

# Spatial Planning Interventions and their Implications on Conservation of Urban Green Spaces

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## ARTICLE INFO

Volume 3  
Number 4/2014  
Issue 8  
DOI: [10.15590/ajase/](https://doi.org/10.15590/ajase/)

Received: Sep 15, 2014  
Accepted: Sep 19, 2014  
Revised: Sep 24, 2014  
Published: Sep 26, 2014  
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## ABSTRACT

Urban green spaces are quite important in enhancing the urban environment and the aesthetic quality of city life. This research attempts to give proposals for improving the quality of urban green spaces in Kisumu city. The objective of the study was to analyze spatial planning interventions and their implications on conservation of urban green spaces. Data, which was qualitative, was collected from published documents, observation and questionnaires. Content Analysis was used to analyze this objective. The study found out that the multiplicity of laws and regulations, as well as multiple institutions, are the major impediments to the planning and building sector. The absence of a national land use and urban policy has also resulted in haphazard developments that are incompatible and not well served with infrastructural services. The study recommends that a supportive legislative and administrative framework should be put in place; a supportive authoritative body should be established to exhibit strict adherence to physical planning laws at all times; and a single inter-ministerial agency should be made responsible for urban affairs.

**Key words:** green planning, planning intervention, urban planning, quality of life, energy conservation

**Source of Support:** Nil, **Conflict of Interest:** Declared.

**How to Cite:** Owino FO, Hayombe PO and Agong SG. 2014. **Spatial Planning Interventions and their Implications on Conservation of Urban Green Spaces** *Asian Journal of Applied Science and Engineering*, 3, 61-72.

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## INTRODUCTION

Cities around the world, Kisumu included, are endeavoring to improve their local environmental conditions, and hence the health and overall well-being of their inhabitants. Green cities are meant to reach new ecological standards that are more challenging and stretching than would normally be required for new development. These cities like eco-cities are designed to act as exemplars of good practice (DCLG, 2009:1).

Around 50% of the world's population now lives in cities and urban areas (UNEP, 2011). This large population provides both challenges and opportunities for environmentally conscious developers. In order to make them more sustainable, building design and practice, as well as perception and lifestyle must adopt sustainability thinking. Hayombe (2011) argues that debate on mitigation and adaptation to climate change requires concerted efforts in addressing the environmental crisis. UN-HABITAT (2009) advocates for the embracing of the brown and green agenda in modern day planning.

According to Goede, Rodenburg, Leeuwen & Nkjkamp (2001), in the twenty-first century a new type of scarcity has emerged, and that is the insufficiency of healthy environments to work and live. This new shortage is reflected in a decline in air, water and soil quality as well as in a general decline in biodiversity. Urban green protects soils and moderates harsh urban climate, for example by cooling the air, reducing wind speed and giving shade (Tryrvainen, Paulect, Seeland & De Vries, 2005).

### Problem Statement

Kenya is currently in an environmental crisis as a result of encroachment of urban green spaces by human activities leading to their loss. Most areas that were set apart as urban open spaces have gradually diminished over the years. This is as a result of the planning authorities' failure to enforce planning interventions. Green spaces and other public protected areas have suffered on the same note of failure to provide orderly and sustainable development by the governments. Modern town planning provides the image of an art and science placed at inhabitants' disposal irrespective of the organization of places they live. It aims at stimulating the complex growth of locations according to their potential and inhabitants' expectations by accomplishing short-, medium- and long-term growth strategies.

### Study Objective

The objective of this study was to analyze spatial planning interventions and determine their implications on conservation of urban green spaces and ecotourism.

## LITERATURE REVIEW

### Overview

The purpose for the literature review was to gain an understanding of broader issues pertaining to the study. In addition, it was important to examine previous research related to the topic.

### Green Cities

Cities are social, ecological and economic systems within a defined geographic territory. It is characterized by a particular human settlement pattern that associates with its functional or administrative region, a critical mass and density of people, man-made structures and activities (OECD & China Development Research Foundation, 2010)

Green cities are those that are environmentally-friendly. Indicators measuring environmental performance can include: levels of pollution and carbon emissions, energy and water consumption, water quality, energy mix, waste volumes and recycling rates, green space rations, primary forests and agricultural land loss. Other indicators include the motorization rate and modal share of urban transport. Ewing, Moore, Golgfinger & Oursler (2010) states that another important measure of humanity's demand on nature is the Ecological Footprint. Defining green cities by their environmental performance does not mean social equity issues are ignored. Greener living environments can play an important role in making cities more equitable for their residents.

Other existing cities are referred to as green because of their ambitious green policies, management of a range of green projects and a principal trajectory towards a better environmental performance (UNEP, 2011). Suzuki, Dastur, Moffat, Yabuki & Maruyama (2010) indicated that Singapore introduced the world's first road charging scheme in the 1980s, and it is now at the forefront of sustainable policies on waste, water and the greening of the environment.

The history of urban green space planning is traced from Ebenezer Howard's (1850-1928) concept of the Garden City. Howard, who was a utopian thinker, having studied the ongoing debate on urban growth and environment, developed the idea of a 'garden city' (Fainstein & Scott, 2012). Howard wished to combine the best features of town life and country life in a new form of urban settlement, "the garden city" (ideas and merits shown in *Garden Cities of Tomorrow* 1902). Howard conceptualized the garden city as comprising a compact settlement of about 1,000 acres of about 1.5 miles diameter with a large agricultural land surround of about 5,000 acres. This was to be a green belt to control the growth of the town. Zoning would then be carried out within to give industrial, commercial and residential activities. Public buildings and places of entertainment were to be in the centre. He and his supporters founded two English cities, Letchworth (1903) and Welwyn (1920), which still serve as models for his ideas. He envisaged his Garden City as a tightly organized urban centre for 30,000 inhabitants, surrounded by a perpetual "green belt" of farms and parks. Howard had three points to contribute to modern urban planning: that towns must be controlled in real growth: that towns have to be controlled in population: and that towns should integrate urban living and agricultural activities (Fainstein & Scott, 2012).

### **Importance of Urban Spaces**

The case for urban spaces is made in terms of inter-linked economic, social and environmental benefits (Milton, 2002). Economically the benefits include lower infrastructure costs and reduced congestion costs while reducing carbon emissions and environmental pressure. Socially, the benefits include employment creation, poverty reduction and improved equity, and quality of life including improved road safety and community cohesion among others. Environmental benefits are embedded in most of the economic and social benefits (Hague & Siegel, 2002).

### **Mental and Physical Health Benefits**

Sedentary lifestyles are creating serious health problems in the population (Kreyling, 2001). Open spaces provide mental and physical health benefits, including varied opportunities for intense but short bursts of activity for youth, such as unstructured outdoor play with age mates, low-intensity, long duration activities, such as walking, cycling, and gardening for adults, as well as mental relaxation. Studies have shown that children's cognitive development is associated with access and exposure to nature. Nature

helps them make sense of their world (Taylor, Faber, Faber, Kuo & Sullivan, 2001a). Youths who play in green play areas have less severe attention deficit disorder (ADD) symptoms. This is as opposed to kids who play in less-green settings, and for those with ADD, play in green settings reduces post-activity ADD behavior (Taylor, Kuo & Sullivan, 2001). Green space also provides mental health benefits.

In hospital settings, patients show improved surgical recovery, better general health, and mental rejuvenation when provided with a window overlooking trees. Adults credit the comforting, predictable and focused patterns and rhythms of nature with easing the pain of difficult childhoods. Additional documented benefits of green space, include reduced stress levels as a result of envisioning natural conditions, reduced aggression and violence for residents of green buildings (Kuo & Sullivan, 2001b), and decreased mental fatigue for public housing residents in relatively green surroundings (Kuo & Sullivan, 2001a).

### **Environmental Remediation Value**

Urban open spaces provide remarkable opportunities for revitalizing nature in cities given the rate and pace of land development on the urban fringe. Wildlife is evident in such places, and much more can be gained through intelligent creation and management of open spaces (Stille, 2002). These open spaces also serve as migratory corridors for wildlife. Even a dense street tree canopy can serve as an important site for biological diversity if planted with suitable and bio-regionally appropriate plant materials.

It is recognized that sprawl style development, and the amount of paving in cities, contribute to drought and storm water management problems due to water being whisked away rather than re-infiltrated to recharge ground water tables (Jehl, 2002; Pierre, 2002). Open spaces can be substantial contributors to mitigating these problems. Trees are very effective at sequestering rainfall, and appropriately designed open spaces can serve as water bodies at the same time as they provide public open space. These benefits represent not only cost savings, but also tangible benefits to residents in their everyday lives (Pincetl, Wolch, Wilson & Longcore, 2003).

### **Social Benefits**

Urban open spaces also provide social benefits. Open spaces, parks and informal green spaces provide opportunities for casual gathering of extended family or friends (Burgess *et al.*, 1988). Landscaped open spaces, including trees, encourage socialization in poorer neighborhoods (Coley *et al.*, 1997). Increased urban greening has been linked to reduced crime and the perception of decreased risk of crime. Inner city residents are less fearful of spaces landscaped with trees and grass, than when they are devoid of vegetation (Kuo, Bacaicoa & Sullivan, 1998). Public housing residents appropriate outdoor space more frequently when they have a sense of safety, created by greenery, and hence, there is more neighborhood cohesion (Brunson, Kuo & Sullivan, 2001). Increasing access to green space, via increased urban green space, is an important component of creating a more equitable city which takes care of the rights of the inhabitants.

### **Economic Benefits**

Leinberger & Berens (1997) observes that the presence of parks and greened areas increases a city's attractiveness and land values. Greened neighborhoods have measurably higher property values relative to non-greened ones. Proximity to, and views of, urban open or green space are linked to higher individual property values. Studies dating from the 1850s through the 1980s link increased property values to proximity to parks and other preserved

natural areas (Leinberger & Berens, 1997). In general, smaller (local), active-use parks have a greater impact on the property values of abutting lands than larger parks (Crompton, 2001).

## **IMPORTANCE OF PLANNING AND PLAN IMPLEMENTATION**

The Planner needs the government to implement his plans. Town Planners, amongst others, arbitrate between activities and spaces, stating that they deal with the physical layout of communities, make proposals and initiate policies designed to make life comfortable, enjoyable and profitable. Collaborative effort between physical planners, governments and members of the public is required for effective physical planning and implementation in any organized society. Sustainable development is possible only when plans are done and implemented. Physical planning is about organizing things in the settlement. When people don't organize, they would regret and agonize. Governments at all levels need to get their planning through enlarged visions as it is their responsibility to do physical planning in any organized society through the help of professional physical planners. Every disorganized city is a reflection of the people who don't know where they are going. Dreams don't materialize until put into action and as such must take ownership of the environment.

Hardly 30 percent of the urban centres are planned, and even where plans are available they are rarely enforced. The growth in unplanned settlements in the urban areas, urban sprawl, congestion, and property development in excess of the carrying capacity of available infrastructure are the evidence of failure to plan urban development and enforce the designated laws and standards. This study reviews the policies, statutes and regulations that guide planning in general and urban green planning in particular in order to identify the areas that need improvement in so as to ensure sustainable development of our cities.

### **Planning and Building Policy**

The earliest planning policy efforts began with the establishment of coastal urban settlement and construction of the Mombasa-Kisumu-Kampala Railway in the colonial times. There existed early colonial policies that alienated the high potential land in the central highlands for the exclusive settlement and commercial use by European settlers. Markets, towns and appropriate local authorities were set up in the highlands as administrative units and trading centers to support the settler economy. Various planning initiatives during this period got institutionalized through the 1931 Town and Country Ordinance. These included the Swynerton Plan of 1955 which was a colonial agricultural policy established in 1954. It aimed to intensify the development of African agriculture in the Colony of Kenya. The policy focused on increased agricultural productivity as well as environmental resources conservation in order to raise the standards of the communities.

The postcolonial era witnessed the development of urban and regional planning through deliberate development of policy documents aimed at achieving national development goals. In 1965, the Sessional Paper No. 10 of 1965 on African Socialism and its Application to Planning in Kenya was adopted. This paper provided the main policy framework for development in all sectors of the economy in the country. It spelt out the need to correct development imbalances created by earlier policies, recognize the role of urban, regional, local and rural levels of development in the national economy and decentralize and redistribute development and planning. Based on this policy comprehensive five-year development plans addressing development needs in all sectors and regions since 1966 have since been prepared.

In 1978 a human settlement strategy for urban and rural development was developed. It provided an overall framework for the management of future urban growth as well as the

location of physical developments in urban and rural areas in order to develop a coherent system of human settlements. It emphasized the service and growth center policies. The service center policy aimed at improving quality of life through provision of basic services in urban centers. The Growth center policy focused on selected centers to stimulate development in the hinterland and reduce rural-urban migration into the larger cities such as Nairobi.

In 2002, the country witnessed a shift of policy with a change in the political dispensation. The Economic Recovery Strategy for Wealth and Employment Creation policy document got published in 2003 (GoK, 2003). It identified the key policy actions necessary to spur the recovery of the economy as:

- Rapid Economic growth through measures to enhance revenue collection, expenditure restructuring and a monetary policy that supports achievement of economic growth without putting price stability into jeopardy.
- Strengthening institutions of governance.
- Rehabilitation and expansion of physical infrastructure in particular roads, railway and telecommunications.
- Investment in human capita especially of the poor.

The strategy was seen as a tool for providing the impetus required for the recovery. The infrastructure and manufacturing sectors played a major role in revitalizing the economy. At the expiry of the Economic Recovery Strategy for Wealth and Employment Creation policy the Vision 2030 was developed. It is a blue print for Kenya's long term national development and anchored on three main pillars namely the economic, social and political. However, Kenya lacks a spatial framework for implementation of the Vision 2030 since it has no National Spatial Plan. Other policies that have had an impact on the planning sector include Sessional Paper no. 3 of 2009 on National Land Policy: This is the first of its kind in Kenya. The policy objective is "to guide the country towards efficient, sustainable and equitable use of land for prosperity and posterity." It provides an overall framework and defines the key measures required to address the critical issues of land administration, land use planning, restitution of historical injustices, environmental degradation, conflict resolution, proliferation of informal settlements, outdated legal framework, institutional framework and information management. The key principal is land use planning which is essential for the sustainable utilization and management of land and land based resources. Another was Sessional paper no. 3 of 2004 on National Housing Policy: This policy recognizes the absence of comprehensive land use management plans. It aims at facilitating the formulation of plans for sustainable housing development in the future among others. Last but not least was Sessional Paper No. 6 of 1999 on Environment and Development: This policy aims at integrating environmental aspects to the national development planning process. It gives guidelines for achieving sustainable development about the effects of development on the environment.

### **Legal Framework**

There are a multiple of statutes that guide the planning and building sector in Kenya. Prior to 1996, the main planning legislation was the Land Planning Act of 1968 which aimed at controlling the development of the urban land. It provided for the making of town plans. The contents of the plans and the machinery of preparation were however not clearly spelt, and its use in rural areas was limited. This act was repealed in 1996 when the Physical Planning Act of 1996 was signed into law. The Physical Planning Act of 1996 (Cap 286, 1996) provides for the formulation of National, Regional and local physical planning

guidelines, policies and strategies. It further provides for the preparation of regional and local physical development plans in its section 16 and 24 respectively. The third schedule of the Act classifies the plans as long term, short term and redevelopment plans. Falling within the short term plans are the Action Area Plans, subject Plans, Advisory or Zoning Plans and Part Development Plans (GoK, 1996). Control over land and the property development process is crucial in creating a better environment, not just in terms of historic buildings but also civic design. However, the effectiveness of development control was hampered by among others the lack of capacity to inspect and implement plans.

Currently, the Ministry of Land, Housing and Urban Development in collaboration with the Hon. Attorney General, the Kenya Law Reform Commission and stakeholders, have prepared a draft Physical Planning Bill, 2014. The Bill puts into effect Article 66 of the Constitution and revises the Physical Planning Act, Cap 286 in order to align it with the new constitutional dispensation.

Some of the other statutes that have a bearing on the planning and building sector include the Government Land Act Cap 280, Environment Management and Coordination Act (EMCA, 1999), Agriculture Act Cap 318, Forest Act 2002 and Regional Development Act among others.

The Government Land Act Cap 280 relates to the planning and building sector in so far as it gives the meaning of Government land thus influencing the way in which the land is planned and utilized. It provides for the administration and transactions to be carried out on Government land.

The Environment Management and Coordination Act 1999 provides for guidelines for environmentally sustainable development. The Act requires that development plans embrace the preparation of Participatory National Environment Plans that have sectoral coordination and linkages, as well as environmental conservation measures. It also requires that environmental impact assessment be carried out for all development projects that are likely to impact negatively on the environment. For complete projects, the act requires that yearly environmental audits are done.

The Agriculture Act Cap 318 promotes agricultural development through the encouragement of soil and water conservation. By regulating the use of different categories of land in Kenya for various agricultural purposes, the Act tries to enhance sustainable utilization of agricultural land in Kenya. It also strives to ensure food security for the rural, as well as urban populations. The Forest Act 2005 provides for the establishment, control and regulation of forests in Kenya. It encourages the conservation of all types of vegetation thus contributing to the greening of urban areas immensely.

### **Institutional Framework Nationally**

The Department of Physical Planning in the Ministry of Land, Housing and Urban Development has the legal mandate of physical development planning. There are other multiple institutions that carry out these activities at various levels in the country. These include the County Governments and Regional Development bodies.

### **Challenges in the Planning and Building Sector in Kenya**

There is no single policy guiding the planning and building sector. The lack of a comprehensive land use planning policy to guide the way in which land is used creates disharmony in land utilization.

Due to the multiplicity of laws and regulations guiding planning and building in Kenya, various conflicts have been witnessed. There is lack of a mainstream mechanism for physical

development planning thus creating a conflict between the national, regional and local levels of planning. Whereas the plan preparation was undertaken by the central Government, plan implementation was the responsibility of the Local Government. This manifested in physical development plans not being informed by local needs thus failing to address local realities.

The planning and building sector lacks a comprehensive and integrated framework within which to operate. There are many pieces of legislation scattered in many statutes that impact on the industry. The nature of the legislation makes it difficult for developers to understand the requirements and creates ambiguities that make effective enforcement of the law difficult.

Inability to enforce planning regulations has been one of the conducive factors which have led to the rapid loss of green open spaces. It has also encouraged the mushrooming of developments without leaving adequate space for greenery. The greatest legislative impediment in the planning industry today has also been the enforcement procedures. The administration of the various statutes is carried out by several agencies. This multiplicity of institutions creates conflicts and confusion that inhibits the proper functioning of the sector.

### **Assessment of the Effectiveness of the Urban Planning Instruments in the City**

The first urban planning instrument analyzed was the development plan. To assess the effectiveness of the development plan governing developments in Kisumu city, the study determined whether the plan imbibes the three qualities of a good development plan as put forth by Hague (2000).

The first quality assessed is whether the plan exhibits and maintains a sense of purpose. The development plan for Kisumu city states its myriad of objectives ranging from infrastructural developments to housing schemes and even environmental protection. Hence, it can be acknowledged that the development plan is clear on its ultimate goals.

The second quality to determine the effectiveness of the development plan is its consistency. Through a quick analysis of the plans stipulated in the development plan, contradictions must be highlighted. Contradictions are, in fact, evident in the master plan. The plan fails to mention the water-front development for promotion of ecotourism that ideally will also provide commercial activities.

Finally, to assess the success of the development plan, the plan should exhibit a distinct implementation strategy which usually accounts for the downfall or success of plans. While implementation options are provided for recommended strategies, details such as time frames and funding necessary are not adequately provided. Failure of implementation is noted in issues such as encroachment on green spaces.

In addition to the inefficiencies of the development plans in achieving sustainable cities, the development standards must also be assessed. The objective of development standards is to guide development in the city through various control mechanisms. However, this guidance is virtually absent. While building codes do exist, they are inadequate and not enforced. Inadequacy of these codes arises as they are not well aligned to the development of green cities through the creation of energy efficient buildings. No incentives are publicized to educate and encourage developers to establish energy efficient buildings through varying tools such as materials utilized or even the shape and size of the buildings given the urban microclimate. Furthermore, no incentives are in place for developers to harness the unlimited and reliable source of energy in Kisumu city, which is solar energy.

A structure plan was prepared to guide the development within a time span ranging from 1983 to 2013. It covered the social, economic and land use patterns and projections. The objective was to provide a long term framework on which the short term plans should be based (PPD,



1989). Needless to mention, the structure plan was overcome by time and urbanization within Kisumu rendering most of its proposals and policies unadoptable (UN-Habitat, 2005).

The final urban planning instrument, the zoning standards, must also be assessed in its attempt to contribute to urban sustainability. The aim is to protect valuable land space and ensure land use compatibility. This has not been noted in Kisumu city. Firstly, even though the policy has identified areas for environmental protection, there has been indiscriminate encroachment on these delicate environments such as the Dunga wetland area and road reserves.

Furthermore, the zoning regulation has failed to eliminate land use nuisances such as the informal settlements dominant in Nyalenda while land use compatibility remains an issue. In addition, ineffectiveness of the regulations is also noted through its inability to enforce the standards. It is also important to acknowledge that the zoning policy, though it has postulated strict demarcations, has failed to uphold that guideline as mixed land use persists within areas not specified as zones in transition such as parts of Milimani.

## **RECOMMENDATIONS**

While it is recognized that urban planning instruments require urgent reform to allow success in their achievement of urban sustainability, key ingredients are vital to ensure the smooth operation of these tools. These critical success factors are overlooked as the spotlight is placed on the development of the urban planning tools themselves, but in the absence of these facilitating factors, urban success remains elusive.

In order for these urban planning instruments to be effective, supportive laws and administrative frameworks must be in place. Though the Physical Planning Act Cap 286 of 1996 is the legislation governing urban planning in Kisumu city, legitimacy is not derived automatically from the enactment of the legislation. Rather, legitimacy is attained when the enforcement capability of those with the authority is effective in fulfilling its mandate, that is, to uphold the rules and regulations as stipulated without any obstacles. Common obstacles to ensuring legitimacy include acts of impartiality towards groups which jeopardizes the framework as its integrity is undermined. Hence, in addition to an effective legislation being in place, there must also be a supportive authoritative body to exhibit strict adherence to these laws at all times.

In addition to a legislative framework, a cohesive institutional arrangement is crucial to the successful implementation of urban planning instruments. A single overarching agency should be made responsible for urban affairs to avoid conflicting jurisdictions as well as duplication of responsibilities. The Physical Planning Department is the urgency which already exists for urban planning in Kisumu city. It is important to ensure that this department is independent and free from scandal to be assured public trust and support for success.

This issue of public trust follows on to another critical success factor for the urban planning instruments, that is, increased stakeholder engagement. Given the myriad of stakeholders relevant to the planning process, through the participation of these groups more comprehensive plans can be devised to meet the needs of maximum stakeholders and thereby attain urban sustainability. Such attempts at social inclusion can be quite useful. However despite being implemented in Kisumu city, it has failed mainly due to the lack of political support and inadequate resources.

Another critical success factor for urban sustainability is an efficient allocation of resources which can be obtained only through strong political support. Resources include technical equipment such as GIS software to create baseline information to aid in the tracking of changes to land uses. Also, human resources are quite essential both in numbers and at the

required level of training in their respective field given the multi-disciplinary nature of physical planning. In addition, financial resources cannot be overlooked in its ability to assist in development and implementation of plans. Furthermore, as aforementioned, tracking changes is important as a tool for monitoring and evaluating the success of urban planning tools. Through the establishment of performance standards, urban planning instruments can be regularly assessed to determine whether they are, in fact, achieving urban sustainability, or reform as required. Such indicators can include projected energy consumption rates to determine environmental sustainability.

## CONCLUSION

In conclusion, it is quite evident that there are numerous urban planning instruments governing development in the city of Kisumu. However, upon assessing the success of these urban planning instruments in their contribution towards the attainment of environmental, economic and social sustainability, deficiencies have been acknowledged. Accounting for the failure of these tools are multiple factors such as the poor implementation strategies, inadequate enforcement capabilities, insufficient allocation of resources as well as poor stakeholder relationships. Thus, the goal of urban sustainability for Kisumu city, as upheld by the nation's Vision 2030 remains elusive. Therefore to convert this myth of the sustainable Kisumu city to a reality, the need for reform is justified. As a guide, recommendations have been put forth to aid in the achievement of the environmental, economic and social pillars responsible for the establishment of a sustainable city. While it is accepted that urban sustainability in Kisumu city is no more than a myth, the ability of the city to attain sustainability in reality, must not be undermined.

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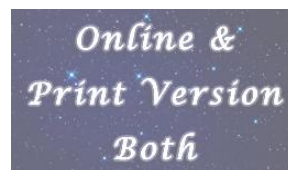
ISSN: 2305-915X (print); 2307-9584 (Online)  
ICV 5.20; SJIF 2.607; UIF 2.0476

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