THE MISSING LINK: SPATIAL INFORMATION REQUIRED IN THE PREPARATION AND IMPLEMENTATION OF PHYSICAL DEVELOPMENT PLANS IN KENYA

Mairura OMWENGA, Kenya

Key words: Physical Planning Act, Physical development plan, information, maps, survey.

1. INTRODUCTION

Physical development planning as a discipline is focused on organizing, directing, facilitating and managing human settlement development and growth. Physical development planning is also concerned with efficient and sustainable use and conservation of land and land-related resources. Preparation and implementation of physical development plans in Kenya has however been inadequate and far behind the national development demand.

This paper argues that inadequate spatial information has greatly contributed to the problem of ineffective and untimely preparation, implementation and management of physical development plans in Kenya. Shortcomings and lack of spatial information has greatly delayed and made plan preparation and implementation expensive and not affordable. This has indeed affected the overall socio-economic and environmental development of the country.

2. PHYSICAL DEVELOPMENT PLANS

2.1 Statutory Provisions

The preparation and implementation of physical development plans in Kenya is provided for in the Physical Planning Act 1996 (Kenya, 1996). Part IV of the Act provides for two broad categories of physical development plans, namely:

(i) Regional Physical Development Plan, and
(ii) Local Physical Development Plan.

The provisions of the Act apply to all parts of and any land (government, trustland, private) in the country, except such areas as the Minister may by notice specify. The administration, preparation and implementation of physical development planning is vested mainly in the office of the Director of Physical Planning.

As will be noted herein, the preparation and implementation of physical development plans in Kenya is far below the demand and falls far short of the statutory requirements.

2.2 Regional Physical Development Plans

Regional Physical Development plans are prepared and cover the area of authority of a County Council. Since a County Council in Kenya has the same area of jurisdiction as a provincial administration district, it means that regional physical development plans are really district physical development plans. Districts in Kenya vary in area and population size. The smaller districts are about 600 square kilometers and the largest are about 70,000 square kilometers. The district population is also as low as 50,000 and as high as over 1,000,000.

In 1999 there were 68 administrative districts in Kenya (Kenya, 2001). This means that the country is supposed to have 68 Regional Physical development plans. Unfortunately, the country has only one approved regional physical development plan for Nakuru district (UNCHS, 1999).

2.3 Local Physical Development Plans

Local Physical Development Plans are prepared for all land within the area of jurisdiction of a city, municipal, town or urban council. Local physical development plans are also to be prepared for trading or market centres in Kenya. In 1999 there was a total of 1783 designated urban, rural and market centres in Kenya (UNCHS, 1999). There is one City Council of Nairobi. There are about 45 municipal councils and 61 town councils in Kenya today. The number of local market centres in Kenya is indeed very large but unfortunately inventory records are not available. Assuming that a district has about 20-30 market centres, the number of market centres in Kenya is about 1700.

Out of 1783 designated urban, rural and market centres only one Nakuru local physical development plan has been prepared, approved, and gazetted as per the current legislation. This is most unfortunate considering that the City of Nairobi has no approved and gazetted local physical development plan and only relies on an outdated 1973 plan. The situation is the same in the other urban, rural and market centres.

3. INFORMATION REQUIREMENT

Preparation, implementation and management of physical development plans requires a very wide range of information. This information base include:

3.1 *Physical and Climatic Features*: This includes information on topography, geology and soils, drainage, vegetation, rainfall, temperature, wind etc.

3.2 *Population and demographic characteristics*: This covers information of population size, growth, income, morbidity, literacy, and employment among others.

3.3 *Economic activities*: This covers production and employment activities like agriculture, manufacturing, commercial trade, tourism, mining, fishing, etc.

3.4 *Transport and communication*: This includes the network of roads, railways, airport, seaports, telephone, broadcasting, and postal services.

3.5 *Infrastructural utilities*: This includes water supply, sewerage, surface drainage, and solid waste disposal. The network also covers electricity generation, the national electricity grid, petroleum pipeline and petroleum products outlets.

3.6 *Public and social services*: This covers public services and amenities like central and local government office services, schools, health facilities, police, fire fighting, places of worship, recreation facilities, and community centres.

3.7 *Land Administration*: Information required include ownership, lease, land size, land use, and value.

For the purposes of physical planning, the bulk of this information has to be spatially analyzed, presented and be mapped. Spatial analysis and presentation and mapping constitutes a central input in the preparation, implementation and management of physical development plans.

4. LIMITATIONS IN SPATIAL INFORMATION AND MAPPING

4.1 General

How adequately is information spatially analyzed and presented and mapped to meet the requirements for physical development planning?

The position of this paper is that the bulk of the information required in physical development planning in Kenya is not adequately analyzed and presented spatially and not adequately mapped. The information base for physical development planning has numerous shortcomings - limited scale and mapping coverage, out-dated, limited range, poor access and storage of records, poor co-ordination, poor information system, and inconsistent jurisdiction of spatial area unit.

4.2 Limited Scale and Mapping Coverage

From the earlier presentation it is clear that all parts of the country need to have physical development plans. This however is dependent on adequate surveying and large-scale mapping of all parts of Kenya.

It is noted that much of the land in developing countries has not been surveyed, documented or mapped at appropriate functional scales of 1:10,000 or larger (UNCHS, 1999). In Kenya, topographical maps cover the entire country but at scale 1:50,000 that is not appropriate in the preparation of physical development plans.

In only 50 percent of the 1783 designated urban, rural and markets, maps are available at scale 1:10,000 and larger. Unfortunately these large scale maps cover only a small section 1-5 km^2 old town centre and hardly 10 percent total of the town/city area and this includes major towns like Nairobi (Kenya, 1995). This limitation has greatly inhibited the preparation, implementation and management of physical development plans in Kenya.

4.3 Out-dated Information

Much of the information in maps currently being used in Kenya is out-dated. This is because existing maps are obsolete as they were prepared in the period 1950-70. Considering the rapid and wide historical development activities in Kenya, a lot has changed since the 1970s. The preparation and administration of physical development plans has indeed been inhibited by these maps that are out-dated.

4.4 Limited Range

As noted earlier, physical development plans covers a wide range of activities. This means that physical planning requires spatial analysis and mapping of a wide range of information. Information on infrastructure distribution networks, economic activities, public and social facilities, and land parameters is not adequately covered spatially and not mapped (Wayumba, 2000).

This problem has led to numerous and lengthy delays in the plan implementation, and management of infrastructure projects in Kenya (Omwenga, 1992). Recently road rehabilitation works in Nairobi faced major disruptions and contract delays because many infrastructure service lines like water, sewerage, telephone and electricity were not mapped.

4.5 Poor Access and Storage of Records

A lot of spatial, survey and map information in Kenya is not easily accessible. Obtaining spatial information and maps from central government and local government offices is indeed not well organized and is faced with lengthy delays. The survey records and maps

are in poor condition, are poorly kept and lack adequate storage facilities. In this state information, although available somewhere, is not easily accessible and prone to abuse (UNCHS, 2001).

4.6 Integration and Coordination

There are numerous central government departments, local authority departments and consultant firms in Kenya keeping important information required in physical development planning. This information is however not integrated and coordinated. The information is often not spatially analyzed and is rarely harmonized on a common base map.

This poor system of integration and co-ordination of spatial information among the various partners makes preparation and management of physical development plans a difficult task.

4.7 Spatial and Land Information System

It is true that almost 99 percent of spatial and land information in Kenya is gathered, processed and stored manually in hard copy form. This includes registers, records, aerial photographs, files, maps and plans. This system is extremely limiting, cumbersome, out-dated and cannot cope with development demand.

Inadequate land information in both rural and urban areas in Kenya has been identified as the single most constraint in the effective management of land and attainment of tenure security and property rights (UNCHS, 2001). There is no clear policy on land information and it is not clear how government will process, store, retrieve and update massive land information in the country. A modern computer and digitized spatial land information system like Geographical Information System (GIS) is urgently needed in Kenya (UNCHS, 2001).

4.8 Spatial Area units

There is no clear system that defines the physical area unit for collecting, analyzing and presenting spatial information needed for physical planning. Much of the information and data in Kenya is collected and analyzed on the basis of provincial administration units. The hierarchy of provincial administration units used in collecting and analyzing information in Kenya is the sub-location, location, division and district.

Collecting and analyzing data based on the above administration units has serious weaknesses. The units are sub-divided too often and with no clear boundary changes. This has made collection and analysis of information for physical development planning extremely difficult.

5. RECOMMENDATIONS

1. Harmonize and integrate professional training of land-use planning, administration and management in high level institutions in Kenya.

2. Integrate and improve co-ordination among central and local government departments that relate to land use planning, land and cadastral surveying, and land administration.

3. Establish a common and integrated land information and mapping system in the country. This system should adopt modern land information technology.

4. That central government and local governments allocate sufficient funds for land and cadastral surveying, and preparation of physical development plans in Kenya.

REFERENCES

Kenya, Republic of, 1996, The Physical Planning Act 1996, Nairobi, Government Printers.

Kenya, Republic of, 2001, The 1999 Population and Housing Census, Nairobi, Central Bureau of Statistics.

Kenya, Republic of, 1995, Feasibility study on Infrastructural measures in small towns, pre-feasibility study report, Vol. II: Case studies Chuka, Kilifi, Kisii, Kitale, Nairobi, Ministry of Local Government.

Omwenga, M. 1992, Urban Infrastructure Financing Management in Kenya: A Picture of Sewerage services in Secondary Towns, Proceedings of African Research Network for Urban Management Workshop on Urban Management in Kenya; pp. 9-26, Nairobi, University of Nairobi, Housing and Building Research Institute.

United Nations Centre for Human Settlements (UNCHS), 1999, Report of the Regional Workshop on Land Survey and Large-Scale Mapping in Support of Settlements Planning, Land Development and Management, 4-8 October 1999, Nairobi, UNCHS (Habitat).

United Nations Centre for Human Settlements (UNCHS), 2001, Land Information Service in Kenya, Nairobi, UNCHS (Habitat).

Wayumba, G.O., 2000, The Role and Potential of Land Surveying in Urban Land Management in Kenya, paper presented at Regional Conference on the Relationship Between Land Ownership and Land Use in Emerging Land Markets in East Africa, Nairobi, 25-26 February 2000.

BIOGRAPHICAL NOTES

Mairura Omwenga is a trained and practicing civil engineer planner and holds B.Sc. (Engineering) and MA (Planning) degrees. Omwenga has worked in government and in the private sector and also a lecturer in University of Nairobi. His career profile is outlined below:

- Ministry of Water Development, Assistant Engineer (Nairobi), 1985
- Runji & Partners, Consulting Engineers & Planners, 1988
- University of Nairobi, Lecturer, 1989
- Keipet Consultants Ltd., Director, 1995

- Member of Institution of Engineers of Kenya.
- Member of Architectural Association of Kenya (Town Planners)
- Member of Kenya Institute of Planners
- Member of Physical Planners Registration Board.

CONTACT

Mairura Omwenga
University of Nairobi
College of Architecture & Engineering
Department of Urban and Regional Planning
P.O. Box 30197
Nairobi
KENYA
Tel. + 254 2 718 548 / 7533
Fax + 254 2 718 548
Email: momwenga@uonbi.ac.ke