Urban Community Forestry- Opportunities and Constraints (Case Study:Eldom Forest- Khartoum State-Sudan)

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Abstract
This study was conducted at Eldom Urban Community Forest in Khartoum State during 2017. The main objective of the study is to highlight opportunities and constraints regarding the forest, while the specific objectives are to determine: perceptions of people of forest, benefits derived from forest, potential role of the forest, and constraints faced the forest. Data was collected based on social survey through different tools including: questionnaire, checklist, group discussion, observation, records and reports, scientific papers and internet. 50 respondents were interviewed. The data analyzed using statistical package of social science (spss), in addition to frequencies and percentages. The study showed that, health services, building materials, fuel wood and recreation constituted the main benefits from the forest in the study area. Meanwhile, people had developed positive perceptions and attitudes toward the urban community forest. Moreover, recreational services, social services and environmental stability showed as an opportunities and potential role of the forest. Some constraints hindered the development of the forest including: protection, lack of irrigation, lack of seedlings and mismanagement. The study recommended increasing the allotted area for different forest activities and producing of different tree species inside the forest.

Introduction
An urban forest is a forest, or a collection of trees that grow within a city, town or a suburban. In a wider sense, it may include any kind of woody plant vegetation growing in and around human settlements. Care and management of urban forests is called urban forestry. Urban forests play an important role in ecology of human habitats in many ways. A side from the beautification of the urban environment, they offer many benefits like impacting climate and the economy while providing shelter to wildlife and recreational area for city dwellers. All of trees within a town, village, or city make up the "community forest". The community forest can include street and yard trees, parks, school grounds, and undeveloped green spaces. Urban and community forestry is the management of community forests to establish and maintain healthy trees for air and water quality benefits, energy savings,

environmental health, as well as to enhance the quality of life for urban residents(Wolf, K.L. 2003) and (Oct. https// www.the guardian.com 2016). Studies show that trees improve air and water quality, reduce flooding, reduce cooling and healthing energy needs, increase property values and improve the quality of life for people and wildlife around them. Trees remove air and water pollutants through both their root systems and their leaves. Tree canopies shade buildings, sidewalks, streets and other structures keeping them cooler energy needs in summer(Hastic,C.2003). The benefits of Urban Trees Warwick District Council,U.K. Strategically placed trees, and correct tree species selection, can shelter buildings from cold winds in winter months reducing heating costs. The positive effects trees have on human health and well-being are numerous. Studies have found that exposure to trees reduces the symptoms of stress and depression, can aid in the recovery from surgery, and reduce the incidence of domestic violence. People are more likely to exercise if parks are nearby. When people utilize parks and shady street trees, they are more likely to meet and establish bonds with their neighbors, which help to create a sense of community. When people enjoy spending time in their neighborhoods, they develop pride and a sense of ownership in their communities. The presence of trees and the proximity to parks can also increase residential and commercial property values (Hastic, C. 2003). Urban forestry is practiced by municipal and commercial arborists, municipal and utility foresters, environmental policymakers, researchers and community activists (Wikipedia, 2014).

The environmental and human actions can cause different stresses to urban trees, some of which include: soil moisture extremes, compacted soil, reduced soil fertility, pollution, improper pruning and trenching.

These stressful growing conditions can cause decline in tree health and may eventually result in death, if not corrected in time(Oct.htt''www.theguardian.com,2016).

Research Problem

Eldom urban community forest was established in 1967 with *Eucalyptus* species. However, some constraints hindered the development of the forest including: illegal grazing, the forest used as a place for wastes and crimes, in addition to stresses of the recreation that lead to migration of some rare birds(FNC, 2011).

Research Objectives

The main objective of the study is to highlight the opportunities and constraints of the Eldom forest, while the specific objectives are to determine: the perceptions of people of the forest, the benefits derived from the forest, constraints and the potential role of the forest.

Materials and Methods

Eldom village lies north Khartoum State at Bahri locality. Eldom urban community forest established in 1967, the dominant trees are Eucalyptus species. The area characterized by clay soil and semi-desert climate. The dominant tree species are: *Acacia seyal, Balanites egyptiaca, Ziziphus spinachristi, Acacia nilotica, Acacia millefra* and *Eucalyptus*. Agriculture is the main economic activity of people in the area.

Secondary data was obtained from the records, reports, scientific papers, text books, internet and relevant studies. While the primary data based on social survey, questionnaire, group discussion and observation. The people in the village constituted the research population (1000 persons), from which a sample of 5% was taken (50 persons). The participants were selected randomly. The data analyzed using statistical packages of social science (spss), in addition to frequencies and percentages.

Results and Discussion

Table (1) Respondents' age categories in the study area:

Age	Frequency	%
18-25	22	44
25-32	10	20
32-39	10	20
39-45	8	16
Total	50	100

The results in table (1) indicated that, the age of the respondents ranged between 18-45 years. These findings denoted to the physical fitness which help in exerting enough efforts to encourage the experience of the urban community forestry in the area. The forest authority should make use of that.

Table(2) Respondents' educational level in the study area:

Educational level	Frequency	%
University	21	42
Secondary School	12	24
Primary School	8	16
Khalwa	4	8
Illiterate	3	6
Post Graduate	2	4
Total	50	100

The findings in table (2) revealed that, 94% of the respondents were having an education ranged between Khalwa to Post Graduate studies. These results indicated to the high level of education which will be reflected in a good understanding and perceiving of the role and benefits of the urban community forests in the area which eventually lead to the development and conservation of these resources.

Table(3) Origin of the idea of urban community forest in the study area:

Origin of the idea of urban community forest	Frequency	%
From Forestry extension	39	78
From People	11	22
Total	50	100

According to the results in table (3) 78% of the respondents mentioned that, the idea of the urban community forest in the area was a result of forestry extension authority.

These results denoted to the suitable services and great efforts that exerted by the forestry extension authority due to increased awareness of the people regarding the importance of the urban community forests in the area. However, all respondents accepted and adopted the idea of the urban community forest in the study area.

Table(4) Benefits of the urban community forest in the study area:

Benefits of the urban community forest	Frequency	%
Health services	35	70
Building materials	23	46
Fuel wood	15	30
Fodder	12	24
Recreational services	8	16
Air conditioning	5	10
Others	2	4

The findings in table (4) indicated that, health services, building materials, fuel wood, fodder, recreational services, and air

conditioning were reported by 70%,46%,30%, 24%, 16%,10% and 4% of the respondents respectively, as derived benefits from the urban community forest in the area.

These results indicated to the essential role of the community forest as a main source of building materials, fuel wood, social services(schools, clubs, water pipes, mosques and electricity…..etc), health services(e.g. hospitals and health care centers), fodder during drought seasons, and recreational services. These results in line with study of Abdalla and Tia (2004 and 2012) that mentioned forests are important to ecological, economic and social wellbeing of the communities, they provide wood and nonwood forest products, recreational values, environmental and clean air. However, people get their needed forest products through permission from the village committee.

Table(5) Respondents' perceptions of forest in the study area

Perceptions	Frequency	%
Forest resources are necessary	31	62
Forest management systems are good	43	86
Forest policies and laws are effective	41	82

The survey findings revealed that, forest are valuable resource as perceived 62% of the respondents in the area, 86% perceived the prevailing forest management systems as good, while 82% perceived forest policies and laws as effective in maintaining and conserving forest resources.

These results showed that, people in the study area perceived forests and trees as valuable and useful resources, they provide arrange of goods and services. This positive perception is in line with Abu Sin and Elsamani(1986), whom reported a growing awareness as concerns the role of community forest resources in economy as a source of domestic needs, income, fuel wood, building materials and grazing. Moreover, the management systems were also perceived as good and contributed to conservation of the forest resources.

It's appropriate to examine peoples' perceptions of trees and forests. Understanding peoples' perceptions helps in framing the relevant land use strategy. Hence, forestry extension will able to strengthen forestry programmes to address the needs and perceptions of people related to tree planting activities (Elmadina,A.M., 2006).

Table(6) Responsibility of managing the urban community forest in the study area:

Responsibility of managing the forest	Frequency	%
Public administration	35	70
Participatory management	8	16
FNC	7	14
Total	50	100

According to the findings in table (6) the majority of the respondents (70%) mentioned that, the urban community forest managed by public administration. Hence, due to the traditions and customs this type of management will enhance, protect and conserve the forest resources.

People in agricultural areas traditionally have indigenous experiencies in forests management. The sustainable management of community forestry is aimed to ensure enough resources for present and future generations (Yasir,Y.A. and Abdel Hai,M.E.2019). Moreover, experiencies has shown that problems arise when people

within a community feel that they not had adequate role in the development and implementation of a project(Kupsch, 1985).

Table (7) Opportunities and potential role of the urban community forest in the study area:

Opportunities	Frequency	%
Recreational services	36	72
Social services	10	20
Environmental stability	4	8
Total	50	100

The survey results revealed that, recreational services, social services and environmental stability mentioned by 72%, 20%, and 8% of the respondents as an opportunities and potential role of the urban community forest respectively.

These findings denoted to the high level of education, increasing awareness and positive perceptions and attitudes of people in the area regarding the experience of the community forest. The forest extension should make use of this and build programmes to address and consider these views.

Table(8) Constraints to the urban community forest as perceived by the respondents in the study area:

Constraints	Frequency	%
Protection	20	40
Lack of irrigation	15	30
Lack of seedlings	9	18
Poor land preparation	5	10
Mismanagement	1	2
Total	50	100

According to the table (8), several constraints affected development of the urban community forest in the study area. Hence, protection, lack of irrigation, lack of seedlings, poor land preparation and mismanagement perceived by 40%,30%, 18%, 10% and 2% of the respondents respectively.

Several constraints faced the development of the forest in the area. Protection is one of the most notable among these constraints; in addition of lack of irrigation, lack of seedlings, poor land preparation and mismanagement. This results is consistence with Padi and Abdelmagid (2000) whom stated same results. GOs and NGOs should support and provide funds and inputs to enhance, protect and develop the experience of the urban community forest in the study area.

Life in cultivational areas is often characterized by scarcities such as lack of improved seeds, farm implements, health care, and schools. Under such circumstances, the planting of trees, even in situations of acute firewood and building materials may not make sense to farmers (Wellstead *et al*, 2003). Hence, some barriers usually hinder community forestry initiatives. Meanwhile, people in group meeting mentioned that, security of land and tree tenure are important issues, where farmers and communities have no long-term guarantee on the use of the land they farm it, and they need to be assured that trees will remain their property. In addition to that they mentioned, competing uses for land, labour and capital may hinder community forestry, where tree planting is seen to be one of several possible alternative land uses. Also time scale of forestry conflict with the priorities of people who focus on meeting of the day needs.

Table(9) Respondents' suggestions to improve urban community forest in the study area:

Suggestions	Frequency	%
Increasing the allotted forest area	31	62
Introducing different species inside the forest	19	38
Total	50	100

According to findings in table (9) increasing the allotted forest area and introducing different species inside the forest appreciated by 62% and 38% of the respondents as main suggestions to improve the forest resources.

Meanwhile, the long-term interaction has enabled the local people to acquire valuable traditional knowledge and accumulate previous experiences which helped greatly in the provision of advice and some solutions of the problems in management. These results in line with what stated by Colfer *et al* 1995 and Elhassan (2000).

Conclusions and Recommendations
Conclusions
The study revealed that, the urban community forest was the main source of various socio-economic benefits and environmental services such as: building materials, fuel wood, fodder, health services, recreation and air conditioning.
Local people in the study area were developed positive perceptions and attitudes towards forest resources and tree planting.
Recreational services, social services and environmental stability appreciated as an opportunities and potential role of the forest.
Protection, lack of irrigation, lack of seedlings, poor land preparation and mismanagement were the notable constraints to the urban community forest in the area.

Recommendations
Increasing the allotted forest area. Introducing different tree species inside the forest. Availability of adequate water supply. In this connection, water harvesting techniques offer opportunities for widening the scope of urban community forest establishment in the area.
GOs and NGOs should support and provide funds, inputs and logistics to enhance the experience of the urban community forest in the study area.

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الغابات الحضرية الشعبية– الفرص والمعوقات
دراسة حالة – غابة الدوم – ولاية الخرطوم

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المستخلص

اجريت هذه الدراسة بغابة الدوم الحضرية الشعبية بولاية الخرطوم فى العام 2017. الهدف الرئيسى لهذه الدراسة هو التعرف على الفرص والمعوقات التى تواجه الغابة الحضرية الشعبية، فيما تمثلت الاهداف الخاصة فى التعرف على:الفوائد التى تعود للمواطنين من الغابة، اراء المواطنين فى موارد وادارة وقوانين وسياسة الغابات، الدور المستقبلى للغابة، والمشاكل التى تواجهها. استخدم فى جمع المعلومات منهج المسح الاجتماعى مع خليط من الادوات البحثية شملت: الاستبيان، قائمة الاسئلة، مجموعات النقاش، الملاحظة، التقارير والارشيف بالاضافة الى الانترنت. اوضحت الدراسة ان الغابة توفر الكثير من الفوائد للسكان المحليين تمثلت فى الخدمات الصحية، مواد البناء، حطب الوقود والاستجمام والترفيه. كما اوجدت الدراسة ان للسكان المحليين اراء واتجاهات ايجابية فيما يتعلق بموارد الغابات وادارتها وسياساتها وقوانينها. كذلك خلصت الدراسة الى ان الخدمات السياحية، الخدمات الاجتماعية بجانب الاستقرار البيئى تمثل الفرص والمرتجى المستقبلى للمواطنين من الغابة الشعبية. كذلك ابانت الدراسة بعض المعوقات والمشاكل التى اثرت سلبا فى نمو وتطور الغابة شملت نقص الحماية، شح الرى، قلة الشتول، وسوء الادارة. اوصت الدراسة بزيادة مساحة الغابة المزروعة مع ادخال انواع مختلفة من الاشجار.