

INTEGRATING INDIGENOUS KNOWLEDGE SYSTEMS (IKS) IN IMPROVING RURAL ACCESSIBILITY AND MOBILITY (IN SUPPORT OF THE COMPREHENSIVE RURAL DEVELOPMENT PROGRAMME IN SOUTH AFRICA)

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ABSTRACT

This study discusses opportunities and challenges for integrating local knowledge in improving rural accessibility and mobility, within the context of supporting the Comprehensive Rural Development Programme (CRDP) initiatives in South Africa. One of the major challenges besetting rural areas of South Africa and the CRDP sites is the lack of and need for a critical mass of infrastructure and services that can link communities to one another. This will aid the process of transforming rural spaces, places, people and cultures. The research for this study therefore sought to explore alternative and innovative ways through which local knowledge could contribute towards reversing impediments and existing problems in rural areas. The study is based on a broader Indigenous Knowledge Systems (IKS) audit conducted by the Department of Rural Development and Land Reform across the country. The study approach was participatory, involving extensive discussions with stakeholders. This included visits to project areas, robust application of internal and external peer-review mechanism and document analysis. The researchers conducted an audit to unpack existing local knowledge systems that could be improved and integrated to address access and mobility issues in rural areas. The ultimate aim of the exercise was to establish a platform and expand pathways to improve the socio-economic growth and development application levers for use by rural communities in the CRDP pilot sites. The results show that a number of local knowledge systems are available in rural areas, however, these have been neglected as they are considered primitive and inferior. We recommend that scoping and interrogating existing local knowledge systems is an essential pillar to promote local economic development. Finding practical ways of improving the development value add of local knowledge is critical in designing, implementing, commercialising and sustaining appropriate community technologies to respond to the rural development agenda in South Africa. This paper posits that the local knowledge systems can be improved to support integrated infrastructure interventions and strategies for implementing affordable access and mobility interventions. We believe that using local knowledge to support local infrastructure interventions will assist the Department of Rural Development

and Land Reform to meet part of its mandate within the broader ambit of rural development initiatives and service delivery.

Key words: *indigenous knowledge systems, rural areas, accessibility, mobility, interventions, comprehensive, South Africa*

1. INTRODUCTION AND PROBLEM STATEMENT

The Comprehensive Rural Development Programme (CRDP) is a cross-cutting and comprehensive initiative. It was developed with involvement from all sector departments and clusters through the Medium Term Strategic Framework (MTSF, 2009-2014) and the government's programme of action. The CRDP encompasses three distinct components, namely agrarian transformation, rural development and land reform.

The vision of the CRDP is to create vibrant, equitable and sustainable rural communities including by:

- contributing to the redistribution of 30% of the country's agricultural land;
- improving food security of the rural poor;
- creating business opportunities, decongesting and rehabilitation of overcrowded former homeland areas; and
- expanding opportunities for women, the youth, people with disabilities and older persons who stay in rural areas.

For sustainable and vibrant rural communities to be realised, the government has recognised the need to incorporate Indigenous Knowledge Systems (IKS) in project planning, implementation and policy formulation processes. The main thrust is to encourage community men, women and the youth through various social facilitation instruments at the disposal of the Department. This is aimed at obtaining IK of communities on development issues at hand to unlock the socio-economic potential of their respective areas.

One of the major challenges besetting rural areas of South Africa and the CRDP sites is the lack of and need for the development of a critical mass of infrastructure and services that would link communities to one another in the process of transforming rural spaces, places, people and cultures (Chakwizira et al., 2010; Nhemachena et al., 2010; ANC, 2007). Lack of basic infrastructure such as roads, water and electricity that characterises many rural areas entrenches the problems of poverty and limits the potential of communities to engage in productive socio-economic activities. There is growing appreciation of the fact that, at local level, the conventional transport system will not cater fully for all movement, travel needs and demands (Chakwizira, 2010). Therefore, this paper discusses opportunities and challenges for integrating local knowledge in improving rural accessibility and mobility within the context of supporting the CRDP initiatives in South Africa. This paper sought to explore alternative and innovative ways through which local knowledge could contribute towards addressing such impediments and related problems in rural areas. The analysis is based on a broader IKS audit conducted by the Department of Rural Development and Land Reform across the country.

2. RATIONALE AND OBJECTIVES

Taking into account that at the local level the conventional transport systems will not cater fully for all movement, travel needs and demands in rural areas, there is growth in exploring local level transportation planning and a host of appropriate access interventions. Finding the correct mix and balance of implementing community access technologies is still a huge challenge. Thus, this paper seeks to identify opportunities and challenges for integrating local knowledge in improving rural accessibility and mobility. The main objective of the paper is therefore to explore alternative and innovative ways through which local knowledge can contribute towards addressing such impediments and related problems in rural areas.

3. THEORETICAL FRAMEWORK

The value of IK has gained ground world-wide in various areas, ranging from transport, trade and industry, biodiversity, science and technology, traditional health and traditional leadership, governance and sustainable development (Mosimege, 2005). Against the backdrop of the legacy of colonialism and the imperialism of western knowledge, a new development paradigm has precipitated in the African society to reclaim and explore the core essence of IK and its contribution to livelihoods and economic contribution. IK is the unique, traditional, local knowledge existing within and developed around specific conditions of women and men indigenous to a particular geographic area.

In some instances external or scientific knowledge is combined with IK during the innovation process. IKS is embedded in the cultural milieu of all people, irrespective of race. People are historically and culturally bound and thus have a specific knowledge system, which enables them not only to survive, but also to become a civilised community (Ntuli, 1999; Vilakavi, 1999).

It is argued that most civilisations that practice cultural and scientific knowledge are economically-stable societies. These societies also prosper when they use their Indigenous languages in economic and scientific activities (Gxilishe, 2009). While it is argued that IK provides opportunities for local and rural development, the history of South Africa and its political landscape have seen many rural communities deprived of the opportunities to exploit the potential of their IK. It is therefore critical to explore the opportunities for empowering local and rural communities through IKS in support of the overall government thrust of creating vibrant and sustainable rural communities. In this study, IK is understood to refer to unique locally-available knowledge, innovations, technologies, practices, resources and their utilisation for improved livelihoods, beliefs and their contribution to the wellbeing of communities.

Non-motorised transport is the most common indigenous transport to most cultures and races. However, many cultures have developed different options and ways of transportation that identify them and make them unique to others. For example, use of animal-drawn carts (Figure 1) and sledges dates back to centuries ago in African history with oxen used to transport goods and services in ancient times (Simalenga and Joubert, 1997; Starkey 1997). The ancient indigenous animal-drawn carts have been improved through conventional science and technology through new non-motorised animal cart design prototypes (Interdesign, 2005).

In addition, other indigenous transport systems exist such as road construction and maintenance that local communities depended on even without organised municipalities to construct and maintain roads. This still offers vast opportunities to improve mobility of most rural areas, especially where there are no well-developed roads. Communities can exploit indigenous road construction methods for local-level accessibility interventions such as foot bridges, footpaths, etc.



Figure 1: Example of a donkey cart in Northern Cape, South Africa



Figure 2: Example of the newly- designed prototype of a donkey/ox cart by Interdesign, 2005

With the growing concern about the impact of the transport sector on emissions contributing towards climate change, non-motorised transport interventions offer great opportunities for investments. These include clean transport systems that cater for the environment while simultaneously providing low-cost transport solutions to accessibility challenges faced by many rural communities. Given that most rural communities still keep livestock such as cattle and donkeys, such interventions offer great opportunities for local-level transportation needs such as in deep rural areas where conventional motorised vehicles cannot reach. Thus integrating local IK of transport provides various opportunities to address transportation and accessibility needs of most rural communities. In addition, communities can exploit tourism opportunities with their local transport interventions such as the Rickshaws of Durban in KwaZulu-Natal. However, despite these opportunities, many communities are not keen to use such interventions for various reasons. It is critical to promote local transport intervention in order to change the mindset and perceptions of such interventions among rural communities.

4. STUDY APPROACH AND METHODS

The study is based on a broader IKS audit conducted by the Department of Rural Development and Land Reform across the country. The study approach was participatory, involving extensive discussions with stakeholders. This included visits to CRDP project sites, robust application of internal and external peer-review mechanism and document analysis. Visual observations and photographs were used to document the identified practices from each of the visited CRDP site. We conducted an audit to unpack existing local knowledge systems that could be improved and integrated to address access and mobility issues in rural areas.

The ultimate aim was to establish a platform and expand pathways to improve the socio-economic growth and development of rural communities at the CRDP pilot sites. The paper is based on findings from the IKS audit from CRDP pilot sites in the following provinces: North West, Eastern Cape, Northern Cape, Mpumalanga, KwaZulu-Natal, Limpopo and Free State.

5. FINDINGS AND DISCUSSIONS

This section presents and discusses the findings from the IKS audit relating to transport. The overall results show that a number of local knowledge systems are available in rural areas, however, these have been neglected as they are considered primitive and inferior. There are opportunities for integrating these knowledge systems in improving accessibility in the CRDP sites. This requires scoping and interrogating existing local knowledge systems as an essential pillar to promote local economic development. In addition, finding practical ways of improving the development value chain of local knowledge is critical in designing, implementing, commercialising and sustaining appropriate community access technologies to respond to the rural development agenda in South Africa.

This paper posits that the local knowledge systems can be improved to support integrated infrastructure interventions and strategies for implementing affordable access and mobility interventions. We believe that using local knowledge to support local infrastructure interventions will assist the Department of Rural Development

and Land Reform meet part of its mandate within the broader ambit of rural development initiatives and service delivery.

Tables 1 below summarise the highlights of findings from the CRDP pilot sites.

Table 1: Highlights of findings from the CRDP sites

| Item | Description |
|--|---|
| Description (Non-motorised transport (NMT) – animal traction, walking and roads) | <ul style="list-style-type: none"> • Horse/ox carts – Long ago people used horse/donkey/ox carts for transporting goods. Although the practice still exists, very few people use it. People used to exchange cattle for carts from the Boers. These activities were usually done by men. It is also used to collect crop harvest from the field, although these days people prefer motorised transport like tractors and bakkies. • Horse riding: Individuals still ride horses as transport mode, especially for fetching cattle from the fields, horse races and other leisure activities. • Ox sledge: People used the ox sledge for transporting goods and services, especially in areas without developed access road networks. This practice is, however, now regarded as primitive and no longer used. A special type of wood was carved from specific trees, preferably a Y– shaped tree - with the branches of these trees customised for various requirements of the sledge. • Walking: People used to walk long distances from one point to another for various reasons. They used to carry ground maize meal with salt and water as these were light to carry and provide food for days. • Access roads: People used to construct access roads, such as for access to water fetching points and fields. Sometimes, the sledges would help create access roads, which would be used continuously and developed into well established access roads. Men used to construct small crossing points across streams to ensure accessibility of some areas such as fields and access to other resources and services like firewood. Local materials like stones and tree branches were used for these construction activities. |
| Uses | <ul style="list-style-type: none"> • NMT practices described above were used to provide mobility and accessibility to various socio-economic services for the local people. |
| Strengths | <ul style="list-style-type: none"> • The main strength of NMT practices is that it provides mobility and accessibility to socio-economic services for the local people where modern transport services are not available. • NMT practices are cheap and can be used with locally available |

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| | <p>resources.</p> <ul style="list-style-type: none"> • The practices require local training, usually done practically, and are easy to use. • Construction of local access roads with local material provides improved accessibility to socio-economic services in deep rural areas. • Some of the NMT practices are environmentally friendly, for example, some have zero emissions of greenhouse gases. • Has potential for growing in terms of technological design. |
| Weaknesses | <ul style="list-style-type: none"> • The main weakness around traditional transport systems has to do with the values and views of users. • There is a general negative perception of NMT practices and very few people still use these practices. • Most people regard these practices as ancient and prefer modern transport services. |
| Potential for sustainability and impact on local economic development (LED) | <ul style="list-style-type: none"> • One of the big challenges in rural development is the absence of a critical mass of transport infrastructure and services that would link communities to one another in the process of transforming rural spaces, places, people and cultures. • Affordable and reliable transport is critical for people to access basic services and resources. • Geographical isolation, long distances, poverty levels, poor infrastructure and limited transport services in rural and peri-urban areas inhibit such access. NMT can be integrated with Motorised Transport (MT) practices to provide sustainable solutions relating to rural transportation infrastructure and services. • This will unlock the local economic potential and contribution of the rural labour force to productive economic activities. |
| Potential for replication | <ul style="list-style-type: none"> • Mobility and accessibility challenges are common in various parts of the country, especially in rural areas. • NMT can be integrated and replicated across rural areas customised to different requirements to provide cheap and affordable accessibility to socio-economic activities. |

6. CONCLUSIONS AND RECOMMENDATIONS

This study discussed opportunities and challenges for integrating local knowledge in improving rural accessibility and mobility within the context of supporting the Comprehensive Rural Development Programme (CRDP) initiatives in South Africa. One of the major challenges besetting rural areas of South Africa and the CRDP sites is the lack of and need for the development of a critical mass of infrastructure

and services that would link communities to one another to transform rural spaces, places, people and cultures. This study therefore sought to explore alternative and innovative ways through which local knowledge could contribute towards addressing such impediments and related problems in rural areas.

The study results show that a number of local knowledge systems are available in rural areas, however, these have been neglected as they are considered primitive and inferior. We recommend that scoping and interrogating existing local knowledge systems are an essential pillar to promote local economic development. In addition, finding practical ways of improving the development value add of local knowledge is critical in designing, implementing, commercialising and sustaining appropriate community access technologies to respond to the rural development agenda in South Africa.

We suggest that the local knowledge systems should be improved to support integrated infrastructure interventions and strategies for implementing affordable access and mobility interventions.

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