

ALBERT LUTHULI MUNICIPALITY COMMUNITY-BASED LABOUR-INTENSIVE IRMA INFRASTRUCTURE PROVISION: FINDINGS OF AN IMPACT STUDY

MAC MASHIRI*, SIPHO DUBE & JAMES CHAKWIZIRA

*GwaraJena TRD, 25A Barnstable Road, Lynnwood Manor, Pretoria, 0081
[Landline: +27 12 348 5008; Fax: 0866 942 128; Mobile: +27 72 122 9394;
E-mail: mac.mashiri@telkomsa.net

CSIR Built Environment, Meiring Naude Road, Brummeria, Pretoria

ABSTRACT

Between 2007 and 2008, the Albert Luthuli Local Municipality, which is situated in the Gert Sibande District Municipality of the Mpumalanga Province in South Africa, planned, designed and implemented a suite of transport infrastructure projects under the banner of the Integrated Rural Mobility and Access (IRMA) program. IRMA is both a project/program and an approach/philosophy for sustainable mobility and accessibility. In essence, the approach endeavours to find innovative solutions to challenges related to accessing socio-economic opportunities by communities. In this regard, transportation infrastructure projects ranging from low-level bridges accommodating motorized and non-motorized transport modes, drainage facilities, traffic-calming devices, to pedestrian bridges constituted some of the interventions implemented.

This paper briefly describes the community-based labour-intensive construction of IRMA transportation infrastructure projects using selected beneficiary villages in Albert Luthuli local municipality as case studies. It then unravels the impact the IRMA projects have had on beneficiary communities and the local contractors involved in the projects. One of the major findings of the study was that indeed the IRMA projects have had a positive impact on the quality of life of the beneficiaries as circulation in the communities has been significantly improved thereby improving markedly access to socio-economic opportunities. However, a compelling and inescapable conclusion which stems from the notion that rural development is an integrated, multi-sectoral activity, and that therefore other essential services such as reticulated water and electricity, improved sanitation, better schools, more quality health facilities, better telecommunications and more job opportunities are required to effect permanent material changes and to achieve sustainable livelihoods, was also evident. It was thus important to ensure that other sectors were simultaneously involved from the onset.

Key words

Integrated Rural Mobility and Access, transport infrastructure, rural development, labour-intensive, Albert Luthuli Municipality, South Africa

1 INTRODUCTION

1.1 Infrastructure and Rural Development

Between 2007 and 2008, the Albert Luthuli Local Municipality, which is situated in the Gert Sibande District Municipality of the Mpumalanga Province in South Africa, planned, designed and implemented a suite of transport infrastructure projects under the banner of the Integrated Rural Mobility and Accessibility (IRMA) program (Mashiri et al, 2007). IRMA is both a project/program and an approach/philosophy for sustainable mobility and accessibility (Mashiri et al, 2003). In essence, the approach endeavours to find innovative and sustainable solutions to challenges related to accessing socio-economic opportunities by communities. In this regard, transportation infrastructure projects ranging from low-level bridges accommodating motorized and non-motorized transport modes, drainage facilities, traffic-calming devices, to pedestrian bridges constituted some of the interventions implemented.

Rural development, encompassing local economic and human resources development, as well as improved service delivery relating largely to health, education and welfare, is one of the key priority areas identified by the South African government (ANC, 2007). Rural development may crudely be defined as the introduction of structural changes in the rural socio-economic circumstances to achieve improved living standards for rural communities and making the process of their development self-sustaining (Mashiri et al, 2009b). Investment in rural infrastructure is one such key structuring intervention. For most rural areas, infrastructure development is the fulcrum that anchors sustainable development endeavours (Mashiri et al, 2008a).

The development and maintenance of essential rural public infrastructure is an important ingredient for sustained economic growth and poverty reduction (World Bank, 2005). Poor infrastructure is perhaps the most binding constraint to growth throughout the Latin America, Asia-Pacific region and African region (World Bank, 2008). In Asia, Latin America and Africa, rapid population growth and urbanisation threaten to exacerbate infrastructure bottlenecks (IFAD, 2001). In most developing countries emphasis is needed on equitable access to social infrastructure in remote, rural environments where approximately 80 percent of the population live mostly without electricity and roads (UNECA, 2006). Infrastructure investment can lift economic growth and support social objectives (ILO, 2000). Adequate health, education, and water and sanitation services help lay the groundwork for a more productive, healthy population capable of contributing to sustained economic growth (Chakwizira et al, 2008). Likewise, mobility and accessibility infrastructure improves access to services and markets in rural areas (Mashiri et al, 2008b).

Well-appointed infrastructure investment underpinned by beneficiary-oriented programs improves productivity, promotes rural employment, positively impacts income growth and eventually irreversibly erodes poverty (IFAD, 2001; UNECA, 2006; World Bank, 2005, 2008; Mashiri et al, 2009b). Given that such investment in infrastructure is largely lumpy and costly, local municipalities such as Albert Luthuli Municipality are often unable to raise the requisite investment funds, and thus depend on an outside system of economics to meet their requirements. The Mpumalanga Department of Roads and Transport (MDORT), being keenly aware of this view and having had extensive discussions with various stakeholders including Albert Luthuli municipal officials and politicians, sought to plug part of that gap through demonstration projects with a view to:

- Increasing rural employment
- Widening the income base of rural communities
- Enhancing the status of women through capacity building
- Building and entrenching the local skills base, and
- Stimulating, growing and mainstreaming the local economy.

MDORT developed and published a Rural Transport Strategy for the Mpumalanga province in May 2006, which served in part, as an overarching framework to direct transport investment in local authorities (MDORT, 2006). One of the cornerstones of the strategy is the realization that an integrated approach to rural development is the key to sustainability. As articulated in the preamble, MDORT adopted the IRMA approach as a robust vehicle to assist in realizing this vision (Mashiri et al, 2007).

MDORT hired CSIR Built Environment to plan and design a suite of IRMA infrastructure projects to be implemented in selected villages (spatially referenced in Figure 1) in Albert Luthuli Municipality informed by an extensive and iterative consultative process (Mashiri et al, 2007). Thus through a transparent process, tender documents for these infrastructure projects were prepared, prospective local contractors submitted their bids, adjudication was done and contracts were awarded. In part fulfilment of the IRMA approach, MDORT, in association with the Albert Luthuli Municipality implemented these transport infrastructure projects running the gamut from low-level bridges accommodating motorised and non-motorised transportation modes, drainage facilities, traffic-calming interventions, to pedestrian bridges, with a view to improving local circulation (Mashiri et al, 2009a). This was informed by local and international experience, which has demonstrated the potential of employment-intensive public works programs such as infrastructure provision in terms of providing jobs, alleviate poverty, build capacity and create community assets (Mashiri et al, 2009c). The term 'employment/labour-intensive' is used to describe a competitive technology where optimal use is made of labour as the predominant resource in infrastructure projects, while ensuring cost-effectiveness and safeguarding quality (Mashiri et al, 2008c). This paper constitutes a rapid impact assessment of these IRMA projects (spatially referenced in Figure 1).

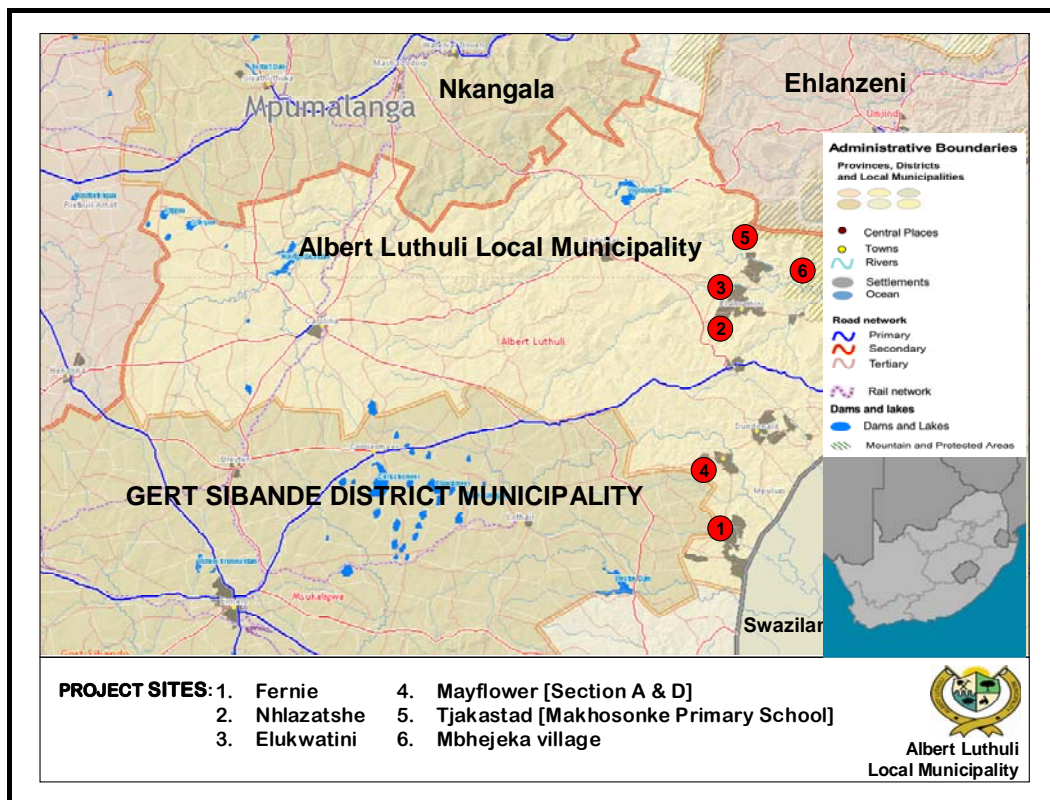


Figure 1: Map indicating the study sites in Albert Luthuli Municipality

1.2 Purpose and Scope of Study

The purpose of this study was to map out the socio-economic, technical and institutional impacts and responses emanating from the IRMA project implementation by way of:

- Undertaking a rapid review of selected IRMA projects including low-level bridges, access roads, pedestrian bridges, sidewalks, traffic calming devices and drainage facilities with a view to understanding the impact on, amongst others, spatial connectivity of the study areas.
- Assessing whether participation by local communities in the selected project sites through the medium of temporary jobs had impacted their livelihoods.
- Understanding as to whether capacity building and training of community members involved in the project in terms of technical skills and knowledge transfer had indeed taken root, and
- Assessing to what extent accessibility to socio-economic opportunities for the people served by the IRMA infrastructure had been achieved.

2 STUDY APPROACH AND METHODOLOGY

2.1 Study Approach

The study approach, which provided a basis for engagement and discussion included carrying out detailed project site investigations, key informant interviews with, for example, with councillors, contractors, labourers and focus group discussions with project participants. In addition, physical observations at project sites, including taking photographs of the situation 'before and after' the construction of transport infrastructure

was undertaken. Life stories and accompanied walks were also employed to gain greater insight into the project impact. Checklists for both qualitative and quantitative physical observation techniques were used to extract information on the IRMA projects. Of the 200 villagers employed on the IRMA projects, 41 were interviewed. In addition to project participants, community opinion leaders such as local councillors, church leaders, general dealer shop owners, traders (hawkers), traditional leaders, contractors and selected community members using the infrastructure on the day of the survey, were also interviewed.

2.2 Project Inception

This phase of the project sought to review literature covering labour-intensive transport infrastructure provision and maintenance, which in turn, would provide the conceptual framework for conducting the IRMA project impact assessment. An internal workshop was undertaken to iron out issues such as the sampling techniques to be employed, mapping of stakeholders and project areas and the associated infrastructure.

2.3 Fieldwork

Fieldwork, involving the use of qualitative and quantitative instruments to capture changes and dynamics in socio-economic and technical impacts associated with and attributed to the IRMA projects was undertaken in IRMA project sites in Albert Luthuli Municipality. Physical road infrastructure observation surveys, participatory surveys with community members hired to provide labour on the IRMA projects, as well as conducting household interviews with selected participants. Key informant interviews with ward councillors and contractors were also conducted. Lastly, focus group discussions were undertaken. Overall, a mixed method approach was employed to gather the information to undertake the assessment.

3 **STUDY FINDINGS**

As indicated elsewhere, review of literature, semi-structured interviews, discussion with opinion leaders, focus groups, life histories and direct observation through field visits were the approaches employed to gather information to construct *'before and after intervention profiles'* enumerated hereunder.

3.1 Empowerment and Capacity-building of Contractors

In line with the objectives of achieving greater women participation and empowerment in the project, female-owned contractors were particularly encouraged to bid. In addition, the contractors were strongly encouraged to employ a significant number of local women and the youth to work on each of the projects. Established principles and procedures for labour-based construction, emphasizing intensive on-the-job training, were employed to construct the transport infrastructure including access roads, pedestrian bridges, footpaths and paved walkways.

In addition, technical, largely on-the-job training, aimed at the management of the winning bidders and community members working as labourers on project sites, was undertaken – comprising of, among others, methods for laying storm water pipes, building of head-walls and wing walls, construction of sub-surface drains, steel fixing, and erecting formwork.

Although some tools and small plant were procured from outside the local municipality, a concerted effort was made to minimise leakage of project funds, for example, transport services for ferrying materials were sourced locally.

3.2 Importance of the Project

The importance of the project is illustrated by the fact that 20 percent of project participants derived their income solely from the IRMA projects. In fact, for the greater majority of participants, it is evident that without this job-creating intervention and the accompanying wages, social grants are their only reliable source of income. It would appear that IRMA project wages had the effect of reducing vulnerabilities of participating indigent households’.

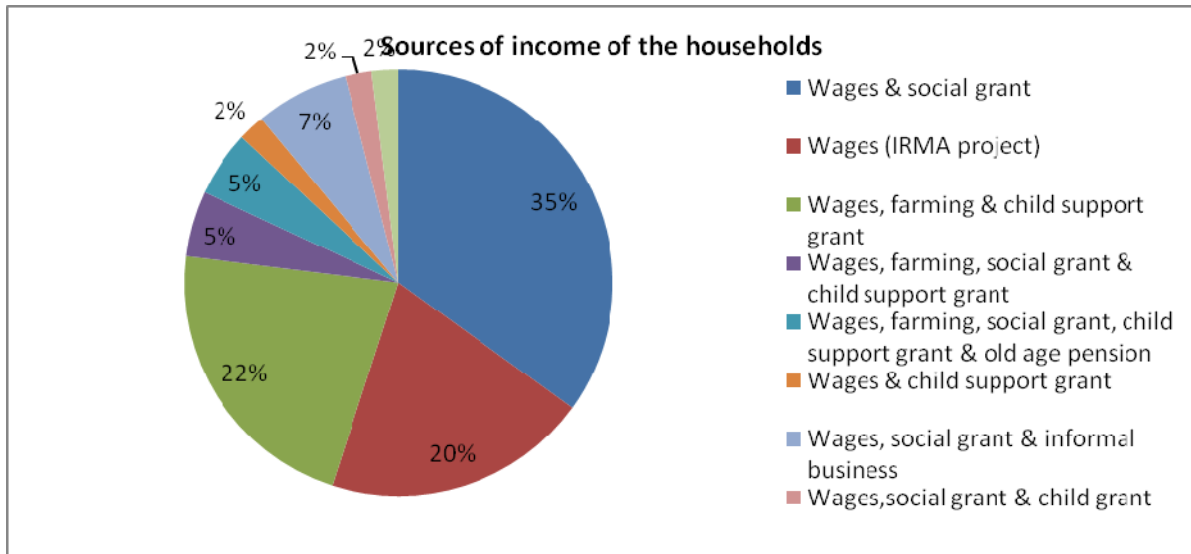


Figure 2: Household income sources

3.3 Employment Record

Of the 200 community members who were employed on a temporary basis on the different project sites over an average period of two months, 123 were women while 77 were men, roughly reflecting a proportion of 60:40 – which meets the general guidelines of public works projects especially in rural areas (where women outnumber men and often occupy the extreme end of the poverty spectrum). In addition, 50 percent of these labourers constituted the youth. There was evidence to suggest that the project provided time and resources to thinking through how participation would be promoted in accordance with the expectations of the project. Thus the process of recruiting labourers which sought to target the most vulnerable in the community was undertaken by respective ward councillors, traditional leaders and contractors and was informed by a household socio-economic profile audit. There was a commitment to the empowerment of women and the youth by the project and thus they were specifically targeted. Given that women often have a ‘societal duty’ – an unwritten expectation to look after their families, predictably their incomes were largely employed to achieve this end, thereby reducing leakage of project funds out of the community.

3.4 Community Empowerment

In general, the Albert Luthuli Municipality community's perceptions of the project were largely positive, for example:

- The community believed that the project had expanded the community's horizon with regard not only to understanding developmental issues pertaining to their areas, but also with respect to perceiving and acting on economic opportunities.
- Upwards of two hundred community members, sixty percent of whom were women, were employed on a temporary basis, for the duration of the project.
- Mostly women-owned contractors were employed to undertake the construction of transport infrastructure, thereby contributing to women empowerment.
- Local contractors and labourers benefited from tailor-made capacity building and training efforts organised by the consultant and overall project manager as the IRMA interventions were designed and implemented in a way that promotes local capacity development.
- All of the contractors came from the local municipality, which meant that most of the project funds were earned by locals and a significant amount were also used locally – thereby assisting in stimulating local economic circuits.
- Accessibility to socio-economic opportunities has been significantly improved through improved local circulation infrastructure allowing, on the one hand, more public transport modes (ensuring more competition and thus driving fares down) to penetrate deeper rural locations. And on the other, liberating the elderly and persons with disabilities by providing them with the freedom to travel around the settlements on foot.
- Community members working on the project reported using their wages for buying food and clothes, paying school fees for tertiary education, as well as buying agricultural inputs, and
- Learners are now able to comfortably access educational services even in inclement weather (including during flush floods that are characteristic of the study sites).

As indicated in Table 1, while varying degrees of impact relating to community tasks and activities were experienced as a result of the new infrastructure, the overall impact has been positive. For example, daily chores such as the collection of firewood and quality of life indicators, such as school attendance, visitations to clinics and movement of mobile clinics, travel to the main centres, accessing community centres and pension payout points were perceived to have improved by the respondents.

Impact of IRMA infrastructure on community tasks and activities			
Tasks and Activities	Better	Worse	Unchanged
School attendance	80.0	0	20.0
Going to church	67.4	0	32.6
Local clinic visitations	70.4	0	29.6
Movement of mobile clinic	89.7	0	10.3
Visitations to local markets	75.0	0	25.0
Visitations to community centres	96.6	0	3.4
Visiting neighbouring communities	91.3	0	8.7
Visiting other residents	69.0	0	31.0
Travel to main towns	93.1	0	6.9
Travel to pension payout points	82.8	0	17.2
Fetching water	69.0	0	31
Collecting firewood	93.1	0	6.9

Table 1: Impact of IRMA infrastructure on community tasks and activities

3.5 Changes in Mobility Patterns and Levels of Service

After the completion of the IRMA infrastructure in the different project sites, over 90 percent of respondents were of the opinion that there was an improvement in terms of movement and accessibility to services. For example, hawkers' reach, and by extension, their profitability had increased as they are now able to cart their wares to a much wider market.

"...Before the project I used to travel an extra 3km to access an additional 800 households across the ravine. Some days I would not travel to that community at all. But now with the construction of the pedestrian bridge, it is so much easier – even my son can push the vegetable cart to go and sell to a bigger market..."
(Mayflower hawker's testimony)

The construction of IRMA infrastructure such as pedestrian bridges and upgrading of access roads as well as the provision of traffic calming devices have had the effect of significantly lowering travel time and distance, improved safety, security and comfort and allowed emergency vehicles such as ambulances and police vehicles to penetrate deep rural areas. This has contributed to the improvement of their quality of life.

Activity	Yes	No
Health services		
improved access to the clinic	77.5%	22.5%
Improved supply of medicines and equipment	90%	10%
Improved staff recruitment and retention	57.5%	42.5%
Improved access to community health centres	85%	15%
Improved access to ambulance services	92.5%	7.5%
Education		
Improved access for school children	95%	5%
Improved supply of school stationery	82.5%	17.5%
Improved staff recruitment and retention	67.5%	32.5%
Police services		
Improved access to police services	75%	25%
Road improved response time for police call-out	87.5%	12.5%
Social networking		
Broadening of membership of associations	82.5%	17.5%
Inter-school cultural and sports activities	85%	15%
Interaction between associations	97.5%	2.5%

Table 2: Impact on community access to socio-economic services

The overall impression from the study in all project sites is that the project had positive immediate benefits of employment and the improved access provided by the IRMA infrastructure is positively impacting on the welfare of the community in many ways as shown in the Table 1. For example infrastructure such as footbridges have had positive impacts on improving access to a number of socio-economic services for the communities such as retail, education, health, agriculture and police services. The results as depicted in Table 2 corroborates the perceptions of IRMA project participants relating to the impact of the projects i.e. significantly improving access to social services such as education, health, police and social networks. In general, all development indicators have been positively impacted.

3.6 Remuneration

Of the total project value of R6 million, close to 30 percent was earned directly by the community. At least R1 million of the project value was spent on wages, while upwards of R 800 000 was employed to purchase materials and procure transport services. The average wage was R350 per week which was earned by semi-skilled labourers. Given that over 80 percent of the respondents working on the projects were unemployed prior to being engaged on IRMA projects, the wages represented a relatively significant injection into the local economy. Although not assessed, there was significant multiplier effects as a result of the R1.8 million pumped into the local economy thereby strengthening local economic circuits. Table 3 summarises the use of money earned from the IRMA project by community members employed on the projects. Given the relatively long distances between the project sites and major urban centres, many shop owners benefited substantially as the new wage earners spent their hard-earned cash in their shops.

Use of money earned on the project	
ITEM	RANK
Bought groceries/food and clothing	1
Paid school fees and bought school items	2
Buy building materials for construction of own dwellings	3
Business start-up capital	4
Paying registration fee for tertiary education	
Paid for transport	5
Paid rent	6
Purchased mobile phone / airtime	

Table 3: Use of wages earned on the project

Table 3 shows that most of the income was used for basic needs such as food, clothing and school fees. Some of the money was used for paying rent, as capital to start up a small business or for buying building materials for constructing houses. In general, employment created through the project provided the community with much needed cash injection and purchasing power which triggered multiplier effects that, as indicated elsewhere, positively filtered into the local economy.

3.7 Construction Materials

Construction materials and equipment for the IRMA projects were purchased from locally identified business entities and were transported using locally hired largely tractor-drawn trailers. The purchase of local construction materials contributed significantly to the project funds that were retained in the community – again reducing leakage of project funds out of the community. As indicated elsewhere, mostly emerging women-owned local contractors were employed to undertake the construction work, which meant that these entrepreneurs have acquired invaluable project experience which empowers them as individual entities to bid for future similar projects locally and elsewhere. At the provincial level, it meant that the project was creating a cadre of experienced contractors who could in future be relied on to undertake preventive and routine maintenance on these community assets.

3.8 Minimising IRMA Project Income Leakage: Machinery usage

Machinery was used sparingly on the IRMA projects in favour of labour. The machinery used included a generator, plate compactor, water pump, concrete poker vibrator and a drill and compressor unit. Labour-based methods helped to minimize external expenditure, keeping a large proportion of the funds that would have been spent on conventional machinery circulating in the community.

3.9 Small Enterprise Development

At least 40 percent of the respondents felt that business had improved since the IRMA projects were completed in their area. Figure 3 shows the percentage of respondents who were of the opinion that certain types of businesses had either been started or had expanded the range of their services and products since the advent of the IRMA projects. Generally community members felt that the new or upgraded transport infrastructure had rendered the different project sites attractive for business development.

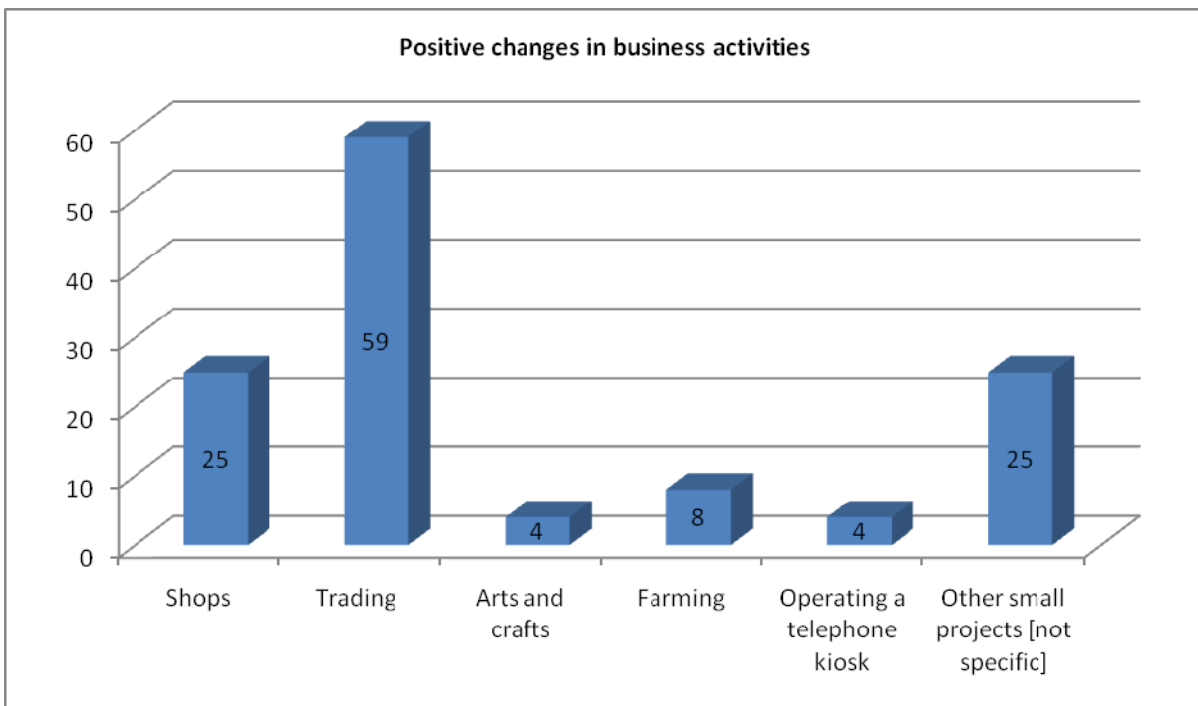


Figure 3: Perceptions of respondents citing positive changes in business activities

65 percent of the respondents engaged in one or other activity expressed the view that the provision of the IRMA infrastructure had inspired them to start their new businesses. In this regard, the greater majority (59 percent) of those inspired chose trading as a business (perhaps also because of the ease with which one could enter or exit the business), while 25 percent chose opening a shop as a preferred enterprise. Figure 3 above enumerates businesses that respondents are already engaged in or would like to start.

3.10 Agriculture Development

The quality of transportation infrastructure often has a direct impact on agriculture development. Before the provision of the IRMA infrastructure, community members complained about their inability to sell their agricultural harvest to a wider market because of a lack of transport services, which in turn tended to be discouraged by poor transport infrastructure. Clearly therefore, before the interventions, the lack of transport services had the effect of increasing the cost of production, by influencing the quantities of inputs purchased (fertilizer, seeds, labour and equipment), which in turn reduced outputs and quality, as well as negatively affecting margins, thereby discouraging production of surplus for the market. Through observation, it would appear that the new infrastructure has indeed begun to impact positively on the cost of production, entrenching food security and increasing incomes.

3.11 Retailers

Retailers, especially general dealer shops represent an important trading post for rural communities. Many pensioners depend on general dealers for operating credit lines and cashing of pension cheques. The improvement of the community's accessibility and mobility has revived many general dealers and restored the formal retail trade by reducing costs of merchandise (mainly because of competition among service providers – both traders and transporters) and attracting new customers especially those working on the IRMA infrastructure projects.

4 CONCLUDING REMARKS

One of the major findings of the study is that the IRMA projects have had positive and significant impacts on the quality of life as well as improving access and mobility to socio-economic opportunities for beneficiary communities. This was largely because the project was predicated upon the primacy of people – people's interests, their needs and their wishes were allowed to underpin the key decisions and actions relating to the project. In addition, local resources – people's knowledge and skills were taken into account by building on and strengthening their existing knowledge and expertise to ensure effectiveness during the project and, perhaps just as importantly, when it came to maintenance.

Through observation and speaking to members of the community, it is clearly evident that the IRMA infrastructure has brought a new lease of life to both direct and indirect beneficiaries of the project. The project thus appears to have achieved its intended developmental objectives of improving access to socio-economic opportunities as well as bettering the quality of life of the beneficiary communities in general and project participants in particular through labour-intensive employment and the accompanying wages.

In addition, the mostly women-owned firms contracted to undertake the projects as well as community members who participated as labourers on the projects benefited substantially from capacity building and training efforts directed specifically at them. This ensured that women's participation was transformative rather than tokenistic. They can certainly be relied upon to undertake preventive and routine maintenance of these community assets in future.

A final strand of thought is evident – while the IRMA infrastructure has contributed immensely to the apparent improved quality of life for the beneficiary communities in the Albert Luthuli Municipality, it must be remembered that rural development is an integrated multi-sectoral activity that involves numerous role players. Certainly, other essential services such as reticulated water and electricity, improved sanitation, better schools, more quality health facilities, better telecommunications and more job opportunities are required to effect permanent material changes and achieve sustainable livelihoods.

It is thus vital for all levels and sectors of Government and the private sector to come together and contribute within the ambit of the Albert Luthuli Municipality Integrated Development Plan to ensure that transport infrastructure investment such as the IRMA infrastructure projects discussed in this paper, are supported by other development activities so as to entrench sustainability even after development impulses from the outside are gone. This way, the development trajectory envisioned by South Africa will begin to take root with a view to bearing fruit in the medium to long-term.

REFERENCES

- ANC (2007) *ANC Policy Conference Resolutions*, Gallagher Estate, Midrand, June 2007.
- CHAKWIZIRA, J. Nhemachena, C. & Mashiri, M. (2008) *Using the Integrated Rural Mobility Access programme to prospering Rural South Africa*, 2nd Biennial CSIR Conference, 17-19 November, 2008, Pretoria, South Africa
- IFAD (2001) *Rural poverty report*, Rome.

- ILO (2000) ***The ABC of women workers' rights and gender equality***, Geneva (ISBN 92-2-110844-9)
- MASHIRI, M. Naude, A. & Nchabeleng, A. (2003) ***A Rural Transport and Development Strategy for South Africa***, Department of Transport, Pretoria
- MASHIRI, M. Naude, A. Moeketsi, P. Dikgale, E. Forshaw, P. Kango, M. Maritz, J. Morojele, N. Ralehoko, E. & Buiten, D. (2005) ***Pre-implementation studies: Integrated Rural Mobility & Access (IRMA) demonstration projects***, National Department of Transport, Pretoria, South Africa
- MASHIRI, M. Chakwizira, J. Madzikigwa, B. & Maponya, G. (2007) ***Rapid appraisal of community transport infrastructure & services***, Mpumalanga Department of Roads & Transport, Nelspruit
- MASHIRI, M. Nhemachena, C. Chakwizira, J. Maponya, G. Nkuna, Z. & Dube, S. (2008a) ***Siyatentela impact assessment***, Mpumalanga Department of Roads and Transport, Nelspruit
- MASHIRI, M. Madzikigwa, B. Chakwizira, J. Nyoni, P. & Makgalemane, M. (2008b) ***"Integrated Rural Mobility and Access: Mainstreaming environmental issues in community transport project planning & construction"***, Proc: SATC, 2008, Pretoria, South Africa
- MASHIRI, M. Chakwizira, J. & Nhemachena, C. (2008c) ***"Rejecting the inevitability of poverty": Empowering women for sustainable rural livelihoods through community-based employment intensive rural infrastructure maintenance projects***. Science real and relevant: 2nd CSIR Biennial Conference, CSIR International Convention Centre Pretoria
- MASHIRI, M. Dube, D. & Madzikigwa, B. (2009a) ***Rapid impact assessment of the Albert Luthuli Municipality IRMA community-based labour-intensive infrastructure projects***. Albert Luthuli Municipality, Carolina.
- MASHIRI, M. Nhemachena, C. & Chakwizira, J. (2009b) ***Mhlontlo Local Municipality Integrated Infrastructure Atlas***, ASGISA-Eastern Cape, East London. Province of the Eastern Cape
- MASHIRI, M. Chakwizira, J. & Nhemachena, C. (2009c). ***Gender dimensions of agricultural & rural employment – differentiated pathways out of poverty: Experiences from South Africa***. Technical Expert Workshop on: Gaps, trends & current research in gender dimensions of agricultural & rural employment. ILO-IFAD-FAO Working paper series, April, 2009. Rome, Italy.
- MPUMALANGA DEPARTMENT OF ROADS & TRANSPORT (2006) ***Rural Transport Strategy for Mpumalanga Province***, Nelspruit
- UNECA (2006) ***Africa Development Report***.
- WORLD BANK (2002) ***Integrating gender into the World Bank's work: A strategy for action***. Washington, DC
- WORLD BANK (2005a) ***Agricultural Growth for the Poor: An agenda for development***, Directions in Development Paper, Washington, D.C.
- WORLD BANK (2005) ***Pro-poor growth country experiences in the 1990s***, Draft Paper, Poverty Reduction and Economic Management, Washington D.C.
- WORLD BANK (2008). ***Agriculture for development: World Development Report 2008***, Washington, D.C.