

Stakeholder participation in rural access road prioritisation: The South African experience

Vivienne Lipman, Senior Policy Advisor, South African Department of Transport

INTRODUCTION

In South Africa, as in most of the continent, the demand for rural access roads is far in excess of what can be supplied in the face of limited resources. Road authorities are often presented with a long list of demands for roads and with communities lobbying for their roads to be given priority. In this situation, it is essential for the authorities to have a uniform approach which enables them to compare roads and to rank them in order of priority. Given the overwhelming demand for roads and the political pressures, the authorities must be able to defend any priority order. They, therefore, need to employ a methodology that is both scientifically robust and transparent to the communities in need.

Both in the KwaZulu Natal province's Community Access Road Needs Study (CARNS) and the Eastern Cape Rural Access Road Study (which was undertaken as part of the Moving South Africa long term strategy for transport in South Africa) methodologies which included community consultation in the prioritisation of rural access road needs were adopted. This methodology not only created a climate of trust but also contributed to a high level of co-operation with communities who now understood the prioritisation process. The Eastern Cape Rural Access Road Study combined desk top studies with on-site assessment and the ranking of priority roads by elected community representatives.

The roads which were studied were not those which could be evaluated in terms of an economic cost benefit analysis as they would generally give negative results because of low vehicle usage. Some 80 per cent of South Africa's rural population resides in villages and dense rural settlements, rather than in areas where commercial farming is feasible. Whilst there may be some economic return most of these roads can only really be justified from a social perspective. The question which Moving South Africa tried to answer was "To what extent should we invest in providing basic access roads, and which communities should receive priority?"

THE MOVING SOUTH AFRICA PROJECT

In 1997 and 1998, the South African Department of Transport undertook a study called the Moving South Africa project. The aim of this project was to develop a strategy for meeting South Africa's transport challenges for the 21st century and to map out a 20 year

strategic framework for the transport sector. Moving South Africa aimed to break out of the mould of thinking about immediate short-term solutions to addressing the major structural problems which inhibit our ability to deliver on the major goals of South Africa's Reconstruction and Development Programme (RDP) and Growth, Employment and Redistribution (GEAR) strategy.

As part of the information collection phase of Moving South Africa, an attempt was made to quantify the rural road needs in South Africa by looking at all the existing studies. The figures in the various studies differed so widely and also contained so many gaps that it was decided that it would be impossible to come up with a reliable figure rural roads needs for the country. Given limits in time, resources and reliable existing data, the Moving South Africa team decided that the best usage of available resources would be to develop and test a methodology for identifying and prioritising rural access road needs. It should be noted that the rural road network in South Africa is in reasonable (although deteriorating) condition and therefore it was decided that the main gap in the provision of transport infrastructure in rural areas was not the network itself but rather community and village access to the network.

THE KWAZULU-NATAL COMMUNITY ACCESS ROADS STUDY (CARNS)

In looking at various South African and international methodologies for identifying and prioritising rural access road needs, the Moving South Africa team was impressed with work that had been undertaken in the KwaZulu-Natal province as part of CARNS. CARNS had produced a methodology which combined community consultation with a transparent methodology which could be explained to the community while at the same time being sufficiently rigorous to satisfy the professionals. The Moving South Africa team made various adaptations to the CARNS methodology, most of which have since been adopted by KwaZulu-Natal in recalculating their priorities.

THE MOVING SOUTH AFRICA EASTERN CAPE RURAL ACCESS ROAD STUDY

The Eastern Cape Province was chosen because it is one of the poorest parts of South Africa with a Human Development Index (HDI) of 0.507 compared against the overall South African value of 0.705. The Eastern Cape itself has widely differing levels of development with the previously "black" areas (the former homelands of Transkei and Ciskei) ranging from as low as 0.08 in Xhora to a high of only 0.36 in Mdantsane. In contrast some of the traditionally "white" areas have an HDI of 0.96. In addition, 62 % of the population of the Eastern Cape is rural. High unemployment levels (over 50%) are also evident in the province. With such high levels of poverty and most of the population being rural, the Eastern Cape provided an appropriate setting for the study.

South Africa has well developed methodologies for prioritising road investment where there is an economic return. In areas like the Eastern Cape, many of the rural access roads would show a negative economic return on investment using these methodologies because of the low levels of motorised traffic which would make use of these roads.

THE METHODOLOGY

The methodology is divided into two parts - the first part explains how roads were prioritised in the study within each of the 37 districts covered by the study of the Eastern Cape. The second explains the methodology for allocating funding between the 37 districts.

Prioritisation of road projects:

When evaluating a number of roads, all of which show negative economic returns, it is often difficult to prioritise whether one road is more important than another. The Moving South Africa study attempted to provide a uniform approach which enables one to compare roads and rank them according to their "points per kilometre" rating. The system is based on the probable usage that would be made of the road by the community (assuming the road is properly maintained). Points are allocated not only for the size of the community served by the road but also for the various facilities along the road which are used by the community at large. The facilities include health, social and administrative services, agricultural activities, educational facilities, businesses and places of worship.

The total points are divided by the length of roads to give a rating value per kilometre. This effectively takes into account the relative cost of the projects. If this is not done then longer roads will generally rate higher than shorter roads.

A desktop study was undertaken to gather basic data. Fortunately, a geographic information system (GIS) existed which gave the locations of schools, clinics, villages and the formal road network. Populations for villages were also available on the GIS. An initial prioritisation of access roads was made on the basis of ensuring that villages have an access road linking it to schools, clinics and the formal road network.

Information was collected for 37 district councils. Each district council has a Transitional Representative Council (TRC) which is the current district level government. The TRC was used to access community participation in each district. The TRC members and community members were provided with data capture forms and 1:50 000 topographical maps of their areas. They were tasked with recording the road side features and population served by the roads. They were also requested to mark the positions of the roads on the maps. Training and assistance was provided for this fieldwork exercise. In many of the districts, passenger transport forums were already in existence and these forums were used as the community representatives.

Points were allocated to each of the roads identified by the community/TRC using the merit assessment system described above. The priorities were then explained to the community. The results were compared with the findings of the desktop study and differences in the findings were discussed with the community. Both sets of data were retained with an agreement that before investments are made, decisions would be taken with the community which of the priority lists would be used.

Prioritisation between districts:

The methodology used four criteria for prioritising the districts in which road infrastructure would be upgraded. These criteria were population size, development potential, human development and accessibility. Quantifying and combining the four criteria using district-based statistics provides a means of distributing funds on an equitable basis that takes into account need within economic growth potential scenarios.

The development potential index proved the most difficult to calculate as many of the factors which should ideally be included are not predictable let alone quantifiable. We constructed development potential indices for the Eastern Cape rural districts using the following variables:

- natural water resources measured length of river per district
- terrain conditions using length of 100 metre contours
- gross geographic product (GDP) adjusted to reflect the rural contribution
- economic interaction potential calculated as the accessibility-discounted GDP of all surrounding districts
- agricultural production potential calculated using factors such as climate, slope, soil type and the availability of water
- forestry production potential
- the likely effect of government supported spatial development initiative (SDI) projects on the district.

Fortunately, the information on natural water resources, GDP and agricultural and forestry potential already existed.

The human development index is calculated using three components - life expectancy at birth, educational levels and income levels.

The accessibility index was measured using the road network density and the population density.

Using all the above factors with various weightings, the 37 rural districts in the Eastern Cape were given priorities for investment in rural access road infrastructure.

DESIGN STANDARDS

Road design standards and literature in South Africa generally do not address the lower order rural access roads and very little documented guidance is available to establish appropriate standards. Rural access roads are often referred to as “non-engineered” and are usually constructed without formal design drawings other than a typical cross-section and drainage standards, relying on the experience of the road builders alone. The following issues need to be considered in the development of appropriate standards:

- all weather accessibility
- restricted budgets
- labour enhanced construction and maintenance possibilities
- low traffic volumes
- the need to reach as many communities as possible.

Any road improvement should be assessed and planned to meaningfully connect into the formal road network and that where possible, continuity should be established to open up areas and to link up communities.

Traffic volumes for rural access roads in South Africa are generally less than 30 vehicles per day due to low vehicle ownership and low economic activity in rural communities. The importance of an access road is therefore not necessarily a function of the volume of traffic. The importance lies more with the type of traffic using the route, whether it be public transport or service providers like mobile clinics, teachers or agricultural vehicles. An assessment of traffic should therefore not only focus on the volume of traffic, but also on facilities and population served by the road.

The standards proposed should be discussed with local communities before commencement of construction to avoid any misunderstanding with aspects such as road widths and realignments.

RECOMMENDATIONS

A major problem for rural development in South Africa is that rural infrastructure investment does not occur in a sufficiently integrated manner. Planning by education, health, housing, water, road and other authorities does not occur with full co-operation between the relevant authorities. For optimal returns on rural investments, it is vital that all the various functional authorities involved in rural investments co-ordinate and integrate their planning processes.

Access roads are the vital link between communities and the formal road network. A programme to support access road construction without regard to other road network needs within the Eastern Cape would *de facto* continue the physical, social and economic isolation of rural populations from the mainstream economy. It is recommended that a more integrated and co-ordinated approach be adopted.

To identify and meet the needs of the rural communities, community participation in planning is vital. The costs of the public participation should be budgeted as part of the costs of service provision.

CONCLUSION

In South Africa, the methodology used in the Moving South Africa Eastern Cape Rural Access Road Study and the KwaZulu-Natal CARNS study has been accepted by all the provincial road authorities. The Department of Public Works has awarded poverty relief funds for road construction in the KwaZulu-Natal and Eastern Cape provinces based on the findings of these two studies.

The methodology used in the Moving South Africa study is not wholly ideal, but given the lack of existing data and limited resources, it is the best that could be achieved. If we had more time and resources, we would, for example, have preferred to have increased the level of community participation. It is, however, also accepted that the data available in South Africa on, for example, agricultural potential, may not be readily available in many other African countries and this would make the use of a similar methodology difficult.

The Moving South Africa question of "to what extent should we invest in providing basic access roads, and which communities should receive priority?" cannot be answered from a transport perspective alone. We need to question what we are providing access to, where will future investments in other economic and social infrastructure be made and what will these investments be, which communities are sustainable and what other developments will affect that community.