Land-use planning Implementation Uncertainty in Bamako District

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ABSTRACT

The goal of this research was to understand the driving forces and agents that prevent the effective application of land-use policies through plan implementation, in the fastest growing city in Africa, Bamako District. The current results yield from the field work done in November and December of 2017. The survey was done at three levels, including interviews with official actors, and questionnaires sent to with citizens and the neighborhood leaders and neighborhood development Committees (Comité de Développement de Quartier: CDQ). In total, 746 questionnaires were distributed to citizens, 32 questionnaires were distributed to Neighborhood Development Committees (CDQ), and 11 interviews were conducted with public officials across the 32 Neighborhoods in the six Communes of Bamako District.

We discovered from our field work that (1) the main factors of uncertainty in land-use planning in Bamako District include political factor, economic factor and government actions; the six municipalities (city halls) and theirs mayors are respectively (2) the uncertain service and (3) the uncertain actor in the plans implementation process in Bamako District. Uncertain factors refer to factors that are very difficult to predict with accuracy during the planning process and that have negative impact on plan effectiveness, namely city master plans and the Bamako’s (six) sector urban land-use plans. For instance, we found that since 2015, Bamako District has not had a valid urban master plan because of political uncertainty. These result are a big concern for sustainable city development.

Our results have several implications including scientific contribution to knowledge of the keys factors and actors causing the failure of land-use policies (plans) in Bamako District, and clearly identifying actors who need to be placed in the center of actions and attention in the sustainable management of African cities. This topic has rarely been the subject of study in Africa, unless we are mistaken, thus, the third contribution is to enlighten policy makers at the regional level (African Union) and to guide actions that will help achieve the « Africa we want » in 2063 through the sustainable development of Africans' cities using global solutions to common land-use planning issues.

Keywords (Cambria 10pt bold): Land-use conflict, Land-use policy, Plans effectiveness, Uncertainty factor, Urban planning, Sustainable Urban Development

Received in: 29-10-2019
Reviewed form in: 09-12-2019
Accepted in: 09-12-2019
Published in: 30-01-2020
1. INTRODUCTION

In the 21st century, an era of globally sustainability conscientiousness, can you imagine the existence of a metropolitan area, a Capital City in fact, without an up to date Master plan? Unfortunately, this is the current case in Bamako District, the Capital City of Mali and the fastest growing city in Africa. Bamako District is the sixth fastest growing city in the world according to City Mayor(2010), and yet it has not had a valid Master Plan since 2015(Field work, 2017). The second round of Bamako District’s Master planning time frame was 1995-2015 (20 years) and because of political uncertainty a new one has not been set out. Truly, the land determines the fundamental development issues in any country (Tenure, 2004; Union, 2009) and the public policies, that determine and guide the land management process, constitute the cornerstone of land-use planning. These land policies determine sustainable development at the scale of villages, city, regional and national scale (Wei, Wei, Cao, & Li, 2016). Urban centers in most of developing countries are in a difficult situation, balancing between urban growth and rapid economic development.

Urban planning tools play a key role in anticipating rapid urbanization and harmonious future management. Land-use planning is also a key tool in regulating land resources (G. L. Xu et al., 2015). FAO, in 1999, has defined land-use planning as "the systematic assessment of land and water potential, alternative patterns of land-use and other physical, social and economic conditions, for the purpose of selecting and adopting land-use options which are most beneficial to land users without degrading the resources or the environment, together with the selection of measures most likely to encourage such land uses" (George, 2005).

In 1981, Bamako adopted its first urban master plan. From that date to current day, the implementation of the land policies, including Master plans, has failed at the implementation stage. However, at this time drafting a new master plan has not been successful because of political uncertainties. In fact, the effective implementation of land use plans is a prerequisite for sustainable urban development. Urban planning practice in Mali, utilizes three kind of plans including: a master plan for the city in whole called a « Schéma Directeur d’Urbanisme » (SDU), the sector urban land-use plans called « Plan d’Urbanisme Sectoriel » (PUS), and land development plans. SDU are valid for 20 years while the PUS are valid for 10 years. This term has been recalled by a very recent provision (Présidence de la Republique, 2017). For instance, they can be object to update plans every five years according to the evolution of the needs for development of the locality. The mayors, with regards to the District of Bamako, are responsible for the design and the implementation of the development plans of their local territories. However, “Uncertainty plagues environmental decision making”(Schropp, 2018).

Our research, trying to discover the uncertain factors driving urban policy ineffectiveness in Bamako District, is therefore, of great scientific and practical concerns. Uncertainty can be defined as the difficulty to predict with accuracy the outcome of planning during the planning process or the actors’ behavior toward plans implementation. The case of Bamako District is a big sustainability issue case, and hence, that is why decided to stress. Keynes defined uncertainty as the fact that “investment decisions are normally undertaken in situations where little if any, information is available concerning
the likelihood of future yields” (Song et al., 2015). Also, uncertainty means difficulties linked with past, present, and future fact establishing (Bellman, 1954). Some strategic planning analysts call uncertainty as “worst-case planning” (Sienkiewicz, 1979).

The goal of this research was to understand the driving forces and agent that prevent the effective application of land-use policies through the implementation of plans, in the actually fastest growing city in Africa, Bamako District. Unless mistake of our side, no research has been conducted related to uncertainty neither in Mali nor in Africa, as it appears in the literature. The overall objective of this study is to understand the uncertain factors in land-use planning implementation in Bamako District. This aim has two specific objectives, (1) identification of land-use uncertainty factors in Bamako District, identification of land-use planning ineffectiveness key influential driving (2) service, and (3) actors.

In general, our literature revealed that a little scientific interest has been given to study uncertainty in land-use planning worldwide. Therefore, our literature review was two-fold, covering land-use policies and uncertainty in land use planning.

Land-use policies and issues in Mali, were subject to several recent works. These researches focused on land sales and the transformation of social relations and landscape in peri-urban Mali (Becker, 2013), land governance in Bamako (Bertrand, 2012; Djiré, 2004; Farvacque-Vitkovic; 2007)), land-use change (Murayama, Estoque, Subasinghe, Hou, & Gong, 2015), housing policy Vaa, 2000), plans and people (Dalai-Clayton & Dent, 1993) and land policy framework (African Union, 2009).

Literature regarding uncertainty, including uncertainty in land-use planning the accessed available literature deals with the definition of uncertainty((Song, Makhija, & Kim, 2015; Schropp, 2018; (Sienkiewicz, 1979)))(Alacevich, 2014); Chin. Geogra (2017).), and uncertainty in land use planning(Wei et al, 2016;(Prato, 2007); (Shao, 2005); (L. Ricci, 2016); (Geneviève Zembri-Mary, 2017); (Wang, Tian, & Yao, 2018); (Wei et al 2016); Zhong, Mitchell, and Huang (2014); (Scholtz, 2009).

2. MATERIAL AND METHOD

2.1 Study Profile

The capital and largest city in Mali, Bamako District is located at latitude 12° 37’ North and longitude 8° 1’ West. Situated on the blanks of the Niger River. Bamako has a set of six autonomous Communes.
Bamako is the seventh largest urban center in West Africa after Lagos, Abidjan, Kano, Ibadan, Dakar, and Accra. The area of the city is 267 km² (Ministere de l'Habitat et de l'Urbanisme, 2015), with a population of Bamako City was 2,04 million in 2011, and an annual population growth rate of about 5,4%. In 2009, the population density of Bamako was 7,184 inhabitants/km² (Murayama et al., 2015).

2.2 Research Method
The collection of primary hand data used two types of tools, including interview guides and questionnaires. Interview guides were intended for officials at ministerial departments as well as State’s central services and decentralized technical services of the State in the Bamako District, all of which were involved in land use planning and urban management. Interview guides were also distributed to the Mayors of Bamako and its 06 Communes. Questionnaires were intended for populations and their Quarter (Neighborhood) Development Committees (CDQ). Through the help of a specialist in statistics and surveys in Mali, we determined the weight of the survey for the administration of the questionnaires. The sample were derived from the General Census of Population and Habitat (RGPH) of Mali (2009). The target population was all the citizens of Bamako over 18 years of age and above. After collecting data from the interviewees, a data entry form was developed on the software Cs pro 7.0 and export toward the SPSS.

The results presented arise from the administration of 646 questionnaires to the populations, 32 questionnaires to the CDQ, 11 interviews. Thus, the guides of interview were administered to 01 Technical advisor (Conseiller Technique/TA) from the Ministry of the Town and Country Planning and the Population (Ministère de l’Aménagement duTerritoire et de la Population, MATP), 03 representatives from the National Direction of the Town and Country Planning (Direction Nationale de l’Aménagement du Territoire, DNAT), 01 representative from the Geographical Institute of Mali (IGM), 02 responsibles from the Regional office for Sanitation and Control of the Pollutions and Nuisances (Direction Régionale de l’Assainissement et du Controle des Pollutions et Nuisances, DRACPN), 01 responsable from the Regional office of Waters and Forests (Direction Regionale des Eaux et Forets, DREF), 01 representative from the Commune-IV (Leader of the Local Antenna of Domains and the Land registry on the instruction of the Mayor), 01 representative from Bamako District Governorate, 01 representative from Regional Service for Urban Planning and Houssing, 02 representatives of the Committee of Follow-up of the implementation of the National Policy of the City (Comité de Suivi de la Politique Nationale de la Ville, CS/PONAV).

3. RESULTS AND DISCUSSION
We discovered from the result of our research that (1) the main factors of uncertainty in land use planning in Bamako District are, namely, political factor, economic factor and governmental actions; the six Municipalities (City Halls) and theirs mayors are respectively (2) the uncertain service and (3) uncertain actor in planning.

3.1 The main Factors of Uncertainty in land-use planning in Bamako District
Survey data revealed that 43, 6% citizens asked considered politics is the first factor of uncertainty, followed by the economic factor (30,5 %) and Government actions (18,1%). The social factor, even if it is marginal with regard to these opinions (7,7%), is influential on the choice of the decisions by the politicians in Mali (cf. GDB words in succeeding paragraphs).
As for the CDQs, the majority identified the political factor (37.5%), followed by the economic factor (31.3%) and Government actions (21.9%). Here the social factor is quoted by fewer members of CDQs (9.4%) than by their populations.

Responses from interviewees, selections of which are included below, confirm the views of the surveyed populations and their CDQs.

Thus, to GDB,

“Factors can be at two levels: a thing is to plan and another one is to implement it. In brief, is needed a political willingness. It is a political factor. It is necessary the political will. It is at the level of the social factor that the rub. Someone who occupied a public place, with the social management that impacts the town and country planning. It foils the planning. It is this last factor which impacts
the town and country planning. When we request demolition is the President of the Republic himself willing to accept? Because people are going to slacken them [...] so that they [leaders] change positions [...].” (Interview, GDB, October 26, 2017)

To TA/MATP,

“The last revision of the SDU was in 1995. It was the second revision. Until now, it is the SDU [Urban Master Plan] which is effective even if its duration expired. It should be revised in 2015. In 2009 we revised it considering the development of the city. The new document was withdrawn by Council of Ministers for a number of reasons. First reason: the SDU has two areas, including, the perimeter of urbanization and the urban perimeter. The urbanization perimeter includes all the bordering Communes of Bamako, including Baguinéda. President ATT said why do not to integrate all the Communes around Bamako (Moribabougou, Sangarébougou, N’Gabicoro-Droit, Safo, Ouinzindougou, Kalaban-cor, Moutougala.). The decision was to integrate all these Communes into Bamako District. The objective was to avoid the multiplication of decision-making centers by creating a unique decentralized entity in Bamako. Something that has never been done. The six Communes [Mayors] of Bamako District and the other bordering Communes grouped together to form a pressure group for blocking this document approval in Ministers’ Council. In 2011, PUS [Sector Urban Plan] was developed for a number of Communes. It is at this level that we are. PUS of 2011 has been developed on the basis of 1995” (Interview, MATP, November 10, 2017).

To DNAT2, “The implementation is a political and not technical question » (Interview, DNAT, November 7, 2017).

To IGM,

“The economic factors: the funding is lacking. The priority actions must be financed by the State, the Territorial Collectivities, and the partners. The State does not have resources and the Territorial Collectivities also. We made forecasts but we cannot fund them.” (Interview, IGM, November 1, 2017)

It must be noted that Bamako is different from western cities where economic development drives land cover change. In Bamako, economic factors include the ability of local, territorial governments to mobilize financial resources for financing actions laid out in plans.

To DRUH,

“06 PUS were developed but none has been approved. PUS was sent to the Ministry of the Territorial Administration with the interdepartmental approval act projects but no reaction [...].The 2nd revision of 1995 was introduced in Ministers’ Council but with the changes of Governments, they are not until yet approved” (Interview, DRUH, October 6, 2017)

To the representative from Water and Forest Regional Administration,

“ It is necessary to give itself the political means by obliging the Mayors to put them in their PDESC[ Economic, Social and Cultural Development Plan]. The base [population] has to be capable of requiring from the Mayor to put the planned actions in PUS in their PDESC.” (Interview, DREF, November 14, 2017)

The most surprising discovery of our research is that since 2015, Bamako has not had a valid urban planning document. The Master plan (1995-2015) falls under the current regulations comply with constant principles to the validity period of 20 years. So, urban sector land-use plan are rarely developed. In cases where they are developed, the elaboration (2011) is made late with regard to the adoption of the SDU. For example, according to the repertoire of current spatial planning tools in Mali, only three PUS were developed and approved in Bamako District on the basis of the SDU of 1995(Direction Nationale de l’Amenagement du Territoire (DNAT), 2017).
3.2 The six Municipalities (Communes/City Halls) are the most Uncertain Services in Land-use Plans Effective Implementation in Bamako District

Question 1: Which service is the most responsible of the non-effectiveness of urban planning?

79.4% of the interviewees think that the Town Hall is the most responsible for the non-application of the plans, versus 9% for service of Domain, 7.7% for service of urban planning, 2.9% for the Central State, 0.8% for economic operators and other (0.2%).

<table>
<thead>
<tr>
<th>Table 1: The most uncertain service in land-use planning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Service most responsible for the non-effectiveness of urban planning</td>
</tr>
<tr>
<td>Response by category of respondent</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Mayors' Office</td>
</tr>
<tr>
<td>Service of Urban planning</td>
</tr>
<tr>
<td>Service of Domain</td>
</tr>
<tr>
<td>Economic Operator</td>
</tr>
<tr>
<td>Central State</td>
</tr>
<tr>
<td>Other</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>

**Source:** Author’s Field Survey, 2017

The ratios indicating the Mayor’s Office are higher in Commune-IV (101 out of 107), Commune-V (140 out of 178) and Commune-VI (103 out of 120). And 62.5% of the questioned CDQ members think that the Mayors’ Office is the most uncertain actor in planning, versus 12.5% for the central State, 12.5% for the service of urban planning, 9.4% for service of Domains and 3.1% for the economic operators. However, the Mayor’s Office is the most accused in all the Communes except the Commune-VI with 4 out of 5 which find the Central State responsible.

3.3. The Mayors are Key Uncertain Agents in Land-use planning in Bamako District

Question 2: Which is the most uncertain actor in land-use planning?

The Mayor is the actor the most indexed by the population, 540 out of 646 (83.6%), as the person the most uncertain actor in land-use planning. He is followed by the agents of Local Antenna for urban planning, 52 opinions (8%), the agents of Domain and the Land registry Local Antenna, 38 (5.9%), the agents of the Regional Direction for Urban Planning and the Housing, 9 (1.4%), the economic operators, 4 (0.6%), the Regional Direction of Domains and the Land Registry agents, 3 (0.5%). The CDQ as for them indexed the Mayor, 26 out of 32 interviewed (81.3%), the agents of Domains and Land Registry Local Antenna of 5 views (15.6%), and agent of Urban Planning Local Antenna of 01 view (3.1%).
Table 2: The most uncertain person in land-use planning in Bamako District

<table>
<thead>
<tr>
<th>Answer by category of respondent</th>
<th>Population</th>
<th>CDQ</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>%</td>
</tr>
<tr>
<td>Mayor</td>
<td>540</td>
<td>83.6</td>
</tr>
<tr>
<td>Agent of Urban planning Communal Antenna</td>
<td>52</td>
<td>8.0</td>
</tr>
<tr>
<td>Agent of Domain Communal Antenna</td>
<td>38</td>
<td>5.9</td>
</tr>
<tr>
<td>Agent Regional Direction of Urban Planning</td>
<td>9</td>
<td>1.4</td>
</tr>
<tr>
<td>Agent of Regional Direction of Domain</td>
<td>3</td>
<td>.5</td>
</tr>
<tr>
<td>Economic Operator</td>
<td>4</td>
<td>.6</td>
</tr>
<tr>
<td>Total</td>
<td>646</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Source: Author’s Field Survey, 2017

To conclude, the political factor represents the major uncertainty which prevents the effective implementation of plans (SDU) and sector urban land-use plan (PUS) in Bamako District. This phenomenon has several characteristics including central planned, local diverted; policies orienteered (Padeiro, 2016), self-interest piloted (Durand-Lasserre et al., 2013). Our outcome here is in line with some previous studies like Attahi et al. (2009), who found that since the advent of democracy and its local counterpart, decentralization, people have become more demanding of their locally elected officials, whom they accuse of not initiating local development plans based on a vision for the town. Alternatively, Kleemann et al.'s (2017) results showed that Governmental decentralization was contested as a challenge of land-use planning by the experts and literature. Furthermore, Satterthwaite (2017) argues that sub-Saharan Africa is mainly facing rapid urban growth issues in the context of a failure of existing urban governance structures to meet their responsibilities and manage the change. Also, Padeiro (2016) found that the political orientations of local governments significantly influence land-use evolution. Finally, well-established researcher concerning planning uncertainty in Africa stated that, “Where informal, extra-legal land occupation and use is the norm, the inconsistencies between planning and land laws conspire to create an endless cycle of uncertainty, allowing the different government bodies responsible for each one's implementation to operate in isolation from each other, mutually negating each one's effectiveness and doubling the difficulties of people who might want to operate according to the law.” (Stephen Berrisford, 2011)

In sum, the economic, social and political circumstances that exist at definite historical moments direct the facts that shapes planning results (Cash, 2016). The interpretation of these situations is done in following paragraphs. For instance, the local leaders in charge of policy implementation make them imprecise and sluggish. As stated by J. Xu et al. (2009) the “ungovernable spatial development is not a result of complications in land development, but a consequence of the ineffectiveness of state regulation. The majority of world countries have rules and regulations although they are not adequate, however, their implementation by central and local authorities are not like desired” (Attahi et al., 2009).
With regard to the political environment and land, the implementation of central policies is very problematic, perhaps even absolutely impossible (J. Xu et al., 2009). The local elites formulating policies implement them poorly (Cai, Wang, & Zhang, 2016). Social connectivity negatively impacts on the land-use system in Bamako (Djiré, 2007; Durand-Lasserre et al., 2013). The behavior to policy ordinance explains more about the current land-use planning issues than a legal or political framework. This situation refers to neopatrimonialism which explains the local elites’ attitudes concerning illegal behaviors through which norms with universalistic purposes are diverted to particularistic contents and objectives (Coco, 2015). The same author argued that according to the attitude of local elites, institutions appear to stay susceptible and unprotected against neopatrimonialism inclinations. In addition, the new millennium is carrying the expectation that planners and their communities are well positioned to help to offset this self-centered unsustainable conduct (Berke, 2002). Additionally, some scholars (like Zhong et al.), relatively to local grass-roots actors behavior in land-use plan implementation process, called it “Local government’s ‘Halloween’ strategy”. To them, “There have been many ways used by local governments to bypass laws and policies regarding plan implementation rather than use the second plan [2nd round in China] as a reference for land-use decisions. The ‘Halloween’ strategy mentioned in the heading above refers to local governments’ response of ‘cheat or meet’: they would cheat the central government when their demands for land conversion were not met by misreporting” (Zhong et al., 2014).

Actually, the political, economic and Government actions uncertainty factor inhibiting land-use policy implementation in Bamako are sources of the unsustainable land-use structure of the District threatening residents lives. As example, the flooding following the torrential rain of 16 May 2019 has cost the life of 15 people in Bamako District because of anarchic constructions (unplanned) on rainwater natural road (retrieved from https://malijet.com/actualite_dans_les_regions_du_mali/227604_inondation_bamako_quinze_morts_deux_blesses_.html, 21th May 2019). Therefore, there is a crucial need of actions to save life, especially more researches on this issue are needed.

4. CONCLUSIONS

Our results revealed that the uncertainty factors influencing land-use planning in Bamako District include the political factor, the dominant one, as well as economic factor, Governmental actions, and the social factor. Along with this finding, we got more precise results about crucial issues in plans implementation in Bamako District. Town Hall (Commune), and Mayors are both uncertain service and actor in land-use planning system. This research contributes to knowledge in three aspects of innovation in the better understanding of land-use planning uncertainty factors, service and agent in Bamako District. Manifestly, these results have important scholarly values in terms of better understanding the driving forces of urban planning uncertainty in Bamako District and for thinking a global solution concrete physical urban planning in this city in a given time series framework (Ailu & Wanmin, 2016). There is a pressing need for research on how to make citizens sensitive to planning. This suggestion is in line with (Padeiro, 2016); to whom, “The education index demonstrated the capacity of people with high education levels to form groups and associations and negotiate with stakeholders” and Pandit et al. (2015) concluded that “Considering the uncertainties of the future and the associated risks, adaptive
management should form the framework of policy decision making”. Scholars and researchers in Africa (NELGA with the support of ALPC) should focus on the development of processes, method, and strategies to make citizen aware of land-use planning driving uncertainties, which would make city sustainable and life sustainable, especially in Africa to have the “Africa we want in 2063”.

5. ACKNOWLEDGMENT

I am very thankful to Kevin Brown for his insightful friendly reading of this paper.

6. REFERENCES


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7. KEY TERMS AND DEFINITIONS

District: Set of municipalities forming one city.

Master Plan: Urban improvement guiding document which provides for 20 years (in Mali) the land-use planning for a given city.

Sustainable Urban Development: Planning guiding urban management.

Uncertain: Behavior or actions impacting negatively the achievement of planning or policies goals.

Urban sector land-use plan: Detailed Land-use plan for each zone or geographical sector (municipality for Bamako District) of a city. It must serve as reference for all land development plans or land related activities by the mayors and all other actors. The respect of the urban sector land-use plan provision is compulsory by law.