



ESTABLISHING THE LINK BETWEEN SPATIAL PLANNING AND INFRASTRUCTURE DEVELOPMENT

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Introduction

- Infrastructure development is at the very heart of efforts to meet the Sustainable Development Goals (SDGs). It include addressing poverty and hunger, industry, innovation and infrastructure, health, education, water and sanitation, human settlements, waste management, transport and power generation infrastructure and services that enable society to function and economies to thrive.
- Infrastructure development is part of a portfolio of assets that collectively hold great potential to deliver the three pillars of the SDGs: economic, environmental and social sustainability.
- Spatial planning enhance the integration between sectors to improve local systems of urban and rural development.
- Spatial planning has a key role in providing a long-term framework for development, integration and coordination.

Background and objectives of the paper

- National Infrastructure Plan 2050 (NIP 2050) paints a shocking picture of the status of public infrastructure in the country.
- The plan describes the status quo regarding public infrastructure in various functional areas.
- The NIP 2050 phase 1 identified and focused on bulk infrastructure related to energy, water, freight transport and telecommunications. It also attended to strengthening institutions capabilities for delivery of infrastructure
- The second phase of the NIP 2050 focused on distributed infrastructure and identified six infrastructure areas namely: human settlements, municipal electricity, water and sanitation, solid waste, passenger transport, road infrastructure, education infrastructure and health infrastructure

Background and objectives of the paper

- Rules and regulations relating to infrastructure development are often disregarded and not linked to spatial planning, creating hazards, posing serious risks of harm to residents and lacking alignment and integration with other urban development initiatives.
- Quality, access, and social arrangements in relation to basic infrastructure and services such as water/ sanitation, electricity, refuse removal) are urban management functions and contributes to service delivery in a municipality.
- Townships and suburbs were planned for the level of population densities .
- Due to urbanization, population growth the infrastructure and services get overloaded, resulting in blockages and breakdowns.

Background and objectives of the paper

- An increase in the number of backyard rental opportunities pose a serious risk to existing infrastructure.
- Municipalities are encouraged to plan for higher density development and streamline their building approval procedures and by-laws to support second dwellings on residential properties.
- Public infrastructure development to be planned and linked to spatial planning to cater for informal densification in future and to accommodate extra infrastructure capacity to cope with the additional load requirements for denser residential development.
- Sustainable infrastructure developments is dependent on government playing a developmental function through spatial planning at local, provincial, and national levels to give approval for infrastructure development tools.

Objectives of the study

- To assess the usefulness of linking spatial planning and infrastructure development within cities.
- Secondly to present a practical rational allocation of resources
- To propose a sustainable infrastructure development and integrated framework models for decision-making to prioritize and coordinate projects at all spheres of government
- Lastly to present challenges in the implementation of infrastructure development projects are discussed.

Methodology

- This paper used a literature review methodology where United Nations documents, journals, and articles focusing on infrastructure development and spatial planning were consulted.
- The researchers' own knowledge of the domain of facilitation of human settlements infrastructure provision and human settlements planning also contributed.
- The literature was used to debate and discuss the main objectives of paper outlined above.

Theoretical framework

- This paper has adopted two theoretical approaches namely: social developmental and bottom-up. For infrastructure development, the paper adopted the social developmental theory and for spatial planning the paper adopted the bottom-up theoretical approach.
- Infrastructure development programs are strongly influenced by involvement, participation and community ownership of implementation processes for projects to reach their goals.
- The theory advocates putting people at the centre of any development and infrastructure development projects should be rights based and encourage empowerment and engagement primary and secondary beneficiaries

Theoretical framework

- Spatial planning is influenced by bottom-up approach wherein the existence of community needs, problems and expectations are better addressed through comprehensive land use governance practices.
- The bottom-up approach uses new planning tools such as needs assessment, socio economic surveys, planning and participatory evaluations, project management principles, respecting and considering ideas of communities, local people and beneficiaries of the projects
- Bottom-up participation approach is used to overcome conflicts at the institutional levels in the use of the urban space
- The bottom-up participation by local people is used to analyze the vision of the people in the urban context, and the information is shared with decision-makers to develop the planning and design solutions.

Observation and discussion

- The benefits of linking spatial planning and infrastructure development within cities plays key roles in shaping the spatial form of the city at a macro and more at local scale, and that it influences the sustainability, efficiency and inclusiveness of cities and local areas.
- The spatial form of cities is influenced by a range of social, political, institutional, and regulatory conditions in various contexts.
- Benefits includes the following: Contributes to liveability and inclusiveness of cities as it promotes access to many facilities, amenities, including places of education; health facilities; libraries; crèches; safe spaces for recreation; spaces for religious and cultural practices; markets and retail outlets and spaces for economic activity.

Observation and discussions

- The rationale allocation of resources to achieve sustainable infrastructure development is influenced by bureaucratic coordination and integration of the various parts of the economy, investments, loans, land, buildings and human capital.
- Obstacles to the rational allocation of resources is the lack of an integrated framework for decision-making on priorities for intersectoral resource use and a coordinating mechanism for implementation of decisions.
- To address this, the public sector needs to intensify its involvement in terms of regulations, operation, control, and contractual arrangement that shares resources and responsibilities between a public agency and a private sector needs to be synchronized

Observation and discussion

- A rational allocation of resources for infrastructure development is based on the following approaches: formula-based performance in terms of implementation of infrastructure projects
- sound infrastructure expenditure framework
- immediate technical priorities
- multi-year allocations
- governance and financial management measures such as the unqualified audit opinion
- under expenditure of their capital budget of less than 35%

Observation and discussion

- A coordinated approach towards implementation of infrastructure projects within a municipality is key in ensuring the best project results and good value for money wherein customers are provided with services they desire.
- The NIP is focusing on coordinating infrastructure planning to ensure there is vertical integration across spheres and tiers of government and horizontally across provinces and municipalities
- Coordination is complex and it involves cooperation, interaction, communication, sharing of information, institutional arrangements ,adherence to laws and regulations and observing implementation protocols

The main challenges in the provision of sustainable infrastructure development

- Inadequate funding-Given the economic conditions in the country funding major capital infrastructure project remains a major challenge for government.
- Multi-stakeholder management-Due to broad interest groups involved in infrastructure development it is important to have multi-stakeholder management plan to ensure that all project challenges and bottlenecks both with community leaders and professionals are addressed.
- Poor governance is largely responsible for poor state infrastructure in all sectors.(inefficient allocation, poor management of resources, misappropriation of funds, abandonment of project due to lack of project management capabilities).
- Insufficient capacity, skills, and an inefficient regulatory and policy framework to develop a robust, credible and bankable project pipeline.

Conclusions

- Centralizing the provision of infrastructure development at municipal level will assist in facilitating integrated planning.
- Provide municipalities with sufficient autonomy to identify their own infrastructure investments and priorities.
- It must be noted that some municipalities are ready to implement integrated spatial planning for built environment and
- Rural municipalities need intensive support around spatial targeting, capital investment programming and infrastructure project implementation
- Infrastructure development projects empower communities to reach their goals and contributes towards addressing socio-political factors (poverty, social integration, political conflicts,

Recommendations

- There are multiple grants to address infrastructure backlog, and it is recommended this be carefully managed to avoid duplication and overlap and sector specific grants be consolidated towards the achievement of national targets and priorities.
- Where national or province builds infrastructure on behalf of municipalities through indirect grants, there should be service level agreements in place to clearly define the roles, responsibilities, targets, and priorities.
- Municipalities must develop infrastructure investment and implementation plans to intensify infrastructure investment and financial planning practices to coordinate the demand and supply of infrastructure projects and serves as intergovernmental mechanism to facilitate consultation and alignment of infrastructure programmes and projects with clear -cut targets.