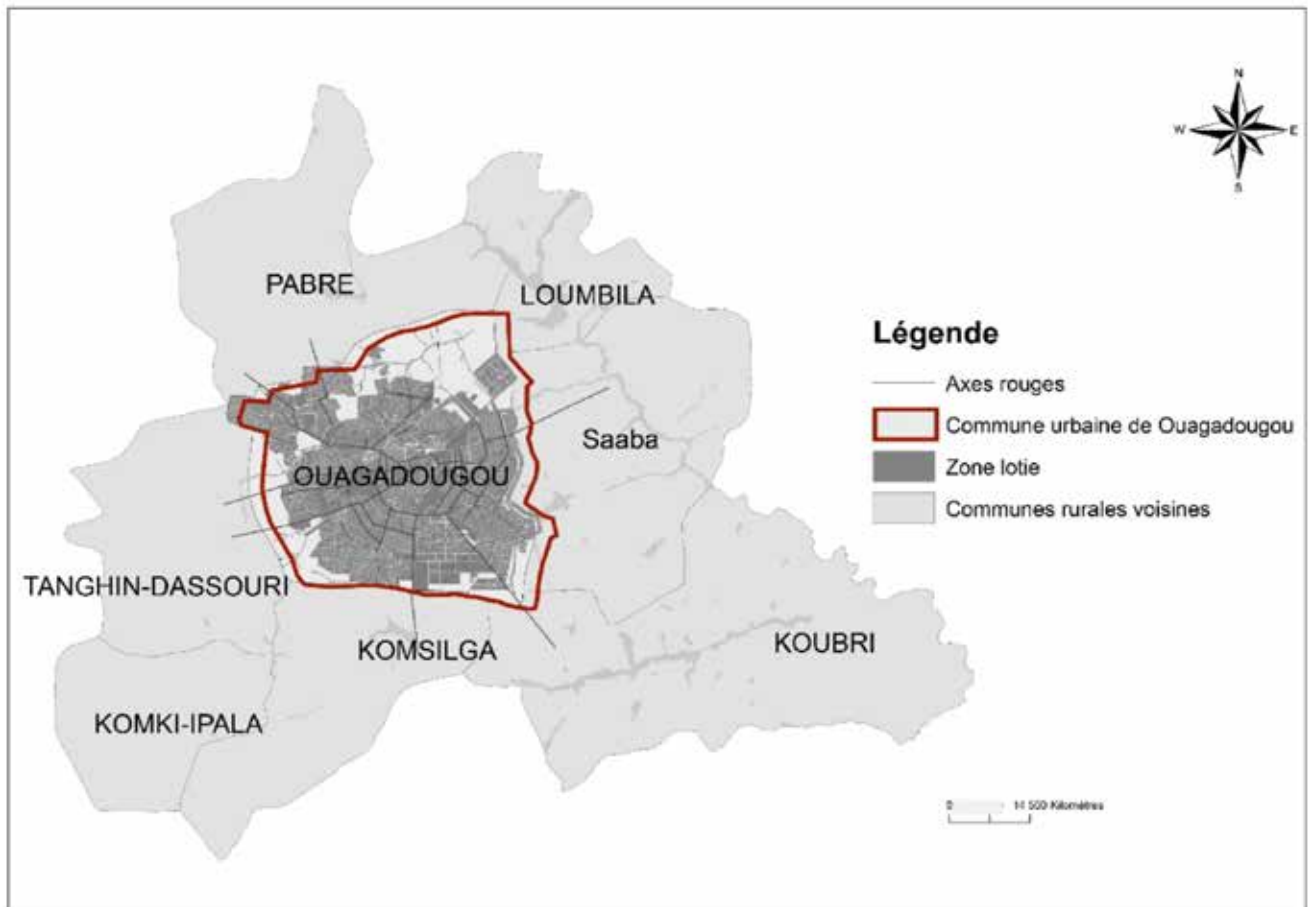


Fig 1 : Ouagadougou and the urban area of Greater Ouaga

A poetic history rooted in tradition

The settlement history for the city of Ouagadougou remains vague and fragmented. It is based on the stories, oral and written, of explorers, colonizers and native groups. In addition, it has been told from father to son. Notwithstanding the variances, the story of the arrival of the Mossi people remains the best window into the history of the city of Ouagadougou.

One story recounts how, as far back as the 12th century, this locality served as the capital of the Mossi Kingdom. At that time, two populations coexisted in the territory that is now present-day Ouagadougou. They were the Yonyonsé and the Ninsi. After several attacks by the Ninsi, the Yonyonsé took their revenge through the help of Wubri, the son of Naaba Zoungrana. Later, Wubri renamed the entire area that was under the authority of the Ninsi and had been called “kumben-Tenga” into “Wogodogo”, which means “where one is honoured and respected”. The term Ouagadougou is therefore a distortion of the name “Wogodogo”.

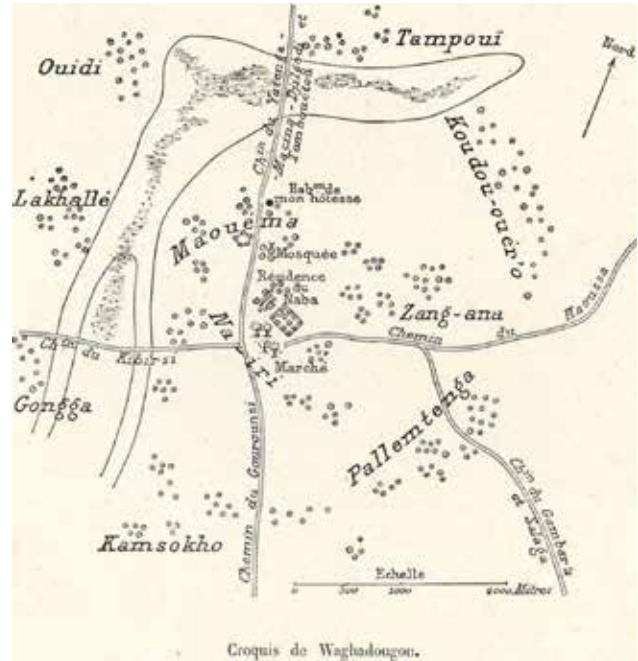


Fig 3 : sketch of Waghadougou



Fig 2 : the Mogho Naba

The origin of the name Ouagadougou or Wogdogo remains a mystery, as there are many explanations. Captain Binger described two possible interpretations of the meaning of Ouagadougou, that of the Bambaras, where we find the linguistic root in Djougou: “In Mandé, Waghadougou means village of the bush or, more precisely, land of baskets”. Whereas, in Moose: “Oour’odor’o, in the Mossi language, means: many boxes: oror’o, many; dor’-o, case”. Beyond the versions reported by Captain Binger, which the scientific community calls fanciful, many other hypotheses have been formulated by linguists. Two interpretations based on oral tradition are the least disputed. It is said that as a result of the sympathy of the indigenous people who submitted to Wubri, the legendary founder of Ouagadougou, during the invasion, Wubri named the place Wogdogo, which means “respect” in Moose. The second version is based on the existence of a market called Wogdogo before Wubri’s arrival and could also be the basis for the origin of the toponym. Until then, the toponym Wogdogo remained a subject of debate.¹

¹ Mama Awal, Halimatou. (2015). La métropole-village(s) contemporaine de Ouagadougou Explorer les potentiels d’un territoire, supports de processus de projet architectural (Doctoral Dissertation, p. 7). Université Grenoble Alpes..

An exponential demographic and spatial growth

Ouagadougou is marked by a horizontal urbanization. Indeed, the urbanization of the city has, in recent years, been characterized by a population growth paralleling its spectacular spatial development. This has resulted in the encroachment onto some cultural areas, and many villages have been swallowed up by this spatial expansion.

The traditional structure of land-use changed with the arrival of the colonial administration. The urban evolution proceeded around the central market known as “Rood Woko”,

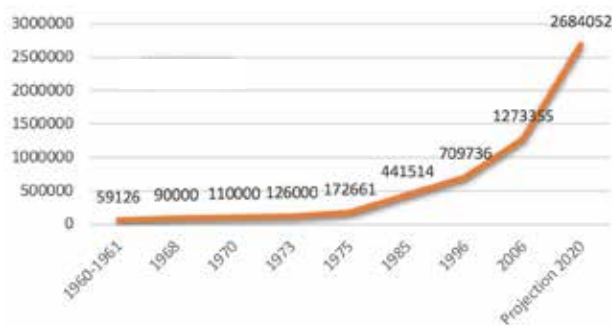


Fig 4 : Population growth in Ouagadougou

around which buildings and other structures were located to house shops, services and leisure facilities. The administrative facilities, schools and staff quarters were then established on the hill located to the east of the central marigot. The railway that arrived in 1954 occupied a vast area to the north of the commercial district.

Since Burkina Faso declared independence, Ouagadougou’s population has grown extremely rapidly. The city, which represented only 1.3% of the country’s population in 1960-1961, rose successively to 3% in 1975 and 5.5% in 1985. Ouagadougou nearly doubled its population from 1960-1961. According to the December 1985 census, there were 441,514 people living in the capital, twice as many as there had been six years earlier. In the same period (between 1960 and 1984), the capital’s developed area consisted of 1,040 hectares, while there were 4,900 hectares of informal settlements, for a total area of 6,860 hectares, of which 28.6% were divided into developed parcels known as lotis.

With this accelerated population growth, Ouagadougou quickly reached 1,273,355

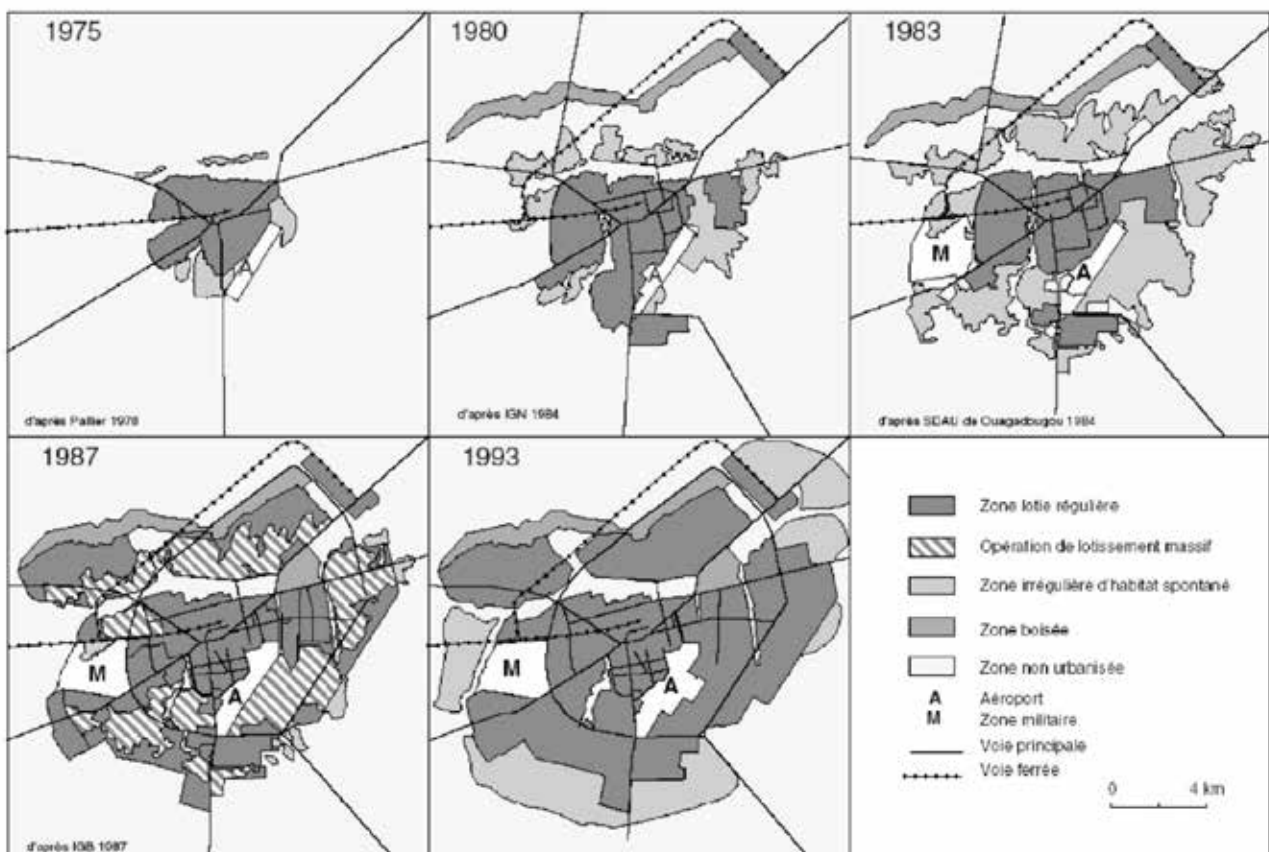


Fig 5 : Evolution of the city between 1975 and 1993 by Alain PRAT

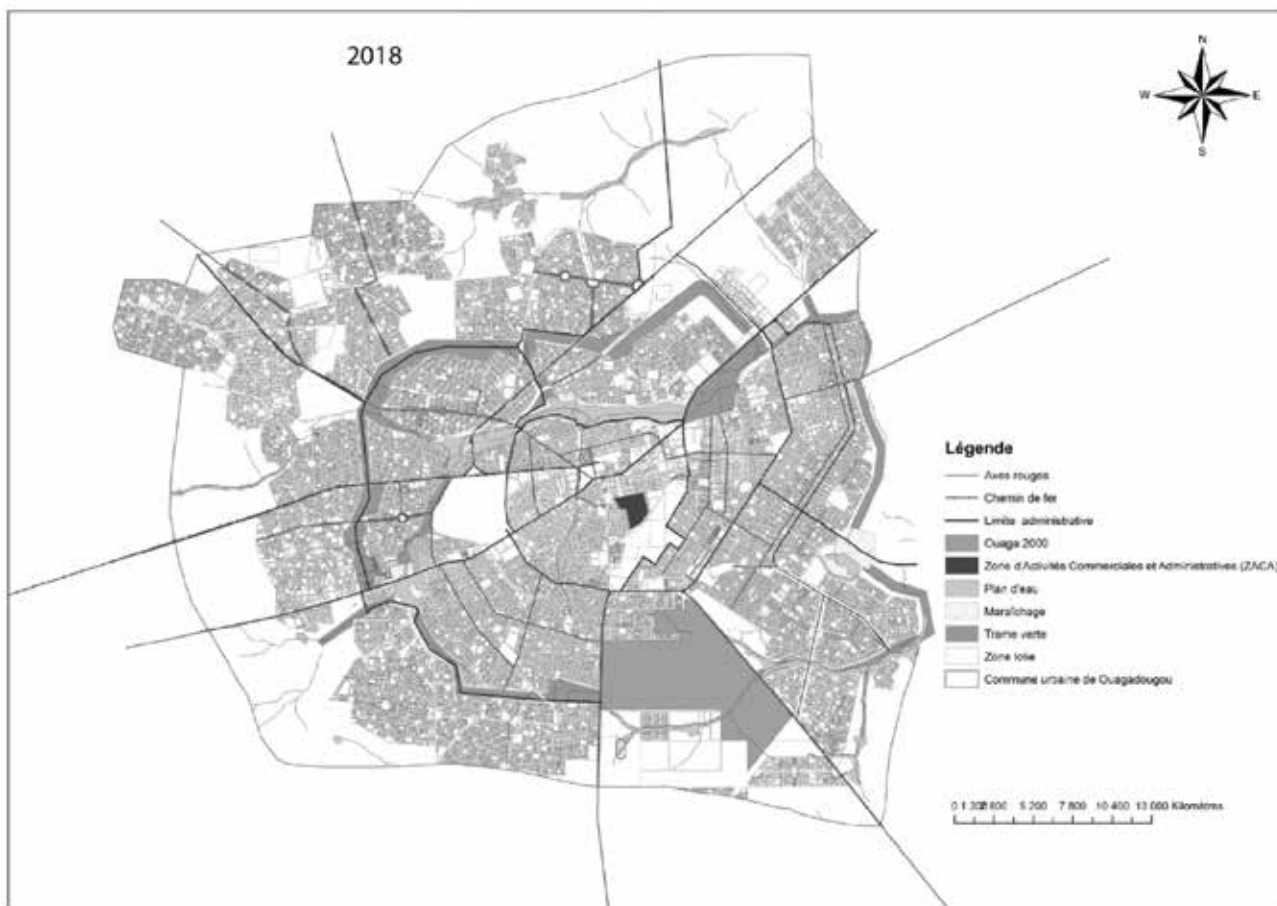


Fig 6 : État de l'urbanisation de la ville en 2018

inhabitants by 2006. In 2008, land demand led the capital to expand its surface area to cover 268.3 km² (POS, 2012). In 2017, demographic projections based on data from the Institut Nationale de la Statistique et de la Démographie (INSD) estimated the capital's population at 2,388,725 inhabitants. According to the same INSD demographic projections, Ouagadougou could reach 2,684,052 inhabitants by 2020.

The city of Ouagadougou now covers an area of 51,800 ha with a large part consisting of informal settlements still awaiting land regularization. This rapid urbanization of Ouagadougou, which has spread to neighbouring rural municipalities, has given rise to the “territory of the Greater Ouaga”.

Greater Ouaga, towards a new metropolis for West Africa

Greater Ouaga covers an area of approximately 3,300 km², and extends over the territories of the Central Region and the rural municipality of Loumbila in the Central Plateau

Region, with a population expected to reach 4,713,077 inhabitants by 2025.¹

The emergence of the concept of the Greater Ouaga is the result of a development and intervention strategy for the suburbs of Ouagadougou. This concept also led to the drafting of a planning document known as the SDAGO, which covers the geographical area formed by the urban municipality of Ouagadougou and seven (7) peripheral rural municipalities, namely: Komki Ipala, Komsilga, Koubri, Pabré, Saaba, and Tanghin-Dassouri, in the Central Region; and the rural municipality of Loumbila, in the Central Plateau Region.

In the territory of Greater Ouaga, the growth rate of the peripheral municipalities is highly contrasted, with record numbers in the rural areas of Saaba and Komsilga and very low rates for the others. The population growth of Greater Ouagadougou represents nearly 60% of the country's urban growth.²

¹ SDAGO 2025

² Study of the National Land-Use Development Plan for Burkina Faso: Diagnostic assessment, guidelines, summary of the diagnosis, Report N°1, December 2009

A governance in development: The Greater Ouaga Authority

The process of decentralization is underway in Burkina Faso. Municipalities are currently governed by a mayor. He/she is responsible for the administration of all municipal affairs and the management of administrative, industrial and commercial services on behalf of the municipality's interests, while also promoting its public and private sectors. Ouagadougou is an urban municipality with a special status and is headed by an elected central mayor and twelve (12) district mayors. The central mayor is the head of the municipal administration.

To date, Greater Ouaga has no formal existence. No institution defines or governs the administrative borders of this territory. However, it should be noted, as part of a structuring strategy at this scale and with the ongoing decentralization process, that meetings between the mayors of the municipalities of Greater Ouaga are in fact taking place.

Several decentralized cooperation projects are underway in Ouagadougou with the cities of Lyon, Grenoble, Loudun, San Miniato, Koweit City, Québec, Ville Leuze-en-Hainaut en Belgique, Turin, Kumasi, Genève, Eragny-sur-Oize, Marrakech et Bordeaux.

As part of the decentralized cooperation with Greater Lyon, Ouagadougou is now working in collaboration with the Lyon Urban Planning Agency to establish its own urban planning agency and intermunicipal body.

The creation of the Greater Ouaga Urban Planning Agency aims to respond to the problems of a city whose planning has been overshadowed, generating uncontrolled spatial growth, and which encompasses seven (7) neighbouring rural municipalities that now form Greater Ouaga.

The various local elected officials are eagerly awaiting the creation of this new urban planning agency, whose objectives are of considerable importance for the metropolitan area of Greater Ouaga, in particular for:

- _ Decision-making assistance for local elected officials
- _ Better spatial planning for the Greater Ouaga area
- _ Establishing an urban planning policy

- _ Project monitoring
- _ Better consideration of the population's participation in urban projects
- _ Improved land management

A diversified and healthy economic base

The population of Ouagadougou is relatively young and contributes significantly to the economic development of the city. The working rate of the population aged 15 or over was 54.5% in 2009.³

The capital's economy is the most dynamic in the country. It encompasses a variety of economic sectors ranging from urban agriculture to services. In general, the city's economy is mainly driven by the tertiary and secondary sector, as shown by the following graph, the data of which was provided by the Institut National des Statistiques et de la Démographie (INSD).

³ Ministry of Economy and Finance; Monograph of the Municipality of Ouagadougou, December 2009.

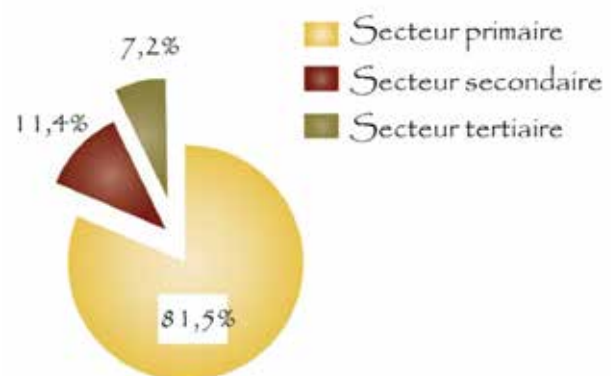


Fig 7 : Portion of the working population based on activity sector

Primary Sector :

LAgriculture and livestock are sparsely developed in the Ouagadougou's city centre. Most agricultural production occurs in rural Ouaga, which surrounds urban Ouaga. However, in the city of Ouagadougou, there are some urban agricultural activities that are practiced during rainy periods in small areas.

- o Urban agriculture

Urban agriculture is most often practiced in green spaces, administrative reserves, or undeveloped land. Millet is grown there. The yields are low and are used for small businesses.

In Ouagadougou, urban market gardening

is widely developed in a number of interstitial areas of the city, around reservoirs and waterways. It supplies city dwellers with fresh vegetables and fruit. Associations of people grow vegetables there. Market gardening is therefore very important in the centre. In 2009, surveys estimated the number of farmers in Ouagadougou at over 5,000, the number of people engaged in this activity (including workers and seasonal workers) at 15,000, and the number of people who earned a living from this activity at 75,000.⁴

4 POS, 2012



Fig 8 : Garden closed to the reservoir

Farmers are mainly between 30 and 45 years old and come from rural areas⁵. However, this market gardening activity is hindered by the depletion of water sources during the dry season, the lack of tools for gardening and planting, the lack of premises (refrigerated storage rooms) for crop conservation, etc.

Strategies for the development of urban agriculture would benefit this sector, as the products of market gardening are sold both domestically and internationally.

- o Livestock farming

Livestock farming is very poorly developed in Ouagadougou. However, small-scale livestock farming is found mainly in non-lotis neighbourhoods and in some lotis neighbourhoods (in the corner of courtyards). Domestic livestock products are most often used for family consumption or for sale during the holidays (Tabaski, Ramadan, Christmas, etc.). Medium- and large-scale livestock farming (cattle and poultry, etc.) can be found in the rural municipalities that, together with the urban municipality of Ouagadougou, form Greater Ouaga (Komsilga, Pabr , Koubri, etc.).

5 ibid



Fig 9 : Fishing by pirogue at the reservoir

- o Fishing industry

Fishing is conducted at water sources such as lakes and reservoirs. It is practiced by artisans and does produce high yields. Fishing boats are mainly pirogues.

The depletion of water sources and the weak outflow rate from the dams hinder the development of this activity. This situation has become more acute in recent decades with the phenomenon of ecosystem degradation.

In short, primary sector activities contribute very little to the performance of the urban economy, but they should not be neglected, as they contribute to reducing the unemployment rate.

The secondary sector includes traditional arts and crafts as well as industry :

- o Industry

Industry mainly includes sectors of construction and public works (cement works, metalwork production, etc.), food processing and packaging.

The city of Ouagadougou has two developed industrial zones. The oldest is in Gounghin, located in the heart of the city. It was created in the 1950s for the development of the industrial sector. This first industrial zone was overtaken by the city's spatial growth. This led to the creation of a second industrial zone in Kossodo at the northern end of the city (in District 4) in the 1970s. After the creation of the Kossodo industrial zone, more than 80% of the industries in Gounghin were transferred to Kossodo. Today, Ouagadougou alone accounts for nearly 60% of Burkina Faso's industrial companies.

o Traditional arts and crafts

The crafts industry in Ouagadougou includes various types of productions, primarily animal hides and skins, carpentry, sculpture, pottery, construction and dyeing.

The crafts industry contributes to the generation of GDP and the conservation of cultural heritage. It participates in the valorization of local materials. It also provides new tools needed by the agriculture, construction and hydraulics sectors⁶.

Craftsmanship is valued thanks to events such as the SIAO, which has the distinction of bringing together craftsmen from across the West African subregion and even from the rest of Africa every two years. This expo develops tourism in the city and supports the craft industry which is in the process of development.

Tertiary Sector :

The economy of the city of Ouagadougou is dominated by the tertiary sector. Administration, commerce, hotels, banks, restaurants, pubs and so on are the most developed. A preference is given to commerce, which develops along the main arteries, occupying in some cases part of the roadway which in turn causes accidents. In addition, commerce takes place in the marketplaces.

The tertiary sector employs a large portion of the population. Activities are most often developed in the city centre, generating daily commuting travel to the city centre. It remains the refuge for a myriad of informal sector activities, employing a concentration of the urban poor.

Example of two urban centres in construction

ZACA :

Ouagadougou has been shaped by two major urban projects, the ZACA (Zone d'Activités Commerciales et Administratives) and Ouaga 2000 (a residential, commercial and administrative zone), built in the city centre and on the southern periphery of the city, respectively. These two separate development projects have been very important in building the current image of the capital.

Precursors to the ZACA (Zone d'Activités Commerciales et Administratives) project were based on a proactive plan by the Burkina Faso government to rebuild the central market of Ouagadougou. In 1985, the Conseil National de la Révolution (CNR) decided to rebuild the central market of Ouagadougou (called the Rood Woko market). The scale of the project led to discussions about how best to develop the area near the market and at the same time create a harmonious environment. This resulted in the creation of the ZACA project, which was approved by decree in 1990 and included a restructuring plan for the commercial area and the An IV A housing estate, which covered an area of 115 hectares.

Following this first phase, the ZACA was extended due to the spatial pressure on the area's economic activity, which was operating in an inadequate framework that created multiple dysfunctions in the city centre. Consequently, the project evolved from the basic regulatory provisions (specifications) that were introduced due to the inevitable urban renewal process. This futuristic vision of the ZACA has led to the construction of several commercial, administrative and residential buildings in the centre of Ouagadougou.

Près de deux décennies après l'aménagement Nearly two decades since the development of the ZACA, the outcomes have proven disappointing for local actors. Indeed, the results of a study carried out by the MUH and published by the press show that the rate of developed lotis plots in the ZACA stands at 25%. Following this observation, the Ministry of Urban Planning and Housing, during a press conference held on 24 August 2018, invited the owners of the different plots to respect the guidelines set forth and to develop the empty plots within a period of one month. After this period, the undeveloped plots would be taken away from their owners and reallocated. This measure led to the development of several parcels of land by their owners. For the time being, the development deadlines previously set have passed, and according to data from the Ministry of Urban Planning, "more than half of the property owners in the ZACA have not complied with the orders in the official statement". In November 2018, a committee was established by the MUH to review and validate the files of applicants who would like to be allocated undeveloped or ineffective parcels.

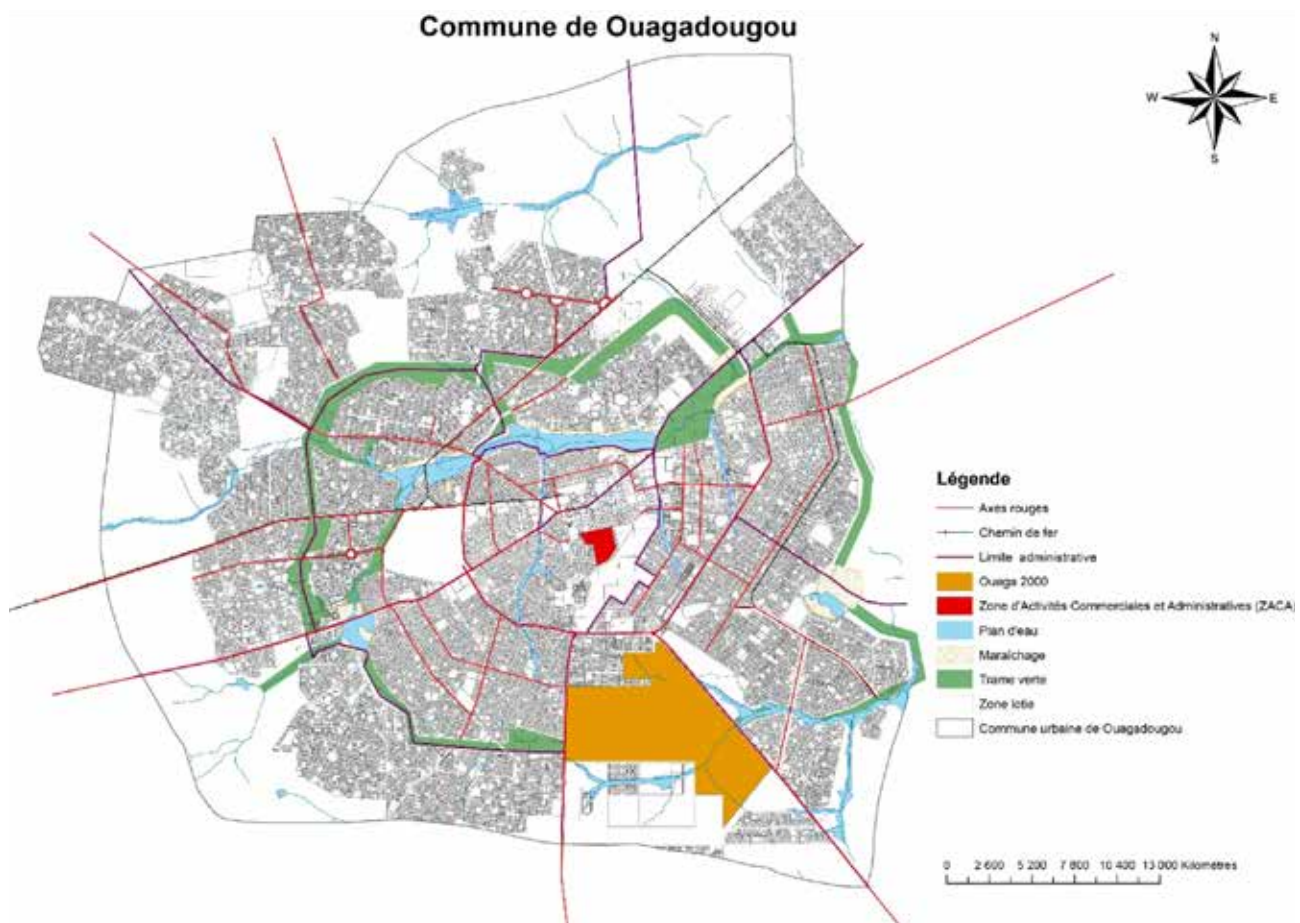


Fig 10 : Localisation of Zaca and Ouaga 2000

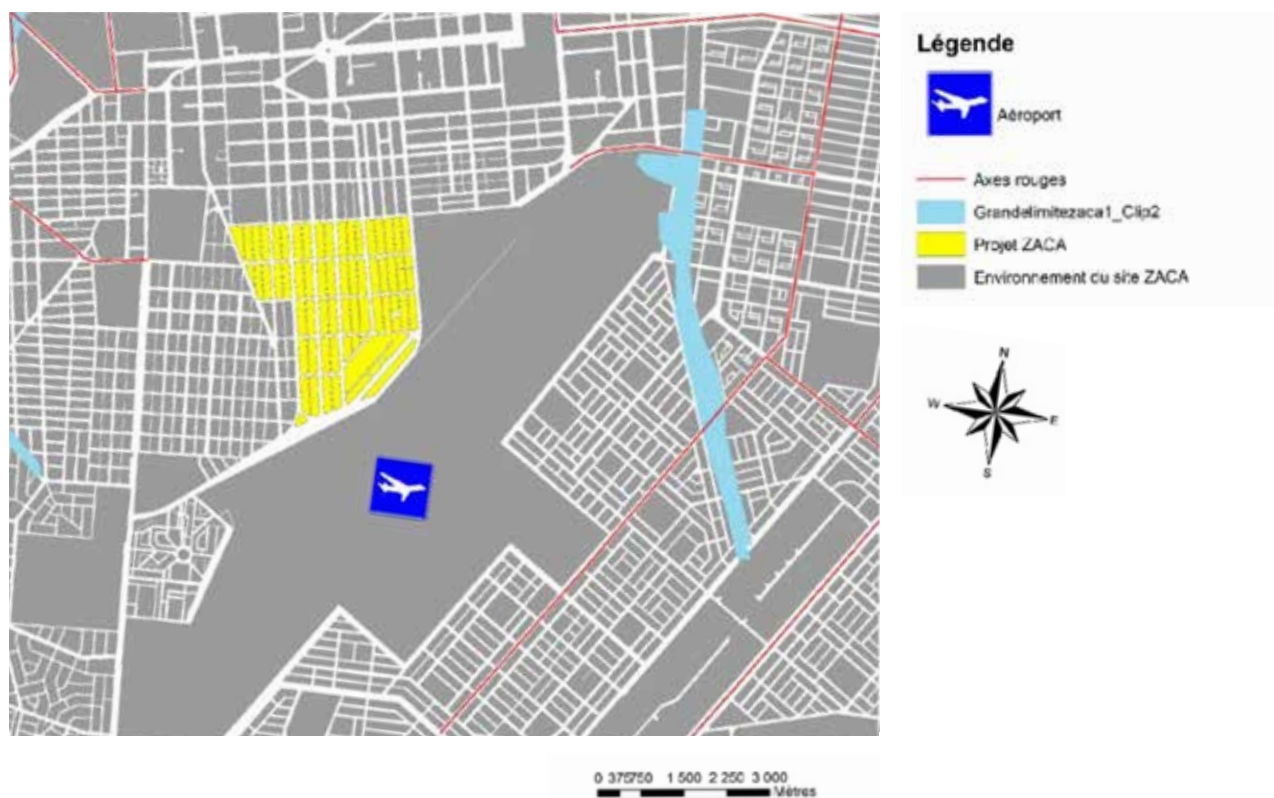


Fig 11 : Parcelling of ZACA

Ouaga 2000 :

The project for the Ouaga 2000 development zone was launched in 1990. Located south of the “Patte d’Oie” corridor in District 12, Ouaga 2000 is a complex dedicated to the construction of infrastructure and facilities.

The project was developed with the goal of reducing congestion in the city centre. It was also guided by the idea of hosting the presidential palace, its outbuildings and certain institutions on the periphery, outside the hyper-centre. With an area of 730 hectares divided into three designated areas (Zones A, B and C), guidelines were drawn up in 2007 to improve its spatial occupancy rate. However, to date, this area has experienced the same problem as the ZACA, that of spatial occupation.

After an initial assessment of the area’s low spatial occupancy, a new set of guidelines was developed in 2007. These new specifications were preceded by a modification of the zoning system (now favouring an allocation of zones, regulations for each zone, fixed authorizations for building surface areas, materials, building colours, building heights, the use of public spaces, treatments, road access and junctions, parking, etc.).

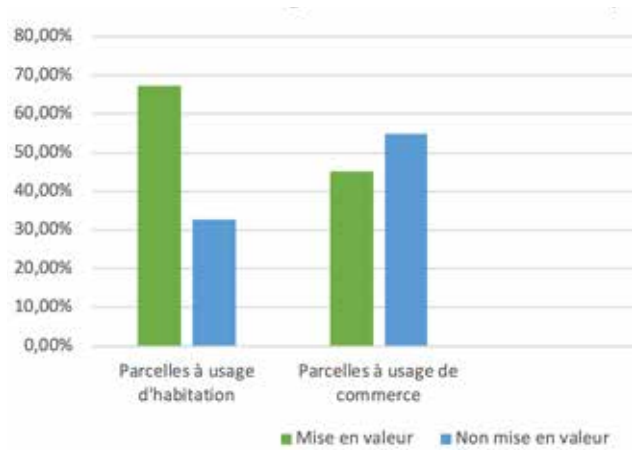


Fig 11 : In 2018, a study carried out by the Direction Générale du Contrôle on the spatial occupancy rate, based on 4,281 residential parcels and 431 commercial parcels, revealed the following occupancy rates.

Even if the spatial occupation is incomplete, buildings are still being erected, and the areas near Ouaga 2000 have gained in importance.

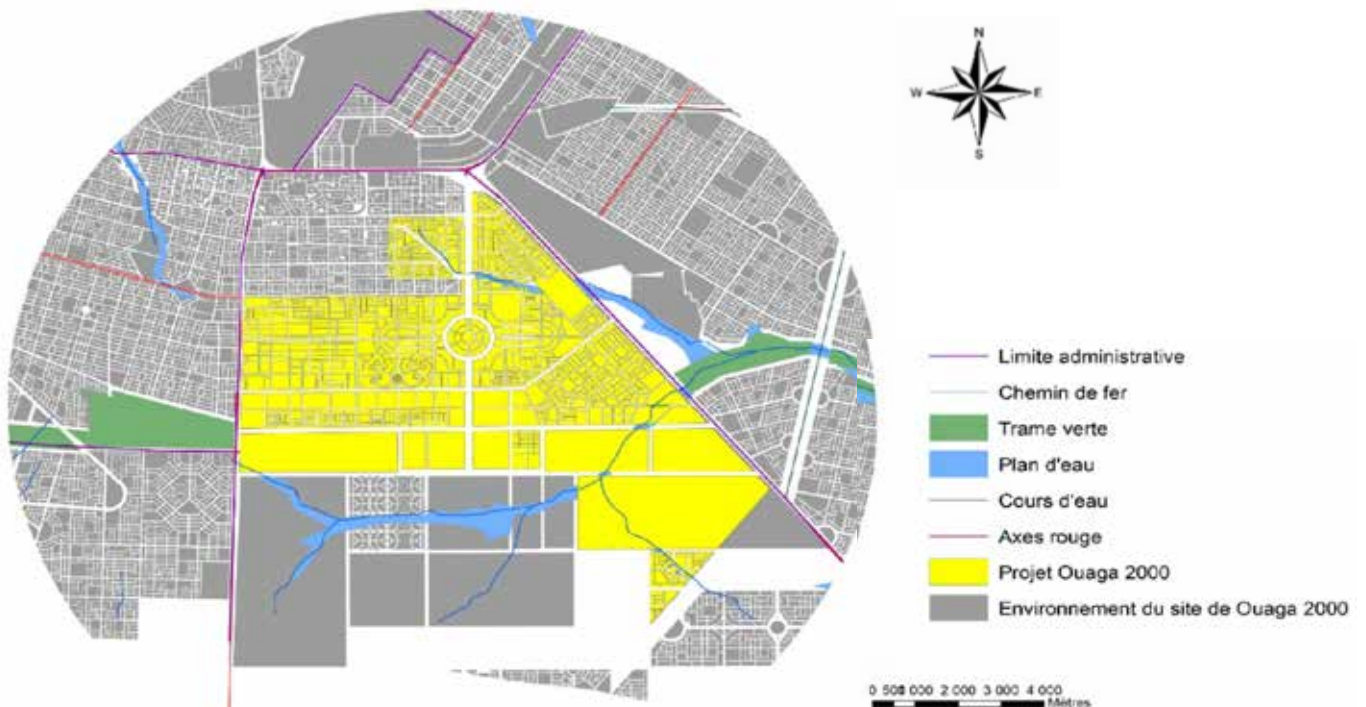


Fig 12 : Parcelling of Ouaga 2000



PART 2 : Challenges and vulnerabilities of the city

Housing in Ouagadougou, living in a city as it is being built

In recent years, Ouagadougou has been subject to a significant spatial expansion, accentuated by the population's demand for single-family homes. In 2013, single-family homes represented 68.7% of housing¹. This expansion has led to a rise in the land speculation of non-loti zones (undeveloped areas), some of which are parcels deemed unsuitable for occupation or have already been assigned a purpose, and land where construction is prohibited.

The loti zones, organizing the city through urban planning

The parcelling structure adopted by the city of Ouagadougou is that of a checkerboard. The loti zones (developed areas) are distinguished by a defined road network, rectangular blocks, existing basic urban services, a high proportion of buildings constructed from permanent (hard) or semi-durable materials (a mixture of cement and mud), etc.

¹ Project for the rehabilitation of the peripheral districts of the city of Ouagadougou; Indemnification and Reinstallation Plan (PIR) of the Populations affected by the Mogho Naaba Marigot Plan, Final Report, 2013.

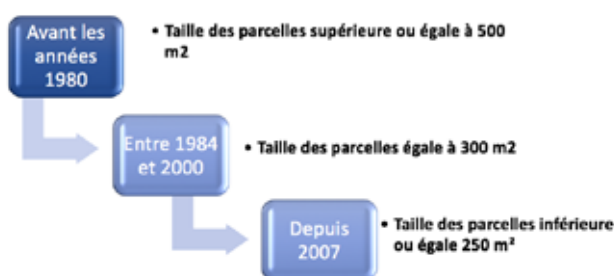


Fig 1 : Evolution of parcel sizes for loti zones

To address spatial needs and the lack of density, the surface area of the parcels was reduced from 600 m² from “before the 1980s” to approximately 300–400 m² between 1984 and 2000 and is now restricted to around 240 m² for recent housing developments (since 2007).

From Thursday, 24 to Friday, 25 October 2013, the États Généraux on allotments in Burkina Faso was held in Ouagadougou. Organized by the Ministry of Housing and Urban Development, its focus was on “New practices in urban development”. One of the conclusions of this meeting was to halt the development of housing allocations in Ouagadougou and Bobo-Dioulasso. Since then, no new housing estates have been built in Ouagadougou.



Fig 2 : aerial view of the lotie zone in Tanghin district

Self-built constructions as a driver of diversity and urban resilience

Ouagadougou is a city where the construction sector is in the process of being established. Since 1984, self-construction has produced 2,000 housing units annually in the city and accounts for nearly 85% of housing production, ranging from constructions using precarious materials in undeveloped areas to luxury villas.² Self-construction is extremely widespread in non-loti areas. The owner ensures, with the help of a team of drudges or by himself, the different stages of construction (from the building's foundation to the making of mud bricks or cinder blocks) up to the completion of the site. Economic reasons — “self-construction is said to be less expensive” — accentuated by a lack of financial or technical assistance mechanisms to facilitate the construction of housing are at the origin of self-construction, which results in the significant number of precarious dwellings.

Burkina Faso's national government has carried out several projects to meet the housing needs in Ouagadougou, such as the An housing estates and the 2007 project for 40,000 social housing units at the Bassinko site.

In addition, the government has been working with private property management companies as part of the housing production system. As such, new players in the real estate market are appearing and a policy of private housing estates in the periphery is emerging. Among these new private real estate actors are SOCOGIB, AZIMMO and GELPAZ.

The urban habitat, between tradition and globalization

The majority of housing is dependent on the geographical area in which it is built. Indeed, there are more simple sheet-metal houses or “maison 8 tôles” (approx. 9.6 m²) in non-loti zones than in the other areas.

The dominant housing type in Ouagadougou is the “detached single-family home”, which represents 68.7% of all dwellings. The second most important type of housing is multi-unit buildings



Fig 2 : Auto-construction



Fig 3 : «Maison à cour» and commercial autopromotion

(17.1%), followed by villas (10.7%)³. In other words, 96.5% of homes in the urban municipality of Ouagadougou fall into one of these three categories. Apartment buildings and huts are also types of housing found in the city of Ouagadougou, but they are not widely represented.⁴

The city of Ouagadougou is characterized by a wide variety of architectural housing forms. Diversity is also present in the materials used: traditional architecture (mud-built huts, Nubian vaults), semi-modern architecture (mixing traditional and modern materials) and modern architecture (laterite bricks, compressed earth blocks, cinder blocks, sheet metal, roof tiles, slabs, etc.).

The architecture of Ouagadougou is characterized by «non loti» districts. To know more about «non-lotie» districts, see «Le «Marteau», un coup dur sur l'homogénéisation des quartiers de Ouagadougou» written by Léandre GUIGMA.

² «Reflections on housing and urban planning strategies», Introductory Report for the CASEM meeting held on 28–29 September 2000.

³ Project for the rehabilitation of the peripheral districts of the city of Ouagadougou; Indemnification and Reinstallation Plan (PIR) of the Populations affected by the Mogho Naaba Marigot Plan, Final Report, 2013.

⁴ *ibid*



Fig 3 : Publicity



Fig 4 : In the first ground : «la maison à cour», in the second ground : modern house

«Yaam solidarité»

Yaam Solidarité is an association based in Ouagadougou, in the Boassa neighbourhood of District 7, which is working to address the issue of decent housing in Burkina Faso. It was created in 2009 and its main objective is to improve precarious housing conditions through reconstruction or rehabilitation programmes. It promotes the use of local materials in construction and supports the populations of non-loti neighbourhoods with self-construction practices through:

- o Theoretical and practical training for stonemasons in clay construction techniques;
- o Demonstrative workshops in schools and homes of local residents;
- o Awareness-building activities for households on sustainable construction techniques and home maintenance.



Mobility, a factor of social inequality

Circulation lanes: Gourdrons and “6 mètres”

The “6 mètres” are unpaved lanes in the city. They are reserved for serving residential areas. The footprint of these lanes no longer corresponds to the 6-metre dimensions used during the colonial period. However, all tertiary roads, within neighbourhoods, that have a width of 12 to 15 m are called “6 mètres” by the population as a reminder of the six-metre lanes of the old neighbourhoods.

These lanes are generally built through the initiative of local residents who try as much as possible to make earth and rubble embankments from time to time. For example, local residents install improvised speed bumps to force users of these roads to slow down in order to prevent traffic accidents on the streets. The “6 mètres” are often overrun with potholes and wastewater stagnation due to the fact that some households discharge wastewater directly into the street.



Fig 1 : A “6 mètres” (which is actually 14 metres wide)

Walking, a poorly managed mode of travel

The insufficiency and/or lack of footpaths does nothing to help encourage walking in Ouagadougou. Pedestrians have difficulty moving around the city centre. On some roads, there are no formal footpaths. Existing pavements are practically overrun by commercial activities, vehicle parking, etc.

Public transportation, a difficult model to apply

Public transportation is not well developed in Ouagadougou. The urban public bus service, delegated to the SOTRACO agency, serves a network of 145 km via 12 lines within the city. The limited availability of these buses (some areas are not covered by the SOTRACO network), the lack or insufficiency of buses and bus stops in some districts, the average frequency being over 50 minutes¹... Do not encourage greater use of the bus system by the population. In addition, the lack of a lane reserved solely for buses often leads to them getting stuck in traffic jams, which explains the low motivation of the population to use them.

¹ Référentiel Hiérarchie des Voiries Ouagalaises, Juin 2017

Omnipresence of motorcycles and cars, a symbol of freedom

Ouagadougou, also known as the capital of two-wheelers, is a city where motorcycles are the preferred means of transportation. On average, each household has at least one motorcycle. This mode of transportation is used by 73% of the city’s population. With the advent of vehicles: “goodbye France” (vehicles no longer deemed suitable for use in the West are exported to Africa) cars are relatively inexpensive, leading to the development of the private car as a mode of transportation.

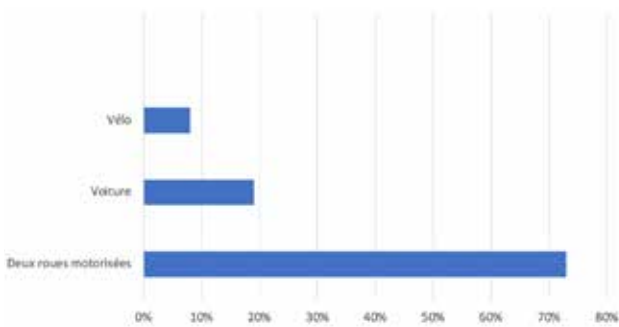


Fig 2 : Percentage for modes of transportation based on road traffic

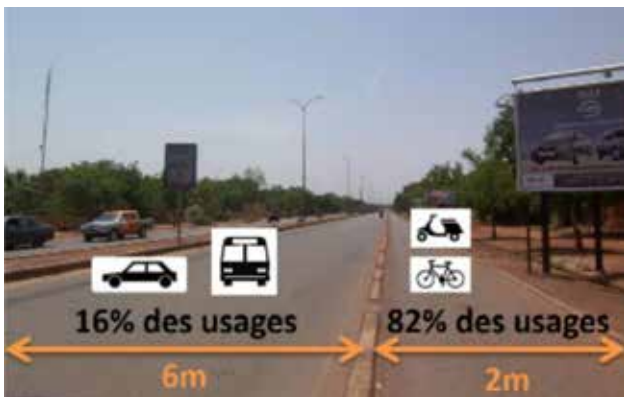


Fig 3 : Road use

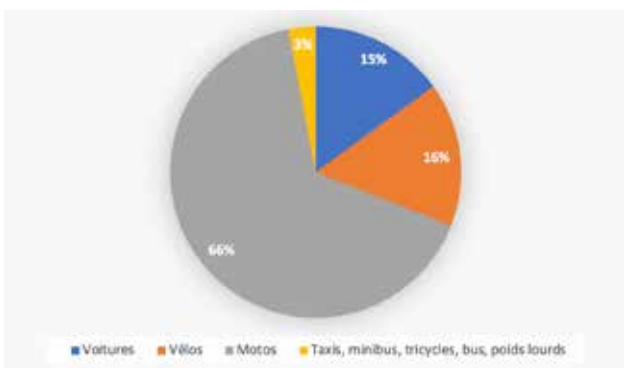


Fig 4 : Types of motorized transportation that comprise traffic in Ouagadougou’s city centre (Districts 1 and 2)

Shared taxis and tricycles, an informal response to transportation problems

Shared taxis are public transportation vehicles that are usually green in colour. An organization of taxi drivers exists in Ouagadougou, and each taxi has its own dedicated travel routes, which are generally on paved roads. Thus, a passenger X wishing to go to point A must stop at the edge of a line H where he is sure to find a taxi that will take him/her to point A. Taxis cost between 250 CFA francs to 3,000 CFA francs depending on the destination of the customer. If the customer wishes to go to a destination that is on the edge of the goudron (paved road), then he/she will pay an average of 300 CFA francs. If he/she wishes to go inside the neighbourhood districts, which would require the taxi to drive along a “6 mètres” or unpaved road, then he/she will have to pay up to 2,000 CFA francs or more. These taxis are shared and can accommodate a maximum of six (6) people at a time, all of whom may have different destinations.

Motorcycle taxis, which are typically tricycles, are used to transport goods.

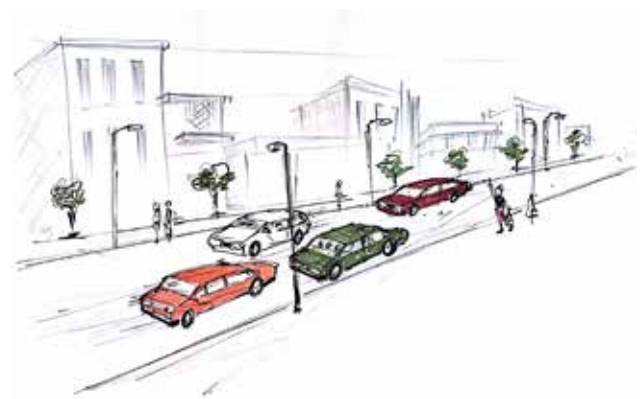


Fig 5 : Croquis du fonctionnement des taxis partagés, le goudron devient un arrêt sur toute sa longueur



Fig 6 : Tricycles



Fig 7 : Cycling in Ouagadougou



Fig 8 : Motorbikes in Ouagadougou

Lack of alternatives results in predominance of individual transportation.

In general, whether by car or motorcycle, individual mobility is the most developed means of travel in Ouagadougou. According to data from the Ouagadougou road database, every day, 1 million people and 600,000 vehicles enter and leave the centre of Ouagadougou. The inadequacy and inefficiency of the public transportation system forces people to turn to individual mobility.

In order to improve urban transportation in Ouagadougou, the national government of Burkina Faso signed a formal agreement in June 2018 at the European Mobility Exhibition for the modernization of Ouagadougou’s bus network with RATP and the Scania Group. This project, set for 2018–2020, aims to increase the density of the public transportation network in Ouagadougou by deploying 550 new vehicles on current and future bus routes. It will also make it possible to develop the future multimodal prioritization network, which will be centred around 4 structuring lines of High Level Service Buses.

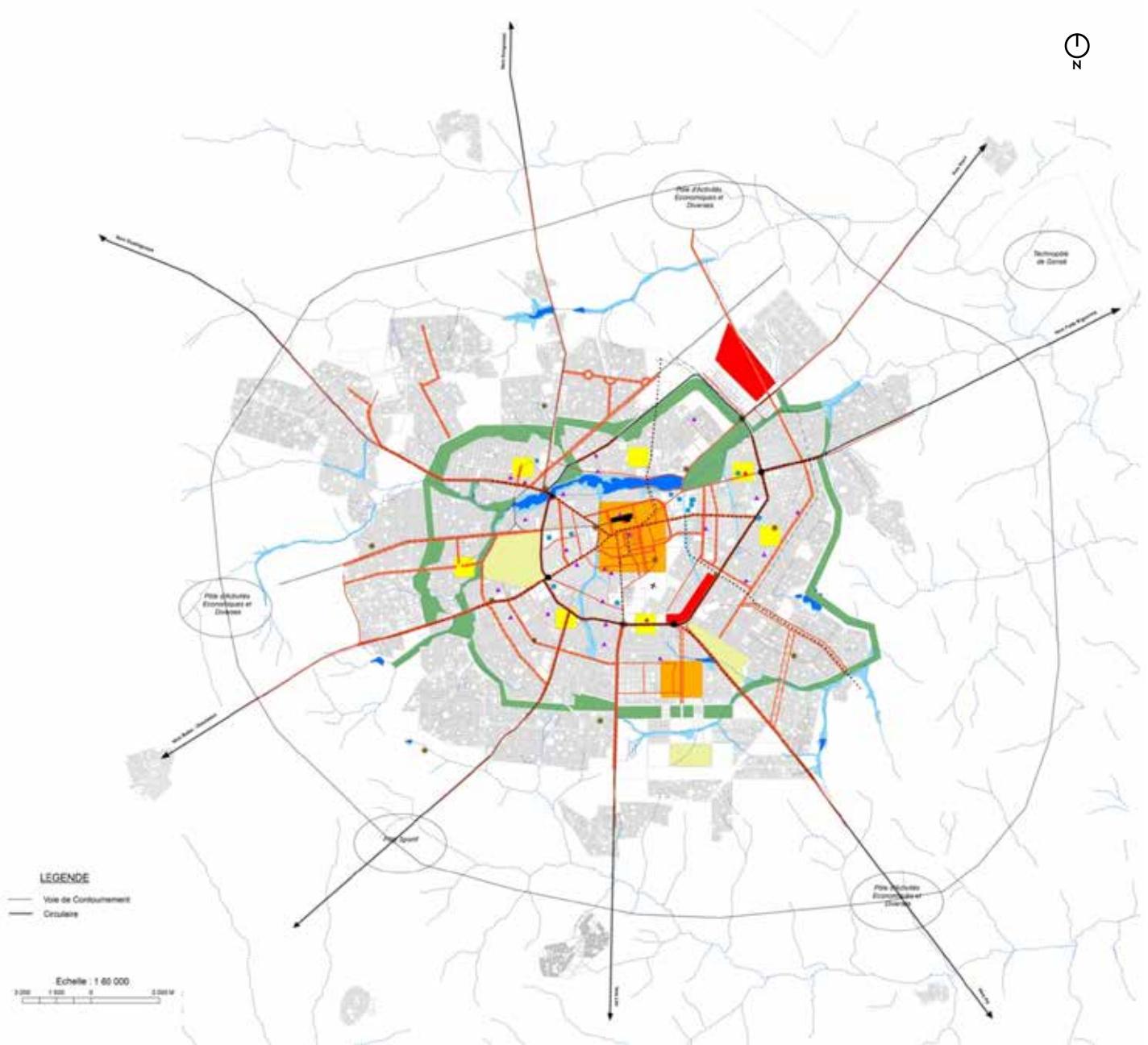


Fig 9 : View of the Circulaire and the Northern Bypass

The major urban projects underway for constructing a modern city

Projects aimed at improving mobility are underway in the city of Ouagadougou and in the Greater Ouaga area. These include the Northern Bypass project, the Circulaire, the study for the development of a traffic and parking plan, etc. The Circulaire was originally designed in the 1990s to prevent large international freight transport vehicles from entering the city of Ouagadougou. Nowadays, this ring road has become an avenue that runs right through the city centre, with large trucks travelling through the city, creating traffic jams, traffic accidents and so on.

To address this problem, the Northern Bypass project was launched in 2018. This 125-kilometre motorway will run from Gampèla to Loumbila via Koubri, Saponé, Tanghin-Dassouri and Pabré. It will offer two (2) express roads. This project is part of the National Programme for Economic and Social Development (PNDES). Launched on 30 October 2018, it aims to transfer large truck travel to the bypass, which will help solve safety and mobility problems in the city centre.

The Donsin Airport, freeing up the city centre

Since 2017, the city of Ouagadougou has been working on a project to build a new airport at the northern end of the city of Donsin. The new Donsin Airport aims to replace the existing airport (which will be delocalized from the centre of the city) and to meet growing air traffic demands. The work is scheduled to be completed in 2021. The construction of the new airport is under

the supervision of the Prime Minister's office. This project has already gone through the phase of delocalizing the existing airport as well as compensating and relocating people affected by the project.

Operational development strategies and objectives

Burkina Faso has an Urban Planning and Construction Code established by Law No. 017-2006/AN. Its purpose is to organize and regulate the sectors of urban planning and construction in Burkina Faso.

In 1984, Burkina Faso initiated a national development policy aimed at eventually providing all administrative and decentralized entities with guidance tools for land use in Burkina Faso, notably:

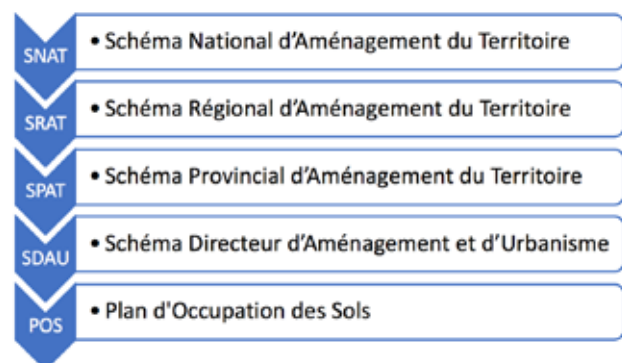


Fig 1 : the different national policies to organize Ouagadougou

As a result, all urban municipalities will have to possess a SDAU. Ouagadougou has a SDAGO and a POS (Land-Use Plan) that are pending adoption.

Master Plan of Greater Ouaga (SDAGO)

The city of Ouagadougou has undergone an uncontrolled spatial evolution, which has led local actors to propose a planning document known as SDAGO. This Greater Ouaga Master Plan is a planning guidance document for the Greater Ouaga area that takes into account the urban municipality of Ouagadougou and its neighbouring rural municipalities (Saaba, Pabré, Komsilga, Tanghin-Dassouri, Komki-ipala, Ouahigouha, Koubri). This planning document aims to control spatial occupation in the Greater Ouaga area. Developed in 2008, it is currently being updated for adoption.

Land-Use Plan (POS) and secondary urban centres

Ouagadougou has a Land-Use Plan (POS, drafted in 2012). Although it has yet to be adopted, the guidelines in this planning document are already being used in the city's urban development. This is evidenced by the seven (7) secondary urban centres proposed by the POS, three (Tampouy, Katr-Yaar, Grand Est) of which have already been reviewed and a fourth (Tanghin centrality) which is currently under review. The purpose of these secondary urban centres is to relieve congestion in Ouagadougou's city centre, which is characterized by its hyper-centrality, and to bring the city's populations into proximity with these secondary urban centres which will offer superstructure local facilities.

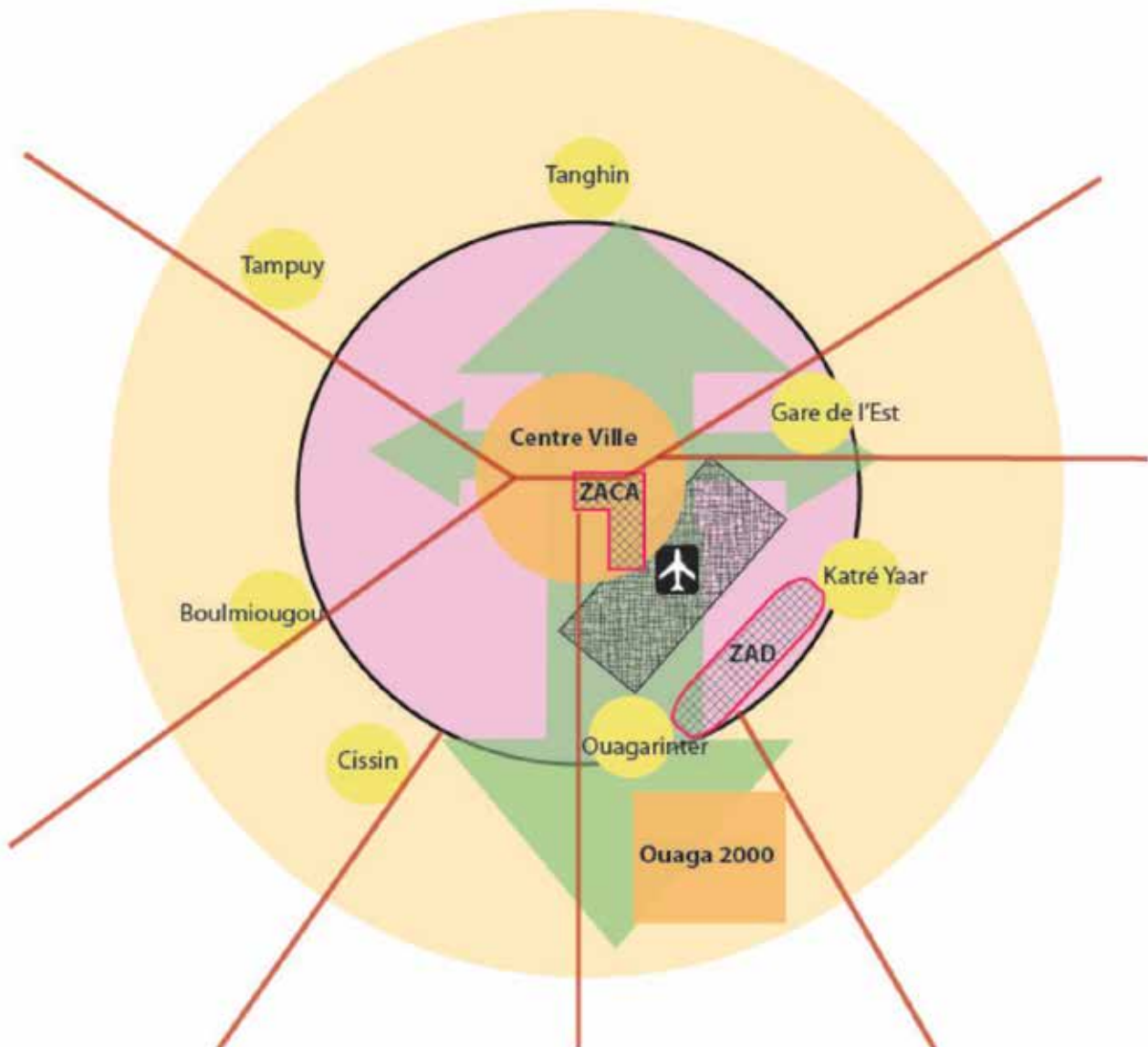


Fig 2 : Secondary urban centres proposed by the POS

Northern urban centres, today's challenges

In its efforts to relieve congestion in its city centre, Ouagadougou is in the process of integrating the secondary urban centres proposed by the POS. In the northern part of the city are the urban centres of Tampouy and Tanghin, which are currently under review.

Located in District 3 of the city of Ouagadougou, the development project for the secondary urban centre of Tampouy responds to the demands of a growing population and a city centre that is facing difficulties in fulfilling the needs for urban facilities and services of its population located in the outskirts. According to the terms of reference, the priority is in identifying the investments required for urban projects at the secondary urban centre level, including structural infrastructure and facilities projects. The time frame defined for the finalization of the development of the Tampouy urban centre is five years (2017-2021).



Fig 3 : The new urban road interchange

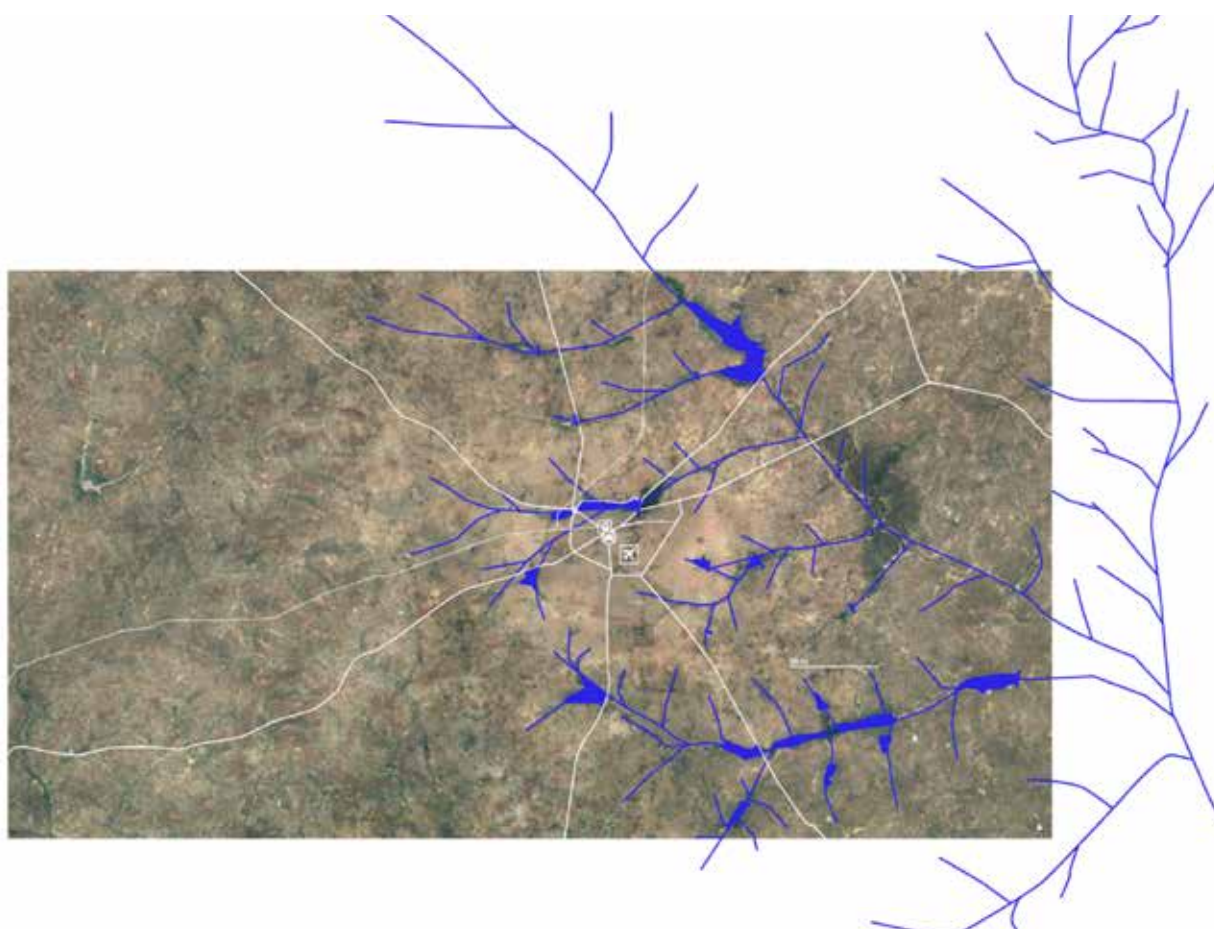


Fig 1 : hydrographic network and reservoir of the great Ouaga



Fig 2 : Aerial view of the reservoir 3

Water, a latent resource

Originally, the city of Ouagadougou was built on a marshy site as a means of protecting it from potential invaders. The marigots (water drainage canals) of the past have since become intra-urban reservoirs. Water and in particular potable water are a significant and multidimensional challenge for this city located in the Sahel region.

On average, the annual volume of precipitation for the country as a whole is estimated at 206.9 billion m³. For comparison, the annual volume of rainfall is lower in Paris (650 mm) than in Ouagadougou (800 mm), yet the rainfall cycles of the two result in significant differences. While spread over the entire year for the French capital, it only extends from June to September in Ouagadougou.

Water management, a strategy at the city level

The National Office for Water and Sanitation (ONEA) is responsible for rainwater management, drinking water supply and sanitation in Burkina Faso. All of its resources depend mainly on rainwater. They are drawn directly from so-called “underground” reservoirs (groundwater) or from so-called “surface” reservoirs (water retention systems)¹.

The 2010 report by the Ministry of Agriculture and Water Management notes that “groundwater cannot be considered as a renewable resource” and that surface water must

be considered as “the only resource available in the long term”². In addition to the three intra-urban dam reservoirs (south of Tanghin) that supply the city with water, two surface water reservoirs, one in Loumbila (20 km from Ouagadougou) and the other in Ziga (50 km from Ouagadougou), were built to respond to the increasing water demands and drought conditions.³

The current system captures runoff and stores it in large reservoirs. The dam then allows the water to be used directly or to be pumped to water towers followed by standpipes or houses. However, this water is stored in the open air and is directly affected by natural hazards, the most important of which is evaporation. Each year, more than 80% of rainwater is lost to evaporation.⁴

In addition, there is the risk of pollution of runoff water during its transport to the reservoirs. In Ouagadougou, rainwater collection is managed by a system of open-air drainage canals. Organized in a network of primary, secondary and tertiary canals⁵ they are often cluttered with waste and are not sufficiently maintained, which increases the risk of contamination. This implies that ONEA must implement technical and financial means to filter and clean the water.

Flooding incidents have increased over the past 10 years. Between 2000 and 2009, no less than seven (7) floods affected more than 164,000

¹ Boubacar, Ibrahim. (2012). Caractérisation des saisons de pluies au Burkina Faso dans un contexte de changement climatique et évaluation des impacts hydrologique sur le bassin du Nakanbé (Doctoral Dissertation). Université Pierre et Marie Curie Paris VI, Paris.

² Government of Burkina Faso. (2010). Inondations du 1er Septembre 2009 au Burkina Faso Évaluation des dommages, pertes et besoins de construction, de reconstruction et de relèvement.

³ IRD. (2008). Ouagadougou (1850–2004). Une urbanisation différenciée.

⁴ op. cite BOUBACAR

⁵ op. cite Government of Burkina Faso.

PART 2 : Challenges and Vulnerabilities of the city

people and killed more than 33,000 people⁶.

During the 2009 flood, residential areas were the most severely affected. More than 33,000 homes were destroyed, 90% of which were mud dwellings located in non-loti neighbourhoods and in loti neighbourhoods near the reservoirs such as Dapoya. Mud-built structures are particularly vulnerable to flooding, particularly due to the absence of cement or stone foundations. The soil in Ouagadougou is also a problem: it is mainly composed of a crystalline base that reduces infiltration into the soil and makes it impermeable. This is why after rainy episodes the unpaved streets are often made inaccessible by standing water. In addition to hindering circulation, this standing water contributes to the spread of mosquitoes, vectors of malaria, and it takes several days for the puddles to evaporate.⁷

⁶ Government of Burkina Faso. (2010). Inondations du 1er Septembre 2009 au Burkina Faso Évaluation des dommages, pertes et besoins de construction, de reconstruction et de relèvement.

⁷ Sabatinelli, G., & Lamizana, L. (1989). Le paludisme dans la ville de Ouagadougou (Burkina Faso).

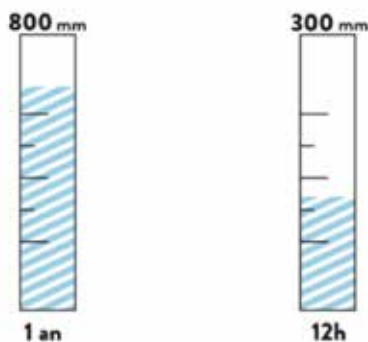


Fig 3 : Rainfall comparison in Ouagadougou between the annual average and the flood on 1 September 2009



Fig 4, 5 et 6 : Picture of the flood of 2009

Unsanitary conditions and diseases, a direct consequence of water use and management

In Africa, malaria is one of the main causes of death. In 2016, there were more than 216 million cases of malaria worldwide, 90% of them in Africa.¹ In Ouagadougou, the “small pools of stagnant, cloudy, sun-exposed water present during the rainy season throughout the city” are “breeding grounds” for mosquitoes to develop and spread disease.²

¹ mashable.france24.com, Mashable & France 24, « L'Afrique est de très loin la première victime du paludisme » (en ligne), url : <http://mashable.france24.com/monde/20180425-afrique-victime-paludisme-malaria>

² op. cite ABATINELLI

Standpipes: Shared watering holes

Much more than individual water connections, standpipes or collective watering holes are the primary means of obtaining water in Ouagadougou. This public infrastructure promoted by ONEA aims to share the resource and diversify the distribution system. This has allowed the city to expand while also providing its residents with access to safe drinking water. The standpipes, placed more or less every 500 metres, supply 400 to 500 families each. Today the city has more than 340,000 of them. The inhabitants can come with containers to collect their water directly or they can call on carriers to bring the water to them. Although rare, private boreholes can also be found in the city of Ouagadougou, which pump water directly from the groundwater without going through an operator (i.e., ONEA). The population's demand for water is constantly on the rise, particularly due to certain aberrations such as car washing or lawn watering, which use this scarce resource for superfluous needs. In addition to its scarcity, water is contaminated by "abusive and often poorly controlled use of agricultural inputs, as well as industrial and domestic discharges that

significantly threaten the quality of the reservoir's water"⁸.

Sanitation, a key priority

ONEA and a number of private specialized companies are responsible for the overall collection and disposal of domestic and industrial wastewater in the loti areas. In the city centre and some loti neighbourhoods, collective sewers or sanitation systems can be found. Otherwise, plots are equipped with individual septic tanks. Most inhabitants of Ouagadougou have a toilet pit (stone-built or not). Non-masonry pits (which are often found in non-loti areas) release waste into the ground: the risk of groundwater contamination is therefore very high. In addition to toilet pit problems, there is also a "normal routine" problem: a large part of wastewater (from dish washing, showers or laundry) is often dumped directly into the streets.

⁸ Dynamique spatio-temporelle de l'agriculture urbaine à Ouagadougou : Cas du Maraîchage comme une activité montante de stratégie de survie, CONCHITA M. G. KÉDOWIDÉ, MICHEL P. SEDOGO ET GUÉLADIO CISSÉ, Ouagadougou 2010



Fig 9 : A standpipe in Tanghin

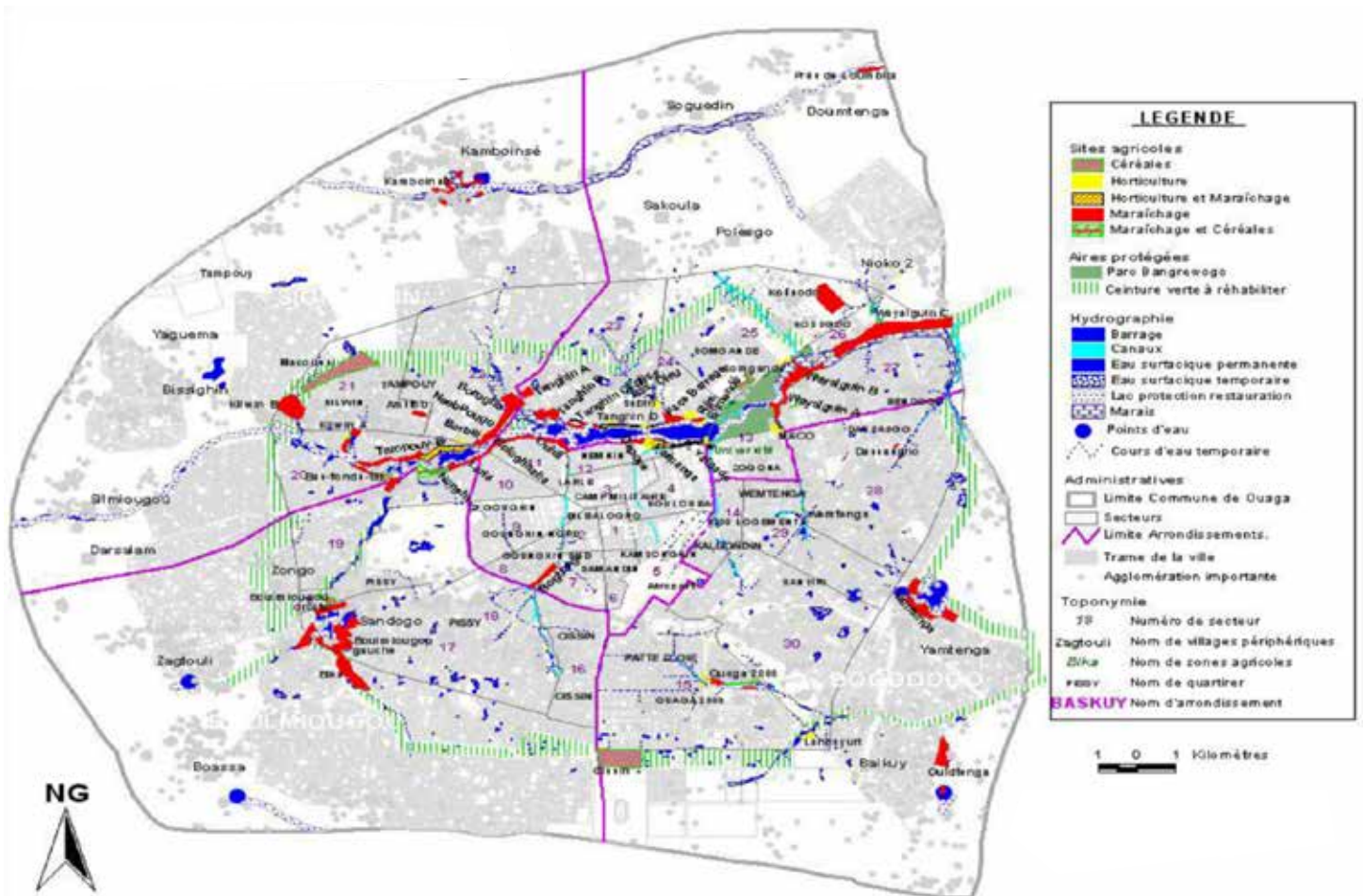


Fig 1 : Localisation of the agricultural site of Ouagadougou



Fig 2 : Maraichage close to the reservoir 2

Urban agriculture, a concept that is already a reality in Ouagadougou



Fig 6 : in the gardens

The gardens of AMIFOB, a management system that works

The gardens of the Amicale des Forestières du Burkina Faso (AMIFOB) are located on a vast plot of land north of Ouagadougou. In the past, this land was used as a “garbage can” for the city. The association is composed of some sixty widowed women who have come to seek emotional and financial support. The organization provides them with cultivable plots so that they can grow vegetables all year round and a commercial space from which to sell their produce.

The association includes a training centre, rented buildings (to finance crops) and an arboretum. This “green space” plays an important role in the life of the district: it is a kind of urban agroforestry park where the inhabitants of the district come to play, rest and have fun.

The Guiè pilot farm, an example of urban development with the living world

The Zoramb Naagtaba Association aims to test new techniques to halt land degradation caused by desertification in the region, and to train people in these sustainable land management techniques and apply them in the Sahelian region.

“Where there is rain, even if it is scarce, there is the possibility of managing water to keep the land alive, or even to revive barren ground”¹.

In order to encourage land conservation and the possibility of exploitation despite the arid climate, Henri Girard imported the bocage technique by adapting it to the Sahel climate. He defines this practice as a “balanced, man-made environment where trees, crops and livestock are rationally combined”. The association is also experimenting with techniques to restore soil that has experienced desertification or degradation as a result of intensive agriculture. This is particularly true of the zaï technique, which consists of storing rainwater in a hole filled with compost which leads to the enrichment of the soil as the water seeps in. These various experiments have been proving their worth for nearly 30 years now. They increase the productivity of farmers and extend farming periods throughout the year while sustaining the soil².

1 Terre Verte & Ferme pilote de Guiè. (2016). Wegoubri [Video file]. A film presenting pastureland and groves of the Sahel.
2 ibid

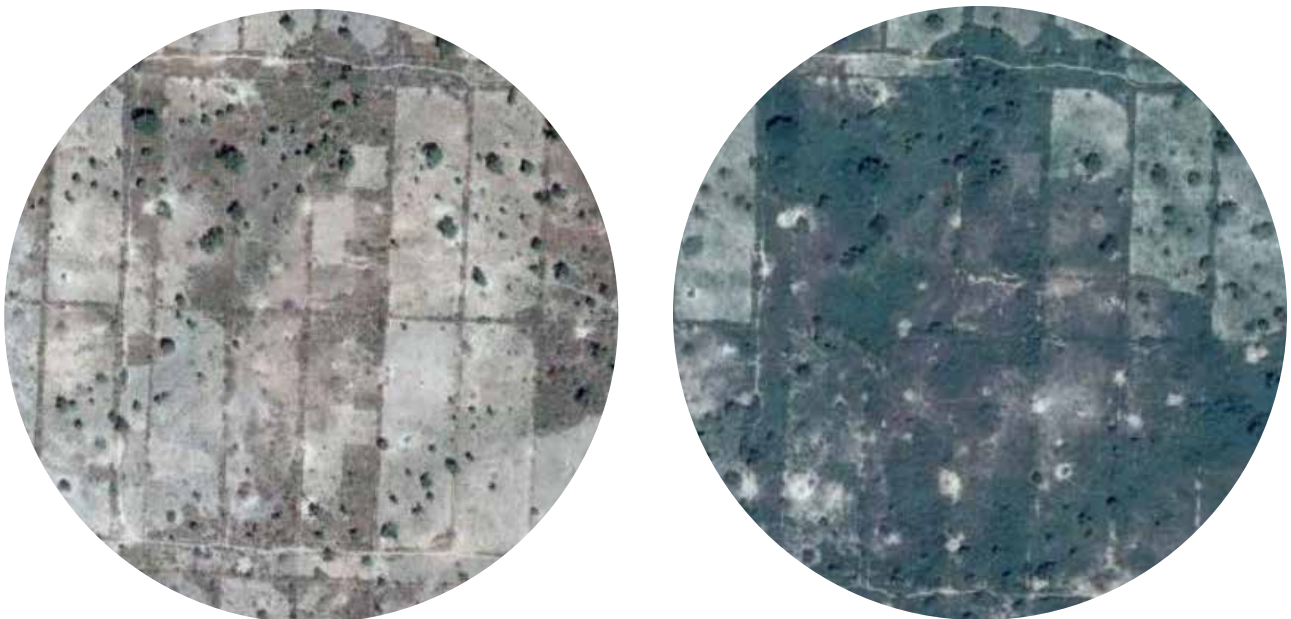


Fig 4 : aerial view of mai 2016 and of october 2016

Waste, between constraints and resources

Individual management for treating household waste

Solid waste management in Ouagadougou begins with households. Thus, each household manages its own waste separately. Some use methods that are not environmentally friendly (open-air burning as well as waste disposal in the open, in wild dumpsites or even in gutters, etc.), while others use waste collection companies to collect their waste.



Fig 1 : Waste incineration near a courtyard wall

Households or structures that choose to use waste collection companies pay an average monthly amount of 5,000 CFA francs, which varies according to the quality of the housing unit and the quantity of waste. The waste is then disposed of at the one of the city's collection centres. The city is divided into 12 collection areas which are assigned to Economic Interest Groups (EIGs) or Small and Medium-sized Enterprises (SMEs).

In 2005, there were 35 collection centres in the city. The waste collected from households was then sent to the Waste Treatment and Valorisation Centre (CTVD) located north of the Tanghin neighbourhood. Covering an area of 70 hectares, the site is expected to be operational for 20 years, as of 2005.¹

At this site, waste is transformed into biogas, buried or recycled. The widespread use of plastic bags for domestic shopping and freight transport does not benefit the environment, as this plastic is most often discarded after use into the natural environment. However, not all of this plastic is biodegradable.

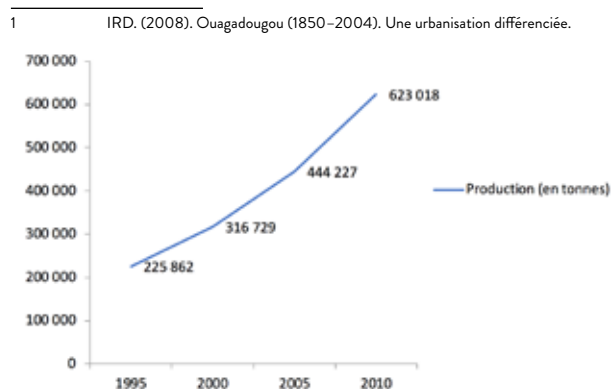


Fig 2 : Evolution of waste production and a picture of a wild dumpsite

The city has two industrial zones: the Gounghin industrial zone located in the city centre and the Kossodo industrial zone located at the northern edge of the city. Waste management in these industrial areas is not always obvious and has its shortcomings. In addition, the populations living near these industrial areas (Kossodo) complain about the noise and odour pollution caused by the industries located there, some of which discharge waste into the environment.

Although the use of firewood as a domestic energy source in households is fairly common nowadays, this use emits carbon dioxide. Carbon dioxide (CO₂) emitted during the incineration of solid waste in the open air and the burning of agricultural plots in the urban periphery impacts the air quality.

Recycling, a sustainable resource for the city

Waste recycling is still in its infancy in the city of Ouagadougou. Despite the fact that the recycling rate is low in relation to the amount of waste produced, it must be acknowledged that it has grown over the years.

In recent years, several NGOs, associations and structures have been contributing to the economic and environmental development of the city by recycling waste. Some women's associations, such as SWOP (Sachet Woogdba Ouagadougou Paagba), for example, process plastic waste. This recycling activity creates employment for the disadvantaged social strata and at the same time protects the environment.

A strategic approach to waste management

Since the 2000s, a new waste management policy has been applied through the implementation of the Waste Management Master Plan (SDGD) and the construction of the Waste Treatment and Valorisation Centre (CTVD). As a result of the SDGD, the CTVD was created in April 2005 in Polesgo (70 ha site), approximately ten kilometres north of the city in District 4.



Fig 3 : Recycled pavement



Fig 4 : Recycled bag

The potential of the economy and informality

In addition to the traditional and globalized economic system that the city of Ouagadougou follows, the city is characterized by a popular and innovative economy resulting from the informal practices of its inhabitants. This so-called “informal” economy remains the main means of subsistence for a significant portion of Ouagadougou’s inhabitants and is undoubtedly one of the means of resilience for the city as it faces a multitude of changes (political, social and environmental).

Appropriation and adaptability of the informal sector

The city of Ouagadougou is shaped by the different relationships and interactions experienced by the inhabitants and the environment it generates. The open spaces (unfenced public or private spaces appropriable by inhabitants) of the city of Ouagadougou allow informal practices (market gardening, trade, service, etc.) to develop according to the specificities they offer (access to water, light, electricity, a space to circulate, pedestrian junctions, shade, etc.).

The various appropriations are made by the inhabitants of the neighbourhood or the city depending on their financial resources and the approval or not public authorities. The installations are made by negotiating with the other inhabitants already present and are further embellished depending on the installer’s confidence in the public authorities. Several areas of the city are characterized by these appropriations:

The goudrons, as they are commonly called in

Ouagadougou, are the paved roads of the city. They are heavily congested during the “descent”¹ hours. Paving is typically done on only parts of the route and therefore generates appropriable interstitial spaces. These are very busy roads used by motorized vehicles, leading to traffic jams during the “descent” hours. As a result of this traffic, the major roads and intersections represent significant opportunities for actors in the informal economy. As such, the areas surrounding the goudrons are often spontaneously occupied by kiosks, vending stalls and itinerant salesmen.

“The ‘6 mètres’ are dirt roads that can be found on either side of the paved roads, i.e. in the develop loti zones of the metropolitan area.”² As such, a real appropriation of the 6 mètres by inhabitants in front of their “courtyards” can be observed, whether it be as an extension of their living space (by installing tables and chairs) or for exercising some sort of economic activity (sales or crafts). Activities (informal or formal) are integrated into homes. These activities can be conducted in the family’s courtyard, but can also extend into the public/common space. Many shops or workshops line the 6 mètres, transforming this dormitory housing estate into a productive and commercial zone. The facilities are scalable and modifiable, as are the activities they host.

There are a large number of vacant spaces in the capital. Depending on their location and the services they offer, projects and informal constructions develop naturally. Thus, it is common to see the emergence of many services (hairdressers, dentists,

1 Ouagadougou expression to indicate rush hour

2 Halimatou Mama Awal « La métropole-village(s) contemporaine de Ouagadougou Explorer les potentiels d’un territoire, supports de processus de projet architectural »

PART 2 : Challenges and Vulnerabilities of the city

barbers, money transfer kiosks, carwashes), sellers (grocery stores, handicrafts, fruit and vegetable stalls, ready-made meal catering, cake and confectionery sellers), craftsmen (bricklayers, welders, joiners, upholsterers) and farmers (market gardening, plant nursery, livestock). These spaces evolve over time: the human cycle (strongly influenced by mobility, which is itself influenced by working hours), the day/night cycle and the seasonal cycle.

The maquis are all the spaces in which one can sit, rest, consume drinks and cooked dishes, and buy all kinds of everyday or non-common objects (from shower heads to sandals to bags of paper napkins). The maquis is organized around a space where customers can sit. There is usually one person who sells beverages (beer, fruit juice or soda called *sucrerie* or “sweets”) and one or more people sell cooked dishes and grilled foods (fries, *alloco* [fried plantains], *sumbala* rice, garlic chicken, etc.). These “fixed” vendors are installed in individual kiosks, while other merchants wander through the maquis offering their services. The maquis is akin to a conventional restaurant, but the diversity of services offered by the mini-business that constitute it makes the maquis unique in the way it functions. This management style allows for a degree of freedom (if a vendor is absent, the maquis still continues to work) and a mutual cooperation and responsibility (if a vendor is penalized, the whole maquis is penalized) that would be impossible through traditional management practices (hierarchical functioning, set times and constraints).

The maquis is most often located in a garden: the surrounding plants create a refreshing atmosphere and an environment that attracts customers. Decorations (frescoes, artwork, colours, etc.) and entertainment (shows, concerts, music, television) are common in the maquis. The management of the space is a shared responsibility, so it is up to all of the vendors to take care of it.

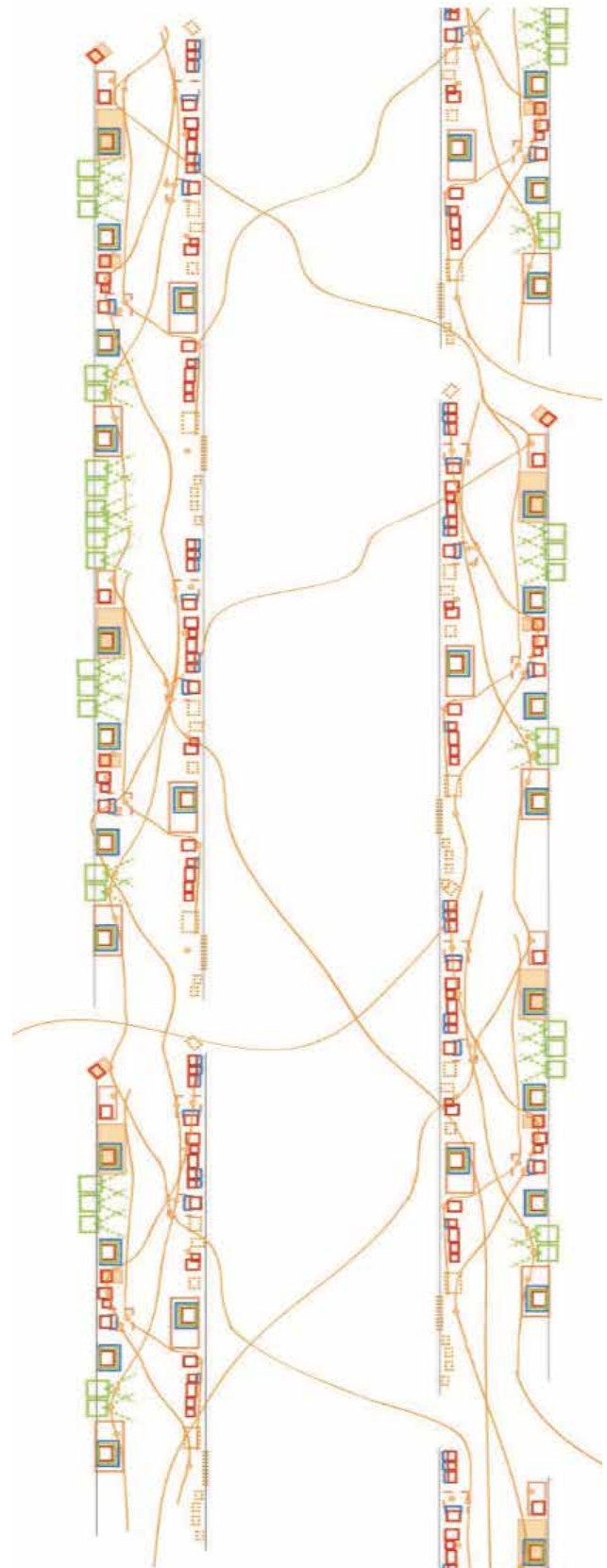


Fig 1: The «goudron» and its activities by Halimatou MAMA AWAL

Itinerant commercial activities, an efficient and equitable method

In Ouagadougou, activities (commercial, service, production) are not necessarily subject to a fixed time and place, instead they adapt to the situation.



Fig 2 : Roaming street vendor



Fig 3 : Semi-stationary vendor t



Fig 4 : Stationary vendor

Tontines, an informal banking and lending system

Tontines are found in both professional (e. g. markets) and domestic/family sectors. They are a type of money management system that is very common in Africa. "The idea is simple: a group of people decide to create a shared pool where everyone contributes the same amount of money on a regular basis. This amount benefits everyone in turn through the form of an interest-free loan. It is therefore an opportunity for the poorest, who do not have access to bank credit, to buy a good they want." Therefore, in Ouagadougou, this widespread practice makes it possible to build up savings without sacrificing incomes in order to use the money for unexpected or important expenses. This practice, even if criticized by financial professionals because of its lack of equality (the first participant who receives the sum benefits from a free loan, while the last one will not receive any interest, moreover the latter risks a diminution of his/her stake if there is inflation), has the advantage of generating social ties: participants know and sometimes help each other. Tontine parties are also held.

"We talk about our problems; we encourage each other; we help each other. The dues are used to respond to the hardships that hit one or another family in the community the hardest. Thanks to tontines, many women have regained their independence."



Fig 1 : Grand Nord and its context

PART 3 :

From Tanghin to Loumbila, the Territory of the Grand Nord

Defining the Grand Nord of Ouagadougou, a territory of several scales

District 4, Sectors 17, 18, 19 and 20, and the neighbourhood of Tanghin

District 4 covers the northern part of Ouagadougou (north of the dam reservoirs No.2 and No.3 in Ouagadougou). It is bordered to the west by District 3 and the Tampouy neighbourhood and to the east by the Parc Bangr Weogo. It is the largest district in the capital with an area of 25,995 km².

The district is subdivided into several sections (Sectors 17, 18, 19 and 20), which are themselves divided into city neighbourhoods: “Tanghin and Bang-pooré (Sector 17); Koulweog, Sambin, the former slaughterhouse area (Sector 18); Somgandé, Toukin, Silmissin, Roumtenga, Nioko 2 (left side), Kossodo, Sourgou and Bour-yiri (Sector 19); and Polesgo, Wapassi, Toubdweogo, Songdin (Sector 20).»¹ The boundaries of these neighbourhoods are subjective and vary depending on the opinions of the inhabitants.

These different districts are managed and governed by the District Council of District 4, which collects taxes on the various types of land appropriations (commerce, maquis, market gardening, marketplace). The District Council’s budget (approximately 50 million CFA francs in 2016)² is devoted mainly to its administrative operations and for small investments. Larger investments are financed by the budget of the Central District Council.

Traditional chiefs also play an important role in social cohesion: highly respected by the population, these district chiefs are called upon to

manage disputes between inhabitants (generally those related to land). While in the past these chiefs determined land boundaries for claimants, today they no longer have this prerogative: land is now bought and sold between individuals.

In 2012, the population of the district corresponded to 9.42% of the population for the municipality of Ouagadougou, i. e. 180,428 inhabitants.

Loumbila, a municipality attached to the Grand Nord

Loumbila is a rural municipality located 25 km from Ouagadougou, to the northeast of Tanghin, more precisely in the province of Oubritenga. It shares its southwestern border with District 4 of the Ouagadougou Municipality. Loumbila and all the municipalities of the Kadiogo Province (Ouagadougou, Saaba, Komsilga, Tanghin-Dassouri, Komki-Ipala, Pabré), together form Greater Ouaga. The municipality of Loumbila has approximately ten seasonal runoff reservoirs. The Loumbila reservoir contributes significantly to the supply of drinking water for the city of Ouagadougou³. This reservoir is also, thanks to associated facilities such as Loumbila Beach, a weekend recreational area for Ouagadougou’s residents.

The municipality has several market gardening sites, one of the most productive of which is the site around the Loumbila Reservoir⁴. Market gardening products include: onions, tomatoes, aubergines, cucumbers, courgettes, green beans, etc. According to the Municipal

¹ 2018 Development Plan for District 4 of the Municipality of Ouagadougou
² ibid

³ op. cite Development Plan for District 4
⁴ Municipal Development Plan for Loumbila, Final Report, 2013.

Development Plan for Loumbila, tomatoes are processed on site by the women of Association Song-Koadba de Donsin (ASK), who package the tomato juice in 200 g bottles. The produce from the market garden is sold at the main marketplace in Goué (Loumbila), near the main road. A large portion of market gardening customers come from Burkina Faso's neighbouring countries (Ghana, Togo, Côte d'Ivoire).

Based on a growth rate of 1.87% and the findings of the two (2) General Population and Housing Censuses (RGPH) in 1996 and 2006, the projections made in the Municipal Development Plan for Loumbila estimated the population of the aforementioned municipality at 34,925 inhabitants in 2018.

The construction of the Donsin Airport, the Northern Bypass project, the current drinking water supply project⁵, etc., are all projects that should benefit the future urbanization of Loumbila.

⁵ op. cite Development Plan of Loumbila

The Kossodo industrial zone

Sector 19 is home to the Kossodo industrial zone: the largest in the municipality of Ouagadougou. The industrial activities include: cement factories, building material production (iron, paint, sheet metal), a brewery, oil mills, a hide and leather processing plant, etc. Its presence offers employment to young people and has led to the installation of some factory workers in the non-loti zone of Kossodo. Nowadays, a cohabitation between the industrial zone and the residential area (loti and non-loti) appears difficult due to the pollution (noise, auditory, olfactory, etc.) produced by the former.



Fig 2 : Boats in Loumbila



Fig 3 et 4 : Industrial activities in the zone of Kossodo

Tanghin: Development plans, functions and events

Like the other neighbourhoods in District 4, Tanghin's boundaries are not precise: according to some residents, Tanghin includes Sector 17 and Sector 18, while others think it is concentrated in Sector 17, and there are even those for whom it is the physical boundaries (Green Belt, railway, market gardening area, power line) that define the neighbourhood's limits

Tanghin: A secondary urban centre

The neighbourhood of Tanghin originated north of reservoirs No.2 and No.3 and was developed during the massive allotment policies of the revolutionary period (1983-1987). It is one of the secondary urban centres of the Land-Use Plan (POS). The district is also a central hub of Ouagadougou's Grand Nord, which extends from the three reservoirs to the industrial zone and the future Donsin Airport. The Grand Nord is home to a number of structuring investments, including the Northern Bypass and several real estate development projects being constructed in anticipation of the relocation of the Ouagadougou Airport to Donsin¹.

Closed to the industrial zone of Kossodo there is a «non-loti» area called «Le Marteau». To know more about this area, look at the article «Le «Marteau», un coup dur sur l'homogénéisation des quartiers de Ouagadougou» written by Léandre GUIGMA.



Fig 1 : Tanghin and its context



Fig 2 : The secondary centrality of the POS

¹ Les Ateliers de Cergy. (2018). Topic Document: Ouaga 2050, Embracing the Everyday at the Scale of the Greater Territory.

A mystical imagination

Le Centre Delwendé :

Between 1966 and 2006, Tanghin was home to the Centre Delwendé, which housed women who, based on indigenous beliefs, were accused of witchcraft and banished from their respective villages. Accusing a woman of witchcraft is usually a way to get rid of an economic burden: these women tended to be widows and the elderly. At the centre, these women could find protection and a normal life through market gardening and retail. Following the 2009 floods, this centre was transferred to Sakoula, 15 km from Ouagadougou. During the years when this centre was in Tanghin, the population was largely reluctant to accept its presence, fearing that their children would be “eaten” by these women accused of witchcraft. Today, however, these women have become well integrated into the community of Sakoula.

Cemeteries :

Tanghin’s area has two cemeteries: Tanghin Cemetery and Toudoubwéogo Cemetery. These sites which are associated with rituals and sacrifices are treated differently. A varying degree of integration and maintenance can be observed at the Toudoubwéogo Cemetery; whereas there appears to be a total abandonment of the Toukin Cemetery, which, without lighting or fencing and treated as an unauthorized dumping ground, attracts illegal or criminal activity.



Fig 1 : A tomb in the cemetery Toudoubwéogo

Future projects structuring the neighbourhood, mobility being the main issue

Tanghin has been identified by the Land-Use Plan of the City of Ouagadougou as one of the secondary urban centres for structuring the future development of the city.

A project for the sustainable development of Tanghin’s urban centre, part of the vision to make Ouagadougou a multi-polar capital, began in December 2018. The objective of the project is to support this secondary urban centre in Ouagadougou by proposing the development of structuring facilities and infrastructure in order to meet certain needs of the population and to contribute to the dynamism of this part of the city. According to the February 2019 preliminary report

on the Tanghin Centre Sustainable Development Project, the area of influence chosen for this urban centre includes District 4 and extends over a wide northern periphery and includes localities such as Ziniaré and Loumbila. This area of influence affects nearly 500,000 people..

At the same time, several studies and projects are now underway in the Tanghin neighbourhood. These include the project to complete the Northern Bypass, the study to extend Kwame N’Krumah Avenue to the bypass by creating a third bridge over the reservoir, the project to extend Rue de la Concorde to the landfill site, the construction of a service road to the Donsin Airport, etc.

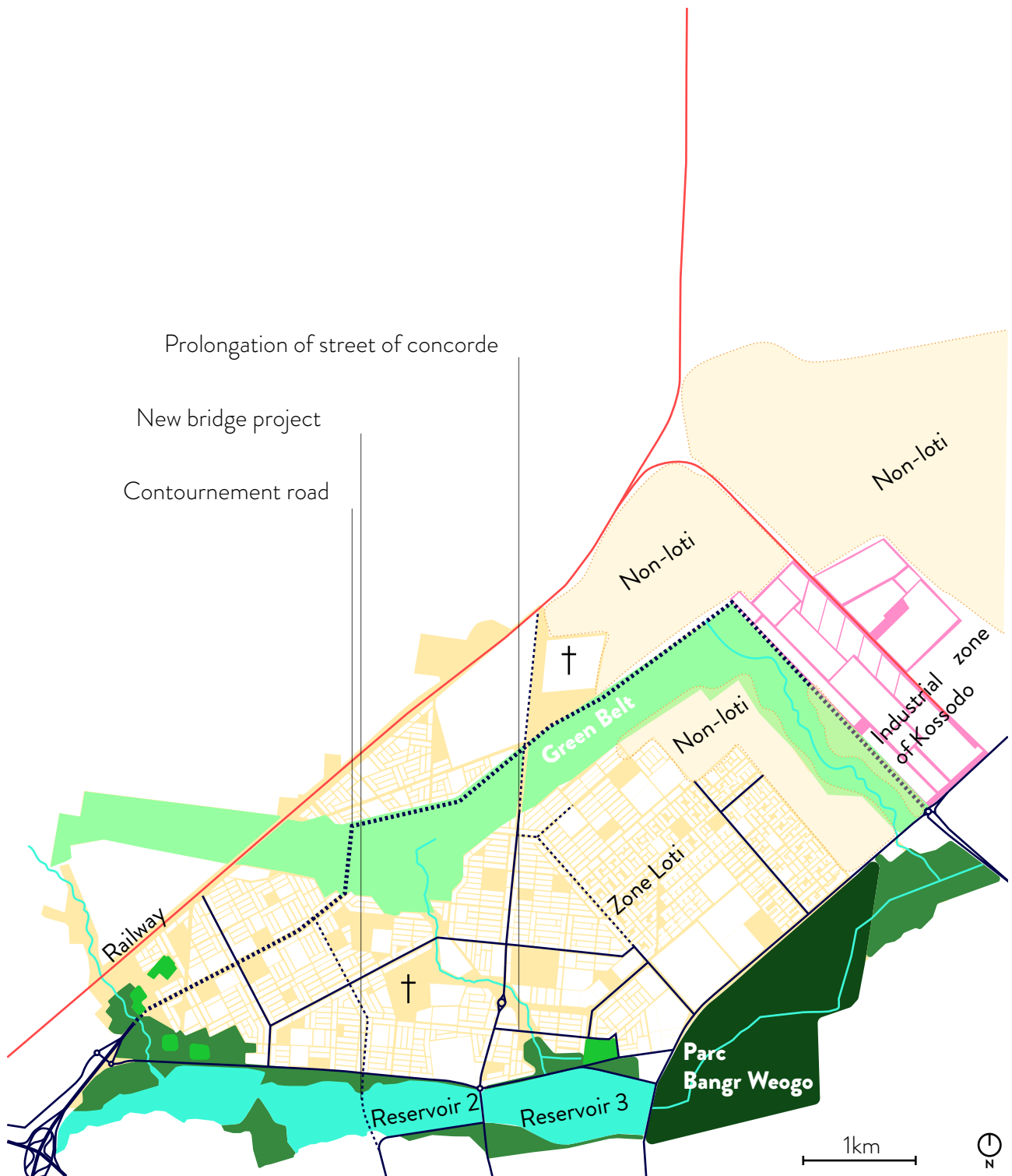


Fig 2 : Tanghin's area and futur projects

The FESTANG, a festival that unites the neighbourhood

The FESTANG is a festival that brings together the youth of Tanghin with a vision of promoting culture, sports competition, etc. For the past two years, it has been dedicated to the neighbourhood. The festival takes place in November each year at the Olymique Naba Baongo stadium. Its founder, Claude Sawadogo, describes the event as “a place to bring young people together based on cultural, artistic and athletic expression and the idea of creating and encouraging commercial opportunities, dialogue and exchange, and solidarity between Burkinabe brothers.”¹

1

<https://burkina24.com/2018/11/08/festang-2018-tous-a-tanghin/>



Fig 3 : Aerial view of the «Marteau», a «non loti» part of the district



Fig 4 : Aerial view of the «loti» in Tanghin



54 Fig 5 : Tanghin and its emblematic spaces



Gardens closed to the reservoir



Water tower of the North



Mango orchard



Reservoir 2



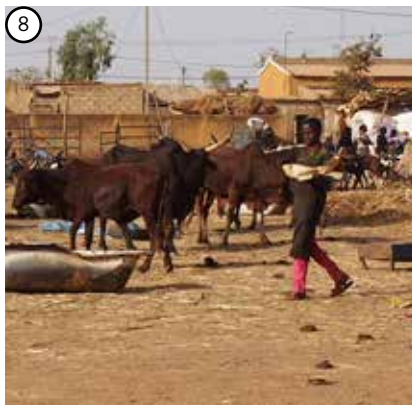
Waste sorting center



Green Belt



Silmande hotel



Livestock market



Mosque



Town hall of the district 4



the Church of Tanghin



The «non loti» of Toudoubweogo

Reservoirs and marigots, a threatened natural ecosystem

All the rainwater that falls on the neighbourhood is drained by the natural slope of the neighbourhood towards the marigots (drainage canals) and then towards reservoirs No.2 and No.3 (commonly called the Tanghin Reservoirs). The drainage network which consists of a system of drainage canals is mainly found at the level of the goudrons (paved roads). The presence of waterlogged soil (with a restricted absorption capacity), aggravated by erosion, contributes to soil leaching and the silting up of the reservoirs. Thus, in the event of rain, water tends to invade homes and streets and stagnate there because it cannot penetrate the ground.² A large part of

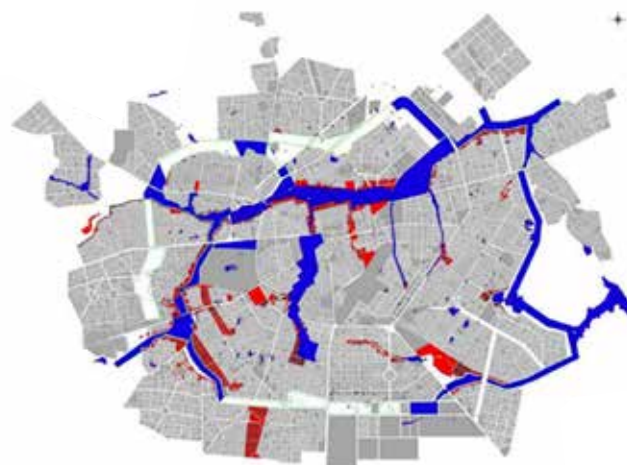


Fig 6 : Flood map of the flooding event of 2009

² Development plan for District 4 of the municipality of Ouagadougou, Diagnostic Report, Final Version, March 2018.



the neighbourhood, due to its proximity to the reservoir and the low absorption capacity of the soil, is subject to the risk of flooding.

An agricultural hub at the scale of the city

Due to the regular and easy supply of water, particularly near the reservoir, the neighbourhood is highly dependent on urban agriculture. Throughout the year, orchards and market gardens provide the neighbourhood with fruit and vegetables. Agriculture develops around water sources: reservoir, marigots, private boreholes. Most of the food produced is intended for family consumption, but some is also sold directly in markets near and at the edge of the goudrons. The crops include “leafy vegetables (lettuce, celery, cabbage, sorrel, amaranth, spinach, parsley); fruit-bearing vegetables (cucumber, pepper, chilli, tomato, etc.); bulb and root vegetables (onions, carrot, etc.); and fruit (papaya and mango)”. Many plant nurseries are also located along the reservoir. These highly vegetated areas are often sites of leisure and recreation for the inhabitants of the neighbourhood, but also those of neighbouring districts.

By “discharging solid and liquid waste, using pesticides and herbicides (often unlicensed), using mineral fertilizers in high doses, spreading organic manure on a large scale at the edge of the reservoirs for market gardening”, these practices threaten the city’s natural ecosystem.³

Livestock farming, a widespread activity

With its livestock market, livestock farming (small animals, large animals, etc.) is very popular in the Tanghin neighbourhood. Livestock (pigs, small animals, poultry), is bred either in concessions or in the front yards of homes. It is not uncommon to see herds crossing the 6 mètres (unpaved roads). In addition to olfactory disturbances, “livestock farming in the district is a source of disease, particularly malaria during the rainy season”.

Fishing, an activity under threat

Fishermen are a threatened community in Tanghin: the contamination of the reservoir has led to a decrease in fish populations⁴ Fishermen are grouped together through the “office of fishermen

³ Development plan for District 4 of the municipality of Ouagadougou, Diagnostic Report, Final Version, March 2018

⁴ Interview with a fishermen about his observations of the decreasing fish population.

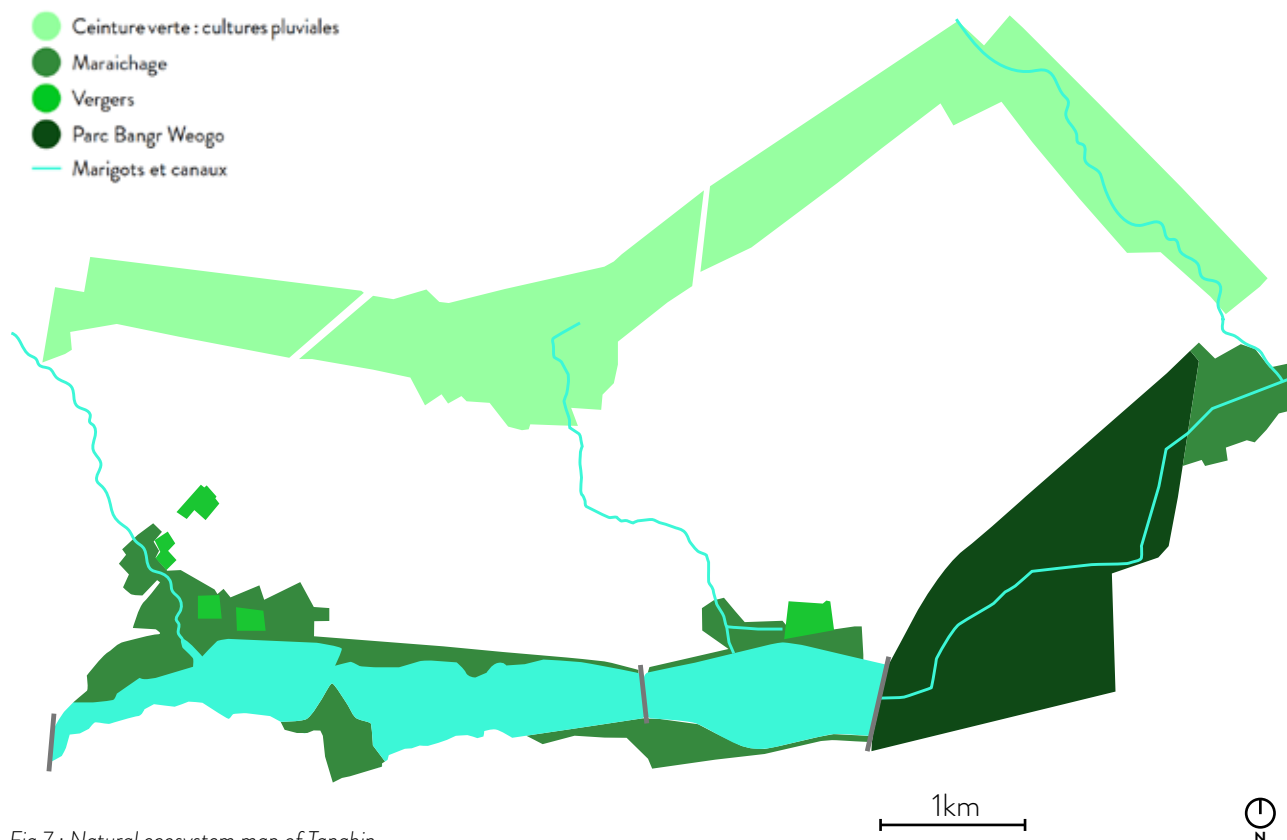


Fig 7 : Natural ecosystem map of Tanghin

in Tanghin” and have at their disposal a market located to the north of the bridge crossing the Reservoir No.2. Equipped with pirogues and fishing nets, they catch mainly bullheads and carps.

Bangr Weogo Urban Park, the green heart of the capital

The Parc Bangr Weogo is located northeast of Reservoirs No.2 and No.3, between the national roads R3 and R4. The park extends across an area of 240 hectares and a distance of 12 kilometres. Its forest has been able to remain preserved since it was considered sacred in the past. It was listed as a national forest by the governor of French West Africa (AOF)⁵, under the name “Bois de Boulogne”. In 1999, with the arrival of the Ministry of Water and the Environment, the idea of developing it into an urban park aimed at environmental education and recreation was born. On 5 January 2001, the authority over the listed forest of the Ouagadougou Reservoir, developed and named Parc Urbain Bangr Weogo, was transferred from the Ministry of Water and the Environment to the municipality of Ouagadougou.

Parc Bangr Weogo is organized into three sections. They are the scientific and educational section, the economic section and the recreational section. The scientific section consists of the zoological park where striking animals (such as tortoises, caimans and peacocks) can be seen, the botanical garden, the museum which offers exhibitions on the environment of Burkina Faso and which is composed of an exhibition hall with trophies and wall posters. The economic section consists of the parking lot and the Faso Parc (which is a recreational site for children). Lastly, the recreational section is essentially a rest area with several urban facilities and services (management office, bar, restaurant, benches, etc.).

Church of Tanghin, a symbolic place in construction

This is the largest Catholic parish in Ouagadougou in terms of building size. Most of its construction is financed through the contributions of its congregants in Tanghin.



Fig 9 et 10 : The enter of the parc and a bus stop



Fig 11 : Church of Tanghin

5 French West Africa, Decree n°2376 from 9 October 1932.

Northern section of the Green Belt

The Ouagadougou Green Belt borders the Tanghin neighbourhood to the north. It is also found south of the industrial zone where it has been reclaimed by non-loti areas. The green belt's functions depend on seasonal temporality: during the dry season, a handful of market gardeners can be seen, depending on the water supply; and during the wet season, millet and sorghum fields generate thanks to the heavy rains.

The Green Belt is crossed depending on the axes of the surrounding loti neighbourhoods and the structures bordering the roads. It therefore establishes itself over time. The appropriation of the Green Belt allows a large number of inhabitants of the neighbourhood to survive, but it is also one of the causes of its degradation.



Fig 11 : Aerial view of the Green Belt in 2016 between october and may



Fig 12 : Aerial view of the district in 2016 between october and may



Goudrons, 6 mètres and open spaces in Tanghin: Places of interactions and appropriations

The goudrons, 6 mètres and open spaces in Tanghin are characterized by the large number of activities in their surrounds.

Shops and services are divided according to their location in the neighbourhood: on a paved crossing axis there are generally shops and services for the inhabitants of the neighbourhood, but also for the commuters who cross it: permanent maquis spaces, take-away chicken stands, telephone centres, clothing shops, IT services, etc. Within the 6 mètres, the activities are generally intended for local consumption: groceries, vegetable sellers, mills, grilled allocos, etc. Open spaces generally

concentrate activities that require more space and less visibility than roadside: car repair or dismantlement, open-air maquis, sports fields, craftsmen (welders, carpenters, tailors), etc.



Fig 13 : Aerial view of the concorde road and a «6 mètres» in Tanghin



Fig 14 : A wedding in Tanghin, a kind of use of open-spaces

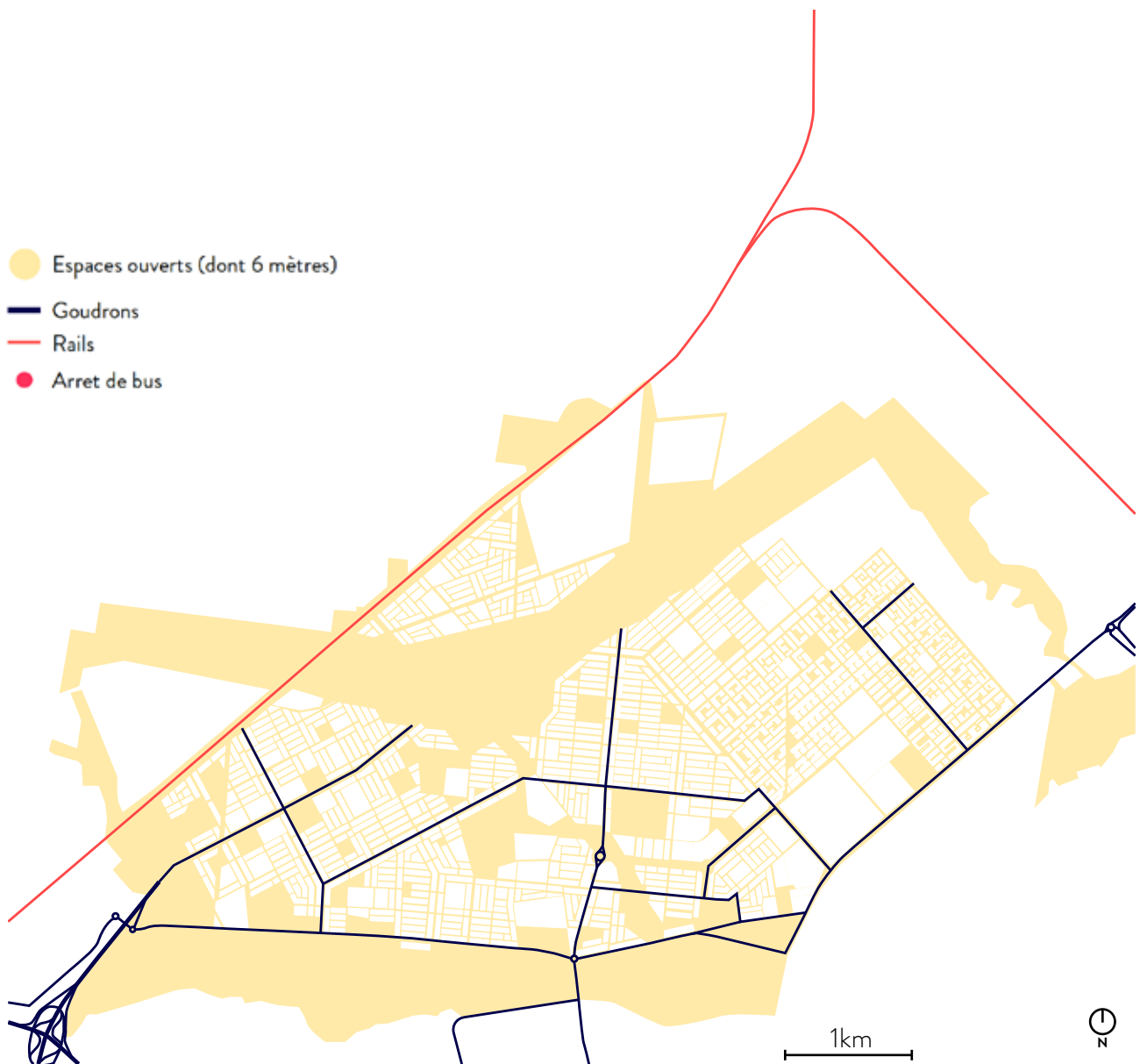


Fig 15 : Map of the transportation ways : railway, goudron, 6 mètres and open space

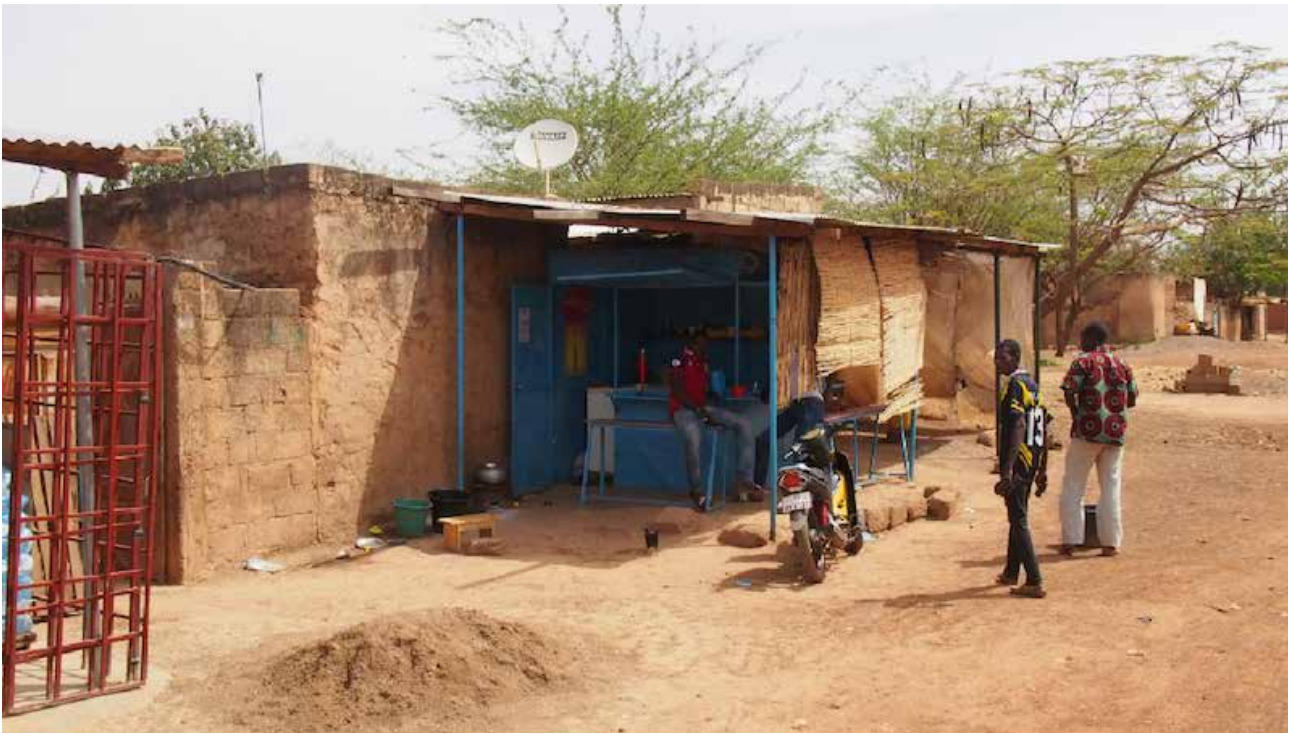


Fig 15 : Commercial device change during the day/night

There are several degrees of installation: as in non-loti areas, the installations are more or less completed depending on the installer's confidence in the authorities (risk of eviction) and his/her financing capacity (from temporary installations to permanent installations).

The city's infrastructure: goudrons, street lighting, standpipes, reservoirs; or those of inhabitants: market gardening sites, orchards, stock

houses, etc. generate different appropriations according to their needs. Installations and activities adapt to the context: a vendor's structure can be supported by a house wall while also taking advantage of the street lighting and the accessibility of a goudron; the beverage seller can be installed in an orchard to benefit from the shade and freshness of the market gardens; or women farmers can use the visibility of a goudron to sell their produce to commuters.



Fig 16 : Aerial view of concorde road in Tanghin

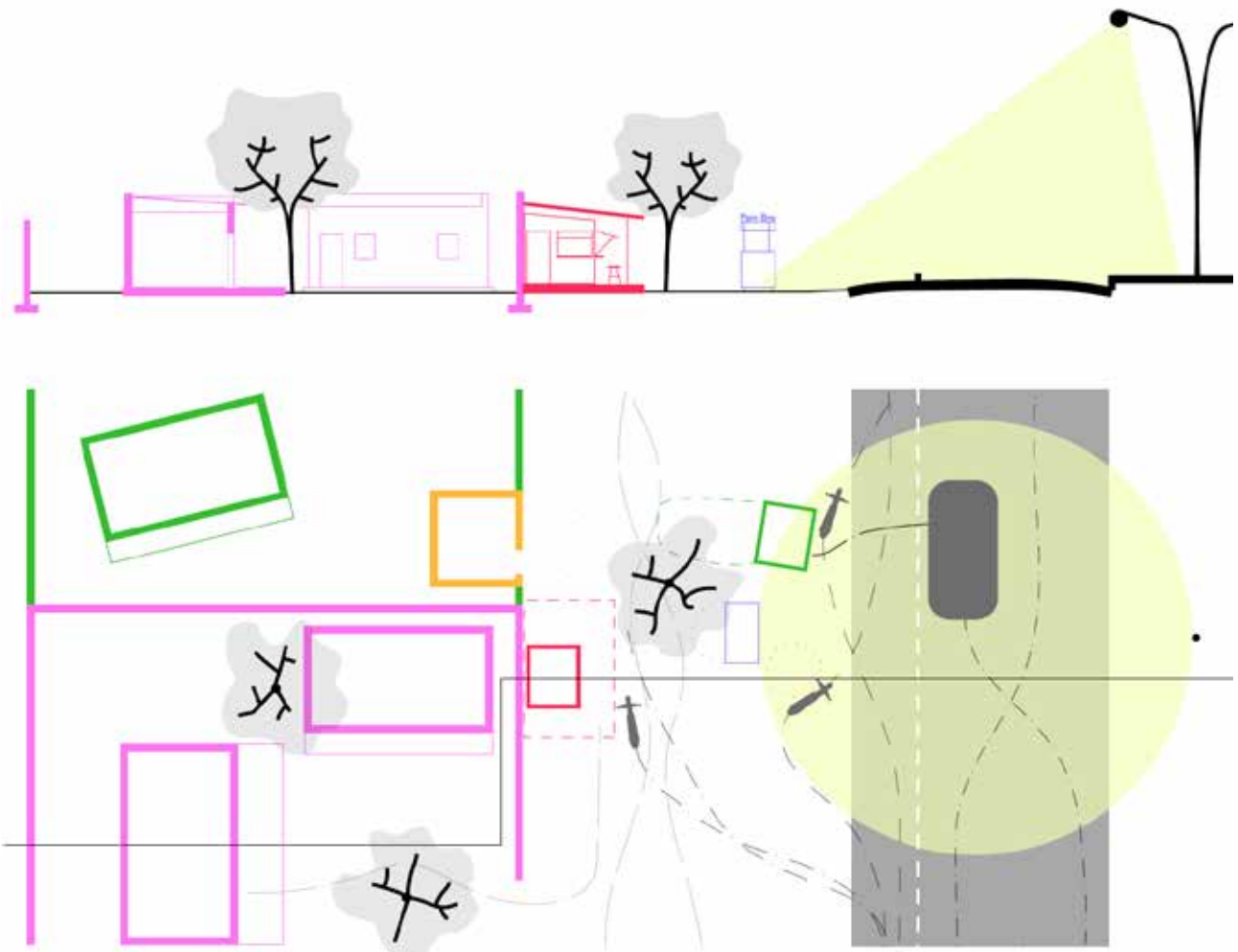
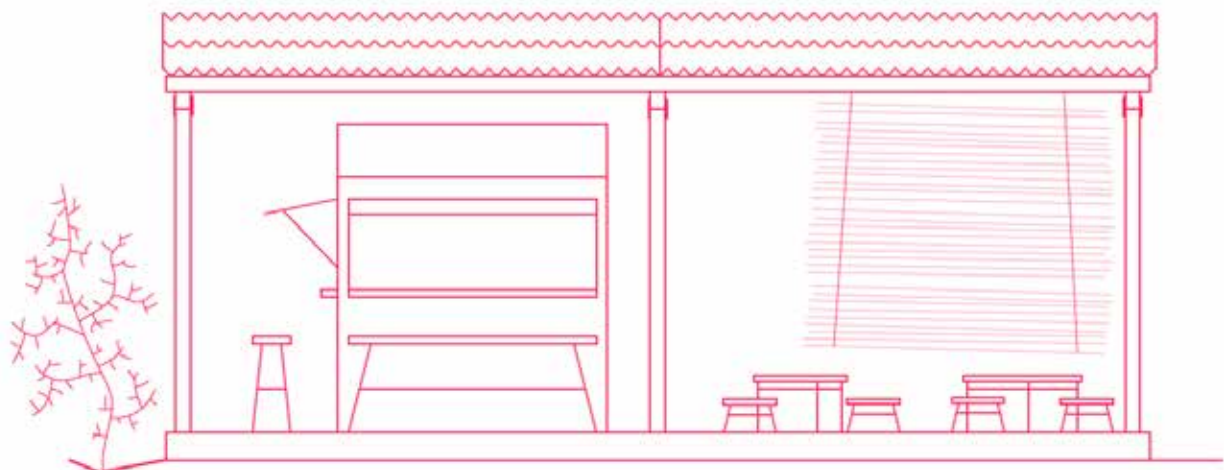
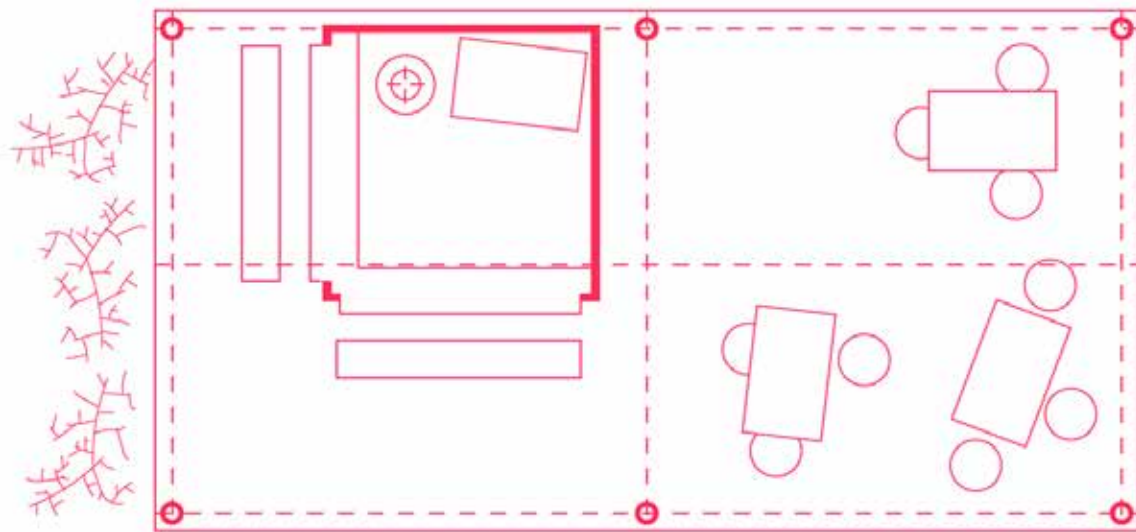


Fig 17 : Diagram of the different interactions close to the «goudron»

PART 3 : From Tanghin to Loumbila, the Territory of the Grand Nord



Fig 18 : Different appropriations in the district



64 Fig 19 : Diagram of the architectural device of a coffee seller

“Sous les Manguiers”, an informal institution on the city scale

This emblematic area of the neighbourhood is known throughout Ouagadougou. Its name, meaning “Under the Mango Trees”, comes from the orchards in the northeast (above the restaurant Le Calin), but also the orchards to the north of Reservoir No.2. This particular place has been developed into a maquis (recreational and commercial marketplace), but has a multitude of uses and a distinctive way of operating. The place is at the same time a restaurant, a vegetable garden, a plant nursery, a market and a green space. The restaurateurs (flambéed chicken, braised sheep, prepared alloco or soubmala dishes, drinks, etc.) share the space, but also the furniture; while other vendors wander among the customers who themselves enjoy the refreshing atmosphere of the vegetation (vegetable garden and tree nursery).

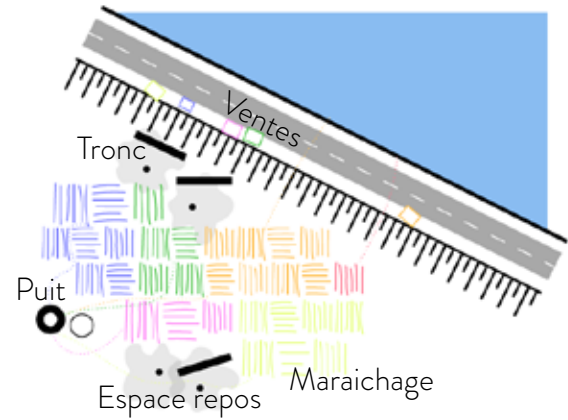
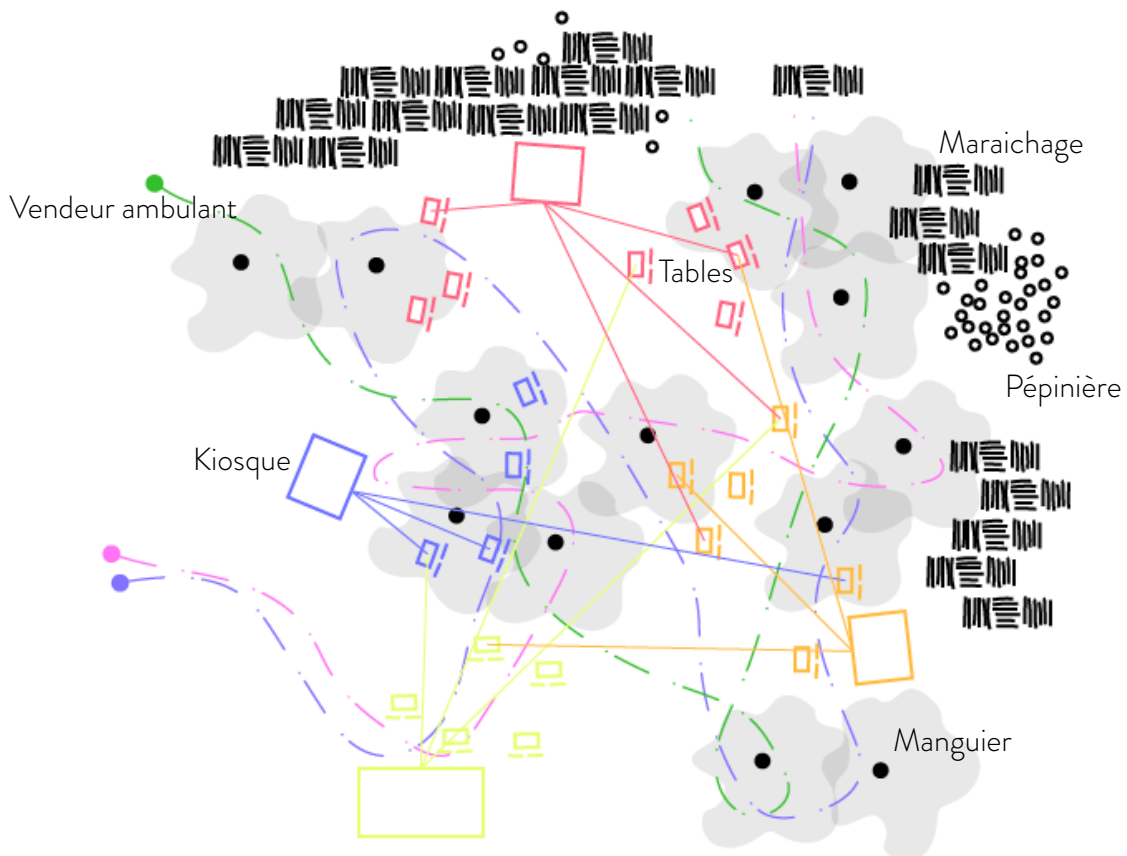


Fig 20 : Diagram of organisation of the gardens close to reservoir 2



Fig 21 : «Sous les manguiers»

Fig 22 : Diagram of the organisation of «sous les manguiers»



Marketplaces: traditional spaces of meeting and exchanging

Tanghin has several “small marketplaces” for selling food products, livestock, and so on. There was also a fish market which is no longer operational and whose site has now become a wasteland.

- Food markets

Still called *yaar*, food markets (Tanghin market, Toukin market etc.) have roughly the same configuration. The market organization is such that it is subdivided into several areas with installations more or less structured according to usage. Thus, in the market, there will be vegetable stands, fruit stands, starch stands, fresh produce stands, etc. In the Tanghin and Toukin markets, without any regulatory standards, the stands (usually made of straw or sheet metal) are staged individually by the merchants. These markets are essentially places where market gardening products from sites in Tanghin, Kossodo etc. are sold and where local populations can stock up on food products.

- Livestock market

The Tanghin neighbourhood has a livestock market (for large and small animals). Located in Sector 17, it is the largest livestock market in the city of Ouagadougou. Livestock (cattle, sheep) arrive from cities and livestock regions across all of Burkina Faso to be stored and sold domestically in Ouagadougou or exported to cities in the West African subregion (Côte d’Ivoire, Nigeria, Togo, etc.)



Fig 23 : Informal market on concorde street



Fig 24 : Toukin Market



Fig 25 : Livestock market

Portrait of an inhabitant, a fragment of life

Abdou, the Bicyclette chicken seller :

- 28 ans
- Sells grilled chicken at “Sous les Manguiers”
- Began selling 3 years ago
- Lives in the neighbourhood of Somgandé, 2 km from Tanghin

7h

Abdou, a local chicken seller at “Sous les Manguiers”, leaves his home in the Somgandé neighbourhood.

Around 08.00

Abdou arrives in Tanghin, at Sous les Manguiers

Abdou’s daily activity is the sale of grilled local chicken. He has a roughly 12 m² space that was granted to him by “the owner of Sous les Manguiers”, who is in fact the person who planted the mango trees. Sous les Manguiers attracts officials and inhabitants from Tanghin, among others on a daily basis. Abdou claims to make more sales on weekends, because Sous les Manguiers attracts a large crowd from all over Ouagadougou on weekends. Thus, Abdou sells grilled chicken from his own stand that he made himself. His stand has a metal roof, a table, and a barbecue. The particularity of his speciality is the fact that the chicken is grilled naturally, without a marinade, and served with only salt and a little vinegar.

12.30–16.00

The time when he serves clients

At 12.30, Abdou sees most of his customers arrive. The chicken orders are made on the spot, and it is Abdou who goes to the customer, as well as to all the other sellers of Sous les Manguiers, to propose his specialty. Once the customer has ordered, the chicken is slaughtered on site, plucked and roasted on charcoal embers. It takes between 30 and 45 minutes for the customer to receive his/her order. Served on a plate accompanied by chilli pepper, Abdou provides customers with a kettle containing water to wash their hands, so that they may proceed to tasting the chicken, which is done by hand. While the customer is at the table, Abdou returns to his stand to honour the other orders, while also keeping an eye on the customer to collect his pay at the end of the meal. One order of grilled chicken at Abdou’s stand costs between 3,000 and 3,500 CFA francs depending on the size of the chicken.

17.00

Abdou finishes his sales, cleans and organizes his supplies under his stand. He leaves Tanghin at 18.00 to return home to his neighbourhood of Somgandé. This retail activity allows him support his family, which consists of his wife and two young children.

Dorcas, a student in Cissin :

- 23 years old
- Masters student in Diplomacy and International Relations at the Université Libre du Burkina, located in Tanghin
- Resident of Cissen, Sector 26, approximately 12 km from Tanghin

Dorcas' daily activities on the days she has class

05.00

After getting ready quickly, she hops on her moped with her backpack of notebooks and school materials and heads to the university. The trip lasts between 30 and 45 minutes. She arrives at her destination at 06:45. Once she gets there, she goes to class.

07.00

Her classes typically begin at 07.00, when the professor arrives. The students have a short 30-minute break at 10.00.

10.00

The students have a break

This is the time when some students have breakfast at either the stalls found inside the university's courtyard or outside the school. Dorcas usually buys a meat sandwich for 200 CFA francs, the smallest size.

10.30

Classes restart

Depending on the programme, students typically continue the class with the same professor or a different one.

12.30

Break for lunch

For lunch, with her schoolmates, Dorcas eats at the neighbouring stall. She typically orders a plate of attiéké (a dish made from cassava) for 400 CFA francs. With her schoolmates, she engages in varying degrees of intellectual conversation while eating.

15.00

Classes restart

The students return to finish their last few hours of classes.

18.00

Classes end

The students either return home or stay to prepare group presentations when asked by their professors, when this happens they sometimes do not leave until 20.00. When she doesn't have a presentation to prepare, Dorcas says she goes home.

18.45–19.00

Dorcas returns home

She says that she experiences a daily battle, that of traffic jams. She swears that circulating near the entrance of the reservoir is practically impossible when there are no police officers to direct the traffic. Even though exhausted from her long, difficult days, she is happy with the knowledge that she is acquiring. After a little rest, she studies her notes from the day. Dorcas travels 25 kilometres a day for her round-trip commute between her home and the university.

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Iconography

Every figures non repertoried in this list (photography, diagram and illustration) are produced by the team of the Ateliers.

PART 1 : Ouagadougou and its context

Page 7, fig 1 : redessin d'après original dans mémoire : la grande muraille verte comme bien commun par M. FAVRE, A. PELLETIER, R. ANDRÉ, C. COSTES

Page 10, fig 2 et 3 : redessin d'après original dans mémoire : la grande muraille verte comme bien commun par M. FAVRE, A. PELLETIER, R. ANDRÉ, C. COSTES

Page 12, fig 2, 3, 4, 5, 6 : redessin et schématisation d'après les cartes originales du SNADTT

Page 16, fig 2 : photographie du Mogho Naba : <https://www.iburkina.com/2017/02/parente-a-plaisanterie-au-burkina-les-samo-viennent-se-prosterner-chez-le-mogho-naba/>

fig 3 : Croquis de Waghadougou : https://commons.wikimedia.org/wiki/File:Pg407_Croquis_de_Waghadougou.jpg

fig 4 : tracé d'après les données originales de l'Institut National des Statistiques et de la Démographie (INSD) du Burkina Faso

fig 5 : évolution de la ville de Ouagadougou par Alain PRAT

Page 19, fig 7 : tracé d'après les données originales de la monographie de la commune urbaine de Ouagadougou, 2009

Page 23, fig 11 : parue dans la presse 2018 : SONATUR : étude sur les taux de mise en valeur des parcelles à Ouagadougou

PART 2 : Challenges and Vulnerability of the city

Page 25, fig 1 : tracé d'après les données originales chiffrées du PIR

Page 28 : illustration extraite du mémoire : la grande muraille verte comme bien commun par M. FAVRE, A. PELLETIER, R. ANDRÉ, C. COSTES

Page 30, fig 3 : photo extraite du Référentiel Hiérarchisation des voiries ouagalaises, Juin 2017

fig 4 : tracé d'après les données issues du comptage routier de commune, novembre 2014/ Référentiel hiérarchisation des voies Ouagalaises, Juin 2017.

fig 7 et 8 : illustrations extraites du mémoire la grande muraille verte comme bien commun par M. FAVRE, A. PELLETIER, R. ANDRÉ, C. COSTES

Page 35, fig 3 : <http://www.fasozine.com/actualite/economie/5386-ouagadougou-l-echangeur-du-nord-ouvert-a-la-circulation-le-15-novembre-2018.html>

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fig 4, 5 et 6 : <http://www.jacques-lacour.blogspot.com/2009/09/inondations-ouagadougou-au-burkina-faso.html>

Page 39, fig 9 : illustration extraite du mémoire : la grande muraille verte comme bien commun par M. FAVRE, A. PELLETIER, R. ANDRÉ, C. COSTES

Page 40, fig 1 : carte extraite de Dynamique spatio-temporelle de l'agriculture urbaine à Ouagadougou : Cas du Maraîchage comme une activité montante de stratégie de survie, CONCHITA M. G. KÉDOWIDÉ, MICHEL P. SEDOGO ET GUÉLADIO CISSÉ, Ouagadougou 2010

fig 3 : tableau extrait de Dynamique spatio-temporelle de l'agriculture urbaine à Ouagadougou : Cas du Maraîchage comme une activité montante de stratégie de survie, CONCHITA M. G. KÉDOWIDÉ, MICHEL P. SEDOGO ET GUÉLADIO CISSÉ, Ouagadougou 2010

Page 42, fig 4 : captures issues de google earth

Page 43, fig 5 et fig 6 : illustration extraite du mémoire : la grande muraille verte comme bien commun par M. FAVRE, A. PELLETIER, R. ANDRÉ, C. COSTES

Page 44, fig 7 et fig 8 : illustration extraite du mémoire : la grande muraille verte : comme bien commun par M. FAVRE, A. PELLETIER, R. ANDRÉ, C. COSTES

fig 2 : données issues du Plan d'Occupation des Sols 2012

Page 46, fig 3 : <https://observers.france24.com/fr/20160325-jeunes-cameroun-paves-plastique-recycle-roger-milla-djouman-yaounde>

fig 4 : <https://www.gafreh.org/>

Page 48, fig 1 : schéma issu de « La métropole-village(s) de Ouagadougou : explorer les potentiels d'un territoire, supports de processus de projet architectural » de MAMA AWAL Halimatou

PART 3 : From Tanghin to Loumbila, the Territory of the Grand Nord

Page 58, fig 6 : carte issues du Plan d'Occupation des Sols 2012

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