

Urban planning orientation tools implementation in Bamako District

Founémakan SISSOKO, Faculty of Administrative Science and Politic, University of Law and Political Science of Bamako (USJPB), sisfoun@yahoo.fr, Tel: (00223) 66852495/(00223)76834733

Paper prepared for presentation at the “2019 WORLD BANK CONFERENCE ON LAND AND POVERTY” The World Bank - Washington DC, March 25-29, 2019

Copyright 2019 by author). All rights reserved. Readers may make verbatim copies of this document for non-commercial purposes by any means, provided that this copyright notice appears on all such copies.

Abstract

Growing cities across the globe face a number of changelings and problems which posse threat to their dwellers. In the world today, the fastest growing city in Africa and the sixth in the world, Bamako currently faces huge challenge of implementation urban planning tools which sooner or later might be difficult to be addressed. In attempt to have a holistic view of the challenge, 646 questionnaires were given to its common citizens, 32 questionnaires were given to Neighborhood Development Committee (CDQ) members, and 11 interviews had been conducted in 32 Neighborhoods (quarters) in the 06 Communes of Bamako District. Through the use of simple percentage, this study discovered that planning orientation tools are not implemented and plans are not respected in Bamako District. The city is progressively demolishing and the village is set up for the change of public facilities into dwellings and the residents are not satisfied of that.

Key words: Decentralized authorities; implementation; planning orientation tools; sector land-use plan; urban master plan.

I. Introduction

According to the City Mayors Statistics rank of the world's fastest growing cities and urban areas from 2006 to 2020, Bamako is ranked sixth in the world and first among all African cities (http://www.citymayors.com/statistics/urban_growth1.html) (Gonçalves & Ferreira, 2015). However, Bamako faces huge problems of building demolitions and reconstructions. The reason is that the city of Bamako evolves on the margins of its urban planning tools which are Urban Master Plan (Schéma Directeur d'Urbanisme, SDU) and the Sector Land use Plans (Plan d'Urbanisme Sectoriel, PUS). While, the spatial planning tools aim to achieve sustainable development (Persson, 2013). Nevertheless, Bamako District had its first Regional Planning and Development Program since 1981. It had been revised twice (1985 and 1995).

With regard to the issue of controlling of the growth of cities, particularly their sprawl, Mali developed and adopted, in 1981, the called document “Big Orientations of the National Policy of the urban planning and the housing in the context of the town and country planning” (les Grandes Orientations de la Politique Nationale de l'Urbanisme et de l'Habitat dans le cadre de l'Aménagement du Territoire). This allowed the development of the documents of urban planning regulations that are the Metropolitan Urban Mater Plan (Schéma Directeur d'Aménagement et d'Urbanisme, SDAU, actually replace by the SDU), Regional Planning and Development Program (Schéma Régional d'Aménagement du Territoire, SRAT), the PUS, and operational urban planning tools as land subdivision, rehabilitation, restructuring and restoration plans.

Subsequently, three urban projects have been implemented: Urban Projects of Mali 1979-1986 and 1986-1994, and the Urban Development and Decentralization project (Projet de Développement Urbain et Décentralisation, PDUD-1997-2005). The Sectorial Urban Development Policy (la Politique Sectorielle de Développement Urbain) was adopted in 1996. The Cities of Mali Development Strategy (Stratégie de Développement des Villes du Mali/SDVM) was adopted in 2009. This Strategy puts a particular emphasis on sustainable urban development. And finally, the National Policy of City (Politique Nationale de la Ville, PONA) was adopted in 2014. In the institutional regard, this policy resulted in the creation of the Cell of follow-up of the National Policy of the City (Cellule de Suivi de la Politique Nationale de la Ville, CS-PONA) and the National Monitoring Observatory Agency of the city (Observatoire National de la Ville) (Ministère de l'Urbanisme et de la Politique de la Ville, 2014).

Urban governance reoriented policies and politics towards sustainability development of the cities has been on since the adoption of Agenda 21 by United Nations in 1992 (Kagan, Hauerwaas, Holz, & Wedler, 2017). Also, recently, the United Nations (UN) endorsed the Sustainable Development Goals (SDGs) in 2015 to serve as legitimate concerns in worldwide sustainable development action (Parnell, 2016). However, despite all these policies and structures, the all Malian cities have been a facing a plethora of problems. These problems include urban sprawl, the difficulties in

access to basic social amenities, sanitation problems, environmental degradation, lack of supply in housing, lack of road infrastructure and drainage, improper land management, mobility problems, insecurity and marginalization of certain social group (Ministère de l'Urbanisme et de la Politique de la Ville, 2014).

Indeed, the tools of urban planning represent objective tools to achieve political goals of controlled and mastered development of cities. For instance, the Decree N° 185/PG-RM of 26 July 1985, related to sector urban land-use plan regulation lays out that the approval of sector urban plan scheme is equivalent to the declaration of public utility for all the operations of operational urban planning planned (article 26). The validity of the SDU is 20 years and 10 years for the PUS.

However, the SDU and PUS can be object to updating or amending every five years if needs arises. The sector urban plan scheme is opposable to public services, local authorities and the third party(article 27, Decree N° 185), and in case a construction must be built on a location reserved by a sector urban planning scheme, for a road, a free space or a public service, the authorization to build is refused (article 30, Decree N° 185). The mayors, in regards to the District of Bamako, are responsible for the design and the implementation of the development plans of their local territories, however, they should comply with urban planning policy of the SDU and the PUS any stage of designation and implementation (Decree N°05-115/P-RM du 9 Mars 2005 related to the modalities of realization of different types of urban planning operations).

Nevertheless, in reality, these tools have difficulties in producing the expected effects on the ground. In Mali, the urban planning aims to define what area should be used for as shown in Law N° 02-016 of June 3rd, 2002 related to the general rules of the urban planning. In reference to the law therefore, there are two kinds of urban planning tools in Mali including orientation tools (SDU and PUS) and implementation plans (land subdivision, rehabilitation, renovation and restructuration plans).

The SDU is the urban orientation document of first-degree. It is operationalized by the PUS. The PUS is the second-degree of urban guidance document that details and specifies the content of the SDU. The area of application of PUS is defined by the SDU. The PUS has to serve as a basic reference for operational planning (Decree N°04-607/P-RM of 30th December 2004 setting out the modalities of implementation of urban planning).

It must be known that the SDU cannot be implemented directly, it needs PUS to be detailed and provide urban planning operations actions to be undertaken (article 1st Decree N°185/PG-RM) (Attahi, Hinin-Moustapha, & Appessika, 2009).However, urban planning operations reports show that these urban guidance documents are not followed. This endangers people's life and the sustainable development trends in the country (Ministère de l'Urbanisme, 2017). If we are not mistaken, this theme of a so big importance was not the object of scientific research on our site of study.

The main objective of this research is to assess the implementation of the urban planning orientation tools in Bamako District. Specifically it looked into the roles played by various stakeholders in urban planning orientation tool implementation process and its impacts on the sustainable development in the country. Finally, our

research has used three kinds of data stemming from the review of the policy papers on land-use planning and urban planning and landscaping in Mali, administration of questionnaires and interview. The fieldwork has been done from 11 August to 4 December 2017.

II. Method

The questionnaires were used to get Bamako's residents perception at two levels (citizens and leaders of Comité de Développement du Quartier, CDQ). Interviews guide were used to assess institutional actors opinions (State's services and decentralized authorities). The calculation of population sample gave 599 people (of 18 years and above) to survey on the basis of the General Census of Population and Habitat of Mali 2009 (Recensement Général de la Population et de l'Habitat, RGPH).

The following formula was used to determine the weight of the survey for the administration of the questionnaires:

$$n = \frac{t^2 N}{t^2 + (2e)^2(N - 1)}$$

N: size of the parent population (Bamako District's population), n: the sample size, s: confidence level, t: Coefficient of margin deducted from the reliable rate, e: margin of error. The sample was calculated on the basis of a margin of error of 5%.

$$n = \frac{(1.96 * 975247)}{(1.96 + 4 * 0.0016)(975247 - 1)} = 599$$

The distribution between the Communes of Bamako District was made on the basis of the demographic weight. Details are provided in the table below.

Table 1 . Sample distribution.

	Population		Echantillon	Echantillon	
	Number	Percentage		Individual	Neighborhood
COMMUNE-I	174988	17.9	107	100	5
COMMUNE-II	90442	9.3	56	80	4
COMMUNE-III	75492	7.7	46	60	3
COMMUNE-IV	166593	17.1	103	100	5
COMMUNE-V	218714	22.4	134	140	7
COMMUNE-VI	249018	25.5	153	160	8
Total	975247	100	599	640	32

The distribution was made per Commune with a pace of 20 people. Following numbers of neighborhoods have respectively been chosen in Commune-I (5), II (4), III (3), IV (5), (7) V and VI (8). Indeed, Commune-I and III, due to the narrowness of their population saw their number increased to ensure a certain representativeness of the opinion imposing to go beyond two neighborhoods. This is the way in Commune II, 04 Neighborhoods were chosen instead of 03 and in Commune III, 03 instead of 02.

The CDQ's questionnaire was administered in 32 Neighborhoods of studies. The choice of neighborhood was made in random manner. Questionnaires were administered by 06 investigators (one investigator per Commune).The data was treated in entry form on the software Cs pro 7.0 and export toward the SPSS.

The main constraints appeared during the interview include the unavailability of the National Administration of Domains and Land Registry and the Mayors of six Communes of District Bamako and their technical services (Antennas of Urban Planning and Habitat, and Domains and Land Register) to get involved , in spite of our insistence, several appointments were missed.

Involving this paper, the questionnaire was set of 14 survey questions grouped in 05 sections of the answers. The questions are related to 1) Are you aware of the existence of planning tools in Bamako (SDU) and your Commune (PUS)? 2) Have you heard at least once, of these documents? , 3) Is the population consulted during the process of operational urban planning operations? 4) If yes, at what stage? 5) The urban planning operations do they respect the urban orientation documents (PUS and SDU)? 6) Are you aware of the case of a public places (community facilities) or right-of-way which changed use or space has been subjecting to private ownership in your neighborhood? 7) If yes, what was the previous nature of this space? 8) What is the new use of this space? 9) Do these changes of purpose (use) affect the well-being of the populations? 10) If yes, how the populations reacted to these change? 11) For you who is responsible for these changes of uses? 12) Are you satisfied with the level of equipment and availability of space for the realization of the basic social services in your neighborhood? 13) What is your assessment of the management of your space by your elected representatives? 14) According to you, does the current domain and land management system of Bamako District leads to a sustainable development? Correspondingly, the sections of answers include following section: 1) local actors' awareness of urban planning orientation tools existence, 2) population participation in operational planning, 3) plans effectiveness (implementation), 4) respect of publics facilities reserved spaces in already urbanized area, 5) population level of satisfaction on current land-use pattern.

III. Study area

Bamako is the capital and largest city of the Republic of Mali. Geographically, Bamako is located at latitude 12° 37' North and longitude 8° 1' West. It is situated on both sides of the Niger River. Bamako is set of six autonomous Communes. The area of the city is 267 km² (26.700 ha)(Groupement de Bureaux d'Etudes, 2015). The population of Bamako City was 2.04 million in 2011, with an annual population growth rate of about 5.4%. In 2009, the population density of Bamako was 7,184 inhabitants/km² (Murayama, Estoque, Subasinghe, Hou, & Gong, 2015).



Figure 1 Location of Bamako District

Bamako is a form of six municipalities in addition to the District of Bamako. That makes 07 territorial decentralized entities (Collectités Territoriales, CT). Each entity is self-governed with its own responsibilities without any interference each over. In the francophone system, district means a set of Communes (Municipalities).

Moreover, Bamako has the status of administrative Region with a Governor of the Region appointed and elected mayor of the District. The Governor of the District of Bamako is the supervision authority of the six municipalities of the District while the Minister in charge of decentralization is the supervision authority of Bamako District City Council (Conseil du District). Lastly, Communal antennas of technical State's decentralized services as Urban Planning and Habitat, and the State's Domain and Land Registry are located within the town hall of the six Communes. They are responsible for bringing technical support to the mayors in the matters of their competences.

IV. Result and discussion

The results so presented are got from the administration of 646 questionnaires to the populations, 32 questionnaires to the CDQ, and 11 interviews had with the various ministries, Central Administrations, State's regional and local technical services, local decentralized authorities in Bamako District. Among the respondents, there were 460 male and 186 females. About 163 of the respondents have not attended school, 107 of them attended primary school level, 156 of them had reached secondary school level, while 171 of them attended higher education level, alphabetized (14), Koranic (informal Islamic education) (24), and Medersa (formal Islamic school) (11).

Based on profession of the respondents, the following information was obtained: employee (105), merchant (188), farmer (14), breeder (41), retiree (10), private operator (67), carrier (21), housewife (88), craftsman (61), other (51). With regard to the communes of the respondents, the research had data from the following communes: Commune-I (103), Commune-II (80), Commune-III (58), Commune-IV (107), Commune-V (178) and Commune-VI (120). It should be noted that the sliding between the neighborhood of the Commune-V and VI made the quota was exceeded seriously in the first case (140) and not reached in the second case (160) (cf. Table 1).

Concerning the CDQ, out of 32 members surveyed, 06 were employees, 06 merchants, 01 breeder, 02 retirees, 14 economic operators, 01 craftsman, 01 carrier and 01 other. There were 02 females and 30 males. And by the level of study, there was not-educated (3), primary school level (05), secondary school level (14), higher education level (10).

Thus, the guides of interview were administered to 01 Technical adviser (Conseiller Technique, CT) of the Ministry of the Town and Country Planning and the Population (Ministère du Plan et de la Population/MATP), 03 responsible of the National Direction of the Town and Country Planning (Direction Nationale de l'Aménagement du Territoire, DNAT), 01 responsible for the Geographical Institute of Mali (Institut Géographique du Mali, IGM), 02 responsible for the Regional office of the Sanitation and for Control of the Pollutions and Nuisances (Direction Régionale de l'Assainissement et du Contrôle des pollutions et Nuisances, DRACPN), 01

responsible for the Regional office of Waters and Forests (Direction Régionale des Eaux et Forêt, DREF), 01 responsible for the Commune-IV (Chef of the Local Antenna of Domains and the Land registry on instruction of the Mayor), 01 responsible of Bamako District Governorate, 01 responsible of Regional service for Urban planning and Habitat (Direction Régionale de l'Urbanisme et de l'Habitat, DRUH), 02 responsible of the Committee of Follow-up of the implementation of the National Policy of the City (Cellule de Suivi de la Politique Nationale de la Ville/ CS/PONAV).

Of course promise was made to our respondents to quote them only by keeping their anonymity; the text contains direct quotations or stands paraphrased from our interview assigned not to a person recognizable, but a function and/or to a representative of a service of the State with an assigned code. The selected code is the official abbreviation of the name of the structure. A number was arbitrarily conferred to the two agents of the DNAT (DNAT1 to 2). In addition, according to DNAT, it must be noted that only 02 out of 3 responsible records are used in the following development. For the CS /PONAV and the DRACPN, a group interview was conducted on the initiative of the responsible, so no numbering was necessary at this point.

1. Section one: Urban planning tools in the Bamako District are not known by the mayors and the citizens which deprives effective implementation.

The result shows that the mayors and the citizens in Bamako District are ignorant of the basic documents of the urban planning. As can be seen in the analysis of the following questions:

Question1 : Are you aware of the existence of planning tools in Bamako (SDU) and your Commune (PUS)?

The analysis shows that about 78.3% of the respondents among the citizens are not aware of the urban planning guidance documents (SDU and PUS).

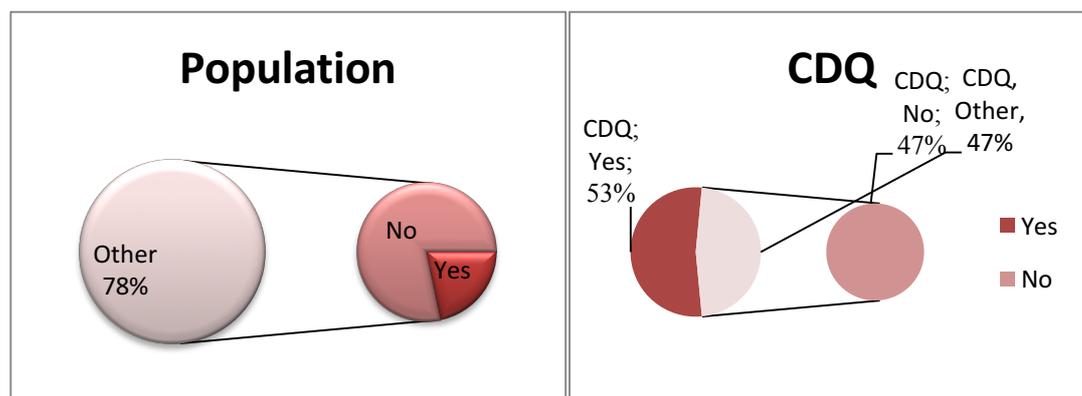


Figure 2 : Knowledge of the population and CDQ of urban planning documents called SDU and PUS.

Indeed, the knowledge of these tools appeared related to the level of education as the ratios reveal it. For example, for investigated having a higher level of education, 75 out of 171 know while respectively 38 out of 156 for those who have the secondary school level, 8 out of 107 for the primary school level, 3 out of 14

alphabetized, 3 out of 24 for the Koranic level, 2 out of 11 for Medersa and the great majority ignore it (non-educated with 11 out of 163). So, 338 males out of 460 ignore, against 168 females out of 186. It shows that the rate of ignorance of these tools is higher among the females of Bamako than among the males.

47% of CDQ (15 out of 32) do not know the existence of the SDU in Bamako District and the PUS in their Commune. This means that these tools are not so much known by the leaders of opinion in the neighborhood that are the basis of the territorial structure. Here also, that the level of study was determined in the knowledge of the existence of the urban planning orientation tools. For example, 6 out of 10 members who have a higher level of study know, 8 out of 14 for the secondary school level, 3 out of 5 for the primary school level and 0 out of 5 for the not schooled. The link between level of education and awareness of land-use policies has been established in other African country (Ariti, van Vliet, & Verburg, 2018).

Furthermore, the entire interview realized with the State's central administration, State's regional services concluded on the lack awareness of these tools by the Mayors. The following examples confirm this assertion. Mr. DNAT1 argue,

“The tools are developed by the State and implemented by decentralized entities (Collectivités Territoriales, CT). The CT expresses their need for elaboration of their urban Masterplan. The State develops and the CT executes. There is a need for an ownership. The city has plans, often we do not manage to find these plans both at the level of the CT as well as at the level of the State's Representatives” (Interview, November 7, 2017)

He adds,

“There is a problem of paradox in the mechanism. The SDU is a city, a CT, generally. The development of the zone falls within the CT. It is the State which develops and finances these planning tools. These tools are more a tool for control than management. The CT should develop them”.

DNAT2 affirm *“Mayors know only the Economic, Social and Cultural Development Plan (Plan de Développement Economique, Social et Culture, PDESC). The PDESC should come from the plan [PUS]”* (Interview, November 7, 2017).

To GDB,

“Once, we were in the City hall of the Commune IV to revise the PUS but much to our surprise, we were not able to find the copy of the PUS to be revised in the City hall. We were forced to cancel and to postpone the meeting for another day so that the Regional office urban planning to find it for us”. (Interview, October 26, 2017)

Question 2: Have you heard at least once, of these documents?

To the citizens who responded to this question, only 230 out of 646 have at least once heard about SDU and PUS. This raises a problem in terms of communication between the people in charge of these documents and the citizens. To the CDQ members, only 19 out of 32 have heard at least once of SDU and PUS.

The interview had with Mr. DNAT1 shows this problem as seen below:

« There is a need for ownership, the dissimilation within the population. Their existence and their contents have to be brought to the knowledge of the entire

population. By us, the one who represents does not restore the report. The CT has to make reference to these documents. » (Interview, November 7, 2017)

2. Section two: The populations are not involved in the process of implementation of urban planning tools.

The majority of the answers given by the citizens and the CDQ show that the concerned populations are not consulted during the urban planning operations (Figure 3). Besides that, those who think that the public is consulted say it is at the stage of implementation (Question 4).

Question 3 : Is the citizen consulted during the process of operational urban planning operations?

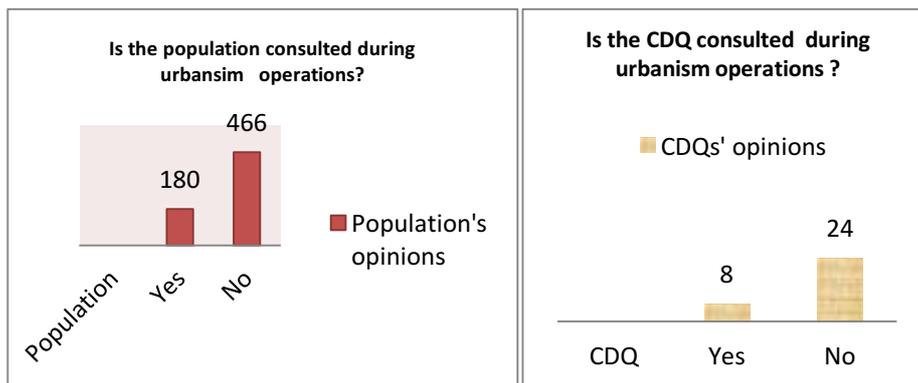


Figure 3. Population consultation on urbanism opérations.

From the data collected, 466 out of 646 citizens argue that the public is not consulted, this is against 180 respondents who believe that they are consulted. In this regards 24 (75%) CDQ members out of 32 assert that the CDQ is not consulted on the operational urban planning actions in their area, while 08 (25%) others claim that the CDQ is consulted. This point must be specified because this statement poses a problem. In reality, it is more here about briefing than about a consultation.

In fact, the consultation guess requires opinions and take them into account in the decision-making process. However, the consultation or involvement of the populations is not required at this level by the legislation in force. Nevertheless, the participation of the public is essential for the implementation of such decisions. In reality, the lack of population participation and ownership are among land-use policies implementation failure (Ariti et al., 2018).

Now, it appears clearly here that it is about the knowledge of the decision-making process regarding these operations. In other words, know that it was decided by the City Council that such operation will take place in the neighborhood. Thus, it is a question of being put in front of accomplished facts and accepting. Otherwise, they have no influence on the decision.

Question 4 : If Yes, at which stage?

About 180 people who say that the public is consulted, the implementation stage dominates with 91, followed by the moment of elaboration, which is the crucial phase with 62 and the validation stage with 27. It is even the reality for the CDQ, out of 6 CDQ who assert that the CDQ is consulted, 4 say that it is at the moment of the implementation, against 2 for the moment of the validation and 0, at the moment of

the elaboration.

The following reports of experts interviewed in different services of the State address in the same direction as it is seen in the wordings below. DNAT2 said,

“Communes are involved in the elaboration. Once adopted, the documents fall into the dungeon to the DNUH. Very often, people are not involved. Normally, the zoning needs to be displayed at City Hall so that people know there where to have plots of land. Only specialists share information like this among them. This is why people do not integrate into their daily lives. People are unaware that there is a common project on space and they come to settle down and think we want to keep them from moving here” (Interview, November 07, 2017)

The word of MC-IV is more illustrative. When he was asked, How is made the follow-up of the implementation of the urban planning tools by the populations? He answered that: *“Populations are permanent supervisors of tools who inform in their turn the authorities in the case of the suspicious movement against planning”*. It means if the population knows about plan or use of a public space, they will follow-up its preservation.

To summarize at this point, urban planning tools in the Bamako District are not enough known by the main local actors to allow their effective implementation. This result is supported by previous researchers. For example, Tran, Nguyen, and Kervyn (2018) find out that the willingness of citizens to participate and support any program related to land use/cover change and management is linked to the level of their knowledge. To Lu and Ke (2017) the engagement of all stakeholders in a city is the requirement of sustainable urbanization.

3. Section three: The mayors of the Communes of Bamako District do not make the SDU and PUS tools to be objective in the operational urban planning decisions-making process.

The SDU and PUS are not management tools for the Mayors during the operational urban planning operations.

Question 5 : Do the mayors respect the urban orientation documents (PUS and SDU) (Land subdivision/Adjustment/ rehabilitation) in urban planning operations?

Here about 67% of respondents among populations believe that urban planning operations do not respect urban orientation technical tools. This is against 33% of the respondents who don't think so. And 41% (13) of CDQ leaders interviewed think that urban planning operations do not respect the guidance of urban planning.

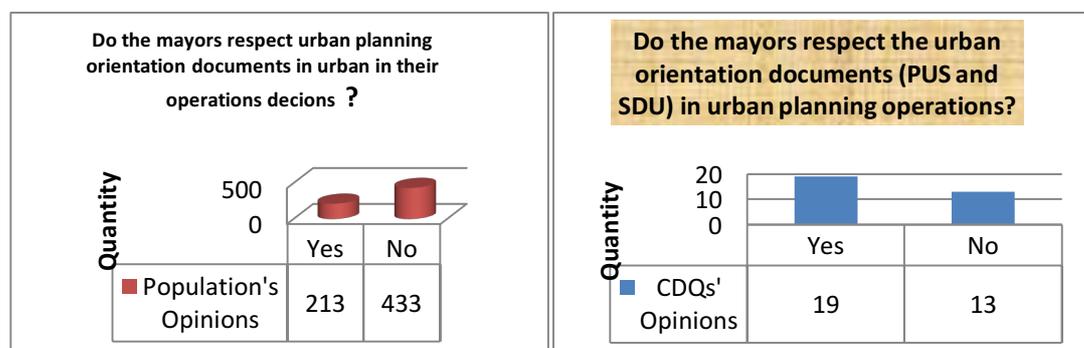


Figure 4 . Respect of the SDU and PUS by urban planning operational decisions.

These results need to be analyzed in the light of the 11 out of 32 who do not know the existence of these documents. Also, only 2 out of 32 CDQ leaders think that operations comply totally, against 12 for often, very often 02, and 03 for rarely. The reports of interview also confirm this tendency. For instance, Mr. CT/MATP argued

“The general situation is the not implementation of the urban planning tools, automatically the failure to respect the vocations of spaces. The actors are not informed about the existence of these tools, thus, they do not participate. All this has for consequence the exacerbation of the land speculation. It is in all of our cities. The town planners say that there is no city in Bamako. It is a big village. All our cities have a rural character. 70 % of the neighborhoods of Bamako have the backbone of the spontaneous neighborhood.” (Interview, MATP, November 10, 2017)

IGM said, there is

“No relation between the forecasts of the orientation documents and the operational documents on the ground in Bamako. [...] we set the purpose of zones, but in the practice, the Mayors overfed, the forecasts are not respected in the practice. They make another thing than what was planned. They change the zones of offices into housing area. They change the purpose of spaces on the ground contrary to the forecasts. [...] the Mayors disregard the vocation; they give because they invested to be Mayor. That is why they dash into the land subdivision operations to recover the invested amount” (Interview, IGM, November 1st, 2017)

The responsible of DRACPN made it clear that,

“The problem of the purification, it is the space. If you have no space, no action can take place. In 2011, a work of identification of 37 transit deposits planned by the plans had been made in collaboration with the National Direction of urban planning and Habitat. Out of 37 planned sites only 01, that of Sénou; had not been occupied, even there also currently there are problems on this site. Everywhere is occupied. Yet it is small plots of land of 20/20 m or 300-400 square meters. Even for one site for sewage sludge discharge, we looked for it around Bamako and the bordering Communes but we did not found.” (Interview, DRACPN, October 31, 2017)

The same service added,

“In the Rural Commune of Kalaban-Coro to Kouralé a space planned for the discharge [dump] is gone. The second to Samanco2 also left. That of the Rural Commune of Mountougoula is also gone. There is a good reason to break to make works of purification in Bamako. How to understand, two to three million of inhabitants 2 300 to 3000 m³ of waste per day, no place there, it is necessary to evacuate.”

The summary of this point, tell us that the mayors of the Commune of Bamako District do not make these tools an objective in their operational urban planning decisions. Many current studies in different socio-political contexts showed the challenge that decentralization represents for land use planning. Burby and Okun

(1983) revealed that local governments are more vulnerable to pressures from special interests, rendering the measures accompanying land-use planning and management unpalatable and often unfeasible. Fu (2018) finds that “among residents' conflicts with different entities of urban governance; only those with local/grassroots governments are significantly associated with more depressive symptoms. Moreover, these subgroups of government-oriented conflicts associated with more depressive symptoms are related to neighborhood planning and communal properties, reflecting a dilemma in the Chinese model of urban governance”. To B. Wang, Tian, and Yao (2018), the absence of trust between local government and villagers is among a keys barriers to redevelopment. Sundaesan (2017) finds that “Plan violation and planning for violations as practices complete the circle of violations of the process architecture of planning system in Bangalore through its own practice”. This situation is similar to Bamako at the difference that there is a legal mechanism to regularize but in Mali we plan everything knowing that the plans will not be applied but also the anarchic occupations in ancient tissues regularized. These results are consistent with the findings.

4. Section four: Change of purpose of the spaces reserved for public facilities to residential lots in already urbanized neighborhoods is transforming neighborhoods of Bamako from habitat to housing.

The respondents’ opinions on the questions 6-12 shows that the changes of the purpose or use of spaces reserved for public facilities into housing presents threat to the living environment in Bamako

Question 6 : Are you aware of a public place (community facilities) or a roadway which has been turned to be a private owned building in your neighborhood?

A total percentage of 39.2 % of the respondents have a public area has be turned into private owned building in their neighborhood. In Commune-VI, majority of the population, 66 people testify that public areas are being turned into private owned buildings. This is against 54 who are not such experience. The Table2 below shows it situation:

Table2 . Population’s awareness of public facilities' spaces use change

		Awareness of public facilities' spaces use change		
		Know	Do not know	Total
Commune	Commune I	50	53	103
	Commune II	42	38	80
	Commune III	27	31	58
	Commune IV	9	98	107
	Commune V	59	119	178
	Commune VI	66	54	120
	Total	253	393	646

71.9 % of the CDQ have knowledge of the case of change of vocation of public places in privative purposes in their neighborhood against 28.1 % which did not know

it. And it is in Commune VI that the ratio is high. Indeed, only 01 neighborhood in this Commune which has no knowledge of the change of vocation.

The interviews also revealed difficulties with access to information related to the use of public spaces. Here the recourse to interview reveals all its importance in giving more precision. As Savoie-Zajc (2009) said that the interviews pursue aims of explication and in-depth understanding (Baribeau & Royer, 2012). Furthermore, coupling confronting population's views and instructional actors' views make our "research an effort that amplify and connect isolated or unheard voices"(Frank, 2017). And hence, for instance, to DREF,

*"We do not have land subdivision plans of Bamako. We are obliged to go every time to the service of urban planning [DNUH] in case of need. The management of the green spaces is a matter of the service of urban planning. It is this service which always manages the green spaces in Bamako District. At the beginning of the year 2015, we started [...] the evaluation of the green spaces in Bamako. Until now the process continues. We did this work with the service of urban planning which has the plans, we have not. When we began the identification of these spaces with them often they brought us in on places which are entirely built in the villa. Those who sold the green spaces are the ones who are in charge of showing us. They will not do it easily. The list of the green spaces that the service of urban planning gave [us] concerning the green spaces in Bamako was not exact after checking, there are more than that. There also, **on 100 more than 56 %** were occupied. There are these that have been split and sold."* (Interview, DREF, November 14, 2017)

The DRACPN admit being confronted with the same problem. They affirmed that,

"In Bamako, it is difficult to gain access to administrative documents. We were not able to have access to the purpose of the space in the urban planning and Domains services". (Interview, DRACPN, October 31, 2017)

In addition, to DNAT1,

"The problem, it is the respect for the use. If space is planned for a market, a time later, this space sees itself occupied by other than the initial purpose." (Interview, DNAT, November 7, 2017)

DNAT2 add also that,

"That happened to Baco-Djicoroni ACI, there is somebody who built a collector [...]. The same thing happened to Banankabougou. An oxbow lake which has been transformed into a collector with the rainy season there is mud. The oxbow lake has been closed partially [sold and built for housing]. The mayors do not apply the rules of urbanization. All the green areas of Bamako were sold".

DNAT2 finished by saying that *"Elected officials do not have the sense of urban planning but there was also this legal insufficiency"* (Interview, DNAT, November 7, 2017).

On this point, it appears clear the difficulties of preservation of spaces of public utilities in Bamako District. Or "in cities, land-use decisions made during planning processes determine the availability of ecosystem services fundamental to the

wellbeing of urban population”(Cortinovic & Geneletti, 2018).The constraints linked to the availability of public space push some technical services of the State, DRACPN, to make a savage occupation activity of some free spaces to make waste transit deposits. These spaces free of any charge, are afterward sold to private individuals after the putting in a good state by DRACPN. And also, the interviews data made it clear that there is a big issue of public utilities spaces use changes for privates one that the opinions of populations do not show clearly.

Furthermore, at this point, we have to indicate, according to the views of DRACPN and DREF, on the difficulties to access information about the statute of public utilities’ spaces in Bamako District are more expressive on the confusion leading in this sector. A key concern, about the opportunity of the decentralization in Mali, has to be pointed out with regard to land management issues. Actually, the decentralization through the transfer of responsibilities and resources to Mayors in land-use planning matters is bringing confusion in urban sustainable management in Bamako District. The public facilities do not have any responsible owner. The law lay out that they are the responsibilities of central State and local decentralized entities. The decree of 2002 classified the public equipment in Bamako between central and local decentralized authorities. But, in reality, because the service of urban planning and habitat which has the up to date information on the official use of the spaces provided by planning as public utilities is leading and managing the land-use change affecting these spaces. Because it is, almost, the only one (except IGM and Domain) which hold the urban land information. For example some key State’s technical services involved in planning implementation like DREF and DRACPN still argued that these places are managed by DNUH and that their services need to ask for their transfer. This argument is erroneous. This confusion gives rooms to the local antenna of urban planning and their attached Mayors to change the use of public spaces as they will because the majority of the keys ignore the status of the land.

Question 7 : If yes, what was the previous nature of this space?

According to the respondents, the type of the initial use of public facilities that had been changed turned into private owned building is following: 51, 8% (131) were youth sports fields, 24, 5% (62), green spaces, 11, 9% (30) of places of worship, 11, 1% (28) of schools and 0, 8% (2) of Health Care Centers.

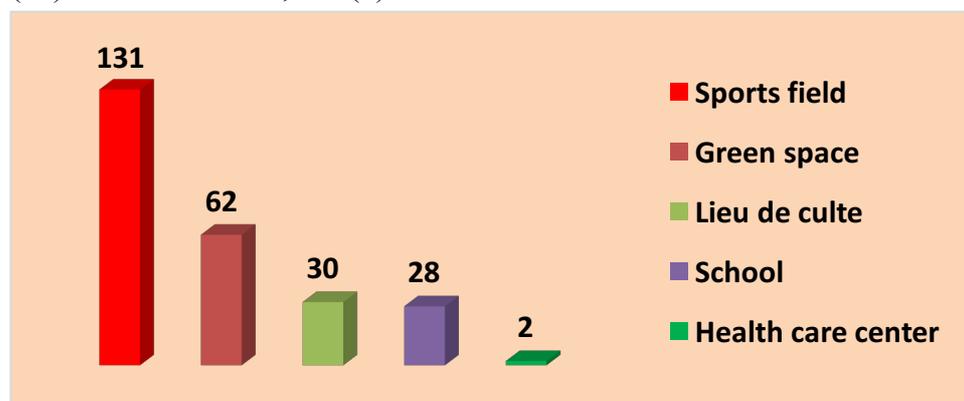


Figure 5. Nature of public utilities already object to use change

For the CDQ, these changes have mainly concerned green spaces (41.7 %, 10 opinions), 41.7 % sports field (10 opinions), 12, 5% of school (3 opinions) and 4.2% of the place of worship (01 opinion). However, the analysis by Commune shows that in Commune-I, the green spaces are the most concerned by the changes of use (23 out of 50) against respectively 20 and 7 for the sports fields and the place of worship. Schools come in 2nd position in Commune-VI (14 out of 40) followed by the green spaces (11) and the rest (40) for the sports field. This trend of the occupation of the land of sports by housing has emerged as a source of daily tension in Bamako.

Table 3 : Population opinions on planned public utilities object to private ownership spaces per Commune

		Previous planned public facility space type					
		School	Green space	Health care center	Sport field	Worship place	Total
Commune	Commune I	0	23	0	7	20	50
	Commune II	6	7	0	26	3	42
	Commune III	3	1	0	23	0	27
	Commune IV	0	2	0	4	3	9
	Commune V	5	18	2	31	3	59
	Commune VI	14	11	0	40	1	66
	Total	28	62	2	131	30	253

These opinions from population and CDQ are evidenced by the words of GDB. He affirmed that,

“The occupation of sports fields arise every day. Practically, every day we hear at the level of all the Communes of Bamako District to say that people wanted to change the use of such or such space as people [young people] opposed. It is every day.” (Interview, GDB, October 2017)

To DNAT2 *“There is a problem of green spaces around Bamako»* (Interview, DNAT November 7, 2017). In addition, the Regional Administration for Sanitation and Control of Pollutions and Nuisances admit that *“every day, we receive complaints around air pollution, problems of waste...”* (Interview, DRACPN, October 31, 2017).

Question 8 : What is the new use of this space?

The overwhelming majority of the respondents assert that these spaces were transformed into the housing (188 out of 253), followed by business (47), other (14) and industry 04.

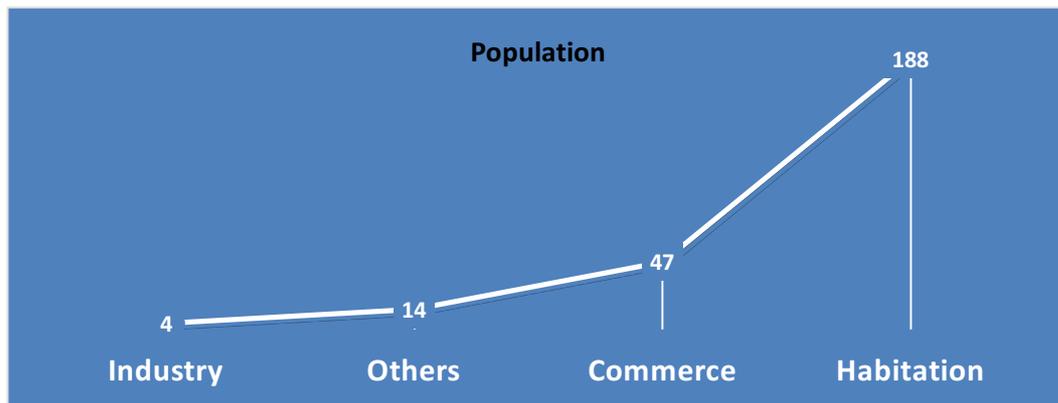


Figure 6 : New use of public facilities spaces

The partition by Commune indicates change for habitation is high in all of 32 Neighborhoods. However, the difference gets narrower in Commune-VI with 33 places for habitation and 28 for commerce.

Table 4 : New use of public facilities per Commune from population opinions

		Current private land-use type of public facilities planned spaces				
		Habitation	Commerce	Industry	Others	Total
Commune	Commune I	47	2	0	1	50
	Commune II	33	8	0	1	42
	Commune III	22	0	4	1	27
	Commune IV	7	1	0	1	9
	Commune V	46	8	0	5	59
	Commune VI	33	28	0	5	66
	Total	188	47	4	14	253

For the CDQ members' opinions, 22 out of 24 were converted to habitation, 01 for commerce, and 01 for other use.

Question 9 : Do these changes of use affect the well-being of the populations?

About 75.1 % of the respondents are aware of the case of change of use of the public places in the already urbanized neighborhoods and they believe that it affects the well-being of the local residents. This feeling is higher among respondents in Commune V (50 out of 59). Unlike the words of the DRUH and the GDB of Bamako who assert the respect by the administration of the use for the change of use that is the strict observance of the public utility (sports ground for school or green space for sports field for example) to their views point.

22 (95.7%) out of 23 CDQ who knew of a case of change of use, say that it affects negatively the well-being of the populations against 01 (4.3%) who did not see a negative impact in it. This result shows that the change of purpose of public places represents a fundamental issue of the urban planning in Bamako District.

Question 10: If yes, how the populations reacted to these change?

Table 5 : The way of reaction of the people against the occupation of their collective spaces

If yes, how the populations reacted to these change?	Population		CDQ	
	Frequency	%	Frequency	%
Popular contesting	160	84.2	22	95.7
Resort to the traditional authorities	14	7.4	1	4.3
Administrative appeal	12	6.3	-	-
Judicial appeal	3	1.6	-	-
Other	1	0.5	-	-
Total	190	100.	23	100

84.2% of the interviewed people with information on cases of use changes say that the changes have led to popular protests. This is contrary to 7.4% of the respondent who argue that the traditional authorities, 6.3% of administrative appeal, 1.6% judicial appeal and 0.5% other means of solving. In the view of the CDQ, respondents in the 24 cases, so 95.7% reacted by means of popular protests against 4.3% by resort to traditional authorities. However, the views appear at odds with the words of the DRUH that urban planning is still suspended for the decisions of justice on enforcement against offenders or occupiers of spaces and public domains.

Indeed, the recourse to popular protest is the most chosen way in all the Communes of Bamako District, except Commune IV where 2 out of 4 have recourse to the administrative appeal. The frequent recourse to popular protests (84.2%) leads to violence that represents a real threat to stability and social peace in Bamako. Some policies and technicians' opinion confirm this analysis. For instance, the security and social cohesion are threatened by conflicts around the land-(Ministère de l'Urbanisme, 2017).

Question 11 : For you who is responsible for these changes of uses?

Table 6 : The person considered responsible for utilities use change

For you who is responsible for these changes of vocations (use)?	Population		CDQ	
	Frequency	%	Frequency	%
Mayors of Communes	158	83.2	20	90.90
Mayor of Bamako District	16	8.4	-	-
Regional Direction of Urban planning and Habitat	5	2.6	1	4.54
Regional Direction of Town and Country Planning	4	2.1	-	-
Citizens(population)	1	0.5	-	-
Services des Domain	4	2.1	-	-
Bamako District Governorate	2	1.1	1	4.54
Total	190	100	22	100

Among the respondents, 174 people out of 190 citizens expressed their opinion on this question thinking that the Mayors (Mayor of Commune and Mayor of the Bamako District) are responsible for these use changes. Then, followed by the Regional Direction of urban planning and the Habitat (5), the services of Domains (4), the Regional Direction of the Plan and Town and Country Planning (4), and the

Citizen/population (1) who are all blamed in taking the responsibility of the changes.

20 out of 22 leaders of CDQ judged that the Mayors of Commune (District excludes) are the most responsible for these changes, these anti-planning actions, against 1 respectively for Bamako District Governorate and Regional Direction of Urban planning and Habitat.

The information gathered through the interviews confirms and give more details on this phenomenon. For instance, to CT/MATP,

“The problem, it is the irresponsibility of the State. The rural concessions are transformed into a zone of the house there without as the SDU plans it as such. 2nd aspect, villages around Bamako through the tenure system, split. That is the foundation of the spontaneous neighborhoods. The first consequence is the ruralized city. The 2nd consequence is the transformation of the populations in farm laborers’ or jobless. 3rd is the exacerbation of the speculation in the land [...]. In already urbanized neighborhoods, the changes of vocation consist of the transformation of all the land planned for community facilities in housing. The changes of use are a common currency in Bamako. They are illicit actions of the Mayors and lack of follow-up of the State.” (Interview, MATP, November 10, 2017)

The respondent of Commune-IV City Hall acknowledges in answering the following question. What do you answer to people who think that the failure of the effectiveness of urban planning tools in Bamako is attributable to the Mayors? He said *“Everyone has his share-in it”* (Interview, MC-IV, December 2, 2017)

To GDB,

“Difficulties exist, because the Mayors do not use them as a tool. Once the PUS is developed, generally, it sleeps in drawers. Generally, on paper everything is OK but it is the realization which causes a problem” (Interview, GDB, October 26, 2017)

It is necessary to specify here that the rural concessions, according to law, have the agricultural purpose. It is granted by the representatives of the State who are the authorities of allocation. However, the substantive law forbids the allocation of rural concessions in the District of Bamako. But in reality, in the urbanization perimeter of Bamako, these rural concessions are granted with real vocation of housing for the beneficiary.

Besides, the SDU of 2015 draft report states that the absence of final discharge in the District of Bamako creates an unsafe situation and a very difficult problem in the channel of waste collection. Farms and careers are used as final discharge. Such practice poses serious environmental and sanitation problems (Groupement de Bureaux d’Etudes « La Soudanaise-Sigiyorodia », 2015).

This last point shows the crisis of space for utilities, especially sanitation. That has a negative impact on living conditions of the populations. These actions contribute to the deterioration of the living environment. We are gradually seeing the demolition of the city with the daily removal of spaces reserved for public utilities. The worst is that these public utilities are mostly classified as such by decree adopted by Ministers’ Council since 2002 for their preservation (Présidence de la République, 2002).

The change of use of spaces reserved for public infrastructures and equipment in

already urbanized tissue is transforming these Neighborhoods' from habitats to housings in Bamako District. This result is in line with some recent researches outcomes. Studying the case of Kaduna(Nigeria), Dyachia, Permana, Ho, Baba, and Agboola (2017) find out that the concept of land use planning has been reduced to “land subdivision” and control by illegal multiple organs. The lack of coordination and proper monitoring of growth have affected the infrastructure base of the city. This raises conflicts. To Gonçalves and Ferreira (2015) the frequent processes of partial or total suspension, amendment, and revision of spatial plans only serve to destroy their coherence, contribute to their inefficiency and heighten the tensions between stakeholders.

5. Section five: The Bamako dwellers are not satisfied with the impact of the physical results of urban planning on the improvement of their living environment.

Neither the populations nor the CDQ is satisfied with the existence of spaces for the realization of community facilities in their neighborhoods (Figure7). The local elected representatives' space management behavior is not satisfactory. The majority of respondents believe that State's domain and land management in Bamako is not sustainable (Figure 8).

Question 12 : Are you satisfied with the level of equipment and availability of space for the realization of the basic social services (school, sports, health, deposit of transit, final landfill for wastewater, gutter, collector, and place of worship) in your neighborhood?

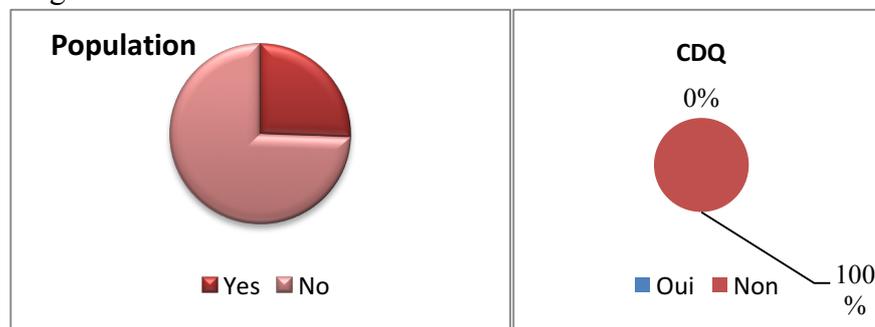


Figure7 : Dissatisfaction of the populations of the level of equipment and the availability of space for the realization of basic social services in their neighborhoods

Based on the data analyzed, 74, 5% (481 out of 646) of the people are not satisfied with the level of equipment and by the existence of space for the realization of their basic social services. Here, it is not even about the functioning of these services but rather about the existence of space to make it. The level of dissatisfaction is higher in Commune-III with 55 dissatisfied people out of 58 or 94, 8% (while 3 only of satisfied) followed by the Commune-VI (98 out of 120 or 81, 6 %), Commune-V (75, 2%) and Commune-IV (72, 8%). Conversely, the Commune-I has the highest level of satisfaction compared with the other Communes (42, 7% of satisfied against 57, 2% of dissatisfied). As regards the CDQ members, 100% of them are not satisfied.

The opinions of citizens and CDQ leaders are comforted by the results of the interviews on this precise point. The only word of the DRACPN on the absence of

space for the realization of the centers of purges contains all the precariousness on the subject and consolidating solidly the opinions of the populations. He asserts that,

“With the African Development Bank (BAD) the financing was acquired for two projects (Power plant of a purge of muds of draining) but until now no space. An NGO had come with money to build sewage treatment plant but no site has been found. In 2014-2015, we were confronted with a problem of the bridge of draining no site was found. There is no m². There is no deposit of transit in Bamako. In Commune-I, there are only savage deposits of transit. In Commune-II, there is a single deposit of transit, CFP. In Commune-VI the transit deposit of Djanéguéla was lost. In Commune-V, a center of transfer exists but not functional [...]. A deposit of transit is inside the Cemetery in Yirimadio. One is inside the Market in Niamakoro. Commune-IV 02 (01 in Lafiabougou and 01 called Luxembourg); Commune-V, 01 in Baco-Djicoroni. Commune-VI, there were 02 (01 in Sénou and 01 in Yirimadjo). For Sénou somebody surrounded it. Also, the SDU planned four finale discharges in Bamako but only one was found to Noumoubougou [35 km outside Bamako].” (Interview, DRACPN, October 31, 2017)

This last point proves enough the insecurity in which community facilities are subjected in Bamako District in spite of a very protective legal framework. The report of the project of SDU made noted that the absence of final discharge in the District of Bamako creates an insalubrity situation and a very thorny problem in the channel of waste collection, the farms and careers are used as final discharge and such practice poses serious problems of sanitation and environmental (Groupement de Bureaux d’Etudes « La Soudanaise-Sigiyorodia », 2015). In fact, a recent study showed that even that is a classifying by Decree of the President of the Republic, it has failed to preserve these public spaces (Samba & Mamy, 2016). However, recently, the [Ministries Council](#) has taken a decree to declare public interest the work of construction of one purification dump in Missabougou (Commune-VI). This also is beside the planning. The decree mentions it clearly that the space of an area 25 hectares 89 ares 41 centiares concerns partly private farmland to be expropriated.

Besides, a recent study pointed out the sanitation equipment issue in Bamako District. To the authors, sanitation is one of the major difficulties faced by the city. In addition to insufficient sanitation facilities and equipment, Bamako does not have a faecal sludge treatment plant (M’ BAYE, CISSÉ, BARA, & KITANE, 2016).

Question 13 : What is your assessment of the management of your space by your elected representatives?

Table 8: Populations' opinions on the management of their space by their elected representatives

What is your assessment on the management of your space by your elected representatives?									
Answer per Actor		Results par Commune						Total	
		C-I	C-II	C-III	C-IV	C-V	C-VI		
		Frequency	Frequency	Frequency	Frequency	Frequency	Frequency	Frequency	%
Populations	Very satisfied	1	7	-	9	3	8	28	4
	Satisfied	90	40	26	68	73	57	354	55
	Not at all	12	33	32	30	102	55	264	41
	Total	103	80	58	107	178	120	646	100
CDQ	Very satisfied	-	-	-	-	-	2	2	6
	Satisfied	5	3	0	1	3	0	12	38
	Not at all	0	1	3	4	5	5	18	56
	satisfied Total	5	4	3	5	8	7	32	100

A total number of 264 (41%) of respondents out of 646 subjects are not satisfied with their elected officials' behavior in managing local spaces in their Commune, while 382 of the subjects show their satisfaction (very satisfied and satisfied). This may seem inconsistent with the previous opinions. However, a crossed-reading of the various results (awareness of planning tools) allows to moderate this point because a system of land management is measured through the respect for urban planning tools about which 78,3 % ignore the existence (SDU and PUS). We can take an illustrative example of the insecurity of green spaces.

The project of the master plan of Bamako of 2015, not yet approved, diagnosis indicates that the situation of the green spaces is insecure. Indeed, during the period 1998 to 2003, the green spaces were the object of intense change of vocation. For example, in Commune-I **02 green spaces out of 04** changed use, in Commune-III **2 out of 03**, in Commune-IV **03 out of 08**, in Commune-V **06 out of 11**, and in Commune-VI **04 out of 15** and this only **in 07 years** (Groupement de Bureaux d'Etudes, 2015).

On the other hand, 18 out of 32 (56%) CDQ members are at all not satisfied by the management of the space of their Commune, against, respectively, 12 of satisfied and 2 of very satisfied. In addition, the views of State's experts support this result of unsatisfactory local spaces management. Thus, to GDB "The *land issues have a negative impact on the implementation of the planning documents in Bamako District*" (Interview, Bamako District Governorate, October 26, 2017). To DNAT1, "In all cases, the urban planning tools are not respected, the impression is that planning tools are not enforceable" (Interview, DNAT, November 2017)

This diagnosis shows warning sustainability signal in Bamako District's land management system. Moreover, some scientific results find an important connection

between green spaces quantity in living environment and wellbeing of inhabitants(Ward Thompson et al., 2012). In addition, urban green space offers a wide variety of ecosystem services that could help fight many urban ills and increase life for city residents(Wolch, Byrne, & Newell, 2014).

With regard to Bamako District, it is evident, now, that the public facilities spaces which are changing to housing were judged necessary for the functioning of the city and the wellbeing of surrounding populations during planning and even implementation phases. And hence, the change later in their use creates failure in planning goal achievement and impact negatively residents' daily life in concerned Neighborhoods. In fact, utilities are vital in city meaning and urban sustainable management. Especially, green spaces are crucial, as C. Wang, Wang, Wang, and Zheng (2018) acknowledged the ecosystem services are indispensable for human well-being but are severely affected as a result of Land Use/Cover Change(LUCC).

Question 14 : According to you, does the current domain and land management system of Bamako District leads to a sustainable development?

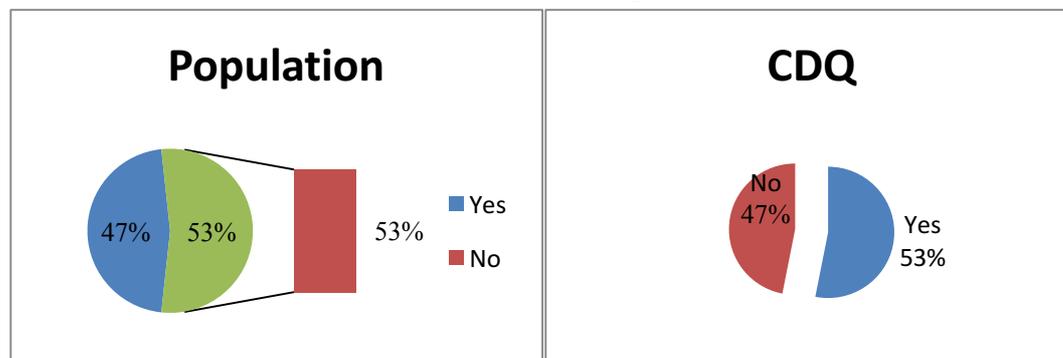


Figure 8: Appreciation of Bamako District residents on the durability of the Domain and land management system in their city

From the analysis, about 53, 4% of the respondents of Bamako consider that the domain and land management of the District are not sustainable. That is in line with the overall result that is the failure to respect planning tools which affects sustainable development in the District. However, 47% (15) of CDQ members think that land management system in Bamako District is not sustainable, while 53% (17) indicate the opposite perception. On this issue, the opinions of interviewed technicians help more in appreciating the situation.

On this issue, the opinions of interviewed technicians are sharper, hence helping to more precise the perceptions' indications in the presence of difference of between population's and CDQs' opinions. For instance, to the Regional Direction for Water and Forest of Bamako District, "It is not the case [sustainable development]. Mayors are fighting to split the green spaces we cannot talk about sustainability there" (Interview, DREF, November 14, 2017). DNAT1 gave another understanding of this fact, hopeless one, to him,

"The planning is not Malian. It is can be bound up with our society. We do not make maximum efforts for the elaboration of planning tools and if they exist, we do not benefit from them. People must know that we do not develop randomly even

when it is thought we often result in undesirable situations for more so than if it is thoughtless.” (Interview, DNAT, November 07, 2017)

IGM think, that “sustainable, none” (Interview, November 1st , 2017). GDB said that “Without planning tools, it cannot have territorial development”. The recent law on the domain and land policy clearly alerted on difficulties of development posed from disregard to planning tools by the operational actors (Ministère de l’Urbanisme, 2017). The view of MC-IV is a good concluding point here. In answering the question: is the current management system of the space in Bamako District sustainable? He said: “the current management of the space in the District of Bamako is not even mastered fortiori talk about durability” (Interview, MC-IV, December 2, 2017)

To sum up, at this point, the populations are not satisfied with the impact of the physical results of urban planning on the improvement of their living environment. A simplistic arithmetic allows understanding the disturbing trend of changes in the use of spaces reserved for populations’ basic social services in lots of residential tenancies.

The trend is read in the following logic. A specialist, of experience, highly positioned in the administrative superstructure said with a lot of bitterness that the balance of the land subdivision (land development) is 58 % for house and 42 % for equipment, in Mali, against 32 % for house and the rest for equipment, in China (Interview, MATP, November 10, 2017). The diagnosis of a recent policy noticed that in the realized land subdivision areas, 87 % are housing against 13 % for infrastructures (Ministère de l’Urbanisme et de la Politique de la Ville, 2014). The same diagnosis showed that 30 % of the collective spaces in the already developed area have changed use in Bamako District. A researcher using GIS for geo-referencing public facilities in Bamako District found that 10 to 50 % of the public facilities of Bamako have already changed vocation despite their explicit classification by decree taken in Ministers’ Council (Samba & Mamy, 2016).

This analysis shows at which threshold the life is threatened in the city Bamako. Because of each change of use nibbles on the 13 % dedicated to public facilities. Recently, the mass media and some activist have reported the change of one public space reserved for the police station to private use by one provincial Official for her daughter.

The main lesson learned from our results which is the failure of urban planning tools to guide operational urban planning actions that is consistent with several research results in the field we accessed. For instance, M. Wang, Krstikj, and Koura (2017) find that the planning is not currently effective in guiding urban development in China. Attahi et al. (2009) discover that one of the essential features of urban development in Sub-Saharan Francophone Africa is the absence of matching between provisional urban planning documents and operational urban planning documents.

The urban planning is huge concern, particularly for public facilities availability in Africa. To NJOH* currently, the infrastructure in urban areas in francophone Africa is encumbered to a point which many now acknowledge creates a crisis (2004). Dyachia et al. (2017) suggested a failure to synchronize between the land use plan and development that has shaped an extensive defy for Kaduna city. Finally, Tzoulas et al

argued the reason of citizens' dissatisfaction on uncoordinated urban growth, like we find in Bamako. The authors conclude that "Urban growth, by altering cities and the surrounding countryside, presents numerous challenges for the maintenance of urban green space, and consequently also for human health and well-being" (2007) .

Conclusion

Looking at the above discussion, the implementation of planning from 1981 to the present day time has failed to drive urban development. Bamako has become a strange city with utilities in danger. The SDU does not exist anymore since 2015. The PUS and the SDU are in operations of urban planning in the city. This leads to piloting at the sight , by contrast, evaluating of the degree of planning effectiveness required to which it influences decision making and finally growth shapes (Feitelson, Felsenstein, Razin, & Stern, 2017)

The study shows that the respondents are not satisfied with the impact of the physical results of urban planning on the improvement of their living environment. A simple statistics allows understanding the disturbing trend of changes in the use of spaces reserved for populations' basic social services in lots of residential tenancies. The sacred spaces are used for the benefit of individual interests.

This analysis shows at which threshold the life is threatened in the city Bamako. It shows the reality is the current trend of the demolition of the city in Bamako District, with the selling off and the construction of spaces reserved to community facilities. Bamako is at present a bottle of stuffing if nothing is done to address the situation, the city might become hazardous to live in. Unfortunately, this situation is not unique to Bamako but to all the cities of Mali. The reports of the National Technical Committee of Evaluation (CENT-SDU/PUS) of various cities', inside of country, Master plan revealed the same observations as we had seen in the District of Bamako. For example, it is clearly established that the majority of the populations of the perimeters of urbanization of the SDU evaluated ignore the SDU and very often did not even hear of these plans (Ministère de l'Aménagement du territoire et de la Population, 2017; Ministère de l'Aménagement du territoire et de la Population, 2017a, 2017b).

In trying to redress the situation, two significant legislations were taken this year to strengthen the legal weight of planning tools and reaffirm the need to respect the initial use of spaces in the operation of urban planning as discussed above (Ministère de l'Urbanisme, 2017; Présidence de la République, 2017). The SDU and PUS are supposed to be the legal bases and the justifications of these operations. Therefore the authorities in charge have to enforce the existing legislation.

The findings also show the failure of urban planning tools to guide operational urban planning actions. This is in line with Arimah (2017) on urban areas in many African countries where growing of cities becomes problem because of the insufficient provision of infrastructure and ineffective urban planning.

Therefore, the urban planning orientation tools implementation in Bamako District are in an embarrassing situation. We found the unexpected features that the

SDU and PUS are not implementing in Bamako District to guide operational urban planning decisions in 2015, the city does not have any valid urban planning orientation document.

However, in our current study, we were not able to go into the uncertainties and difficulties compromising planning efforts in Bamako and leading to the city current unsustainably physical land use pattern. Meanwhile, these results have important scholar values in terms of getting awareness on urban planning ineffectiveness in world fastest growing cities in developing countries where data are rare and literature very limited. They have also development value in indicating to decision makers the urgent current need of action in urban planning crisis leading in Bamako District.

Further research and suggestion

There is need for research on how to make decentralized authorities planning sensitive in Mali. The focus should put in understanding clearly the uncertainty factors linked to local officials in achieving planning goals.

Acknowledgements

We are very grateful to Mr. Mamadou Mohamd Fofana, Consultant, ACEF-Afrique, whom without their help this research might have been done. We are also very grateful to our research assistants: Adama Sogoba, Tiekoro Doumbia, Fati Ba, Aguibou Doumbia, Abdoulaye Tembely and Ballamoussa Diallo. They helped us to administrate questionnaires in very difficult condition. Also thanks go to Makoro Camara and Aminata Diakite Oumou who helped in the statistical analysis of the data collected.

Reference

- Arimah, B. (2017). Infrastructure as a Catalyst for the Prosperity of African Cities. *Procedia Engineering*, 198, 245-266. doi:10.1016/j.proeng.2017.07.159
- Attahi, K., Hinin-Moustapha, D., & Appessika, K. (2009). Revisiting urban planning in the Sub-Saharan francophone Africa. *Revisiting Urban Planning: Global Report on Human Settlements*.
- Ariti, A. T., van Vliet, J., & Verburg, P. H. (2018). Farmers' participation in the development of land use policies for the Central Rift Valley of Ethiopia. *Land Use Policy*, 71, 129–137. <https://doi.org/10.1016/j.landusepol.2017.11.051>
- Baribeau, C., & Royer, C. (2012). L'entretien individuel en recherche qualitative : usages et modes de présentation dans la Revue des sciences de l'éducation. *Revue des sciences de l'éducation*, 38(1), 23. doi:10.7202/1016748ar
- Burby, R. J., & Okun, D. A. (1983). Land use planning and health. *Annual review of public health*, 4(1), 47-67.
- Cortinovis, C., & Geneletti, D. (2018). Ecosystem services in urban plans: What is there, and what is still needed for better decisions. *Land use policy*, 70, 298-312. doi:10.1016/j.landusepol.2017.10.017
- Dyachia, Z. S., Permana, A. S., Ho, C. S., Baba, A. N., & Agboola, O. P. (2017). Implications of Present Land Use Plan on Urban Growth and Environmental Sustainability in a Sub Saharan Africa City. *International Journal of Built Environment and Sustainability*, 4(2).
- Feitelson, E., Felsenstein, D., Razin, E., & Stern, E. (2017). Assessing land use plan implementation: Bridging the performance-conformance divide. *Land use policy*, 61, 251-264. doi:10.1016/j.landusepol.2016.11.017
- Fu, Q. (2018). Bringing urban governance back in: Neighborhood conflicts and depression. *Soc Sci Med*, 196, 1-9. doi:10.1016/j.socscimed.2017.10.035
- Frank, A. W. (2017). An illness of one's own: Memoir as art form and research as witness. *Cogent Arts & Humanities*, 16. <https://doi.org/10.1080/23311983.2017.1343654>
- Gonçalves, J., & Ferreira, J. A. (2015). The planning of strategy: A contribution to the improvement of spatial planning. *Land use policy*, 45, 86-94. doi:10.1016/j.landusepol.2015.01.020
- Groupement de Bureaux d'Etudes « La Soudanaise-Sigiyorodia ». (2015). Schéma Directeur d'Urbanisme de la ville de Bamako et environs.
- Kagan, S., Hauerwaas, A., Holz, V., & Wedler, P. (2017). Culture in sustainable urban development: Practices and policies for spaces of possibility and institutional innovations. *City, Culture and Society*. doi:10.1016/j.ccs.2017.09.005
- Kleemann, J., Inkoom, J. N., Thiel, M., Shankar, S., Lautenbach, S., & Fürst, C. (2017). Peri-urban land use pattern and its relation to land use planning in Ghana, West Africa. *Landscape and Urban Planning*, 165, 280-294. doi:10.1016/j.landurbplan.2017.02.004
- Lu, X.-h., & Ke, S.-g. (2017). Evaluating the effectiveness of sustainable urban land use in China from the perspective of sustainable urbanization. *Habitat International*. doi:10.1016/j.habitatint.2017.10.007
- M'BAÏE, E. H., CISSÉ, B., BARA, S., & KITANE, S. (2016). *Bamako Sanitation Project: Environmental and Social Impact Assessment Summary*. Retrieved from
- Ministère de l'Aménagement du territoire et de la Population. (2017). *Rapport d'évaluation du Schéma Directeur d'Aménagement et d'Urbanisme de la ville de Zégoua et environs*.
- Ministère de l'Aménagement du territoire et de la Population. (2017a). *Rapport d'évaluation du*

- Schéma Directeur d'Aménagement et d'Urbanisme de la ville de Konlondiéba et environs.*
Ministère de l'Aménagement du territoire et de la Population. (2017b). *Rapport d'évaluation du Schéma Directeur d'Aménagement et d'Urbanisme de la ville de Yélimané et environs.*
Ministère de l'Urbanisme, de l'Habitat et des A. F. Document de Politique Nationale Domaniale et Foncière (2017). Mali.
- Ministère de l'Urbanisme et de la Politique de la Ville. (2014). *Politique Nationale de la Ville.*
- Murayama, Y., Estoque, R. C., Subasinghe, S., Hou, H., & Gong, H. (2015). Land-use/land-cover changes in major Asian and African cities. *Annual report on the multi-use social and economy data bank*, 92.
- NJOH*, A. J. (2004). The experience and legacy of French colonial urban planning in sub-Saharan Africa. *Planning Perspectives*, 19(4), 435-454.
- Padeira, M. (2016). Conformance in land-use planning: The determinants of decision, conversion and transgression. *Land use policy*, 55, 285-299. doi:10.1016/j.landusepol.2016.04.014
- Parnell, S. (2016). Defining a Global Urban Development Agenda. *World Development*, 78, 529-540. doi:10.1016/j.worlddev.2015.10.028
- Persson, C. (2013). Deliberation or doctrine? Land use and spatial planning for sustainable development in Sweden. *Land use policy*, 34, 301-313. doi:10.1016/j.landusepol.2013.04.007
- Présidence de la République. Décret portant classement des équipements collectifs du District de Bamako et leurs emprises dans le domaine public immobilier de l'Etat (2002). Mali. Présidence de la République. Portant loi d'Orientation pour l'Aménagement du Territoire (2017). Mali.
- Samba, D., & Mamy, D. S. (2016). L'APPORT DU SIG DANS LA GESTION DES ESPACES PUBLICS DU DISTRICT DE BAMAKO. *SYLLABUS N, NUMERO SPECIAL VOL VII N° 1*, 173 - 189.
- Satterthwaite, D. (2017). The impact of urban development on risk in sub-Saharan Africa's cities with a focus on small and intermediate urban centres. *International Journal of Disaster Risk Reduction*, 26, 16-23. doi:10.1016/j.ijdrr.2017.09.025
- Sundaesan, J. (2017). Urban planning in vernacular governance: Land use planning and violations in Bangalore, India. *Progress in Planning*. doi:10.1016/j.progress.2017.10.001
- Tran, H., Nguyen, Q., & Kervyn, M. (2018). Factors influencing people's knowledge, attitude, and practice in land use dynamics: A case study in Ca Mau province in the Mekong delta, Vietnam. *Land use policy*, 72, 227-238. doi:10.1016/j.landusepol.2017.12.009
- Tzoulas, K., Korpela, K., Venn, S., Yli-Pelkonen, V., Kaźmierczak, A., Niemela, J., & James, P. (2007). Promoting ecosystem and human health in urban areas using Green Infrastructure: A literature review. *Landscape and Urban Planning*, 81(3), 167-178. doi:10.1016/j.landurbplan.2007.02.001
- Wang, B., Tian, L., & Yao, Z. (2018). Institutional uncertainty, fragmented urbanization and spatial lock-in of the peri-urban area of China: A case of industrial land redevelopment in Panyu. *Land use policy*, 72, 241-249. doi:10.1016/j.landusepol.2017.12.054
- Wang, C., Wang, Y., Wang, R., & Zheng, P. (2018). Modeling and evaluating land-use/land-cover change for urban planning and sustainability: A case study of Dongying city, China. *Journal of Cleaner Production*, 172, 1529-1534. doi:10.1016/j.jclepro.2017.10.294
- Wang, M., Krstikj, A., & Koura, H. (2017). Effects of urban planning on urban expansion control in Yinchuan City, Western China. *Habitat International*, 64, 85-97. doi:10.1016/j.habitatint.2017.04.008

- Ward Thompson, C., Roe, J., Aspinall, P., Mitchell, R., Clow, A., & Miller, D. (2012). More green space is linked to less stress in deprived communities: Evidence from salivary cortisol patterns. *Landscape and Urban Planning, 105*(3), 221-229. doi:10.1016/j.landurbplan.2011.12.015
- Wolch, J. R., Byrne, J., & Newell, J. P. (2014). Urban green space, public health, and environmental justice: The challenge of making cities 'just green enough'. *Landscape and Urban Planning, 125*, 234-244. doi:10.1016/j.landurbplan.2014.01.017