

Human resources capability and capacity in the effective operation of road administration in developing countries: A case study of Lesotho

M. Domela

Department of Public Administration and Human Resources Development, Lesotho Institute of Public Administration and Management, Lesotho
maldom@webmail.co.za

ABSTRACT

A study of utilising the right level of human resource, both in capability and capacity in effective operation of road administration in the developing countries was undertaken. It utilised literature review and field survey in Lesotho. The research was on engineers and managers in road administration who are responsible for the specification, procurement, implementation and operation of road management systems. The findings suggest that engineers and managers are not able to reach informed decisions about the type of road management system that best matches the needs of their administration. The problems that lead to poor decision making include: insufficient financial resources, lack of management capabilities and a lack of accountability and transparency mechanisms. There is a need to have the right levels of human resources, both in capability and capacity in effective operation of road administration. Hence road management ought to start from the premise that the road network is an asset which ought to be maintained and improved so as to secure performance and value for money and maximum service of life.

1. OVERVIEW OF THE ECONOMIC TRANSITION IN LESOTHO AND ITS EFFECT ON THE ROAD ADMINISTRATION

The development of road administration is one of the main challenges facing developing countries including Lesotho. Road management enables the network to withstand the damage caused by wear and tear, to prevent sub-standard conditions from developing, and to ensure that traffic can continue to travel in a manner which is safe, efficient, and reliable and which causes the least damage. The challenge is even more acute in Lesotho given the topography of the country, whereby a large surface area is mountainous (Central Bank of Lesotho, 2006). The Government of Lesotho has prioritised construction and development of roads as a catalyst for economic growth and development in recent years. It is regarded as a springboard upon which other developments can be made. Roads are a very convenient infrastructure upon which the transportation system depends. Inadequate and poor roads access increases high cost of transportation, thereby limiting uses of local and international markets to the sales of necessary products and constraining access to social infrastructure such as education and health facilities. On the other hand, improvement of roads, especially rural ones where a large population lives, seems to be a clear means by which large numbers of people might acquire the opportunity to participate in the market economy, pulling themselves out of poverty (Central Bank of Lesotho, 2006).

Concern over maintaining the road asset capital stock is not new. Considerable effort has been expended through international finance and domestic finance in many countries to determine how best to maintain roads in “acceptable” condition and to provide decision makers with tools to optimize the allocation of scarce funding to that task. The current road sector development in Lesotho is a welcome development goal in recent years. This is because improved and better-quality infrastructure has a number of important economic benefits. First is developing the road network that would link Lesotho’s economic sectors like manufacturing sector to South Africa. Transport infrastructure can boost investment in the manufacturing sector. Second, the construction of rural roads is a vital tool for economic growth as it would enhance establishment of smaller businesses with access to markets, either locally or in South Africa.

This is likely to impact positively on income levels and reduce poverty levels in the country. Third, improving and upgrading roads throughout the country can act as a magnet to tourists. Due to the beautiful mountain scenery of the Kingdom of Lesotho, the tourism sector is likely to be boosted significantly by improvements in road infrastructure. Fourth, the impact of road construction, maintenance and upgrading has created employment for the urban poor and this has also affected their income levels positively.

1.1 Sources of funding for road construction in Lesotho

The Government of Lesotho has sourced funds both locally and internationally for the construction of roads and their maintenance. International organizations such as European Commission have been vital in funding some portions of construction in Lesotho recently. Locally, the Roads Directorate will be funded from monies from consolidated fund from Lesotho Road Fund. The management of road infrastructure is delegated to the Lesotho Road Fund. The funds are allocated through budget that is prepared by the Ministry of Finance and Development Planning (Central Bank of Lesotho, 2010)

The Government of Lesotho has created a Lesotho Road Fund as a separate administrative body. The objectives of this fund are to ensure that:

- Sufficient resources are available for the maintenance of all roads in Lesotho
- Road users participate in the management of the sector to improve decision making and consumer willingness to pay
- Financial discipline is strengthened to enable the public get value for money
- The fiscal burden on the government is reduced to manageable proportions;
- Road users pay more equitably for the damage they inflict on roads. The Road Fund was established by Legal Notice published in the Government Gazette. This specifies its purpose, sources of revenues, and its management by a representative board and the manner of its auditing.

At present, revenues come from four main sources:

- Border fees/short-term SACU permits charged on all foreign trucks entering Lesotho
- Annual license fees collected from all types of vehicles;
- A road maintenance levy *added* to the price of all transport fuels, including the fuel consumed by government. Total annual revenues of the Fund are in the region of US\$11 million and are being paid directly into a special account at the Central Bank.

1.1.1 *The state of road infrastructure in Lesotho*

The development of transport infrastructure – road networks in particular – is vital to economic and social advancement in Lesotho as well as the broader African region. Road infrastructure in Lesotho has improved markedly since independence, when horseback was the primary mode of transport over a network of gravel roads and bridle paths between villages. At independence in 1966, there was only one paved road, since then, a concerted programme of road construction and upgrading has sought to extend the domestic road network through the country's challenging and mountainous topography (Lesotho Review, 2010). The acceleration of this network expansion is needed to unlock the growth potential of sectors, such as investment, tourism and agriculture, especially in the rural areas.

The road system links urban communities with remote rural areas, and connects to the South African road network at several locations. Lesotho Review (2010) indicates that developing the road network to enhance links between Lesotho's markets and South Africa's transport infrastructure is a priority, as is the construction of access and feed roads to new industrial estates in order to support investment in the manufacturing sector. Another challenge is to maintain the momentum of providing basic infrastructure to rural areas in order to connect communities and bring them essential services.

Lesotho's road infrastructure comprises a road network of 7, 437 km, of which 16% is paved, 51% is gravel and 33% is earth. There are 221 footbridges. Most of the road network is in fair-to- good condition, although percentage of fair to good condition is higher for paved than for unpaved roads. This is largely the result of the difficulty in maintaining gravel roads with steep gradients where weathering effects can cause quick deterioration of unpaved surfaces. Road transport is the primary means of travel and road transportation service is provided almost entirely by private entrepreneurs (Kingdom of Lesotho-European community, no date).

In 2009, the road network comprised of 1350 kilometers of paved roads and 1021 km of unpaved roads, (Lesotho Review, 2010). Lesotho's mountainous environment is one of the challenges facing the transport sector. As a result, most roads tend to be concentrated in the lowlands. While arterial roads connect all districts in Lesotho, there are relatively few rural roads connecting villages and towns within mountain districts, which comprise 75 percent of the country's total area and are home to about one quarter of the population.

The road conditions in Lesotho are not good and the country faces a significant challenge to catch up with South Africa. Road construction has been prioritized by the government as a trigger for additional private sector investment and employment creation. In addition to opening up markets, building roads makes tourist attractions more accessible and brings services closer to the people. The Roads Branch of the Ministry of Public Works and Transport is responsible for major trunk roads, formulating and implementing policy relating to road infrastructure, and also engaging in some bridge construction (Government of Lesotho 2010). The Department of Rural Roads (DRR) is charged with constructing, upgrading and maintaining secondary and tertiary gravel roads using labour- based methods and appropriate intermediate technology. The Labour Construction Unit also upgrades Civil Works Section roads and then takes over responsibility for these roads.

The poor road infrastructure has impacted negatively on the development of Lesotho. The infrastructure is currently being rebuilt and, once operational, will offer opportunities for the services sector. The country has a well established road network linking the country with South Africa. Road rehabilitation and maintenance programmes aim to maintain the entire classified road network, upgrade priority roads and encourage the involvement of the local private sector in maintenance and rehabilitation of main roads as well as new construction on national trunk routes and urban and peri-urban roads. Labour intensive construction methods are highlighted, and the government aims to construct, rehabilitate and maintain roads linking rural communities to basic services, construct foot bridges and river crossings and train local communities in road construction and maintenance. A national roads needs assessment is being carried out and a list of roads requiring attention prioritized according to needs and availability of funds.

2. HUMAN RESOURCE CAPABILITY AND CAPACITY IN ROAD ADMINISTRATION

There is compelling evidence that a significant factor contributing to the poor condition of much of Africa's rural road network is inadequate human resource capacity. This shortage of professional skills in road engineering inhibits proper management of road networks leading *inter alia*, to hundreds of millions of Maloti being incurred as excess road user costs by the populace, as well as greatly increased risk of road crashes. As indicated earlier in this study, roads are the primary mode of internal transport in Lesotho, and are vital for future economic and social development at both national and local level.

Roads are a fundamental and integral element in the transport infrastructure system, *inter alia* to ensure accessibility to the whole of the transport network and to promote mobility of people and goods locally, regionally, nationally and globally. The road map underscores the importance of fostering among engineers and managers cognitive competencies, technical skills and attitudes, which in many developing countries are in short supply and need to be developed. The Committee of Experts on Public Administration (2002) states that, indeed, in most developing countries and countries in transition, the gaps in skills have often been substantial among high-level and lower-level staff. Skills must be constantly upgraded, leadership qualities developed, change facilitated and a new image fostered for the road administration, which calls for new career structures that emphasize mobility, integrity and professionalism. Improvement in performance in the road infrastructure in Lesotho is not likely to occur without the overt and enthusiastic support of proper management.

Roads and road transportation can have adverse environmental effects in terms of emissions, noise, visual intrusion, road accidents, property severance and impacts on residential and shopping/business districts and sensitive areas. Well-designed road improvements do, however, help reduce emissions, whilst by-passes and relief roads remove traffic from unsuitable areas, and road improvements contribute to improved safety. The improvements in road infrastructure will have a positive impact on both economic and social development, including education, health, tourism, and trade, as well as on a nation's integration with the region and the world. The assessment of road sector reforms should not be limited to the adequacy of road financing mechanisms (Road Funds) alone but requires a comprehensive analysis which includes the improvement in the organisation of road management services (Benmamaar, 2006).

The review of road administration cannot be complete without the review of service providers in the road infrastructure. Human resources capability and capacity is currently one of the leading issues in the development community, including the supply of road infrastructure in developing countries. Lesotho is one of the world's least developed countries, with resource deficits, both human and physical. Rohatgi (2007) highlights that inadequacy of skilled human resources is a major constraint across the road construction industry. Proper human resource management has always been one of the most important issues in dealing with organisational management.

The aim of human resources management is to provide competent, capacitated and well motivated staff for effective service provision and utilisation. Training of the staff is, therefore, an essential element for roads administration. The training should be target-oriented and meet the performance requirements of each category of staff. Table 1 provides a brief summary of the training needs, skills to be acquired and necessary training for some of the key personnel participating that might lead to proper administration in rural and urban road works. Due to economic stagnation coupled with very low financing in the road administration, road engineers or jobs alike in road engineering background become more and more difficult to achieve.

Table 1- Skills and training required for human capability and capacity

Position	Duties	Skill Requirements	Training
Engineer	Duties: Responsible for planning and implementation of major road works	Be able to effectively plan, manage and monitor large scale road works programmes, and provide on-the-job training and instruction to subordinates	Labour-based road works technology Contracts Management English Training of Trainers Course On-the-job training through training needs assessment Computer training
Supervisors	Duties: Responsible for road works sites	Be able to independently plan and manage a road works site and to provide instruction and supervision to local contractors	Labour-based road works technology Equipment Operation and Maintenance Contracts Management English On-the-job training through training needs assessment

Foremen	Duties: Responsible for a group of workers carrying out a certain site operation	Be able to manage the various work operations on a road site and command a group of 50 workers	Labour-based road works technology Equipment Operation and Maintenance English On-the-job training through training needs assessment and supervisors
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The most common cause of the failure of paved (usually bituminous) road surfaces is neglect – neglect of routine maintenance, and neglect to repair damage without delay. Neglect of surface damage or of cracking leads to water penetration of the underlying layers, and consequent erosion followed by loss of a portion of the paved surface (the formation of "potholes"). Another common cause is overloading – for example, a road might, for economic reasons, be designed in the expectation that heavy traffic will be infrequent, but the use by heavy vehicles then increases significantly, with consequent damage. Therefore, in order to provide road infrastructure in Lesotho with really competent and competitive workforce, the government has to develop a regular training system. Regular and appropriate training and development of road infrastructure personnel serves as a good motivator, highly important for retention of qualified road specialists.

2.1 Methodology

The assumption from this study reveals that engineers and managers in road administration in Lesotho have a difficulty in reaching informed decisions about the type of road management system which best matches the needs of their administration. Qualitative research was chosen as an appropriate means to understand the experiences, views and perceptions. The Engineers and managers in the Department of Rural Roads (DRR) in the Ministry of Public works and transport in Lesotho were chosen randomly to solicit information on capability and capacity of human resources in road administration in Lesotho. A total of 15 respondents participated in the study of which among them, nine (9) were managers and six (6) engineers. Face to face interviews used to collect data various places including the interviewees' work, restaurants, coffee shops and one interview was conducted telephonically

The findings:

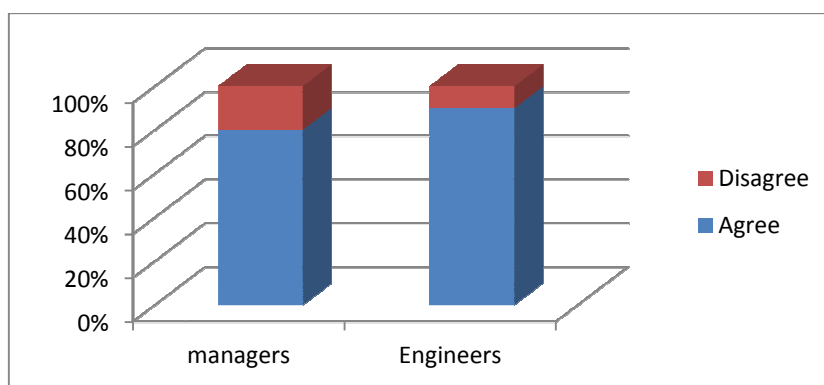
The framework of the findings is divided into three components: Insufficient financial resources; lack of management capabilities and lack of accountability and transparency mechanisms

Insufficient Financial Resources: Studies have revealed that many developing and few developed countries; are faced with difficulties in securing adequate and stable flow of funds for road maintenance through government financing procedures. Despite huge investments injected for road projects in Africa, most of the road networks throughout the continent are still unpaved and /or poorly maintained. This condition negatively reflects on many African

economies, especially for landlocked countries such as Lesotho which is dependent on the roadworks for economic subsistence and prosperity.

Figure1 indicates that eighty percent (80%) of the managers and ninety percent (90%) of the engineers respectively agree that there are no funds for road administration in Lesotho. Respondent A, *indicates that Insufficient funding is often quoted as being responsible for poor state of affairs, but even when substantial funding is available the sustained provision, maintenance, and management of rural road networks, feeder roads, tracks, and paths is vulnerable to failure.*

Figure1- Lack of funds in road administration



Realizing the urgent need for road maintenance in the Lesotho, while faced with massive budgetary constraints, the governments in Lesotho realize the need for road sector reforms subsequently leading to the establishment of road fund. Most of the developing countries do not have access to unlimited budgets. It is more useful to examine how the available budget can best be spread across the competing investments. Once it is decided to use economic criteria to assess priorities, then additional data are required. These may include measures of existing road roughness by road section, average vehicle operating cost and costs for routine, periodic and rehabilitation maintenance and furthermore, a means of trading off the net economic benefits of maintaining one section of road compared to another is also needed financial resources allocation is crucial for the effectiveness of road administration programmes.

If road maintenance is delayed, the cost for repairs, rehabilitation and so on increases exponentially. The delay causes deterioration which very fast infect road transport in general where the costs will soar, which again will infect the economy of the transporters. Therefore the resources allocation process always needs to be a part of road administration programme. Conversely, resource allocation process should be linked to the specific goals for road management in order to achieve maximum benefit of the funds which are allocated in the process.

Respondent C: *shows that road transport dominates the domestic transport of goods and passengers and roads are critical to the social and economic development of Lesotho, however not much funding is being allocated, funds are allocated in health and education in our country.* Providing funds for road administration is a struggle, for many reasons: roads need preventive maintenance. Even when the road budget is adequate for proper maintenance, maintenance can still be inadequate, because of capital bias (Harral, and Faiz, 1988). To maintain the road network at an acceptable level, sufficient financial resources should be set aside for road repairs. Road maintenance is very important to preserve and prolong the life of road infrastructure. Maintenance had been neglected in the past and the repetition of this situation should not be tolerated now or in the future.

Building a new road is a cost that is usually done once, but the cost for maintenance has to be paid over and over again. As a road gets busier, maintenance costs increase. A long term funding plan for maintenance is therefore necessary. According to SANRAL(South African National Roads Agency Ltd), a delay in road maintenance of 3 to 5 years increases the required repair costs by between 6 and 18 times. Also, because of the subsequent decrease in riding quality, the vehicle operating cost of roads could easily double, with the associated ripple effect on the economy.”(DoT 2002:81-82).

There is a problem, however, which is common throughout the world, the neglect of maintaining our roads. Building new roads cost money, but without maintaining the roads properly, they deteriorate very quickly. If nothing is done, roads with a design life of decades can need replacing or major repair work after just a few years. The funding that should be budgeted for maintenance (subject to a host of variables that include the nature of the infrastructure, its age, how well it has been operated, its maintenance history, and many other aspects); and the levels of expertise that should be deemed competent to be responsible for each element of infrastructure maintenance.

Roads are of vital importance in order to make a nation grow and develop. Especially in the developing countries, good maintained roads also will enhance poverty reduction by improving access between regional and rural communities and, ultimately, enhancing socio-economic growth and development. Road networks form vital links between production centers and markets. In addition its multiple function of providing access to employment, social, health and education services makes road network crucial in fighting against poverty by opening up more areas and stimulating economic and social development.

Lack of accountability and transparency mechanisms: The government’s job is to govern and create infrastructure to look after the well being of its people. In seeking to do this, it should concentrate on securing health and education facilities for everyone as well as ensuring food supplies and that roads are maintained. Respondent D: *outlines that deteriorating road safety is a growing concern in Lesotho, not much is been done to ensure responsibility on the funds allocated, and this leads to corrupt practices in issuing tenders.* The creation and development of a strong and capable road administration should be a major concern of the government and the international lending agencies. It has never been Lesotho’s best –kept secret why many other road construction contractors leave behind kilometers of potholed roads. The concern in this study is about the fact that money is invested every year on road construction and maintenance, and yet the roads in Lesotho get worn.

The fact that road users are identifiable and that they bear some taxes (such as gasoline taxes) is used to justify earmarking arrangements for road maintenance or construction. Several developing countries, including Lesotho, have road funds. Although Lesotho's road fund has been in place for years, it has not been able to create the basis for sustainable road maintenance financing. The largest source of revenue for the Lesotho Road Fund is the road maintenance Levy. This levy is included in the price of fuel, in particular petrol and diesel. During the month of June 2006, the Lesotho Petroleum Fund Board announced 3.50 per cent and 5.02 per cent increases in the prices of petrol and diesel, respectively. The main reason for the increases was the review of the road maintenance levy, which was doubled from 15cents per litre to 30 cents per litre for petrol, and from 20 cents per litre to 40 cents per litre for diesel. This is the first adjustment since 1998, when the levy was introduced in Lesotho (economic review, June 2006).

In developing countries however, lack of road maintenance is a serious problem. The road fund is responsible for new maintenance and road construction. The road fund in Lesotho also receives the revenue from a share of taxes on fuel. There are several problems with the operation of the road fund, including among others lack of transparency, monitoring and accountability.

Revenues from the road fund will primarily be used to finance routine and periodic maintenance of the classified road network, together with maintenance of selected Village Councils roads, and selected road safety projects. Village Council roads include those under the jurisdiction of the Civil Works Section (CWS) of the Ministry of Local Government as well as roads where the Village Council agrees to make their contribution to maintenance through a cost sharing arrangement. Village Councils will be expected to contribute 50 percent towards the cost of maintaining Village Council roads, and may choose to do so by contributing direct labor. District Councils will be expected to contribute 50 percent towards the cost of maintaining urban roads using revenues from rates and other local taxes. Road fund revenues may be used to finance rehabilitation, but will only be used to finance road upgrading and new works, once all road maintenance requirements have been met (Heggie, 1996).

Lack of human capabilities: The Poverty Reduction Strategy paper (PRSP) of the Government of Lesotho (GOL) recognizes that the development of rural roads makes an impact on economic growth and poverty reduction. It is in this context that GOL is committed to the implementation of Road Rehabilitation and Maintenance Program (RRMP) with the goal of improving the road transport operating efficiency, providing access to isolated rural areas and developing the institutional capacity of the sub-sector.

Respondent B highlights that inadequate road maintenance is primarily due to a shortage of financial resources; poor management, planning, and implementation of road maintenance; and the weak technical capacity of road agencies and local contractors. The Lesotho's economy needs to shift from primary- and service-related industries to higher technology, and road administration that requires specific skills and competencies. In addition, developments have taken place in technology that has resulted in a change in the profile of the country's workforce. Consequently, more highly skilled labour is required, and nowhere more so than in the road construction industry. This shift to higher technologies has created more pressure on

unemployment in the semi- and unskilled sector of the population, which has led to the introduction of labour-based construction programmes.

Figure 2-Professional Background in road administration

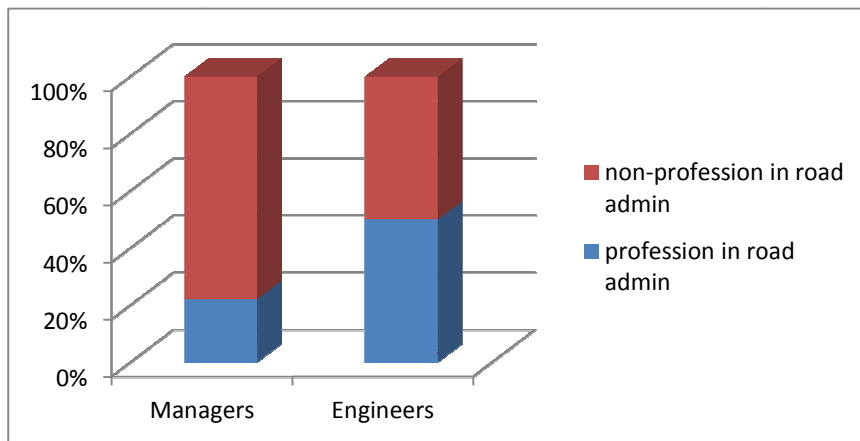


Figure 2 shows that only 22% of Managers in road administration in Lesotho obtains professional background in road administration, and 78% have a background in other professional background, such as human resources, Industrial psychology, marketing and general sciences. 50% of the engineers however have a professional background in road administration. To sustainably reduce Lesotho's legacy of socio-economic inequalities, a strategic investment in the country's human capital is needed. Respondent B: *indicated that in government of Lesotho, salary levels are often low and not competitive with salary levels of the private sector.* Apart from facing problems with recruiting and retaining qualified staff, low salary levels make government organizations prone to corruption and misappropriations. The loss of intellectual assets and key technical staff, and their non-replacement, or replacement by others less qualified or experienced, is inhibiting infrastructure maintenance and in many cases can be identified as the main reason for a breakdown of the service.

The most difficult training to find locally is the professional skills and development training for road engineers and managers. There is no training institution in Lesotho taking care of the continuing education for road, bridge and traffic engineers. The government of Lesotho has to employ or hire people who can organize training courses for the engineers. The results of this study further reveals that only twenty-two percent (22%) of managers and thirty-three percent (33%) of engineers respectively have received training in road administration, while seventy eight percent (78%) of managers and sixty seven percent (67%) of engineers have not yet received road administration training.

Respondent E: *We only have one training manager to organize all the training required for all employees and also some training courses, therefore it is absolutely clear that training needs may not be clearly identified.* It seems that Lesotho's country economic powerhouse is especially poor when it comes to training opportunities. Lack of training is therefore identified this study as the reason for poor performance among engineers and managers in road

administration. Lack of training can often lead to misunderstandings between employees and management causing a rash of problem in road administration.

2.1.1 Lesotho and roads maintenance

The Government of Lesotho (GOL) perceives the country's topography as a cause of problems for providing social services, while some development agencies see it as a challenge to be confronted head-on. Lesotho has over 85% of its territory covered by mountains which represent the rural proportion of the entire territorial mass of the country. It is also here that all the projects considered in this study are located (Ntho and Tsikoane 2003).

Delivering road maintenance in conditions of severe resource constraint has proved to be a particularly intractable problem. Roads have a particularly political nature. They are regarded as key to development, and a politician who can validly claim to have brought a road to their people his importance is easily recognized. Major road developments are political not only in Lesotho but also in many other countries, and in developing countries with such dilapidated road networks; even minor road development and rehabilitation or maintenance becomes a political issue.

The key activity is maintaining the road surface condition for comfort reliability and access rather than a good standard of serviceability and road texture. Funds are so short that allocations tend to be done on a monthly or emergency basis and the worst spots are fixed first. This is contrary to the engineering-economics and conventional wisdom that maintenance gives a better return than construction. However, the level of backlog maintenance in a country like Lesotho prohibit direct application of engineering principles hence modification on almost daily basis.

The road network in Lesotho is young and remarkably simple, particularly compared with Lesotho's only neighbor, South Africa. It is estimated that Lesotho's road network extends over about 7,000 km, most of which are located in the lowlands. The highest concentration of roads per unit of land is in urban areas¹, a contrast reflecting the urban-biased nature of development efforts since independence (Ntho and Tsikoane 2003). Four national agencies – Roads Branch, DRR, Ministry of Local Government and Maseru City Council – are responsible for parts of this network. The Roads Branch is responsible for primary roads (Code A) linking major towns and district centers as well as main border posts. The same is true for secondary roads (Code B) connecting districts and linking local centers to the primary roads. The Ministry of Local Government is responsible for part of the Code B roads and tertiary roads connecting local centers within districts. DRR is responsible for access roads linking one or more villages in the rural areas Ireland Aid, Annual review, 2000.

Both government and donor agencies view the lack of access in the country as a major development challenge. One of the consequences of this problem is that "much of the country is cut off in winter" Ireland Aid, *Annual Review*, 2000 due to snow and frozen rivers. In rainy seasons these rivers become full and hamper human mobility. Since 1994 Ireland Aid has been cooperating with GOL through the Ministry of Public Works and Transport (formerly Ministry of Works) to improve access through the construction of gravel roads, structures and footbridges. At an average of 16 km per year, about 80 km of rural roads have been

constructed or rehabilitated. Under the auspices of the newly created DRR, all construction is intended to be pro-poor in that it uses labor-based methods, providing much needed employment in the countryside (Ntho and Tsikoane 2003).

3. CURRENT INTERVENTIONS TO BRIDGE THE SKILLS GAP

The use of local construction

Government policy in the road sub-sector is incrementally placing less reliance on force account and creating more opportunities for local contractors. A major step in promoting the local construction industry is the provision of a regular flow of routine maintenance works to the local contractors who have been trained on labor-based construction techniques by the road agencies. The development and implementation by the road agencies of routine maintenance activities through contracting is vital to help create the competitive market, whereby qualified contractors would gradually develop into medium sized firms able to take on more complex road works (African Development fund, 2003).

Training

African development Fund (ADF)/Technical Assistant Fund approved a grant for the financing of institutional support to the transport sector. The project provided training in the areas of transportation economics, planning and engineering, and provision of technical assistance to strengthen the capacity of the various departments within the Ministry (African Development fund, 2003). Most of the people that benefited from the training/fellowship program are still with the civil service in general and Ministry of Public Works and Transport (MOPWT) in particular. For example, the Chief Roads Engineer (CRE) and Principal Roads Engineer (PRE) of road branch; and ex-director of Planning Unit of MOPWT were trained under the project. Furthermore, ADF provided two Technical Assistance experts (TA) under the now completed Oxbow-Mokhotlong Road Project with a view to promoting technology transfer. There are currently nine TA experts within MOPWT. Overall, the utilization of TA experts has worked reasonably well. A sustainable solution, however, would be the training and retraining of more local staff to take up responsible positions within the different road departments coupled with improved working conditions (African Development fund, 2003).

The use of consulting firms

Government of Lesotho (GOL) has decided to adhere to the design standards established by Southern Africa Transport and Communications Commission (SATCC) for road and bridge design in the Southern Africa Development Community (SADC). Due to the unique and severe topographic nature of the country and with a view to keep construction costs to acceptable levels, GOL has customized some aspects of the SATCC design standards for conditions in Lesotho. The capacity for carrying out in-house feasibility studies and detail engineering design is limited due to shortage of staff. The capable staff is occupied with the supervision and review of designs. Consulting firms (both local and international) carry out the feasibility studies and detailed engineering designs. The local consulting industry is well developed and they undertake feasibility studies, detailed engineering studies/designs and

supervision of civil works. A local consulting firm supervised the Mpharane-Bela Bela Road Upgrading Project financed by the Bank (African Development fund, 2003).

There is currently a significant amount of construction work going on and particularly in the area of road construction, upgrading and rehabilitation, which is mainly being carried out by international contractors and supervised by consultants. The local construction industry still requires further development to make use of the opportunities. A few local contractors, however, have teamed up with foreign firms as sub-contractors. Currently, majority of the local construction firms are engaged in the maintenance of earth/gravel roads (routine and periodic), and a few in routine maintenance and light periodic maintenance of paved roads (African Development fund, 2003).

3.1 Conclusion

Roads have traditionally been managed as a social service for the good of the public. Whilst some rural access roads may be constructed to provide this service; the main road network supports development of the economy as a whole. Unlike other sectors such as water and electricity hereby their service are relatively easy to be charged, roads are often viewed as a "free good". Roads are primarily financed through taxes. In Lesotho roads department suffer from severe human resources constraint brought about by acute shortage of qualified and experienced technical and managerial staff, while at the same time is saddled with too many unskilled workers. As a result morale is generally low, primarily because of low salaries that compare with the private sector.

Lesotho also suffers from shortage of funds for maintenance and improvement of roads, as mentioned in the findings of this study. This is manifested in the form of rapidly eroding asset values, increased traffic congestions and increased number of accidents. Due to recent recession, the government of Lesotho is under pressure to cut public spending and there is strong competition for the available funds from other sectors such as health, education, security, etc. As a result, there is a need to reform the financing of roads and to change the perception that roads are public goods which can only be financed alongside other public services through the government's budget.

3.1.1 Recommendations

For proper road administration, this research therefore recommends the following:

Retention of staff

In order that valuable employees do not look for better job opportunities outside the government (as already highlighted that there is shortage of professional road engineers and managers of the road administration):

- The government should develop attractive working conditions, system of rewards and social benefit package.
- Depending on their responsibilities the engineers should be equipped with up-to-date office equipment, personal computers and other technical appliances. Due to the need of engineers and managers to be flexible and mobile they should be provided with mobile phones, office cars and they can choose between PCs or laptops.

- In order that the employees receive competitive salaries, the government should participate in a salary surveys every year to find out the situation in the labour market and to adjust the salary levels accordingly.
- Regular and appropriate training and development of personnel also serves as a good motivator, highly important for retention of the qualified road specialists. Due to the fact that very small numbers of recently educated road and bridge engineers join our staff and there is very little opportunity to exchange theoretical and practical experience among them thus pay a lot of attention to raise the practical and theoretical level of their professional education. Each year the main directions for training should be specified by drafting a Programme for Development and Motivation, and hence aside training budget based on the scope of the programme. Once a year organize development discussions with staff to find out their training needs and development plans
- The engineers should be provided opportunities to participate in seminars, conferences, training courses and road exhibitions locally and internationally.

Attraction of new staff members

There had never been problems with finding qualified office staff and specialists like: accountants, lawyers, economists, secretaries, etc., but to find qualified road, bridge and traffic safety engineers in Lesotho, one need to be very skilful and use all sorts of recruitment techniques. Consideration should be made to “head-hunt” appropriate personnel in road administration.

- There should be support financially to employees who chooses to study road and bridge engineering
- There is need to establish contacts with the Technical Universities in Lesotho and other countries such as South Africa, in order to be aware of the situation in preparing future road specialists – their numbers, the specific programmes and skills they are taught and so on.

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