



## Research article

## The governance and management of green spaces in Addis Ababa, Ethiopia

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## ABSTRACT

Despite the increase in the depletion of green spaces, studies on the governance of green space management are limited in rapidly urbanizing African cities, this study examines the application of urban park management models, governance principles, and identifies barriers related to governance processes in Addis Ababa, Ethiopia. Qualitative and quantitative research methods were employed to obtain and analyze data. In general, the study has identified poor park governance practices. However, there is a tendency towards the application of governance by local communities using the User-Centered Model whereby community green spaces are managed by urban communities. The findings suggest the need to focus on a long-term design that encompasses additional recreational areas and to establish integrated green space management. Adapting the strategic park management and park-organization-user model that incorporates three governance levels is also important. This research contributes to the emerging literature on the governance of the management models used for parks, protected areas, and community green spaces. The analysis of park management models and governance principles presented may be useful for the sustainable long-term management of green spaces in urbanizing African cities.

## 1. Introduction

Recently, there has been greater emphasis on urban greening planning and development of cities (Tan et al., 2013). Urban green spaces comprise parks, different types of active and passive recreational grounds with vegetation, street greenery, and pockets of remnant natural vegetation (Qureshi et al., 2013). Urban green spaces provide numerous benefits, also called ecosystem services, to humans that are important for sustainability, liveability, and to plan attractive cities (De Vries et al., 2003; Colding et al., 2020; Bush, 2020). The benefits include the provision of food and medicine (Blaschke et al., 2019), improving the environmental quality of life (Haq, 2011; Yeshitela, 2019), and the provision of social, health, and cultural benefits (Haq, 2011; Vujcic et al., 2019).

Urban green spaces are a green solution for the future development of urban landscapes (Darkhaniet al. 2019) because urban landscape management concerns the management of mainly green and open spaces (Jansson and Lindgren, 2012), to enhance multifunctionality in green infrastructure (Shi, 2013) and its effective management depends on the practice of good governance. In this regard, the combination of governance and management in green space can be a way to respond to current

challenges which increase pressure on sustainable green space development (Jansson et al., 2019). While the relationship between governance and management approaches has not been sufficiently described (Jansson et al., 2019), which requires developing a theoretical approach useful to the understanding and development of green space governance and management in the landscape of rapidly urbanizing African cities.

The depletion of green spaces has been increasing in urban areas of less developed countries and there is a lack of proper management of green spaces in developing countries (Darkhani et al., 2019). The driving factors that have led to the depletion of green spaces include rapid urbanization (FAO, 2018; UN-Habitat, 2008; Mensah, 2014; Mensah, 2016); lack of recognition of the urban environment as a system (Mensah, 2014); and weak institutions for urban development planning, management and limited municipal budgets (Okpala, 2009).

In Ethiopia, the urban population was about 11.9 million in the year 2007 and is expected to surge to 42.4 million in 2037 (CSA, 2012) at an annual growth rate of 3.5% (Desa, 2014). CSA carried out the last census in 2007 and estimates of the population were in 2017. Addis Ababa hosts an estimated 3,434,000 million people (CSA, 2017). By 2037, the population is expected to reach 8,939,000 (UN, 2018), with an annual urbanization rate of 8% (Un-Habitat, 2016). Rapid urbanization has

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resulted in natural resource depletion, as well as the degradation of urban green spaces (Mpofu, 2013).

The conversion of green spaces to built-up areas that led to the loss of green spaces in Addis Ababa was identified by (Horst, 2006; Fetene and Worku, 2013; AACPO 2017; Yeshitela, 2019). Studies on governance also identified issues of weak land governance; the land allocated for green areas in the master plan has been transferred to private use (Deininger et al., 2011; 2012); and lack of cooperation between sectors in the management of green spaces (AACPO, 2017).

However, literature has little discussed whether the most commonly-used management models are applied in the management of green spaces (urban parks and community green spaces) and views on governance principles held by the members of various actors (park visitors and staff). Therefore, this study is intended to contribute to bridging this gap by assessing the governance and management of green spaces. This study aims to analyze the applicability of management models and governance principles in the management of green spaces and to identify the challenges related to its governance process and management, with a focus on urban parks and community green spaces. This study addresses five research questions: (1) What are the management models applied in the management of green spaces; (2) What are the governance principles applied in the management of green spaces; (3) How actors view governance principles in the management of parks? (4) What are the challenges to the governance process and management of green spaces? And (5) What are the management and governance models applied in the management of community green spaces. This study sheds light on knowledge gaps, contributes to the existing knowledge on governance, management, and planning, and contributes to the increased understanding of planners, managers, and policymakers towards the significance of implementing management models and governance principles for the future development of green spaces.

Ministry of Urban Development and Construction (MUDC, 2015) classified green and open spaces into patches such as parks, gardens, amenity green open spaces, and corridors. The Addis Abba city plan classifies the city parks into recreational and special function parks. The recreational parks include city, sub-city, *woreda* (the smallest local administrative), and neighborhood scales, while the special function parks are meant for the conservation of wildlife habitat (AACPO, 2017). Among the types of green spaces selected are recreational parks, botanical gardens, and community (neighborhood) green spaces. A community green space in this research refers to small areas located near residential areas to provide green areas for residents and serve as the 'lung' of the city. A botanical garden is a special recreational park with rich biodiversity and a protected area in the city.

The concept of governance brings up a variety of debates and controversies in using the term (Toikka, 2011). For this study, similar to Ayele et al. (2021, p.3) governance can be defined as the exercise of political and administrative authority in the management and planning of green spaces at all levels in which public officials and institutions acquire and exercise the authority to shape public policy and provide ecosystem goods and services with an interrelated and increasingly integrated system of formal and informal rules, rule-making systems and actor-networks at all levels (UN-Habitat, 2002; World Bank, 2007; Palmer et al., 2009).

Governance is about power relationships and how social organizations make decisions and involve others in the process (Graham et al., 2003). Green space management, which involves the implementation of long-term planning goals (Eagles et al., 2010), takes place at different interconnected (strategic or political), tactical and operational governance levels (Molin, 2014). Besides, the management of parks is mostly approached from a multi-stakeholder perspective (Takyyi et al., 2016). This, therefore, calls for a theoretical framework that combines green space management models with governance models. To obtain insight into governance processes and potentials in green space that addresses different dimensions of park management and governance models, the focus of this research is to explore to what degree the different

dimensions of the park management and governance models have been incorporated in the management of parks and community green spaces. Analysis of how the models and principles are applied in practice would pave the way to build theory-practice knowledge which is a necessary step in the future development of green space that can be seen as a necessary step towards the future development of green space (Ayele et al., 2021). The result of the study could be generalized to other rapidly urbanizing African cities with similar challenges.

## 2. Theoretical context

### 2.1. Park management models

Several authors have developed different models and approaches to park management. For the management of parks and recreation areas, More (2005) identified five alternative models: namely: (1) fully public, (2) public utility, (3) Outsourcing, (4) private-non-profit, (5) and private-for-profit models. The *fully public model* has a government agency operating all services. The *public utility model* functions with a government agency functioning much like a private corporation and the model involves the government function as a private corporation (More, 2005). The *outsourcing* model involves outsourcing services to private companies (More, 2005; Takyyi and Seidel, 2017). While, in the *private-non-profit model*, parks are owned and managed by non-governmental organizations, and in the *private-for-profit* model park owned and operated by private corporations (Eagles, 2007; Hanna et al., 2007; Eagles et al., 2010). The management institution may constitute (1) a government agency; (2) a parastatal corporation owned or wholly controlled by the government; (3) a nonprofit corporation; or (4) a for-profit corporation, public or private (Eagles, 2008, p. 39–41). Sources of income are categorized as (1) societal taxes, (2) user fees, and (3) donations.

In general, Eagles (2009) identified eight park management models. The models are (1) the national park model, (2) parastatal model, (3) non-profit organization model, (4) public and for-profit combination model, (5) public and nonprofit combination model, (6) ecolodge model, (7) aboriginal model, and (8) traditional community model. In the *national park* model, park resources are owned and managed by the government; similar to the national park, the *parastatal* management model is owned by the government, while, it provides greater financial flexibility (Eagles, 2009). The *public and for-profit combination* model involve a partnership between public agencies and profit-making companies; and in the *public and non-profit* model, the non-profit organizations play an advocacy role and focus on natural resource conservation rather than profit-making (Eagles, 2009). The models, ecolodge, aboriginal, and traditional community models, are not considered in this study because both models are relevant for rural areas of Ethiopia.

### 2.2. Governance models

Current views on where the powers and responsibilities of public space governance vary from the heavy involvement and control of state actors in decision-making and implementation (Kooiman, 2010). In addition, Borrini et al. (2013) recommend at least four governance dimensions applicable to all protected area categories: namely governance by the government (at state, sub-national, municipal levels); shared governance (multi-stakeholder management); private governance; and governance by indigenous people and local communities. In the context of this research, community green spaces and community gardens are used interchangeably because both spaces are managed by community members.

### 2.3. Good governance principles

The notions of good governance become prominent by donor organizations in the late 1980s towards the economic development in the aid recipient countries (Kohler-Koch and Rittberger, 2006). The good

governance principles (evaluative criteria) developed by UNDP (1997) were used to evaluate the applicability of the models. These criteria have been used in many analyses of natural resource management (Lockwood et al., 2010), forest management (Agrawal et al., 2008), and protected areas and parks (Shiple and Kovacs, 2005; Hayes, 2006; Eagles et al., 2010). In addition, Graham et al. (2003) identified five principles of governance (Table 1). These principles of governance for world parks are based on the list of (UNDP) good governance characteristics (UNDP, 1997). The approach is referred to as the UNDP–WCPA approach (Eagles et al., 2010) that contains 10 criteria within 5 categories (Table 1).

The category of legitimacy and voice includes public participation and consensus orientation in decision-making (Graham et al., 2003; Edgar et al., 2006). Public participation refers to the involvement of different actors in decision-making (Edgar et al., 2006). Consensus-oriented decision-making means the ability for differing interests to reach a consensus on the best interests of the overall group (Graham et al., 2003).

The strategic vision category considers whether the governing bodies provide clear policy directions or not (Lockwood, 2010). Performance includes three important criteria: namely responsiveness to stakeholders, efficiency, and effectiveness of operations (Eagles et al., 2010). Responsiveness occurs when institutions and processes try to serve all stakeholders within a specific timeframe (Borrini-Feyerabend et al., 2013). Effectiveness involves the capacity to realize organizational objectives and efficiency refers to efficient management of natural resources (Lockwood et al., 2010).

The principle of accountability involves accountability and transparency. Accountability refers to the extent to which officials are answerable to their constituency about their power and duties (Lockwood, 2010). Transparency denotes public knowledge of the policies of the government which allows the public to have confidence in government intentions (Agere, 2000). Fairness involves equity and rule of law (Edgar et al., 2006). Equity refers to access to and use of resources and the decision-making process as well (UN Habitat, 2002), and the rule of law refers to legal frameworks being fair and enforced impartially (Edgar et al., 2006).

Graham et al. (2003) argue that the principles are intended to be internationally relevant and applicable to parks and protected areas. While governance issues have been indicated as a pervasive challenge for landscape management in less developed countries. The challenges, such as weak practices of governance principles and management models have implications on the benefits of green spaces through power dynamics in the governance process that influence the mismanagement of green spaces. Indeed, the challenges could be addressed through adherence to the principles of sound landscape governance (Graham et al., 2003; Kusters et al., 2020) and management models. In this study, the term management refers to all activities comprising planning, development, and maintenance of parks and community green spaces.

**Table 1.** Governance criteria.

SN	Combined categories (Institute on governance)	Basic governance principles (UNDP)
1	Legitimacy and voice	Public participation
		Consensus orientation
2	Direction	Strategic vision
3	Performance	Responsiveness to stakeholders
		Efficiency
4	Accountability	Accountability to the public and stakeholders
		Transparency
5	Fairness	Equity
		Rule of law

Source: Adapted from (UNDP, 1997; Graham et al., 2003; Eagles et al., 2010).

### 3. Methodology

A case study approach is used for this research conducted in Addis Ababa, the capital city of Ethiopia, which falls under the category of a major urban geographic area. The use of quantitative and qualitative approaches in combination provides a better understanding of research problems than either approach alone (Creswell, 2006). Actors in green space management and planning in Addis Ababa involve government, private, NGO, and resident or community actors. Among them, the government actors play major roles in the planning and management of green spaces. At the city level, the main government organizations responsible for the management and planning of green space are Environmental Protection and Green Development Commission (EPGDC), Watersheds and Green Areas Development Agency (WGDA), Gullele Botanical Garden Center, and Addis Ababa City Plan Project Office (AACPPPO). Among these, WGDA is responsible for the management of parks.

#### 3.1. Ethical approval

Addis Ababa University Senate Legislation, article 126,2019 for documenting the names of the research ethics (<https://aaitsc.files.wordpress.com/2019/09/aau-senate-legislation-of-2019-1.pdf>) states 'the rules and procedures of research standards, codes of professional ethics, norms, and responsibilities.' In this context, the Research and Technology Transfer Directorate/RTTD director at the Ethiopian Institute of Architecture, Building Construction and City Development (authors' affiliation) noted that the institute has yet to form a research ethics committee and insisted that research involving human perception to include a statement of informed consent in their methods sections. Therefore, documenting the full name of the approving ethical committee is not possible.

In addition, in this study, all procedures required by the university were performed. The letter from the university was submitted to the concerned organizations and the approval of relevant authorities was sought and acquired before the fieldwork was conducted. Data collectors were trained to keep the anonymity of individuals and respondents were informed of the nature and purpose of the research verbally before the interview to ensure the necessary confidentiality and anonymity of all participating individuals. *Informed consent*: informed consent was obtained from all individual participants included in the study.

#### 3.2. Study area

Addis Ababa is the economic, political, and administrative hub of the country, the seat of the headquarters of the African Union (AU) and UN Economic Commission for Africa (UN-ECA) as well as regional offices for many international organizations (Ayele et al., 2021). The city covers about 524 km<sup>2</sup> and is located at altitudes ranging from 2025 to 3028 m with a mean annual temperature range of 16–18 °C (Feyisa et al., 2014). The total population of the city is projected to reach 8,939,000 by 2037(UN, 2018). The city institutional structure stretches from city to *woreda* (the smallest local administration) levels to implement policy and development plans approved by the city council. The city is divided into sub-cities and the sub-cities further to *woredas*. The selected green spaces are located in three sub-cities, Gulele (Gullele Botanical Garden and Korea, and Hamle 19 parks, Yeka (Yeka park), and from Akaki-Kality (community green space) (Figure 1) WGDAs are responsible for the management and maintenance of urban parks; while *woredas* WGDAs are responsible for outsourcing and partly for community green space maintenance (see Figure 1).

#### 3.3. Research design

Quantitative and qualitative research designs were employed for the research. Due to the exploratory nature of the study (Ayele et al., 2021),

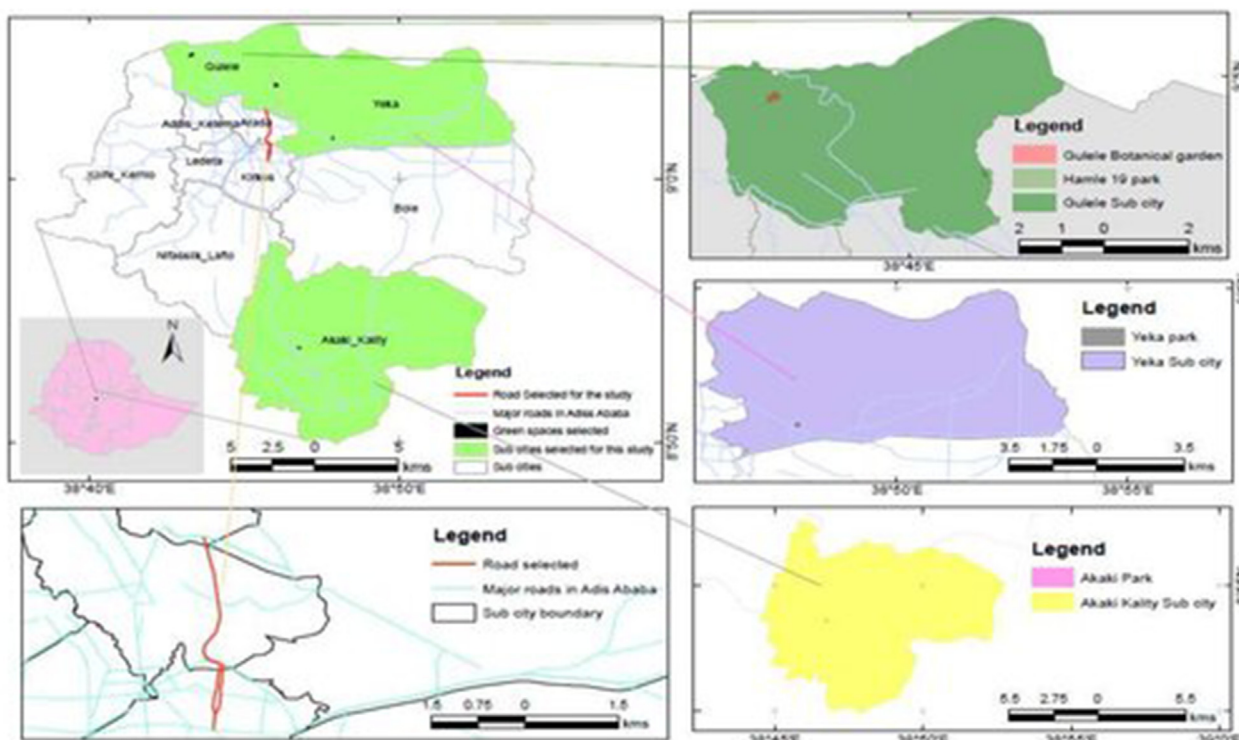


Figure 1. “A map showing the location of the selected urban green spaces”. Source: Author (2021)

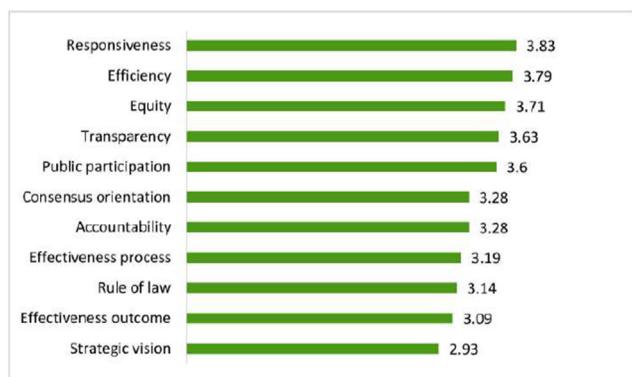


Figure 2. Graph of mean governance scores for a total population. Source: computed by the author based on survey data (2021).

non-probability sampling specifically, convenience, and purposive sampling design were used. Since park users were interviewed on-site, a convenience sampling technique was used. While for park staff and contractors, purposive sampling was used. Among green space elements, this research was focused on urban parks, botanical gardens, and community green spaces.

### 3.4. Data sources

Both primary and secondary data were employed. The primary data were collected using survey questionnaires and key informant interviews. Four data collectors were recruited by the researcher on how to collect quality primary data. These trained data collectors collected the primary data using survey questionnaires from park visitors by asking and completing each question based on the informed consent of each respondent. The survey questionnaires were developed based on the 10 governance criteria. The rating scales of questionnaires range from

strongly agree (5) to strongly disagree (1). A total of (90), 70 questionnaires from park visitors, 15 park managers and staff, and 5 from contractors were collected. Park managers and staffs have a prominent role in the management of green space. Self-administered questionnaires were delivered to park managers, staff, and contractors who completed them and the researcher collected them at an appointed time. Key informant interviews were conducted with 9 persons from sub-city WGDA and 3 persons from the community experienced and responsible for the management of green spaces on the management, governance, and the challenges. The researcher interviewed key informants who at the time of the interview in 2020. Review reports and other policy documents relating to urban park management, planning, and development were sources of the secondary data. Descriptive analysis and descriptive statistics were used to analyze the data. Reliability analysis was also used to measure the internal consistency or inter-item correlation of questionnaires. Cronbach's alpha was found to be .87, which suggests strong internal consistency.

## 4. Results

The study has assessed the green spaces by focusing on recreational parks, a botanical garden, and community green spaces. Addis Ababa has 20 functional recreational parks (at the city, sub-city, and local/neighborhood levels), and 1 botanical garden. The botanical garden at the city level and 3 recreational parks at sub-city levels (*Yeka, Korea, and Hamle 19*) were selected for the study. The management aspect includes designing of parks, organization of outsourcing and inspection, conservation and research activities, while the maintenance includes weeding, mowing, hedge cutting, etc.

### 4.1. Current park management models

Eagle's (2008, 2009) widely used protected area governance models provide the basis for this investigation in the city of Addis Ababa. The first model is the public and for-profit combination model. In this model,



the government owns all resources, with the management and finance undertaken by a combination of public and private organizations (Eagles, 2009). Examples of this model are Yeka, Korea, and Hamle 19 parks. In this model, the government-owned land and resources, the statutory authority was the management body, and funding came predominantly from the government. This model is similar to More's (2005) outsourcing model. The government agency outsourced only food and beverage services to small and micro-scale enterprises. In addition, medians were outsourced to private businesses (WGDA, 2019).

The second model is the national park model. In this model, the government owns resources, the majority of funding comes from the state, and the government agency is the manager. For all parks in the city, the land was owned by the government and managed by the city EPGDC and WGDAs to the local level and botanical garden as well with the majority of funding being provided by the city government. The third model is the Parastatal Model. There are two different approaches to implementing this model. One approach sees the park agency as being relatively unsuccessful in the direct provision of tourism services by its staff and programs. The second approach sees the parastatal as successful in providing tourism by its staff and institutions, and therefore little need for outsourcing. The sole botanical garden in the city is an example of this model. The land is owned by the state vested with the power of protecting the environment. It incorporated multiple government departments and managers, and most of the funding came from the city government. Hence there is significant government influence in the sector as the EPGDC is responsible for many key authorizations in the Act (EPGDC, 2019).

The fourth model, the public and non-profit combination model, suggests the use of many approaches which could best be described as a combination of models. In this model, resources are owned by the government and jointly managed by a government agency and a not-for-profit organization. The model can also be applied by maintaining street trees. Interview with authorities of WGDA revealed the involvement of one NGO (resource initiative institute) in funding, planting, and maintenance of street greening located from Estifanos to Sidest Kilo streets.

The fifth model is the nonprofit organization model. A nonprofit corporation owns the resources in this model and public organizations operate the institutions in a non-profit manner (Eagles, 2007). Public organizations are independent of governments and advocate social, cultural, legal, and environmental positions. Most of the fund comes from donations, the manager being a nonprofit organization (Eagles, 2008, 2009) and it is mainly used by many environmental membership organizations. However, this model is not used in the city. In a country with limited financial and manpower resources as well as poor governance like Ethiopia, nevertheless, the inclusion of the model is imperative because it helps to promote environmental activists that will contribute to the management of green spaces in the city in particular, and at country level in general and can be a way to the emergence of a participatory form of governance.

#### 4.2. Governance principles

A total of 92 questionnaires were collected from park staff, contractors, and park visitors, with an 83% response rate. The governance scores ranged from strongly agree (5) to strongly disagree (1), and (3) neutral score (Eagles et al., 2010). Two to nine questions were developed based on the 10 governance criteria (Table 2). For eight criteria, a single factor was developed, and for the rest one, effectiveness split into two separate factors (Table 2) outcome and process. The outcome was used to measure the quality of visitor services that comprised three items and the process comprised five items used to measure the process. Though equity should be split into two, equity general and finance (Eagles et al., 2010), finance is not considered in this case as visitors are not required to pay an entrance fee.

The mean governance of all respondents (Figure 2) ranged from the higher 2.9 for strategic vision to the lowest 3.83 responsiveness. This

Table 2. Mean governance criteria scores for a total population.

Criterion	Mean	Std. Deviation	N	Do not Know	Not applicable
Responsiveness	3.83	1.2	83	9	0
Effectiveness					
Outcome	3.09	1.15	87	4	1
Process	3.19	1.14	90	2	0
Equity	3.71	1.35	86	5	0
Efficiency	3.79	1.52	85	2	3
Public participation	3.6	1.16	88	4	0
Consensus orientation	3.28	1.13	90	0	2
Transparency	3.63	1.19	89	3	0
Rule of law	3.14	1.26	88	4	0
Accountability	3.28	1.39	89	2	1
Strategic vision	2.93	1.23	89	2	0

Source: computed by the author based on survey data (2021).

shows that all the criteria, except strategic vision (2.93), ranked below the neutral effectiveness outcome (3.09); rule of law (3.14); effectiveness process (3.19); accountability (3.28); consensus orientation (3.28); public participation (3.6); transparency (3.63); equity (3.71); efficiency (3.79); and responsiveness (3.83), indicating weak governance. Respondents felt that "they did not know" was higher than "not applicable" (Table 2), indicating that the model is valid. Some 36% of respondents answered "do not know" for responsiveness, equity, public participation, effectiveness outcome, rule of law, transparency, effectiveness process, accountability, and strategic vision, suggesting the need to improve the governance of parks. Almost 85% of park visitors mentioned that some illegal activities were performed in parks. Interviewees from WGDA authorities also indicated limited cooperation with the city land administration to have land deeds (for example, part of Yeka park is used by the nearby residents for sports activities and they claimed the open spaces as their own), thus making the office unable to fence the park. In sum, the result of this study has identified weak governance practices in park management.

#### 4.3. Challenges related to the governance process and management

Challenges were identified based on the three levels of governance; namely policy, tactical, and operational (Figure 4). Four major challenges were identified in this case: (a) lack of long-term green space planning. The city plan is subject to revision every 10 years and that has led to the conversion of green spaces to mixed-use. For example, among the 59 areas allocated for green space in the master plan of 2002, 54 were changed to mixed-use in the 2017 structure plan; (b) the involvement of politicians at all levels of management and maintenance of green spaces. This led to the allocation of community green/open space for commercial or other purposes; (c) limited cooperation between land management, planning commission, and environmental protection offices to minimize the invasion of green spaces; and (d) there is no specific law for green spaces management. Interview with local government officials has, for instance, indicated that there were cases where individuals attempted to incorporate about 50m<sup>2</sup> land reserved for green space and close to their residential houses. In this respect, green space management requires specific laws and manuals to protect land reserved for green spaces and to control plan violations.

The six major challenges identified by this study are (a) the frequent re-organization of environmental protection institutions which led to a lack of previous information; (b) shortage of experts; (c) limited cooperation between local governments and the community; (d) limited budget; (e) limited involvement of NGOs such as UN-Habitat and Resource Initiative Institute (Ayele et al., 2021) involved in funding small parks and street trees; and (f) the conversion of green spaces, for

example, a plaza at Arat Kilo used for buildings, part of Adwa Park, a city park near *Bole* airport redesigned for housing (Figure 3). EA-14 in the figure shows a city park in the 2017 plan, but later redesigned for housing; a big mosque situated very close to a river buffer at Afinchober, and community green spaces (Figure 5) at different parts of the city used for small-scale enterprises and other purposes.

The strategic park management incorporates three levels of activities (Randrup and Persson, 2009), which will be cross-sectoral at both governance levels (Figure 4). On the vertical three governance levels, the right side represents a cross-sectoral approach and the left represents a park inter-sectorial approach. On the horizontal level, the three levels of activities to be included in the strategic park management include policy, tactical and operational levels.

At a city level, EPGDs have the role of monitoring and regulatory activities. The management and maintenance (operational) activities are to be carried out by the majority of experts from the city, sub-city, and local level WGDAs. Indicating the majority of experts and resources are placed at the bottom of the model. The interviewed city WGDA manager stated that experts and other non-professional workers are responsible for the park management and maintenance activities. The city WGDA is also responsible to develop, administering, and controlling parks among others (WGDA, 2019; Ayele et al., 2021). At the tactical level, plans for sectoral green space and at policy level strategies and long term visions (Randrup and Persson, 2009) are major activities in the model that will need long-term planning and management approach.

#### 4.4. Community green space management

The community green spaces managed by urban communities are selected to indicate the ecological benefits of such areas, and the contribution of the urban community to the conservation and management of green spaces. Regarding types of governance, the management of community green spaces has been categorized as self-governance. The examples cited in this study were the community green spaces found near residential areas and managed by the community in greening the city. Self-governance in this case is similar to governance arrangements facilitated by small communities without the help of a formal government through bottom-up self-governance by associations, informal understandings, negotiations, trust relations, and informal social control rather than state coercion (Ostrom, 1999). Besides, the fourth dimension-which is governance by indigenous people and local

communities is also suited to community green spaces managed by the urban community.

The selected community green spaces in the study areas are managed by committees selected by communities, and they are responsible for the overall management of green spaces. The management is also supported by the local governments. This kind of management shows the combination of self-governance and the collaboration of local governments with communities. In this case, the government owns the land. The budget is allocated by both the community and the government (in terms of professional, material, and agricultural inputs support); and the government contracts out and provides title deeds to the community. Community-based management of green spaces has shown a shift from self-governance to the involvement of local governments in supporting technical and agricultural inputs.

The result also revealed the mismanagement of green spaces (Figure 5). Information obtained from key informant community members shows that previously the area (Figure 5) was allocated for green space to the community and used for children playing ground and trees were planted by community members, while, in 2005, the local government allocated to a group of women for economic benefits through small-scale enterprises. This group was organized by the local government and one criterion for membership of the group was joining the ruling political party as a member during the 2005 election. Besides, the members assigned a responsibility to convince the community members to vote for the ruling party. However, the local government later rented out the area to private businesses.

In addition, key informants mentioned that the right side of (Figure 5) is part of the green space allotted by the local government for community *Iddir* (a community association for helping each other during the death of community members) in turn the *Iddir* committee rented out to private businesses (maintenance of vehicles). This calls attention to areas allocated for the community green spaces in the plan but used for other purposes by the local government and the community. The result in general shows the negligence of the government to environmental protection.

The park-organization-user model with three main elements (managers, users, green spaces) and their interrelations modified from (Randrup and Persson, 2009) is used to explain the community green spaces management. Similar to the strategic park management model (Figure 4) that incorporates three levels of activities, the park-organization-user model (Figure 6) is relevant to analyzing the community green spaces governance process.



Figure 3. City Park redesigned for housing development. Source: AACPP (2017, p. 11) Amharic version report.

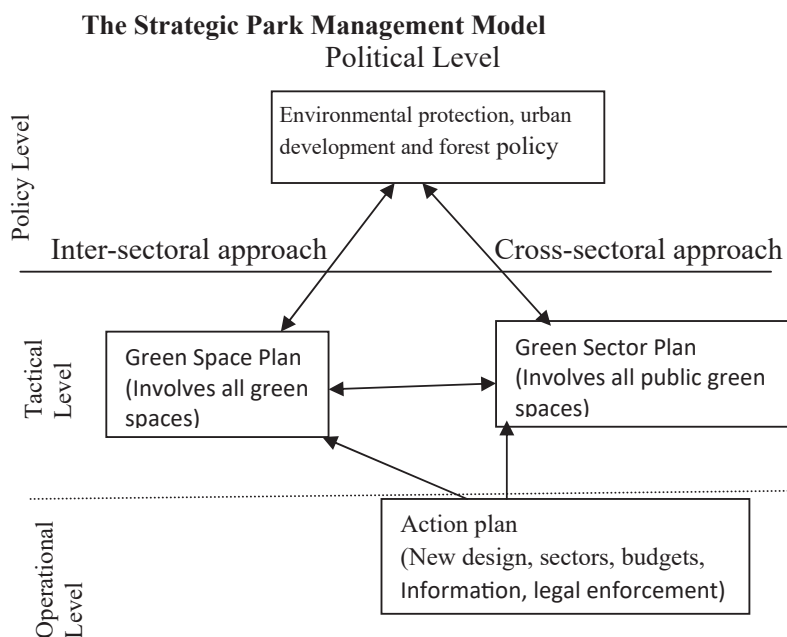


Figure 4. The Strategic Park Management Model. Source: modified from (Randrup and Persson, 2009, p.38).



Figure 5. Community green space used for other purposes. Source: Author.

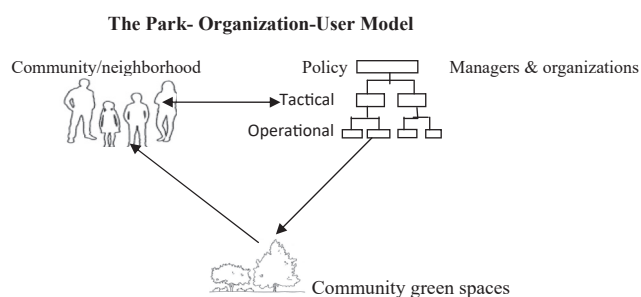


Figure 6. The park-organization-user model. Source:(modified from Randrup and Persson, 2009, p.37).

## 5. Discussion

Among park management models, currently, only four models are partially used in the city. The trend shows the use of the combined public and for-profit private model, the one that is frequently utilized by WGDA. The focus is on outsourcing and contracting out park recreational services. This outsourcing and contracting out park recreational service is subject to renewal within a specific period. The outsourcing and contracting out of parks include maintenance, construction, and recreational services. The majority of the maintenance and recreational services were

outsourced to specific groups of youth and women (Ayele et al., 2021) to reduce the rate of unemployment in the city. The city WGDA used concessions with two approaches for concession takers. These included (a) contracts out to private construction businesses with contractual agreements that include the construction of built-up and then transfer to the agency; and (b) maintenance contractual agreement renewed within a specific period based on each specific activity (WGDA, 2019).

Addressing the challenges of governance process and management will require an inter-sectoral policy approach at the federal, city, and local levels are important to the management of green spaces. Public parks require new design or plan and collaboration with city planning and land management offices, the community, and others. Though stakeholders from different sectors of the local government meet every month, the discussions focus on the general report of the sectors. At this level, there is a need for strong collaboration between green space administration and development agencies with health, culture, and education sectors. The operational level is related to the implementation and management of green space plans (Kabisch, 2015) which brought about the existing visions to the ground (Frantzeskaki and Tilie, 2014). In addition, in park management, weak governance practices were identified that led to the poor management of parks.

Concerning the mismanagement of community green space, both the local government and the community association members are contributing to the mismanagement of community green space. Indicating that the green space plans lacked enforcement laws, the economic benefits are



not the only driving force, but the interference of local governments for political gain or interests, and the use of political power are contributing factors to green spaces changes through the conversion of green spaces to permeable surfaces and built-up areas. Besides, the capture of this green space by the powerful group affects the vulnerable members of the community, restricts children to have access to playgrounds and elders to use the green spaces, will require multi-level governance, user-centered, and park-organization-user management models. Multi-level governance is defined as “an arrangement for making binding decisions that engages a multiplicity of politically independent but otherwise interdependent actors at different levels of territorial aggregation in more-or-less continuous negotiation/deliberation/implementation, and that does not assign exclusive policy competence a stable hierarchy of political authority to any of these levels” (Schmitter, 2004, 49). which incorporate both politically independent and interdependent actors, different territories, and flexibility of policy and political authority.

The strategic park management model (Figure 4) that incorporate three levels of activities, and the park-organization-user model are relevant to analyzing the community green spaces governance process. In this regard, community green spaces properly managed by the community are good examples of the user-centered model. Strengthening self-governance where the community plays a major role and participatory governance in green space management can address governance challenges. In general, the practices of management models and good governance principles profoundly affect the future development of green spaces in rapidly urbanizing cities.

## 6. Conclusion

This study found that currently four of the models are partially used. However, all the management models are useful. The dominant park governance approach in the city seems hierarchical governance or state-centered, and this may result in poor park governance. The current public park administration and management focus on maintenance of existing plants, with limited focus on long-term design related to management, recreational activities, budget as well as lack of control on illegal activities, and the uneven political power attributed to the mismanagement of community green spaces. This in general requires redesigning, including additional recreational services, strong political support, and integrated green space management.

The user-centered model is found suitable for community green space management, while the Park-organization-user model is appropriate to explain the governance approaches to improve the governance process for community green space management. It is argued that adopting the Strategic Park Management Model which incorporates three levels of activities, political (policy), tactical (plans), and operational (maintenance) levels are useful to improve the governance and management of green spaces. Actors' perceptions of governance are indicative of poor governance. Further, the application of the good governance principles developed by (Graham et al., 2003; UNDP, 1997) can be used for the analysis of city parks. In the context of Ethiopia, it is argued that parks as public goods to be accessible to the public need to be under the control of the government; and this can be achieved through addressing the challenges. Such include; improving the practices of good governance principles, legal frameworks, creating inter-sectoral policy approach and collaboration as well as improving outsourcing and incorporating other models. Besides, the combined governance and management models and multi-level governance approaches can be a way to the future development of green spaces. This research provides information that can assist urban green space managers in the decision for the choice of and implementation of the various management approaches for the provision of park services, conservation in protected areas, and improving policy and good governance principles in urbanizing African cities. This research contributes to the emerging literature on the governance and management models used for green space and green infrastructure management. Further research is required to develop a theoretical

framework for green infrastructure planning-based integrated management models and landscape planning approaches.

## Declarations

### Author contribution statement

Bosena Yirga Ayele: Conceived and designed the experiments; Performed the experiments; Analyzed and interpreted the data; Contributed reagents, materials, analysis tools or data; Wrote the paper.

Tebarek Lika: Analyzed and interpreted the data.

Kumelachew Yeshitela: Conceived and designed the experiments; Analyzed and interpreted the data; Wrote the paper.

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### Data availability statement

Data included in article/supplementary material/referenced in article.

### Declaration of interests statement

The authors declare no conflict of interest.

### Additional information

No additional information is available for this paper.

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