Sida Evaluation 97/5

Labour Construction Unit LCU – Lesotho

1977–1996

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Department for Infrastructure and Economic Cooperation

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GLOSSARY

ASIST	Advisory Support, Information Services and Training
AfDB	African Development Bank
CDF	Commonwealth Development Fund
CPDO	Central Planning and Development Office
CWS	Civil Works Section
FY	Fiscal Year
GDP	Gross Domestic Product
GOL	Government of Lesotho
HQ	Head Quarters
IDA	International Development Agency
IBRD	International Bank for Reconstruction and Development
ILO	International Labour Organisation
KfW	Kreditanstalt für Wiederaufbau
LCU	Labour Construction Unit
LHDF	Lesotho Highlands Development Fund
LITU	Labour Intensive Training Unit
M	Maloti
MoW	Ministry of Works
NORAD	Norwegian Agency for Development
PS	Permanent Secretary
RARP	Rural Access Road Programme (Kenya)
RDP	Reconstruction and Development Programme (South Africa)
RRMP	Roads Rehabilitation and Maintenance Project

SEK	Swedish Kronor
SIDA	Swedish International Development Authority (after reorganisation in July 1995: Sida, Swedish International Development Cooperation Agency)
SWK	Scott Wilson Kirkpatrick & Partners
TA	Technical Assistance
TY	Teyateyaneng
UN	United Nations
UNDP	United Nations Development Programme
UNV	United Nations Volunteers

EXCHANGE RATES July 1995

US$ 1.00 3.50 Maloti

US$ 1.00 7.20 SEK

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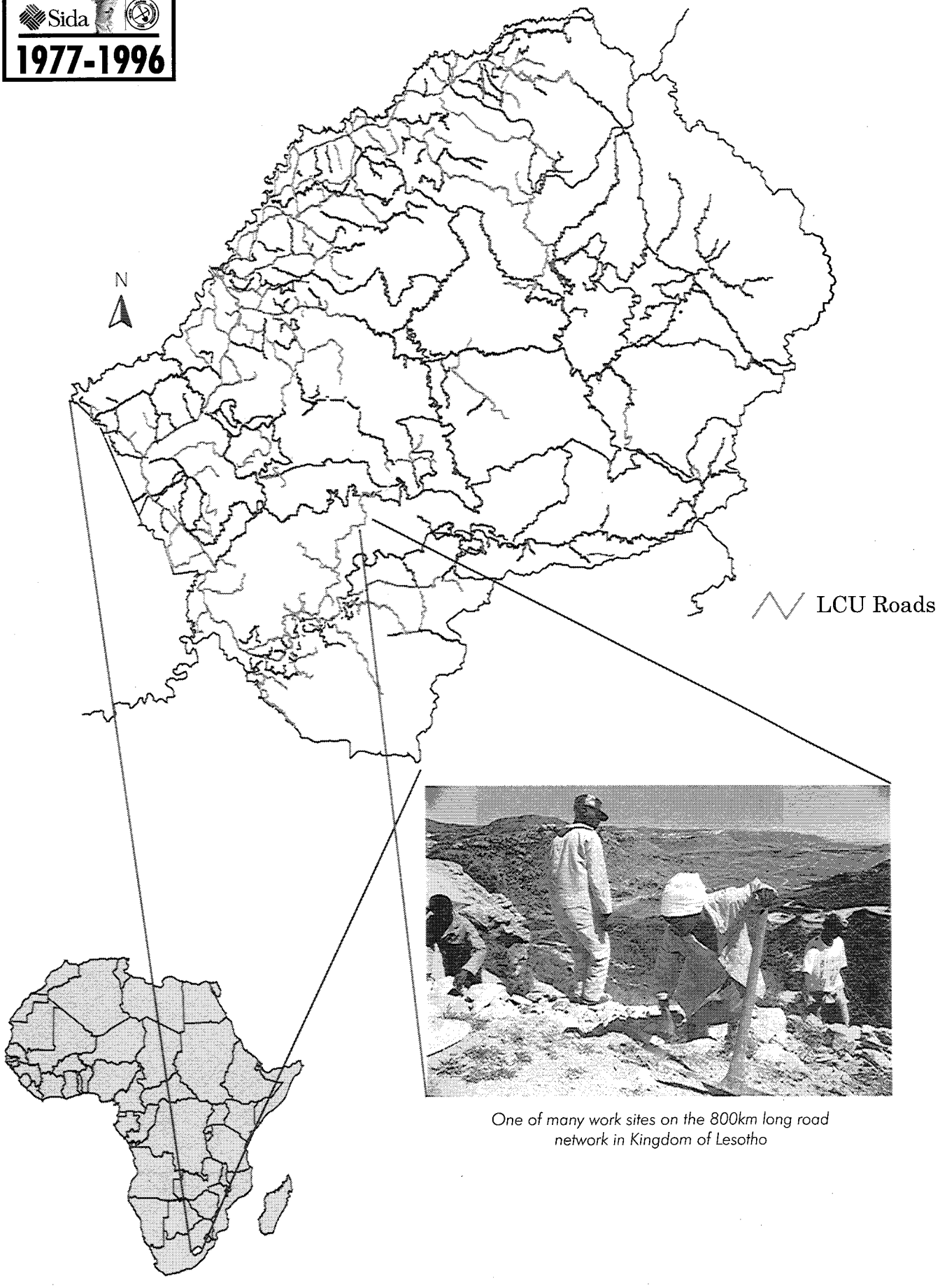
Kingdom of Lesotho



One of many work sites on the 800km long road network in Kingdom of Lesotho

Summary of Conclusions and Recommendations

Lesotho's Labour Construction Unit (LCU) was established in 1977 and is now planning its third decade of successful operation. Sweden has provided funding and technical support from its second year of operation in 1978 and is finally signing its involvement in 1996.

During this period a total of 105 million SEK has been invested for operational activities, infrastructure and technical assurance. This review summarises Sweden's 18 year involvement and clearly illustrates the complex process of developing a new approach from concept to successful institutionalisation. This review should serve as a valuable reference for current and future labour-based programmes in the region.

The members of this review team were Torkel Danielsson (Sida Consultant), Lars Karlsson (Sida), John Mosoabi (MOW), Dejene Sahle (ILO) and David Stiedl (ILO). The document was completed and edited by ILO/ASIST, based on substantial contributions from Torkel Danielson, Dejene Sahle and David Stiedl. All photographs are taken by Fiona McDougall (ILO Consultant). Scanning and Production coordination is done by OneWorld Communications. Design and typeseting is done by Radovan Korda. Printing is done by M.G. Printers, Ruwa..

1. Conclusions and Recommendations

1.1 Policy and Institutional Development

As a general statement it can be concluded that SIDA's long term investment has created a solid and well based institution, that effectively demonstrates the main advantages of the labour-based approach to infrastructure provision in low wage economies. The LCU fulfils a need to build and maintain a significant part of Lesotho Road Network, it is fully integrated into the government's structure for provision of services, and it is still one of the few institutions that fulfils the government's policy to create employment and improve services in the rural agricultural areas.

LCU has provided improved services throughout the country.

The LCU has sufficient resources from both government and donor commitments, as well as the trained manpower required for it to remain fully effective after SIDA's withdrawal of support. Also, because of its early investment in research and training, it is well placed to

weather the transition from a direct labour government institution to a commercialised provider of services, which appears to be the current thrust of policy for Lesotho's road related agencies.

On the negative side, the long term aims of providing a significant level of employment to absorb returning migrant labour was not achieved. In retrospect this was probably an over ambitious goal. The technical nucleus to impart labour-based methods was created, and if emergency repatriation had occurred large-scale labour-based operations might have been possible. However the government decision-makers seemed to have been reluctant to take the necessary steps to add action to the rhetoric of policy. By not instructing government agencies to adopt proven techniques an opportunity for large-scale employment creation has lost.

SIDA and other agencies appear to have been content to accept this lack of high-level commitment, limiting their objectives to ensuring the sustainability of the LCU. Given Lesotho's political turmoil since the mid eighties this was probably a realistic decision but still a lost opportunity.

The principal recommendation in this area is, to ensure that sufficient resources are made available to assist the implementation of policy as well as developing technical solutions. The appointment of the Labour-based Works Co-ordinator at CPDO was exactly the right move but perhaps too little too late.

1.2 Project Outputs and Costs

The basic criteria for the technical soundness of adopting labour-based techniques, is whether it is competitive with equipment based methods delivering the same product. All the available evidence shows that the labour-based approach is still an economic proposition in Lesotho for earth and gravel roads.

Lesotho's unit costs are significantly higher than those from other projects in the region. However LCU construction costs have been remarkably consistent over the almost twenty years of the programme. The team consider that the costs must be optimal and correctly reflect the difficulty of the terrain.

The routine maintenance costs are excessive and the results are not impressive. This reflects the lack of periodic maintenance, which must be introduced as soon as possible. It would also be advisable to reassess routine maintenance procedures, to see if resources are being well used.

1.3 Human Resource Development

1.3.1 Employment

Although the LCU has been a significant employer compared with other government agencies, it has not made a significant impact on the unemployment and

underemployment problem in the rural areas of Lesotho. The main reason for this is that the unit has been restricted by the available funding in its area of operation.

However the techniques developed are as valid today as during the pilot phase, when all sectors where considered as suitable targets. If the government cares to utilise the techniques and skills now available to them in areas which they have stated are their priorities; ie the revitalisation of agriculture with interventions including soil conservation, afforestation, water supply and improved access; then significant employment could be generated, which would directly benefit the small landholders who are their stated target group[1]

1.3.2 Localisation

Localisation of LCU Management has taken almost twenty years to achieve, and is not yet fully realised. However the current situation in the LCU is the same for most line ministries, who all have difficulty retaining technical staff. At least the LCU has now attained a critical mass of experienced staff, and there is a clear career path which should make it worthwhile for interested staff to remain in the unit.

It is possible that the localisation process would have been much more successful in the early years, if the long term prospects for local staff had been better. This really pivots on the question of institutionalisation. If the rhetoric of supporting the aims of the LCU had been turned into real action, then it would have been possible for the TA staff to have put more attention into the needs and aspirations of their counterparts. As it was, most of their energies went into finding work to ensure the LCU's survival

1.3.3 Staff Training

Staff Training is another area where there may have been too little too late. Certainly with the adoption of the twenty year plan and the construction of the training centre in the early nineties, the situation has been transformed, and staff training is now well taken care of with well qualified Basotho trainers.

It could also be argued that in the pilot stages in the first few years, things were developing too fast for a structured training programme. However after the realisation that there was a need, and the appointment of a training adviser in 1983, matters did not progress well. Again it could be argued that the facilities given to the training organisation (LITU) were too meagre, and the ambition to provide labour-based training for all line ministries was too great.

It is the opinion of the team that too much is expected of "training" in isolation. If policy and funding is in place and people clearly know what they want to be trained in; if the technical specifications of that training are already worked out, plus there is an incentive for people to get trained

[1] Lesotho, Strategic Economics Options Report, Phase II, Summary Document, *GOL/World Bank*. November 1995

(ie it improved their promotion prospects or earning capacity), then a training programme can be put in place. A training centre without support and follow-up will have little impact. The very successful Kisii Training Centre was set up as a separate institution ten years after the start of the Kenyan RARP when the technology was well established and growing.

1.4 Technical Development

The LCU has been a pioneer in developing effective ways of substituting labour for machines, to build high standard of work in very difficult terrain. Although improvements are always necessary and desirable, the LCU methods are probably optimal for their unique situation. Any major changes would require much higher engineering input which is unlikely to be available. Maintenance is another matter and there is room for considerable improvement to procedures and costs.

LCU technical and training materials have been produced to a high standard and deserve a wide circulation.

Standards and techniques are adequate for the level of access required in most situations in rural areas. It is incorrect to adopt higher standards just to concur with regional assumptions on appropriate levels of service (Single track roads and unengineered alignments are still common in low traffic situation in Europe).

Labour-based contracting has a great deal of potential for creating indigenous businesses, but the time and effort required to ensure those businesses are viable must not be underestimated.

1.5 Technical Assistance Arrangements

The technical assistance teams and the individuals making up those teams have generally demonstrated a very high level of commitment and competence. The high price of twenty years of expatriate input can be justified by the creation of an organisation that is capable of functioning well with its own resources. However the length of time required to achieve this objective is questionable.

As a general comment, the fielding of a team supplied by one organisation has much to support it from the view of continuity, backstopping and team work. On the negative side the team can be seen as too exclusive, and does not encourage integration with the local organisation.

The key recommendation is that counterpart training and integration has to be a cornerstone of any TA activity. These activities are if anything more important than the TA teams technical development and proficiency, especially during the post pilot stages.

1.6 Impact

The project can be seen as having a positive effect on the rural population in its area of influence. The scale of this impact is difficult to quantify. However given that the

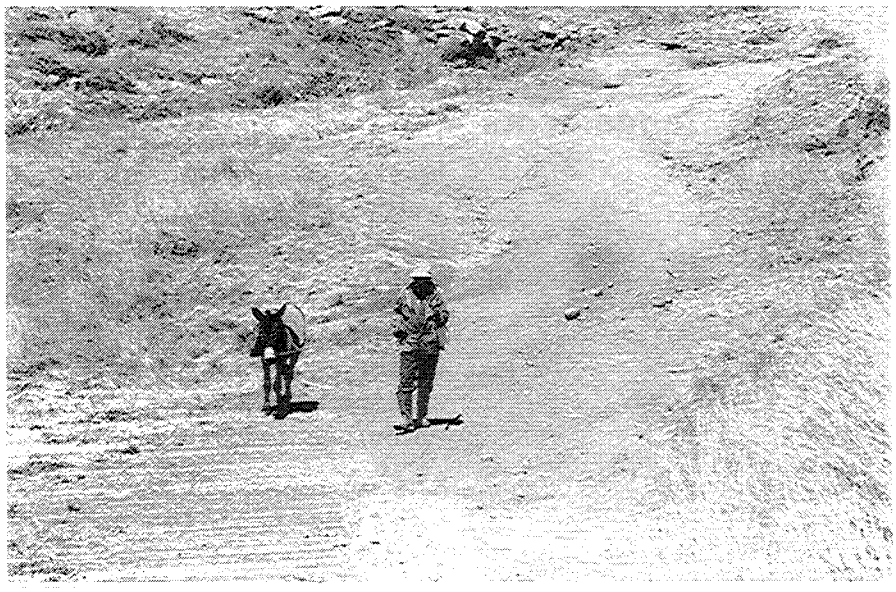
infrastructure provided was part of the National Plan and would anyway have happened, (albeit later, more expensively and with no multiplier effects from employment creation), there is no doubt that the project has been beneficial.

The employment creation effects are less than could have been achieved with full government support. However the effects are still substantial compared with the employment alternatives available in Lesotho at present.

To get the full benefit from such interventions it is necessary for government to have complementary development inputs. Simply creating access will not by itself achieve the government's aim of an agricultural transformation. For rural communities to provide high value exports, many issues must be addressed such as access to credit, land tenure etc. Roads and other interventions will have to be properly planned, with high attention to priorities and feasibility and most importantly, to return on investment. The danger with low cost interventions is that insufficient attention is given to the planning, both technical and economic. It may be difficult to assess the return, but simple procedures do exist and must be adopted.

1.7 The Future of the LCU

The future of the LCU seems to be secured. Provided that the Road Authority arrangements are equitable and sufficient portion of the Road Fund is allocated to secondary and tertiary roads, then the LCU will be able to fulfil its mandate of servicing 2,000 km of rural roads by the year 2010.



The challenge remains: LCU's mandate is to service 2,000 km of rural roads by the year 2010.

The new challenge is to take up the opportunities arriving from the Lesotho Highlands Development Fund. This Fund has the potential to generate a large amount of work that is ideal for implementation by labour-based methods and small contractors. However, by its very nature the work is

difficult to plan in advance and even more difficult to provide adequate levels of technical supervision and training at the required time and in the necessary quantities. The LCU and the government will have to adopt the procedures and processes if the Fund is to be fully exploited.

The potential exists for a very high level of community involvement in all levels of infrastructure development and maintenance. If the government is to fully utilise the resources created in the LCU, they have to find a way of collaborating and co-ordinating between ministries and agencies, as was originally intended during the expansion of the programme in the mid-eighties.

LCU utilizes the skill of local artisans.

2. Programme Context

2.1 Development Context

Lesotho is a small and totally landlocked country . It is one of the most dependent economies on the African Continent, with few natural resources and poor agricultural potential. Over the last century it has changed from an independent and largely self sufficient country to a labour reserve, totally dependent on the South African labour market. In addition to needing gainful local employment, the largely rural population desperately need better access. They live in a difficult and rugged terrain, with only footpaths and horse trails to reach essential services and markets.

To compound these problems, Lesotho's status as a front line country in the anti-apartheid struggle resulted in economic isolation for many years, limiting opportunities for trade and investment.

Sympathetic countries have tried to alleviate this situation and Lesotho has been a recipient for a significant amount of donor support designed to encourage some degree of self sufficiency. However the problem has been to identify interventions that have some potential for success and sustainability in this difficult environment.

Despite an abundance of skilled labour and relatively low wages, Government and donor investments tended not to draw on that advantage. Donor investments remained heavily reliant on imported skills and equipment for all construction and infrastructure projects, even when these projects were aimed at improving the lot of the rural poor.

One of the few exceptions was the potential for improving rural access and rural infrastructure by labour-based methods. This was seen as one intervention that could reverse the trend and mobilise Lesotho's primary resource, people, to improve the rural economy, while providing much needed local employment. The development of labour-based approaches through the

Labour Construction Unit (LCU) with strong support from the Swedish International Development Authority (SIDA) and other donors was a direct consequence of this imperative to invest in Lesotho's self sufficiency.

2.2 Programme History

Lesotho's unemployment crisis was brought to a head in the mid seventies when there was a threat of mass repatriation of the Basothos working in the South African mines. At that time 175,000 Basotho men were estimated[2] to be working in South Africa, mostly in the mines, and their "remittances" equalled and at times exceeded the GDP. This represented 60% of Basotho male labour force. However South Africa was the only realistic option for gainful employment.

An IBRD[3] mission sent to Lesotho to advise on this problem recommended a programme to establish alternative employment opportunities in infrastructure works which could create a buffer for returned miners. This approach was endorsed by an ILO/UNDP mission[4] in the same year. The LCU was subsequently established as a pilot programme in 1977 to investigate and develop this programme under the umbrella of the World Bank Second Highway Project. Although the initial project was World Bank funded, from the start SIDA showed interest in its development and gave support to some of the works constructed by the LCU during its pilot phase.

The three year experimental or "pilot" phase was considered a success, and an expansion programme started in 1980. SIDA continued to support specific projects, and then on the request of the Government of Lesotho, took on responsibility for funding the Technical Assistance in 1982. (The government had paid for TA during 1980 and 1981 from its own resources when World Bank support ceased. This is a very positive demonstration of government commitment).

The programme has continued to expand to this day, changing from a demonstration project to a fully institutionalised department of government with responsibility for 50% of the country's gazetted road network. The manager of the LCU now holds a post equivalent to the Chief Roads Engineer. The budget and establishment while not equalling the Roads Department is a significant percentage, and some 2,000 workers are deployed annually on an expanding network, currently in the order of 800 km, with an annual turnover of 28 million Maloti (US$ 7 million)

Throughout the expansion period from 1982, SIDA has provided the core support to the TA and the institution building. Other donors have contributed significant amounts to the actual works being constructed (see figure 2 at page 21) and as SIDA now phases out of the institutional support the World Bank has returned as a major financier of works. However the LCU is now a fully

[2] Lesotho Report of the Migrant Workers Re-employment Mission, IBRD Report No 614-LSO, 1975

[3] IBRD Report, 1975 op cit

[4] UNDP/ILO Iterregional Mission Report, September 1975

collaborating partner in the process.

The path has not always been smooth, and various alternatives have been explored for institutional structure, scope of works and modalities for technical support. These aspects are discussed in more detail in the following sections. In terms of the core problem, the need to create a buffer for returned miners has been replaced by more positive development goals. However the achievement of using local labour and technical skills to produce cost effective infrastructure in the harsh terrain of Lesotho has remained a constant throughout.

2.3 Programme Goals

The government's original goals for the LCU have been summarised as[5]:

- to promote and propagate the use of efficient labour intensive methods for public works in Lesotho
- to create as much gainful employment as possible especially for returned migrant workers

To achieve these goals the LCU was initially established with a series of objectives to prove the viability of labour-based methods, formulate procedures for the large scale adoption of labour-based techniques, and train supervisory staff.

At the time of the establishment of the programme, SIDA was already heavily involved in supporting Lesotho with the general objectives of promoting economic growth, more equal distribution of income, economic and political independence, and the development of democracy.

While these objectives were common to all SIDA supported development programmes in that period, in the case of Lesotho the economic and political independence from South Africa was considered of overriding concern, in line with Sweden's foreign policy stance toward the apartheid regime[6].

Following from this policy, support to labour-based construction work was seen as an excellent means to contribute towards the objective of economic and political independence for Lesotho, as it lessened the dependence on the South African market to provide employment, and reduced the role of the South African construction industry in building and maintaining Lesotho's infrastructure.

SIDA objectives through out their involvement was thus to provide management and training support to the LCU as the principal instrument to developing a sustainable labour-based construction industry, while maintaining and enhancing Lesotho's rural infrastructure.

As relations with South Africa normalised with the abolition of apartheid and the move to free elections, the imperative to support Lesotho from a political perspective lessened; however, developmental needs remained. The economic advantages of the labour-based

[5] Men or Machines? An evaluation of Labour Intensive Public Works in Lesotho, *Edmonds, Goppers, Söderbäck, SIDA*, 1986

[6] The Performance and Future Role of SIDA-Supported Public Works in Lesotho, *Karlis Goppers*, July 1981

approach were still valid and became the principal reason for SIDA's continued support until cessation of SIDA's development support to Lesotho in 1995.

The immediate objectives and outputs of the LCU and SIDA have modified over the project period as the institutional structure of the LCU has changed (see section 3.1), but the overall goal has continued to be the provision of cost effective infrastructure and the expansion of the application of labour-based methods.

Creating all weather accessibility.

3. Review Methodology

3.1 Scope of Review

This review is intended to give a concise summary of the achievements of the LCU. With a history of almost twenty years of collaboration between a developing country and development agency on one well defined and documented development programme, this presents a unique opportunity to summarise the process.

The review will also provide a description of the current operations of the LCU, its unique technical character, organisation structure, and the costs and outputs of the work. This should serve as a reference for current and future labour-based programmes intending to embark upon the long process of acceptance and mainstreaming.

The review will describe the institutional development of the programme, its evolution from demonstration project to full government department, its relationship with and dependence on donor funding, the effect of government policies, the various Technical Assistance arrangements, and lastly the recent moves towards commercialisation of the agency. The full TOR of the review is contained in Annex I.

3.2 Review Process

This review is almost entirely based upon a synthesis of existing documentation. The LCU has been subject to many searching evaluations over the years by different agencies including SIDA, and the intention was not to repeat that exercise, but to summarise the process of change. The evaluations and reviews were critical in the development and direction of the LCU. The principal changes and turning points of the programme have been highlighted, and where possible the consequences of these decisions have been assessed with the benefit of hindsight.

Although none of the team members had a personal knowledge of the whole programme, the accumulated sum of experience covered almost all aspects of the

programme's development from inception until now. This knowledge was used to augment and to some extent filter the written materials.

The team carried out site visits to new works and to SIDA funded projects completed over twelve years ago. It was thus possible to gain an impression of the soundness of the original investment , the level of upkeep and the change in standards (if any) over the years.

The extensive LCU documentation consulted by the team is listed in Annex II and should be referred to for clarification of details (all documents are available through the
ILO/ASIST documentation service).

In order to obtain a meaningful comparison of outputs and costs, it proved necessary to develop appropriate construction inflation indices. In addition it was necessary to use considerable engineering judgement to compare the distinctly different reporting procedures adopted at various times during the development of the programme by the different TA Teams. This work was principally carried out by Torkel Danielsson assisted by Dejene Sahle.

Getting the moisture content right.

4. Review Findings

4.1 Policy and Institutional Development

4.1.1 The "Pilot" Stage

Following the recommendations of the missions by the IBRD and ILO in 1975, the Government set up a pilot programme to establish labour-based methods in the Ministry of Works in 1977.

At that time the Ministry were responsible for gazetted roads, government housing, and the government plant and vehicle hire service. As labour-based methods were seen as having a much larger remit than roads, the unit, termed the Labour Intensive Construction Unit (later shortened to LCU) reported to a central steering committee under the Senior Permanent Secretary in the government for all policy matters, and the Permanent Secretary MOPW for administrative supervision of day to day activities. The Roads Branch had no executive function except to provide technical advice and supervision from their position as the Roads Authority. This worked well for the pilot phase but caused considerable institutional confusion subsequently.

The pilot phase was completed in 1980, having carried out works in road construction for the roads branch, soil conservation and fish ponds for the Ministry of Agriculture, and maintenance of rural airstrips for Civil Aviation. The technical standards and economic viability of the approach were considered proven. The central steering committee decided that the LCU should embark on an expansion programme with the aim of employing 3,500 by 1985, and maintaining a list of suitable projects such that the programme could be expanded to 10,000 in an emergency. This was reflected in Lesotho's Third Development Plan for the period 1980-1985.

4.1.2 The Expansion Phase

A SIDA evaluation in 1981[7], while endorsing the general approach , clearly stated that it would be necessary to establish a presence at central level, i.e. a Rural Works Planner attached to the Economics Unit in the Prime

[7] *Goppers*, July 1981 op cit

Minister's Office, if the labour-based approach was truly to expand to become an important approach in Lesotho. The same evaluation recommended that the unit took a more serious approach to training by establishing a formal training unit. It also recommended establishing a revolving fund to give continuity in projects (The ad hoc way in which the unit had to lobby for work was already creating difficulties with long term planning. Basically the LCU was having to operate as a commercial venture without the benefits of raising venture capital or reinvesting profits). Subsequent to this evaluation SIDA took over the funding of the consulting firm SWK, who had been providing TA since the set up the pilot phase in 1977.

The lack of clarity in government policy for the expansion phase became apparent in 1982. The steering committee had not met and was virtually defunct. No decisions were being made on the necessary actions and policies necessary to expand the LCU as originally intended. As a short term measure, because the unit was a useful provider of employment and donor funding, it was continued for a period as an adjunct to the Roads Branch: virtually run as an autonomous contracting organisation by the consultants, and increasingly concentrating on roads related projects. There is no evidence that there was any long term policy behind this decision, which appears to have been simply expediency.

By the time of the next SIDA evaluation in 1985[8], the LCU had again become detached from the Roads Branch, reporting directly to the Permanent Secretary of the Ministry of Works, but still dependent on individual projects that could be attracted on an ad hoc basis by the consultancy team or the Ministry planning department.

The SIDA evaluation concluded that although the labour-based approach could still be demonstrated as very cost effective, and the standards and productivity were still high, the unit was not achieving the expected degree of sustainability. It had no permanent status within government, no assured funding, a shortage of qualified staff; and lastly because of its continued role as implementing agency and advisory organisation entirely staffed by an external consultancy firm, it lacked the credibility to promote labour-based policy at the highest levels of government.

Three options where considered for the future of the LCU:

i. *reinforcement*, that is, building up and developing the existing unit as a Ministry of Works branch;

ii. *integration*, by splitting the LCU activities between the various concerned Ministries (co-ordination would go to Central Planning and training to an autonomous organisation);

iii. and lastly *commercialisation*, by setting up a parastatal contracting group responsible for all labour based infrastructure provision in the country.

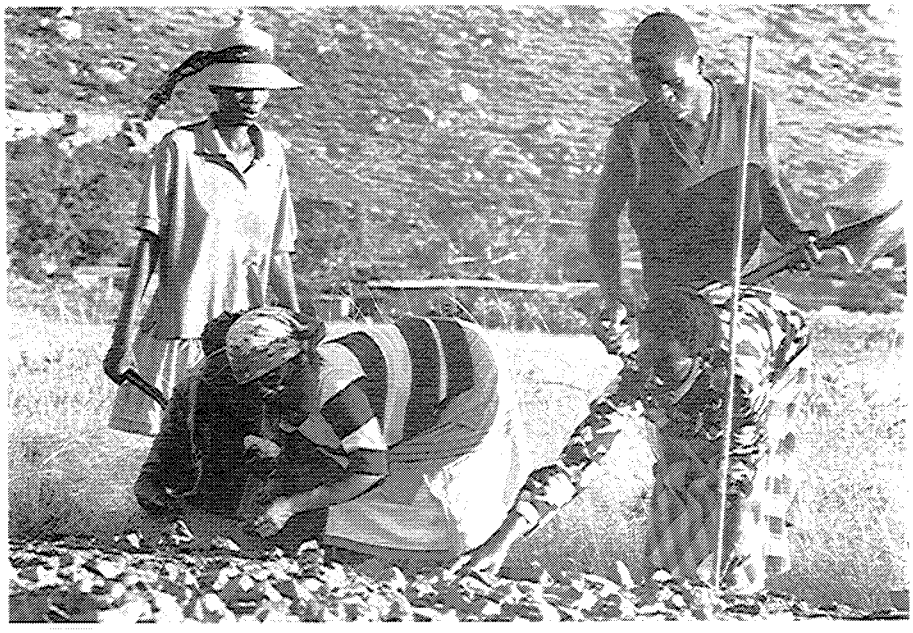
[8] Edmonds et al, *SIDA*, 1986 op cit

Other recommendations from this evaluation included

- the necessity to provide a training base in labour-based techniques that could be used by other agencies and ministries. This unit termed LITU (Labour Intensive Training Unit) was to be based on the training unit established in the LCU in 1984 but becoming eventually autonomous; with the aim of training trainers for the respective ministries who would then set up their own LCU's for water supply, conservation, airstrips etc.
- the inclusion of women in the workforce. As the LCU had been set up to address the problem of returned miners, the rule had been men only. However many households in Lesotho were female headed because of absent husbands and older male children, and the need to provide the remaining women with the option of waged employment was seen as imperative for any sort of rural development.
- setting up a unit within the Central Planning and Development Office assisted by a SIDA funded Labour-based Works Co-ordinator, together with the reforming of an inter-ministerial steering committee to promote the use of labour-based techniques for all infrastructure provision in the country.

Although the evaluation team preferred the *integration* option, the government (and the LCU Manager) preferred the *reinforcement* option; which was eventually adopted

Recommendations stress the inclusion of women in the LCU workforce.



together with the training, female employment and labour employment adviser recommendations. The LCU's position was gradually improved over the next three years. leading to a decision in 1988[9] to mandate the LCU with responsibility for some 50% of the gazetted road network, becoming in essence a rural roads authority, with a dedicated recurrent budget and an enhanced establishment.

[9] This decision was consequent to the findings of an extensive Feeder Road Study carried out by the consultants Loius Berger, which recommended the formation of a roads authority combinng the resources of Roads Branch, LCU, and the food for work Civil Works Section

During this period the manager of the LCU was given the same grading as the Chief Roads Engineer, and permanent (and palatial) offices were constructed with German donated funds. It should be remembered that the LCU had survived in temporary (caravan) accommodation for ten years prior to this move. While this did not affect output and kept overheads very low, the poor accommodation probably contributed to the difficulty in retaining senior local staff, who viewed the LCU as a temporary phenomenon and bad for promotion prospects.

4.1.3 Institutionalisation

The next key transition followed the SIDA review of 1988[10]. It was apparent to the team that although the LCU had significant new resources, its organisation still adversely reflected its history of ad hoc projects and short term planning horizons. In order to fulfil its role as a roads agency it would require significant internal reorganisation. The new mandate and policy of the LCU gave a good chance for a sustainable solution for the organisation, but the operational details now needed substantial modification.

Although the LCU element was performing strongly, some of the parallel initiatives had failed to thrive. LITU, the semi-autonomous training branch of the LCU was not managing to get much custom from other agencies, and of greater concern, the SIDA financed post of Labour-Based Works Co-ordinator within the Central Planning and Development Office was not having much impact. These issues are discussed further in sections 4.3.3 and 4.5.

At the request of SIDA and the Lesotho Government, the ILO carried out an in-depth consultancy study in 1989[11] to establish a twenty year expansion programme for the LCU to address its road sector obligations. Plans were produced for establishing improved planning, design and programming functions, reorganising the field structure on a regional basis, and, most importantly, establishing a revitaliser training organisation with a long term plan for staff training/retraining, staff development, and staff localisation at management level (see section 4.3.2)

With SIDA support, the LCU embarked on the proposed plan in 1990. A TA team of ILO experts and UN volunteers were funded to fill managerial posts at central and regional level, and to establish a training centre. Eleven technical staff were subsequently sent on degree courses in England, and the TA team was gradually phased out as the graduates returned.

At the time of writing this report, the last ILO TA adviser is due to leave in one month, leaving one Irish funded TA post in the planning section. There are currently seven Basotho engineers in post in the LCU, but this has taken twenty years to achieve.

The LCU now has a well constructed infrastructure with central and regional offices, mechanical workshops, a

[10] Project Review of SIDA Support to Labour-Based Works in Lesotho, *SIDA, Moteane Hagen and Persson,* April 1988

[11] The Labour Construction Unit , A proposal for development, *Marshall and Engdahl, ILO Geneva,* February 1990

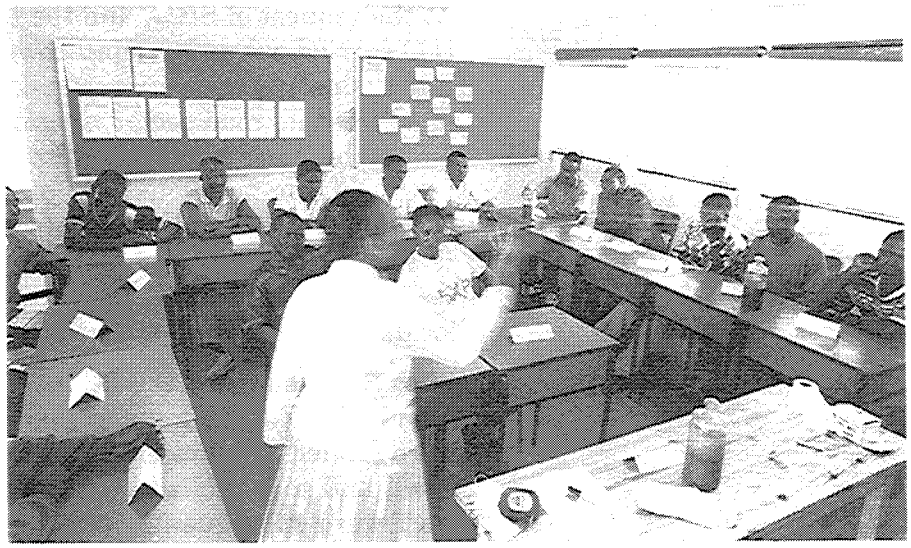
laboratory and a well equipped training centre. This centre could be used for training technicians from other ministries, agencies, or other countries (a training of trainers course for South Africans is currently being discussed). Preparations have been made for a new laboratory.

In addition the Civil Works Section, which provides employment for up to 5,000 workers on food-for-work operations on the third tier of Lesotho's road network (ie the basic access to many rural settlements), is about to become part of the LCU, who will provide the necessary management and expertise to improve their efficiency and standards.

4.1.4 Commercialisation

The latest development in the LCU is linked to the commercialisation of road construction and maintenance activities As a consequence of a major transport sector study completed in 1995[12] it has been decided to establish roads authorities with responsibility for all road sector activities in Lesotho, using a more commercial approach of contracting out the majority of works. As part of a parallel initiative under the World Bank funded Infrastructure Engineering project, LCU proposed[13] and subsequently obtained funding for an initiative to develop procedures and train small scale contractors to carry out routine and periodic maintenance activities.

To date 21 contractors have been trained with a third batch undergoing training. Most routine and most periodic maintenance activities are now being carried out by Basotho contractors who were previously not involved in the road sector. In fact, prior to this initiative no Basotho owned companies were involved in construction or maintenance work for the gazetted road network.



Contractors undergoing training.

The World Bank are now funding a second phase, the Roads Rehabilitation and Maintenance Project (RRMP), which should lead into the establishment of a commercialised road

[12] Lesotho National Transport Study, *SWK*, February 1995

[13] Entrepreneurship development for labour based road maintenance contractors: Proposal for Assistance, *ILO Geneva*, January 1993

authority. As part of this project the LCU are to receive funding to include rehabilitation contracts and contractor development as well as World Bank co-financing of the regular budget that is to be geared to the maintenance needs of the whole network.

The current signs are thus that the position of a labour-based organisation within Lesotho has been secured. The practices established within government are being handed over to the private sector, where they should continue to be effective as long as the technology is an economic proposition for both client and contractor. A number of senior staff who have been involved in the LCU have now retired and moved into the private sector, giving advice on the labour-based approach to government and other agencies. One company in particular is about to set up in South Africa to offer its skills to the RDP.

4.1.5 Lost Opportunities

While the LCU can now be considered fully established and the decision of government in 1985 somewhat vindicated, on the negative side the opportunity to expand labour based activities into other sectors was lost. Although the labour employment adviser, with LCU support, produced guidelines and policy papers on enhancing the employment potential of all infrastructure work; labour-based approaches are not taken seriously by agencies responsible for water resources or conservation, despite the potential identified in the pilot stages of the LCU.

Even more unfortunate has been the lack of involvement of the Lesotho Highland Water Project. This massive three billion dollar investment is currently the largest water related infrastructure project in sub Saharan Africa. However all works are being carried out by conventional techniques, even the measures to resettle and compensate displaced rural communities. One attempt to involve the LCU in the provision of access roads has been the subject of continued argument and compromise over issues of technical standards and cost, this despite the positive record of the LCU work nationally and internationally. This input may now finally go ahead but the overall loss of employment opportunities to the country, from a lack of vision on the potential of this project for labour-based work, is enormous.

The government have recently allocated M 100 million (US$ 25 million) from the Lesotho Highlands Development Revenue Fund for the parliamentary constituencies of the county, to carry out their own rural infrastructure projects. This is intended to be an annual event. Sixty-five constituencies are involved, drawing on the priorities of the village development committees, but with little technical advice as to feasibility or priority. Although the LCU has been requested to manage some of the works, the majority are being implemented by community teams with whatever local expertise is available. The lessons from the first year

are already apparent and as expected. Without the required skills in design and supervision, much of the money and effort has been wasted. A decision has now been made to train technicians in labour-based techniques so that they can supervise next year's work properly, but there is reportedly a reluctance to use the LCU directly because of their insistence on proper planning, standards and provision for long term maintenance.

4.2 Project Outputs and Costs

4.2.1 Establishing a Common Basis for Comparison

The purpose of this sub-section is to look into the development of LCU's annual spending, outputs and productivity as regards construction and maintenance of the gravel road network under its responsibility. During almost two decades since the programme was launched in 1977, there have been steadily increasing road building activities ongoing, mainly in the western part of the country, and there is probably no exaggeration to say that at least during the first 10 years the LCU was pushed by major donors such as German KfW and Swedish SIDA.

A multitude of reports and other documents concerning LCU activities have been produced in the course of time since 1977 (well over 140 documents) but nevertheless there have been some difficulties for the review team in finding consistent and unambiguous data on LCU's performance during its 18 years of operation. The LCU programme has been run by a number of teams of expatriate experts, who have had different opinions of what type of data should be presented in the LCU Annual Reports. As time has elapsed since the initial pilot programme in 1977-78, the organisation and its procedures have been more clearly defined and established, and the reporting has improved considerably as regards the presentation of output, costs and funding of the LCU's activities.

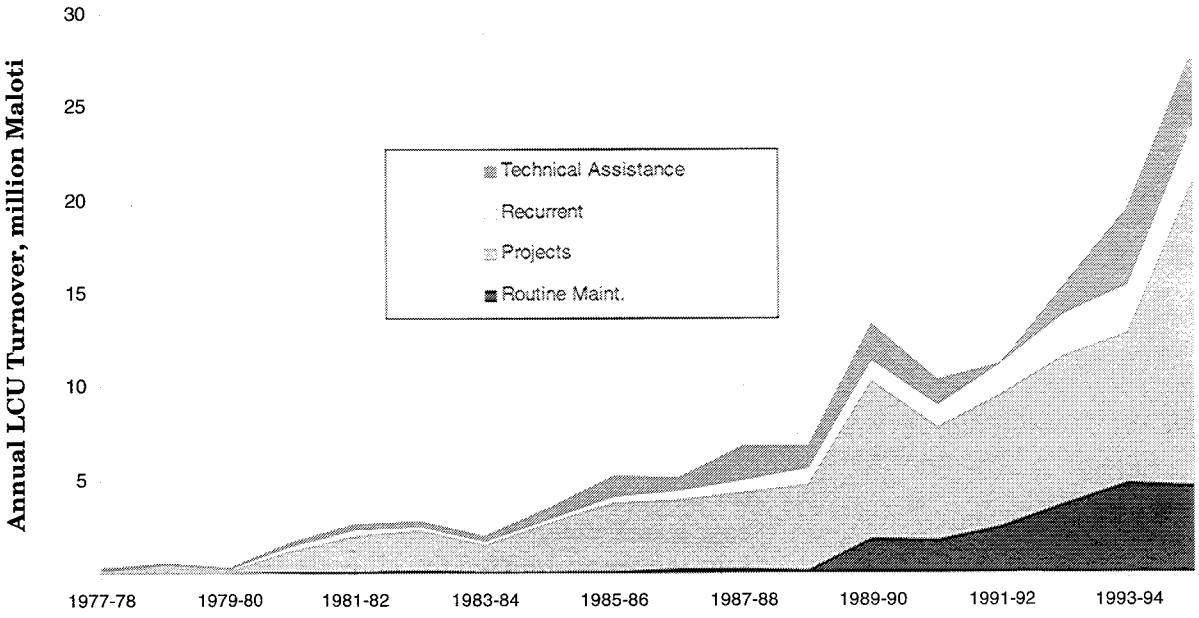
Table 1 on page 52 and Figure 1 show how the annual LCU turnover has gradually increased from M 0.33 million in 1977-78 to M 27.93 million in 1994-95 in actual costs. The total turnover is sub-divided into:

- routine maintenance, funded by the Government of Lesotho (GOL);
- projects, which are mainly donor funded;
- recurrent budget, which covers head office and permanent staff costs funded by GOL, and
- technical assistance, which is donor funded.

There has been a steady increase in the turnover during the past two decades, which can be seen in Figure 1, giving the actual figures for each year. It should be observed, however, that only after 12 years of operation did any substantial maintenance activities commence. This gives reason to assume that there is a backlog of maintenance

Figure 1

Annual LCU Turnover

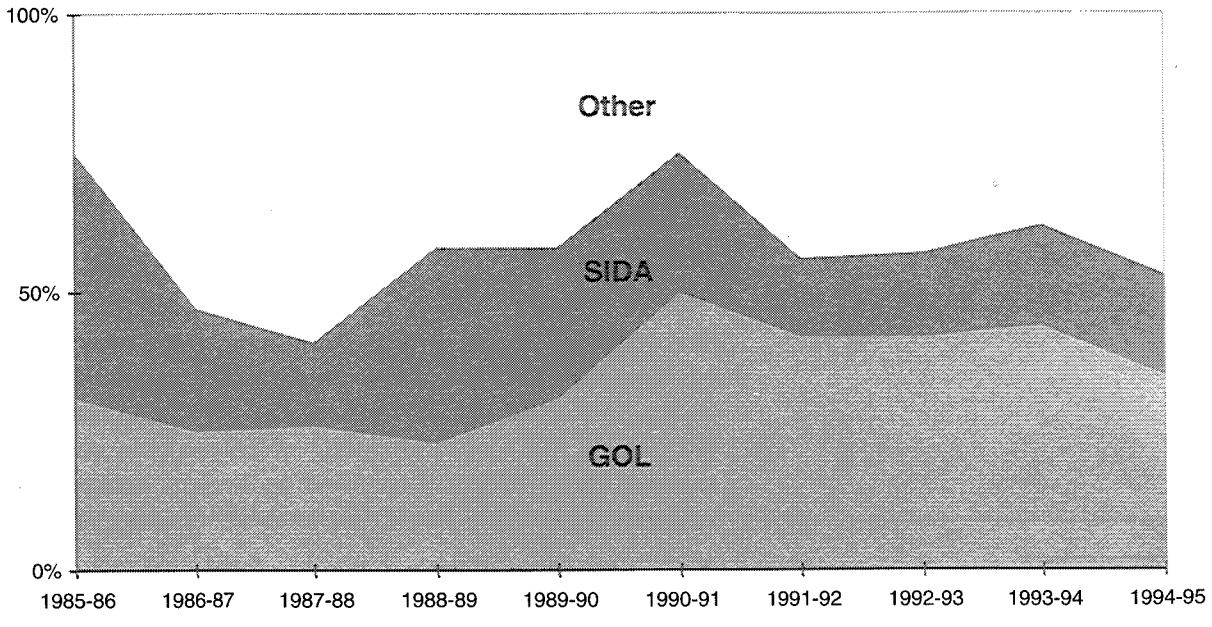


activities to be remedied. A field trip on the Seaka–Nohana road confirmed this assumption to the review team.

Figure 2 shows the contribution of funds to LCU by the various sources. There is a cause for concern in the fact that the GOL contribution during the latest 10 years has still not exceeded 50% and that there is still no long-term policy expressing the future commitment by the GOL for LCU operations.

Figure 2

Contribution by Sources



An interesting task to be undertaken is to compare production costs and productivity for LCU's road construction activities over the years. This cannot be properly done just by comparing actual costs from different years over an 18-year period. Some sort of inflation index has to be elaborated for this purpose to transform all actual costs into a common level for 1995.

Scott Wilson Kirkpatrick & Partners (SWK) have compiled such an index in their summary review for LCU, Stage II Report, April 1980-March 1987[14]. The index is based upon the annual development of costs for labour wages, tipper hire rates and cost of cement which are three important cost elements in the production of gravel roads. The first two costs are fixed by the government while the cement cost is set by the market.

The three key costs have been combined into a single index for each year, using weights which are based on a typical cost break down for a LCU road assuming that the cement cost is representative for all costs fixed predominantly by market forces. The percentage contribution for the three elements are:

- Labour wages 40%
- Tipper hire rates 20%
- Cement costs 40%

For this review, a similar series of combined indices has been elaborated for the period between 1977 and the base sear 1995. The indices are shown in Table 2, on page 53.

In Figure 3 these indices have been applied on the total actual turnover amounts for LCU during 1977-95. The annual turnover in 1995 costs has no doubt increased, but not, however, as dramatically as shown by the turnover in actual costs. As a matter of fact the turnover in 1995 costs was rather constant between 1981-82 and 1991-92 except for a dip in 1983-84 and a peak in 1989-90.

SIDA has given financial support to the construction of two building projects and 13 gravel roads, totalling 294 km, since the LCU programme was launched, see Table 3 on page 54. The review team did not succeed in finding completion reports for all these SIDA-funded projects to compare production output and costs. From LCU point of view it would anyway be more interesting to compare a mix of projects financed by different sources, which has been done as follows:

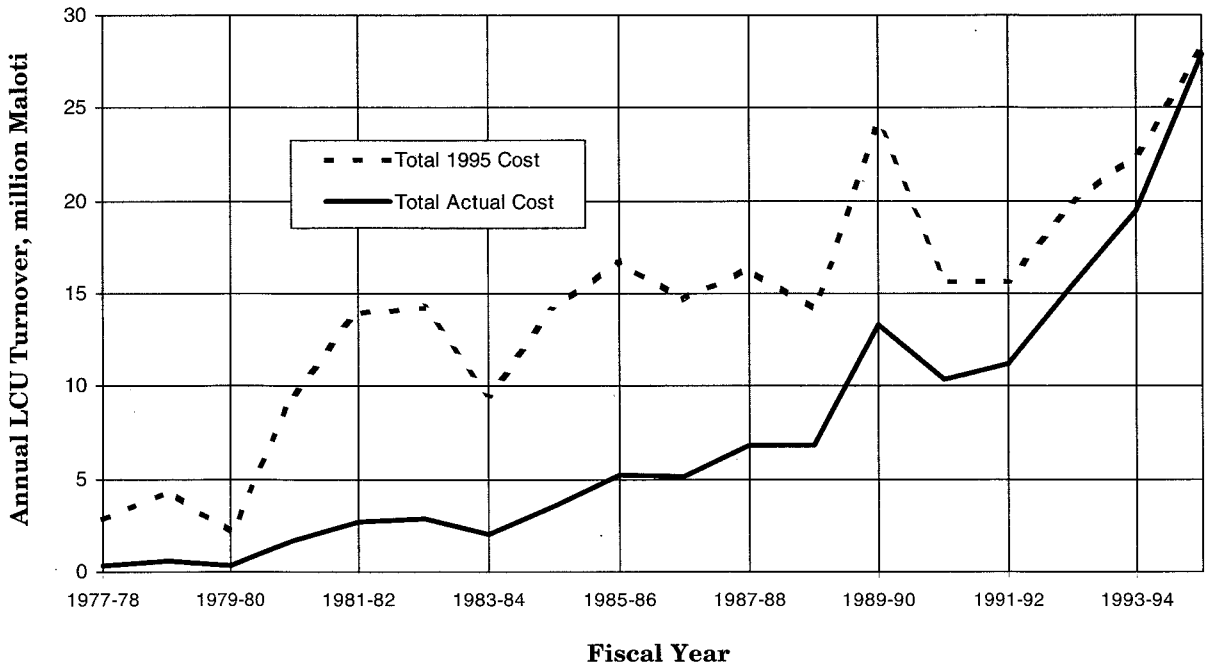
Two groups of gravel road construction projects have been identified. The first group of 13 projects carried out during 1977-86 are described in SWK LCU Stage II report from 1987. The second group of 18 projects carried out during 1990-95 are described in project completion reports which are available at LCU Headquarters.

- The construction periods of the individual roads appear in Figures 4 and 5, showing that the projects

[14] Labour Construction Unit, Stage II Report, *SWK*, 1987

Figure 3

Annual Turnover



are evenly spread in the time within each of the groups.

- Tables 4 to 7 on pages 55-58 (inclusive) present, for each individual road, the construction period, the inflation indices, the financier and terrain type (not complete for group 1 roads), the constructed road length, labour person days per km, labour wages in percent of total cost, actual cost per km and, more relevant, construction cost per km in 1995 cost level. The construction costs cover all direct expenses for the building activities, including depreciation of plant and vehicles. They do not, however, include costs for HQ overheads and technical assistance.

Looking firstly at the weighted averages for each group it is noted that group 1 has 2,590 person-days/km while group 2 has 3,024. There are at least two possible explanations to the difference, namely i) the mix of terrain types in each group, and ii) the supervision by expatriate technical experts was probably more intensive in the beginning of the programme, which may explain the lower input of person-days. In accordance with the above ircumstance the wages percentage of the total cost is lower for group 1 roads than for group 2 roads, 41% as compared to 50%.

Finally, comparing the weighted average construction costs (1995 level) they are surprisingly similar between the two groups; 133,900 Maloti for group 1 as compared to 130,500 for group 2. This is a minor, but not necessarily significant decrease of the cost/km, indicating with due

regard to variations in terrain type, that productivity has at least not decreased during later years when the management functions of LCU have become almost fully localised.

A very important issue concerning gravel roads is routine maintenance. It is a very old truth that a road's number-one enemy is water, which must be diverted from the road by proper camber and drainage to avoid loss of the roads bearing capacity. Consequently, routine maintenance must commence as soon as the road is constructed, and continue for as long as the road is being used. Table 1 on page 52 shows that a significant amount of routine maintenance commenced as late as the FY 1989-90, indicating that a considerable backlog must have been accumulated during the previous 9-10 years. Table 8 on page 59 shows the LCU maintenance responsibilities and the amounts allocated annually from FY 1984-85 and thereafter. The last column in Table 8 gives the expenditure per km of routine maintenance in 1995 cost level.

The variation between different years is quite substantial, and gives the impression that the figures do not reflect the real costs for proper maintenance, but rather that money for maintenance has been allocated on an ad hoc basis. A field trip on the 91 km Seaka-Nohana Road which was built 1980-85 with SIDA funding, confirmed that proper routine maintenance is not being executed. The fact that the road is still reasonably passable must be attributed to the high original standard of the drainage works.

4.2.2 Conclusions on Unit Costs and Outputs

The costs per km of gravel road construction in the LCU programme have been very stable through the years, as seen in terms of 1995 costs. The type of terrain will obviously affect both input of person-days/km and construction cost/km as can be seen in Tables 6 and 7 on page 57 and 58. Typical figures from these tables are:

Terrain type	Labour input person-days/km	Construction cost M/km 1995 cost level
Flat / Rolling	1,400 - 3,200	90,000 - 175,000
Hilly / Mountainous	3,200 - 4,400	170,000 - 190,000

The range above for labour input and costs is due to many factors apart from terrain type (which itself can be ambiguous) viz.

- the amount of drainage structures (bridges, vented fords, drifts, culverts);
- the gravel haulage distance;
- the skills and efficiency of the work foremen and site inspectors in planing and organizing the labour brigades.

The amount of labour input in person-days/km is well within the same magnitude as recorded in other African countries. As regards the construction cost per km, however, Lesotho seems to differ from other countries in Africa. It has been observed in an ILO report "Technology Choice: Man or Machines"[15], that the general cost level for labour-based road construction is high in Lesotho as compared with Zimbabwe.

Lesotho's terrain is a challenge.

It is indeed an awkward exercise to compare costs between different countries. Available data makes it possible to compare average construction/rehabilitation costs/km from four countries:

- 1993/94 in Kenya. Minor Roads Programme, annual average rehabilitation costs;
- 1992 to June 1995. Mozambique Feeder Road Programme, average cost of 1,179 km of rehabilitated roads;
- 1993/94 in Zimbabwe. Three gravel roads in flat terrain;
- 1993/94 in Lesotho. Average gravel road construction cost 1990-95, cost level 1993/94.

The costs in US$/km are as follows:

Country	Cost US$/km
Kenya	18,000
Mozambique	22,000
Lesotho	42,000
Zimbabwe[16]	17,000

The production costs above are not directly commensurate with each other. The costs in Kenya and Mozambique for example do not include depreciation and capital costs of

[15] Technology Choice: Man or Machines, *Lennartsson and Stiedl, ILO/ASIST*, September 1995

[16] Adjusted average cost for 3 roads in flat terrain.

motorized equipment, which according to a calculation by Norconsult in Kenya, is about 30-40% of the total cost.

The Lesotho cost is fairly comprehensive but does not include Technical Assistance (TA). On the other hand, while Kenya, Mozambique and Lesotho represent an average cost of all terrain types, the Zimbabwean cost is based upon flat terrain only.

Some upward adjustment should be made to compensate for Zimbabwe's flat terrain type, while a downward adjustment should be made to exclude the cost for TA which is not included in the costs from the other countries.

Even after making these adjustments, the labour-based road construction cost is still highest in Lesotho, and the explanation to this fact can be sought in higher labour wages and longer haulage distances by tipper trucks instead of tractors and trailers.

However these high costs are also reflected in the price of doing similar work by conventional means, and labour-based costs remain competitive with equipment-based costs in Lesotho.

As regards costs for routine maintenance, it is not meaningful to carry out a comparative cost analysis since there are shortcomings in this respect in at least Kenya, Mozambique and, as the mission observed, also in Lesotho. A formulated long-term policy for maintenance of the gravel road network in Lesotho is highly recommended.

4.2.3 Comparison with Equipment-based Costs

The review did not find any more material on cost comparison with equipment based programmes except for that referred to in the SIDA 1986[17] evaluation and the recently completed ILO Study on Technology Choice[18]. One of the basic criteria by which the LCU should be judged is on whether the investment would have been better made using conventional equipment methods.

Although this sounds simple it is in fact extremely difficult because of the problem in finding similar products for comparison. No two projects are ever the same in terms of terrain, soil, climate, accessibility etc. Productivities can vary enormously for both equipment and labour depending on expertise of supervision, incentive, and experience. And, lastly, labour-based and equipment-based designs are often very different, to take advantage of their respective methods of working. Even within the LCU unit, costs vary by a factor of two when adjusted for 1995 costs.

However, as noted in the 1986 evaluation[19], if labour-based techniques can produce the same product for a cost which is of the same order of magnitude as equipment-based, then the choice is self evident for a country with high unemployment and limited foreign exchange. That evaluation concluded that *"all the evidence appears to suggest that labour-based techniques as applied by the LCU are competitive with equipment at market prices. If shadow pricing were used, these methods would be even more competitive"*.

[17] *Edmonds et al, SIDA*, 1986 op cit

[18] *Lennartsson Stiedl*, September 1995, op cit

[19] *Edmonds et al, SIDA*, 1986 op cit

Labor based quarrying.

The recent ILO study was based on a comparison with tender prices for work of a similar nature recently carried out for the Lesotho Highlands Authority. The prices were factored down by a considerable margin (at least a third) to allow for the slightly higher standards specified in the contract documents but LCU prices were still some 37% cheaper in terms of financial costs. The results of the comparison of average construction costs for gravel road in mountainous terrain are tabulated below:

US$ per km at 1995 prices

	LCU labour-based methods	contractor equipment-based methods
financial cost	50,950	80,990
economic cost[20]	40,190	78,660
labour component of costs	44%	06%

4.3 Human Resource Development

4.3.1 Employment creation

As mentioned earlier, one of the primary objectives of the LCU during its establishment was to create employment for returning migrant miners from South Africa, through the use of labour-based techniques in the construction of different public works. These included dams, soil conservation terraces, housing sites and services, and rural airstrips as well as rural roads.

Although the LCU tried to expand to different projects to increase the number of workers, the amount of employment created was not always as high as expected. This was mainly due to the ad hoc nature of LCU's activities and by the lack of a reliable source of continued funding for the different activities. One good example is that in 1980 GoL decided to increase the number of employees from 500 to 2,500 in two years[21]. However, even

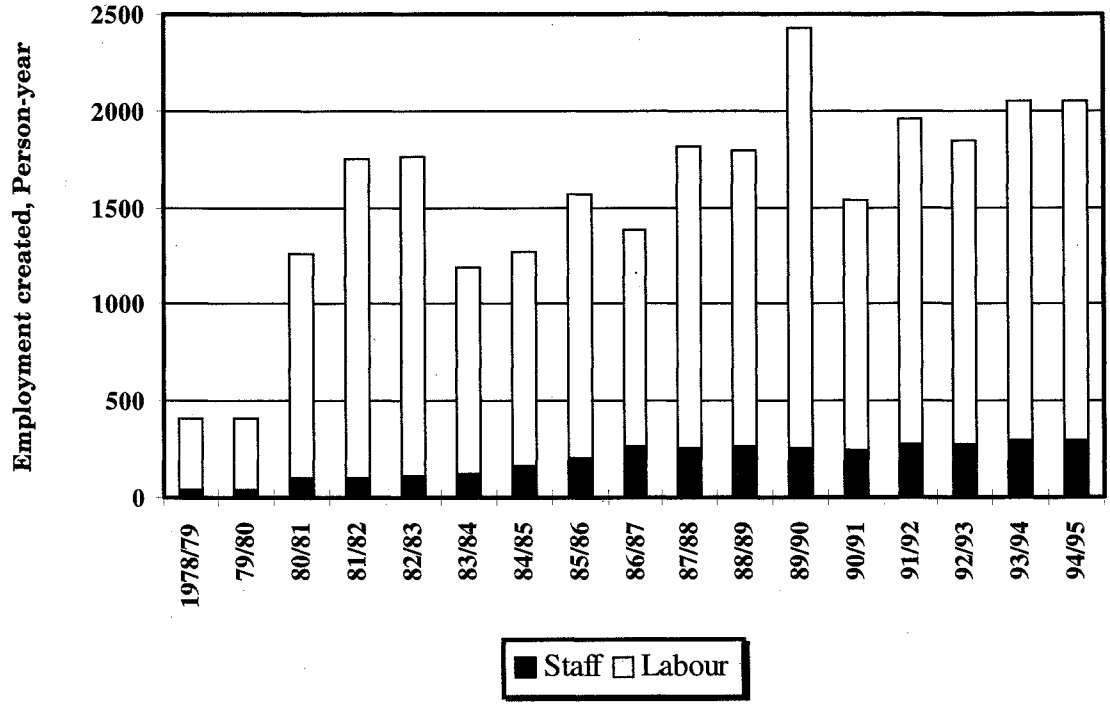
[20] Economic pricing is based on an adjustment of the prevailing supply price of labour in rural areas in Lesotho

[21] The History, current status and proposed future policy and development of the labour construction unit, *Ministry of Works,* August 1985

three years later the numbers had not reached 2,000 and then dropped below 1,500. Employment only approached the target in 1989, and has since stabilised around 2,000. (see figure 4). The number of workers was apparently not varying with the capacity of the unit, but simply with the number of funded projects secured, which depended almost totally on donor funding.

Figure 4

Employment created by the LCU during 1978 -1995



After the LCU was incorporated within the MoW as an independent department in 1988 with its own recurrent budget, the situation has improved. The regular maintenance budget has helped to employ a core of workers on a long-term basis.

More than 30% of the work force during 1995 has been engaged on long term employment for the maintenance of roads and rural airstrips[22].

In the rural areas LCU has become the only large scale employer offering cash wages at recommended government rates. For the period 1978 - 1995 the Unit has created jobs amounting to about 23,000 worker-years[23]. This may not seem large, but even the current level of 2,000 jobs represents over 4% of the total formal sector jobs available in Lesotho, including Government employment.

If it had been possible to widen the scope of LCU activities to other sectors, it would have been relatively simple to quadruple this figure. The recent ILO study[24] estimates that if all existing road sector activities suitable for labour-based where given to the LCU, some 8,000 jobs

[22] LCU Annual Report 1994/1995

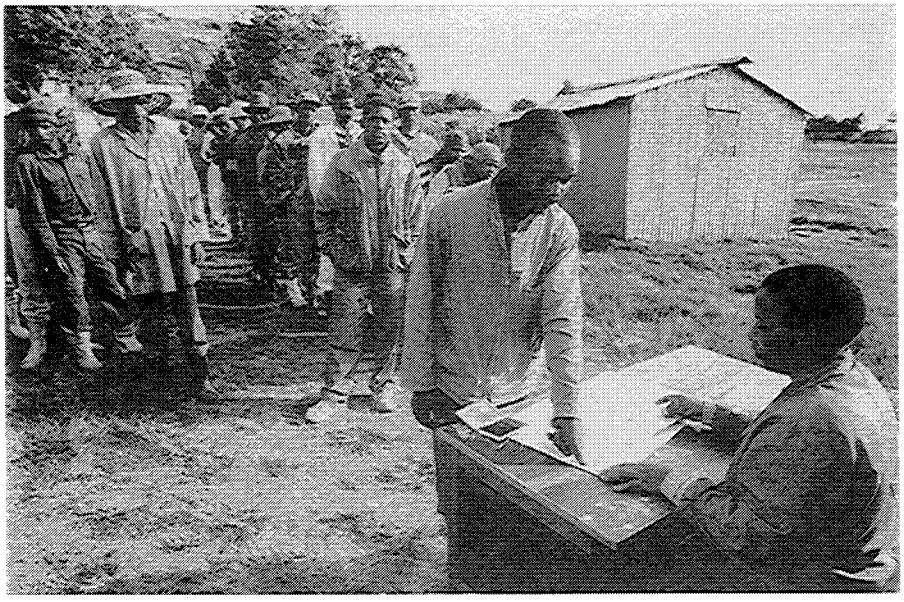
[23] mission team estimate

[24] *Lennartsson, Stiedl,* September 1995, op at

would be created, or 18% of current formal employment. In 1980 a paper by the Soil Conservation Unit[25] estimated that some 50,000 to 100,000 jobs could usefully be created in carrying out necessary soil conservation activities. The LHDF fund would be sufficient to pay for a substantial percentage of such activities.

During the period 1978 - 95, about thirty-one million Maloti has been injected into the rural economy in the form of wages to the workers. According to the 1995 SIDA funded socio-economic and environmental impact study[26] "this income has been spent over a wide range of domestic consumption expenditures, agricultural investment and some big investments like housing". This study also showed how few alternative sources of cash income were available to the rural population, who are still reliant on remittances from migrant workers for such basic necessities as school fees and medical expenses.

LCU has become the only large scale employer in the rural areas.



One area where the Unit was unable to show the hoped-for success, was the recruitment of women. Although LCU had been established to create employment for returning migrant miners who are exclusively men, employment of women was given equal importance from the mid-eighties. During the 1994/95 Financial Year, 19% of the technical and 79% of the administrative staff were women, whereas only 16% of the field workers were women[27]. This is despite the predominance of unemployed and underemployed women in the rural areas and LCU instructions to give equal opportunity to their recruitment.

Lack of definitive recruitment procedures is thought to be the predominant reason for the low numbers of women. Despite numerous studies indicating the equal productivity of women workers and their equal right to, and need of work, there is still a large degree of prejudice during the recruitment process, which can only be overcome by rigid adherence to fair systems of recruitment.

[25] Lesotho's Employment Challenge: Alternative Scenarios 1980-2000, *LASA* Paper No.7

[26] The Labour Construction Unit, Socio-Economic and Environmental Impacts, *Mhlanga, Majoro, Selatile, Ramabina, Bussa / SM Consulting Engineers,* August 1995

[27] LCU 1994/95 Annual Report

It should be noted that there have been periods in the LCU history where biased recruitment procedures have been forced on the unit to favour one or other political party or other allegiance. This again highlights the necessity to insist on clear and transparent systems from the start. It is not sufficient to rely on "existing practice" or "traditional leaders" for relatively large scale recruitment of this nature.

4.3.2 Localisation of Management Functions

Since its establishment, the management of the LCU has been dominated by external technical assistance. The consultants brought in to set up the pilot study, Scott Wilson and Kirkpatrick, were one of the few international consultants actually experienced in labour-based work at that time, having carried out the seminal study on labour-based work for the World Bank[28]. However, although they were viewed as having carried out a good technical development exercise with the benefit of experienced backstopping from their parent organisation, they did not succeed in localising the posts to any extent.

After ten years they were replaced by a team directly recruited from Sweden by SIDA. This did not improve the success with localisation, and it was eventually decide to request the ILO to design and manage a localisation process, which has been largely successful although more drawn-out than expected.

Getting local engineers to take over the managerial positions has always been difficult. As has previously been noted, the unit was set up as a temporary organisation to validate labour-based work. Because of a lack of policy about the permanent institutional setup, this temporary feeling persisted, which did not encourage young professionals to view attachment to the LCU as a positive career step.

Engineers were and to some extent are still rare commodities in Lesotho. There are still no opportunities to graduate locally and given the demands on universities in the region, engineers have had to travel to Europe, America or Asia to qualify. Four years in Europe has not proved the best background for a young professional, who is then expected to take charge of what could be viewed as an old fashioned technology. The other openings for engineers have been many, which has encouraged a high turnover of returned graduates, and in fact even the Roads Department still has a large contingent of expatriates in its offices.

The most successful approach to the problem of expectations and continuity has been to encourage the development of engineers from amongst the technicians originally recruited into the programme. This is of course a long term approach, and was started with the first manager of the LCU who joined as a technician in 1977, was sent for a degree in 1980, returned from Canada in

[28] World Bank study of the substitution of labour and equipment in civil construction, summary of engineering findings, June 1976

1984, was promoted to Manager and finally retired in 1993 having guided the LCU through its institutionalisation. He is now a consultant in labour-based technology.

As part of long term development, the 1990 study[29] carried out by the ILO proposed a localisation programme for senior staff supported by external training. This plan was adopted by government with SIDA and other donors and became the cornerstone for the ILO/SIDA management support from that date. This plan has been revised from time to time and the plan as at 31 March 1995 is shown in figure 5.

Figure 5

Senior staff development plan as at March 1996

Post title	1991	1992	1993	1994	1995	1996
1. Chief Engineer	Localized in 1986					
2. Senior Operations Engineer						
3. Senior Planning and Control Engineer						
4. Training Engineer						
5. Regional Engineer North						
6. Regional Engineer South						
7. Regional Engineer East	**Position not created**					***Vacant***
8. Planning and Control Engineer						
9. Contracts Engineer	**Position not created**			***Vacant***		
10. Assistant Training Engineer						
11. Assistant Regional Engineer - North	***Vacant***					
12. Assistant Regional Engineer - South	***Vacant***					***Vacant***
13. Assistant Regional Engineer - East	**Position not created**					***Vacant***

Key: Technical Assistance staff; Local Staff; Local staff counterparting

The plan is based on the Government of Lesotho requirement that only qualified engineers can fill management positions in a technical department. Technicians very quickly reach their promotion ceiling.

Sufficient bursaries were secured (see figure 6) for the number of managers required for the long term decentralised programme. A bonding system was put in place to guarantee that staff would return to the LCU for a period of two years after qualifying (it has not been necessary to enforce this bond, so its effectiveness can only be surmised). The ILO staffing was then gradually phased

[29] *Marshall and Engdahl, ILO Geneva,* February 1990, op cit

out as staff returned and had time to familiarise with their duties. As the degree candidates where recruited from technicians experienced with LCU activities, the technical part of labour-based work was already well known to them and it was only necessary to acquire management skills as direct counterparts.

Figure 6

Number of engineers trained by the LCU

Training completed	No. of trained Engineers by source of funding		
	SIDA	ODA	OTHERS
1985-89	0	0	2[30]
July 1993	2	2	0
July 1994	0	3	0
February 1995	1	0	0
July 1995	1	1	0
July 1996	0	1[31]	0
Total	4	7	2
Total in post as at 1 April 1996	8		

Source: LCU

Although the programme has been quite successful, the time has proved too short to promote anybody to the Senior Operations Engineer or the Senior Planner posts. A recent attempt to advertise the Senior Operations post reportedly had no response. The ILO had previously advised the government to advertise internationally, as the salaries are very attractive in Central, East or West Africa. It seems that this step may now be taken. Apparently there is no recent precedent for this procedure with MoW, although recruitment of foreigners on local terms is quite common in some other government sectors such as Health.

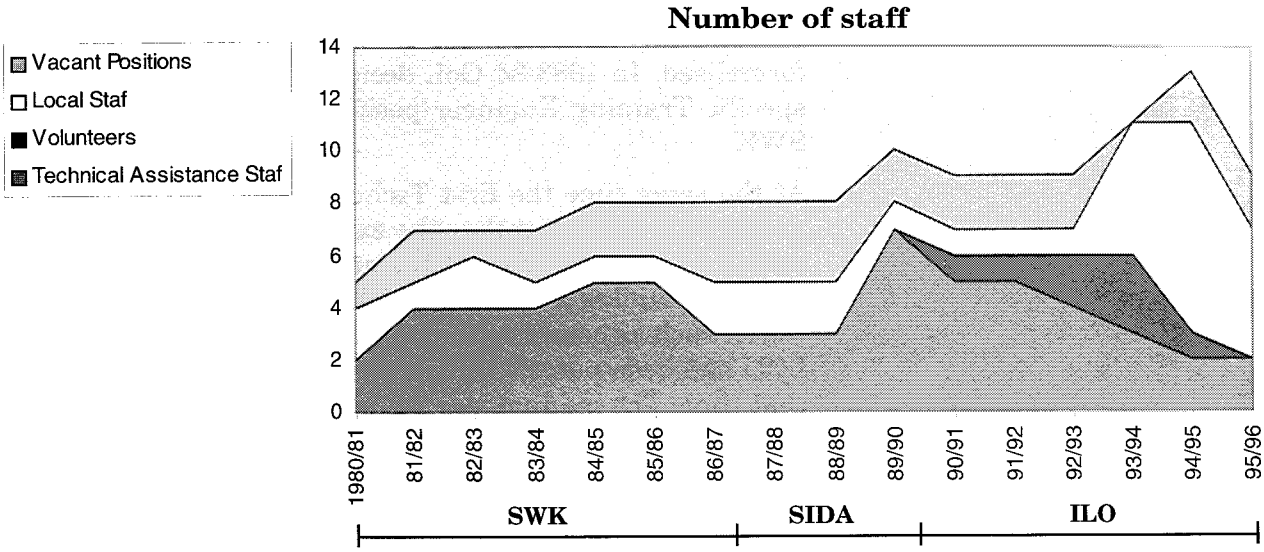
The split between TA staff, counterpart staff, and volunteers with respect to available technical position in the LCU is shown in figure 7.

Despite all the precautions taken to retain staff there are still unexpected obstacles. Promotion has not automatically followed for returned staff. Delays have been as long as eighteen months, or grades offered have been lower than recommended by the LCU. As these decisions are made by the Public Service Commission there is little that the unit can do. Not surprisingly there have been resignations of two graduate engineers during 1995, and more may follow. The market is still very active for skilled personnel in Lesotho and South Africa.

[30] Training of two technicians to engineer level has been funded by CIDA and Fourth Highway Project. They joined the LCU in 1985 and 1989 respectively after successful completion.

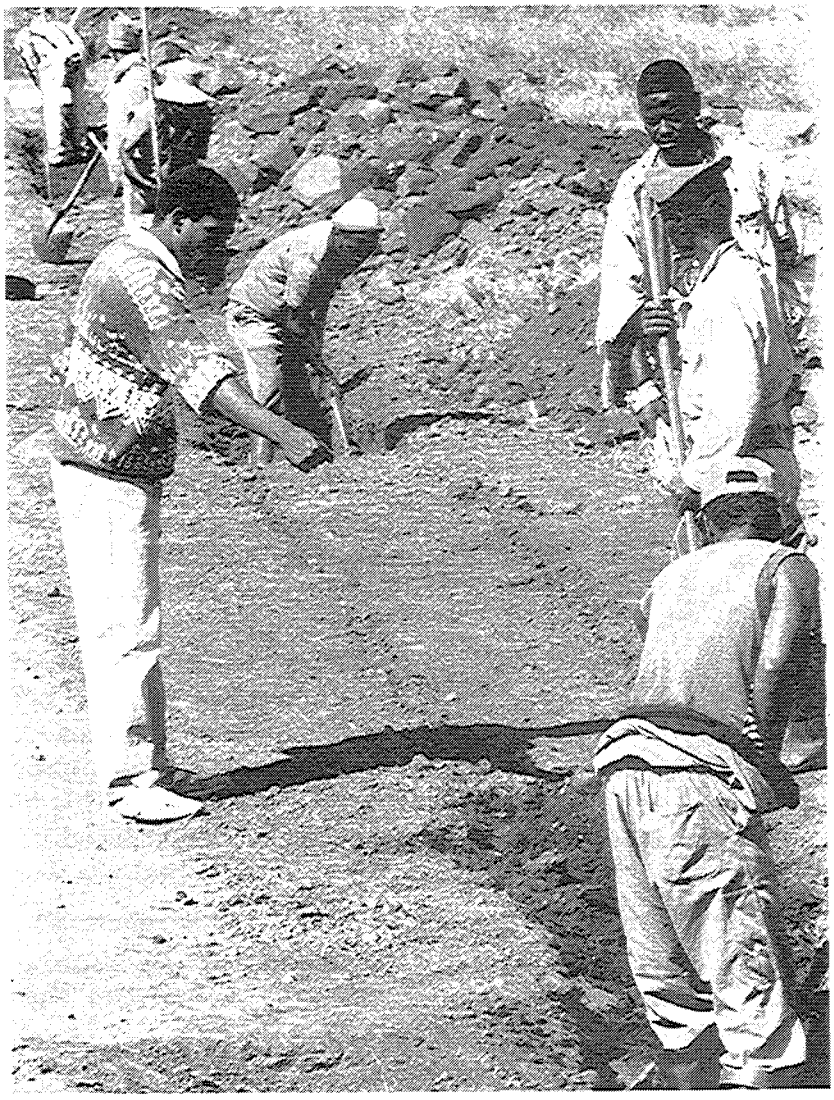
[31] It has been assumed that the last trainee who is currently in the UK will complete his training and join the LCU during July 1996.

Figure 7



4.3.3 Staff Training

Training of technicians on the use of labour-based methods started from the early eighties. The training during 1980-84 was in the form of on-the-job training. The Engineer in charge of the project would instruct the technicians on the planning, management and the execution of the different activities using labour-based techniques, and the



The training of supervisory personnel is vital to the succes of the programme.

experienced technicians would instruct the new recruits. Some one-day courses on specific topics were organised by the consultants, but the training process was not formalised. In 1983/84 GoL decided on the creation of a specific Training Engineer position, which was fielded by SWK.

At the same time the first Technical Manual[32] was prepared to draw together the experience of the LCU to date, and to set out clearly the procedures for constructing and maintaining a road using labour-based methods. Other works such as conservation works were not included, as LCU had been perceived as a purely roads organisation at that time. The manual was well produced and well illustrated and was sufficiently well received to form the basis of the ILO Roads By Hand[33] manual, which was an adaptation for more general usage published in 1990.

A training needs survey was subsequently carried out for the LCU and the other two organisations using labour-based methods, i.e. The Civil Works Section of the Ministry of Home Affairs and Soil Conservation Division of the Ministry of Agriculture. The resulting planning report[34] recommended the use of prepared course material for the training of technicians in the different Ministries, but adapted to their specific needs under the umbrella of a semi-autonomous training organisation called the Labour Intensive Training Unit. The first formal training was carried out in 1985/86 for selected trainers from both the LCU and CWS. Unfortunately this was also the last, as CWS then decided to establish its own training scheme, and Soil Conservation appeared not to be interested in such training, possibly because it was using a food-for-work approach and had little expectation of efficient work or productive output from such workers

The second initiative of LITU was a Field Training Unit, which was established in 1987 to train LCU Technical Assistants in the field. This was a very practical course directly linked to a functioning project, and aimed at improving the skills of the existing technicians.

Although LITU had trained a counterpart technician to run the organisation, with the departure of the SWK team in 1987 together with the trainer, the unit seemed to lose direction and virtually ceased to function. The 1990 ILO study, *The Labour Construction Unit: A proposal for development*[35] found little evidence of its continued existence (the counterpart trainer had been dismissed for financial irregularities). The study recommended that "LITU be replaced by a training institution more appropriate to the current and future needs of the LCU". This training would follow the model successfully established in Kenya, Botswana and other long term labour-based programmes in the region.

Following this report a formal training institute has been established at Teyateyaneng (a District Centre 40km from the capital, Maseru). The centre, purpose built to a high

[32] Labour Construction Unit. Technical Manual, *Peter Guthrie, SWK,* August 1983

[33] Building Roads by Hand, *Antoniou, Guthrie, de Veen, Longman,* 1990

[34] LITU Planning Phase Report, *LCU,* March 1985

[35] *Marshall and Engdahl, ILO Geneva,* February 1990, op cit

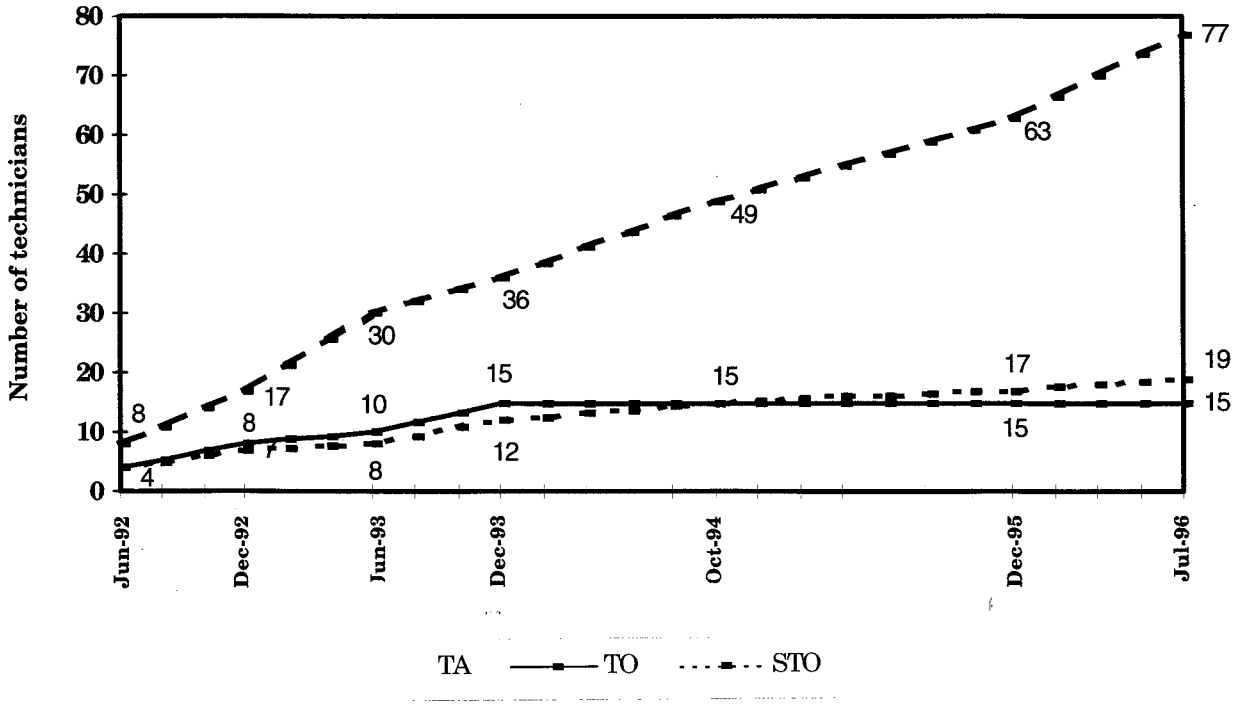
standard with SIDA support, has residential accommodation for 16 trainees, classrooms, offices, a canteen, library and laboratory. The centre runs a labour-based construction team who build "model" roads to LCU standards and instruct trainees on site as well as in the classroom.

Model roads are built to instruct trainees.

The training centre was started with an ILO training expert supported by an experienced UNV. These individuals were mandated with supervising the completion of the centre, developing course material, training trainers and site supervisors and conducting the first courses. The training school is now run by two Basotho engineers with extensive labour-based and training experience. Figure 8 shows the total number of technicians trained at during 1992 -1995.

Figure 8

Technicians trained at TY training center



Retraining of all existing technicians was the immediate objective of the training centre. Formal training schemes had been prepared, with courses divided into six weeks theoretical class room training and fourteen weeks of field practical training.

A completely new technical manual[36] was developed in the period 1990/92 with revised and improved standards. Training materials[37] were then developed from this manual and all LCU technical staff were retrained in the new standards. This necessity for a complete retraining appears quite drastic after so many years of support. However it appears the ad hoc approach to project development over the years and the lack of formal training had resulted in varying standards and some bad practice becoming entrenched in the system. This retraining appears to have been successful in achieving a common standard.

Besides the training of technicians, training of other support staff has been carried out at all times. Most of this training has been carried out outside the LCU

The labour-based approach is to use a proper mix of men and machines.

through specialist training centres like the Kenyan Kisii Training Centre (for labour-based management courses for engineers and training of trainers), the Institute of Development management for administrate staff, and other regional training institutions.

More recently attention was given to accounts and stores personnel. With the help of SIDA and KfW, the Administrative Manual has been revised and the relevant personnel trained on the applicability of the different financial regulations, and on the use of the Administrative Manual.

Although administrative staff are the backbone to any institution, their training is often neglected. It is often the case that when developing a new institution, all attention is paid to the technical or specialist aspects with the

[36] Technical Manual for low volume roads upgraded and constructed using labour-based methods in Lesotho, *Ministry of Works Lesotho,* August 1992

[37] Labour-based Road Construction, Training Manuals Parts 1 and 2, *Ministry of Works Lesotho,* December 1994

assumption that other aspects are somehow well known. The bad effects of this approach was highlighted in the period 1993 to 1994, when SIDA auditors discovered serious discrepancies in the LCU accounts. After considerable disruptions and delays to the implementation of the programme (SIDA funding was suspended for several months while the auditors report was checked out), it was realised that the discrepancies were due to errors and misunderstandings of procedures by the accounting staff and not to deliberate fraud.

4.4. Technical Development

4.4.1 The labour-based approach

The LCU was one of the first structured interventions in labour-based technology in Africa following the findings of the World Bank Study of Labour and Capital Substitution in Civil Construction. Work in Benin, Chad, Malawi and Botswana started at about the same time but the only substantive regional experience was in the Kenyan Rural Access Roads Programme (RARP).

RARP was in its third year and had pioneered the approach of an intensive pilot phase to get the details right before expansion. It had also done substantial work on technology development for handtools, light equipment and construction standards and work organisation.

Interestingly, although the LCU started from the Kenyan model it quickly adapted to different techniques and approaches found to be more suitable for the difficult terrain. This principally involved much larger teams of workers (two to three hundred rather than the RARP workforce of 75), much greater attention to engineering detail on individual projects, the use of compaction equipment because of the weaker soils, and the use of trucks rather than tractors because of the long gravel haul distances, and the need for rock breaking equipment (compressors and mobile hand drills).

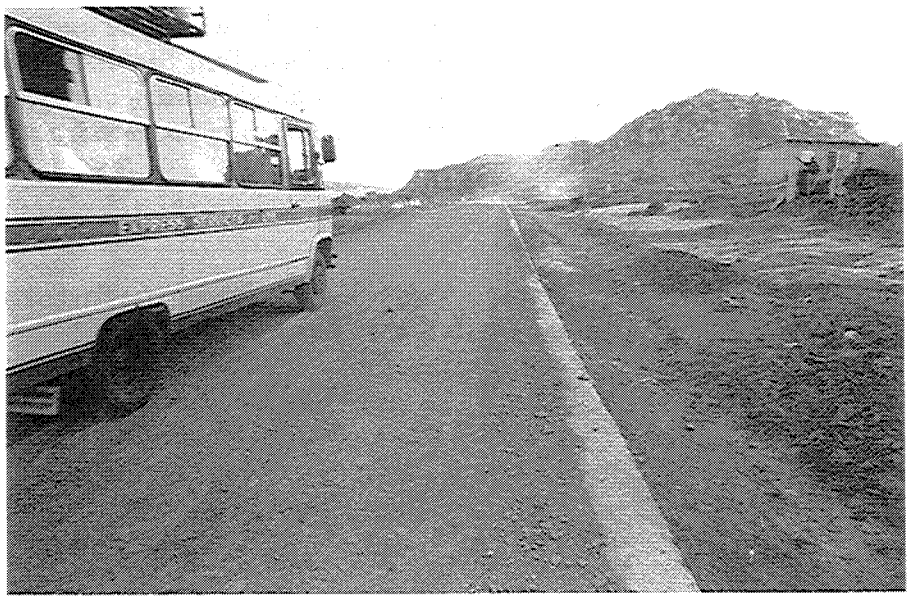
Perhaps the greatest difference between the LCU roads and other projects in Africa is the difficulty in the terrain. Lesotho has a combination of heavy rock cut requirements, weak erodible soils and severe drainage problems from heavy run off in steep terrain.

4.4.2 Technical Standards and Specifications

Over the years the LCU has evolved techniques to deal with these problems, and the resulting standards are generally acknowledged to be high. The LCU thus serves as an example of what can be achieved with labour, given adequate supervision and attention to technical detail. Of course considerable credit is also due to the Basotho workforce, which on any worksite will contain a significant percentage of experienced miners.

Following the adoption of LCU as a roads agency, there has been some revision of standards to accord with existing

roads department standards. This seems to have principally been achieved by widening the standard carriageway and increasing horizontal curvature and site distances.



LCU gravel road standards are known to be high.

All previous evaluations have recognized the good quality of work carried out by the LCU using labour-based techniques. The issue at all times was to construct roads appropriate to a national rural road network. This could be only achieved if some improved methods were introduced to improve the technical standards. To achieve this the 1990 ILO study *The Labour Construction Unit: A proposal for development*[38] proposed that *"firstly it is necessary to identify the key construction activities and produce design standards. Secondly develop appropriate work methods".*

Following the above proposal, several methods have been tested to achieve a certain specification. Newer roads are significantly smoother and faster than the early models. They are also of course more expensive, and it could be argued that bigger roads are not the best solution to the basic problems of access experienced by the rural population.

Minimum standards have been a contentious issue since the inception of the project. The approach of imposing universal theoretical standards, rather than assessing the users' needs, will inevitably result in over design and excessive cost. Currently the LCU standards may be raised again to accord to SADC regional standards. This has little impact on the rural poor, who may have to carry their sick relatives on their backs for up to 20 km to the nearest clinic.

The selection of roads has also changed since the original approach of accepting one-off projects according to donor preference and funding. The LCU now has a twenty-year

[38] *Marshall and Engdahl, ILO Geneva,* February 1990, op cit

plan with a prioritisation system for an annual upgrading programme. The LCU evolved its own approach based on a detailed inventory of the whole system under its mandate; using a simple ranking system based on population served, as the perceived importance given by the District Development Council. The Transportation Study carried out by International Consultants for all of Lesotho's road network in 1993 endorsed this approach as being the most appropriate for the low traffic (or often no traffic) access routes being considered. This approach was also endorsed by the World Bank Staff Appraisal Report for the RRMP.

In 1992 a document titled *Design Guidelines - for low volume roads suitable for labour-based construction methods in Lesotho* has been produced by the LCU. The document has all the specifications appropriate for rural roads that could be implemented using labour-based method. The document has been approved by the MoW and is an official document that is applied and governs on all LCU roads. The document has been revised towards the end of 1995.

In 1992, the Technical Manual was revised for the first time since 1983. The manual is directed to the field supervisory staff and explains step by step the procedures for the execution of each activity. It is designed in such away that the field staff might use it as a reference book in the field before asking the Engineer. This manual is now under further revision to accommodate environmental guidelines, the management of contracts, and other technical revisions. This manual is very useful and should have a much wider circulation than the LCU.

Project planning and reporting follows normal practice on labour-based programmes, and the team was able to inspect detailed site reports produced on a daily and monthly basis. It is impressive that these systems have remained in force for the 19 years of project history. This data gathering is a core activity for all technical site staff and is the main form of control for the management.

4.4.3 Maintenance

Perhaps the most contentious technical issue is maintenance. The maintenance has been organized on a lengthman system allocating 1 to 1.5 km of road per person responsible for general upkeep. As at 31 March 1996, 873 km of roads are covered under maintenance. Unfortunately there has been no regular periodic maintenance as no funds have been allocated, and the conditions of the road surfaces are deteriorating every year. As a compromise, part of the recurrent maintenance budget is used every year for spot improvement purposes to repair damaged sections. This can be only a temporary solution and is probably one reason why the routine maintenance costs are so high (at US$1,500 per km, nearly three times the regional norm).

873 km of roads are covered under maintenance.

4.4.4 Labour-based Contracting

The length of maintainable roads under the LCU's responsibility is increasing by about 50 - 70 kms annually. In order to solve their difficulties in this area, a decision was taken to involve the private sector. This was quite a radical step, as their was no tradition of local contractors in the road sector, even for Roads Branch. However following the precedents of labour-based projects elsewhere, the LCU approached the World Bank in 1992 with a proposal to train and develop small scale contractors to take over road maintenance activities. The project was approved under the Infrastructure Engineering Project[39] and commenced early 1993, implemented by an advisory team from the ILO.

Contractor carying out maintenance.

To date, two batches of training have been carried out, and twenty-four contractors have been trained to work on the maintenance and regravelling of roads. The experience has been considered a success and World Bank support will continue under a second phase, the Road Rehabilitation

[39] this World Bank project was designed to carry out the preparatory work for the road rehabilitation and maintenance project which is due to commence this year.

and Maintenance Project; as part of which the LCU will utilise the trained contractors to take over all routine maintenance, establish a proper programme of periodic maintenance, and hopefully train the better contractors to start to take over upgrading and rehabilitation projects.

The experience has not been entirely positive, as is clearly set out in the recent evaluation of the Contractor Training Project[40], although the period of exposure to the approach is probably too short for firm conclusions. A principal concern is that the LCU has acquired a huge amount of practical experience over the years, which is vested in all levels of its staff. Projects can thus run smoothly with limited interventions from senior staff. The newly trained contractors will take some time to obtain this proficiency on the more complex works.

The other problems encountered are more business-related and include problems with quantifying work, difficulty with costing work realistically, lack of understanding of the terms of the agreement, inability to honour their obligations, to pay their workforce on time.

Figure 9.

Work distribution between the force account and contracting as at 31 December 1995.

Categories of work	Distribution of work, %	
	Force Account	Contracting
Routine Maintenance	76.3	23.7
Periodic maintenance	0	100
Upgrading/construction	100	0

Source: Eleventh Progress Report for project LES/92/MO2/LES

It has also been decided that as future work will be supported by a World Bank loan, all tendering documents must accord with World Bank procedures. In the case of the LCU contractor training programme this has only required a minor modification. However of more concern is that bidding will be open to all comers, Basotho or not, and all technologies. While this may be a worthwhile long-term aim, it may result in the destruction of the newly emerged labour-based contracting industry, which will not have the experience and resources to compete. The team questions the rationale of a development agency rigidly adhering to administrative procedures which undermine the development objective.

In spite of the above problems, the advantage of accountability and possible cost savings are still rated highly by the LCU, and they are determined to continue with this approach. The current distribution of work is shown in figure 9.

[40] Labour Construction Unit, Entrepreneurship Development for Labour-based Road Maintenance Contractors, Evaluation and Phase II Proposals, *Peter Bentall*, May 1996

4.5. Technical Assistance Arrangements

4.5.1 An Overview

Since its inception in March 1977 the technical assistance to LCU has undergone a number of phases. The first 10 years, 1977 - 1987, saw a consultancy firm providing what can best be described as full-scale project management but with varying degrees of GoL involvement. This TA input was financed by the donors (IBRD and SIDA) except for 2 years when GoL financed also the external experts. This TA was followed by a period of individual recruitment of external experts from 1987-1990. The individuals were selected and directly paid by SIDA, but they still functioned in line positions rather than as advisers.

The third type of external support was provided by ILO since 1990. This support can best be described as institutional TA, where the TA was recruited by ILO and provided as a team with support from the regional ILO programme ASIST and from Geneva. Of the different types of TA, this provided the most substantial back-up capacity so far to the experts and their counterparts working in LCU. This is perhaps most noticeable in the field of training, where experiences from other countries and projects could be brought to bear.

During much of the first and second phases of TA support there has been very little counterpart capacity. This was less of a problem during the pilot stage when procedures were developed and site supervisors recruited and trained. However it became very counterproductive during the expansion phase from 1980.

4.5.2 The Project Management Approach

The pilot phase 1977-1980 saw a well motivated pioneering team which broke new ground in several respects. At the time, emphasis was on providing a safety mechanism in case of sudden mass repatriation of miners from South Africa, and the objective was to explore the suitability of various areas of civil works for labour absorption and to make contingency plans. From this place a period of expansion followed (1980 - 1987) during which the scope of actual works narrowed, and the unit acted much like a contractor, taking whatever government work seemed appropriate and cost effective.

This was in conflict with both the original and evolving intentions of the unit. GoL indicated around 1985 its desire to change from the management team to direct recruited external staff. Although not explicitly stated, this was perhaps seen as promoting better opportunities for local staff to be brought into management positions.

During the 1987-1990 consolidation phase, three Swedish engineers were recruited and employed through SIDA with a Mosotho Engineer heading the unit. Apart from the

Manager who had already been identified and trained under the previous regime, no progress was made in retaining counterparts. The TA team continued to run the unit, with the added problems of having first to forge a team amongst themselves, and having no technical back up.

In addition to the LCU TA team, from mid-1986 an expatriate was recruited to the CPDO to promote labour-based methods. This had been requested for several years and was originally proposed as a separate unit. In the event, only one person was recruited and placed in an advisory position. Without counterpart or institutional backing and with a sectoral vacuum at the central planning level, this did not prove to be very effective for the original purpose of promoting LBM. As neither SIDA nor LCU were prepared to expand this TA the issue of broader employment creation was essentially dropped, and from 1989 both the donor and GoL were content with concentration on the rural roads sector.

The last TA phase, the Institutional Phase 1990 - 1996, followed on the mandate to LCU as a roads agency, and brought in a large emphasis on training. The engineering TA has mainly been through ILO, augmented with volunteers and experts provided by Skillshare, Australian and Irish Aid. In addition, TA on finance procedures was supplied by an arrangement between the CDF and KfW.

As can be seen from figure 7, a significant number of counterparts became available during this phase. However unlike previous periods, when the LCU had simply waited for the Public Service Commission to provide new graduates as counterparts, the LCU embarked on an extensive bursary programme, financing promising technicians in obtaining degrees.

The team itself was linked to a replacement programme, gradually withdrawing staff as counterparts obtained the requisite skills. The replacement programme did not run to course and has extended some two years longer than expected. However the momentum of placements has been maintained throughout.

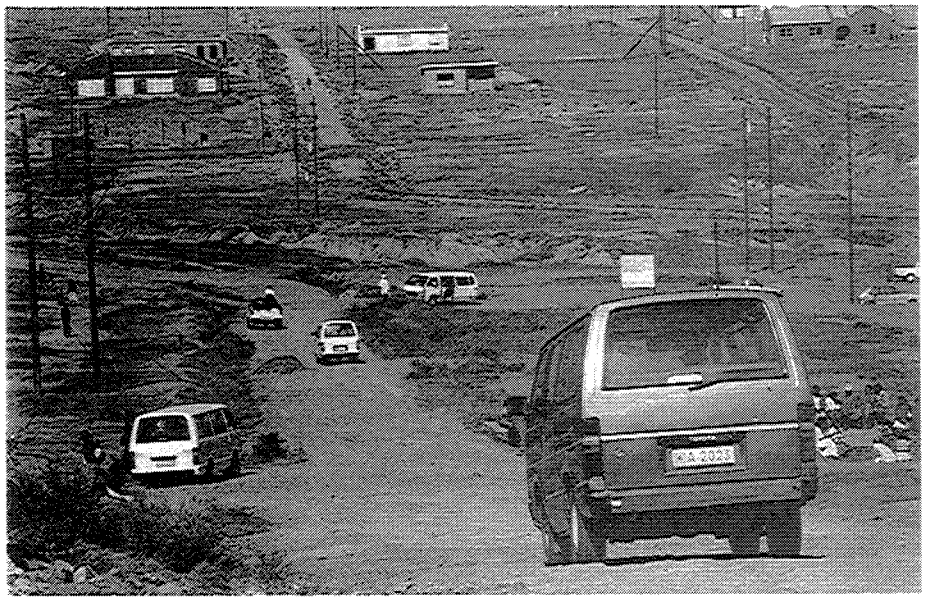
The biggest advantage for the team seems to have been the outside support which the ILO has been able to organise to help in key problem areas, particularly in the area of institutional change. With well structured backstopping it appears that the system is less dependent on individual preoccupations

4.6 Impact of Project Outputs

4.6.1 An Overview

The various projects and initiatives involved in developing the LCU have never been subjected to a rigorous project analysis, certainly not in the logframe format with which we are currently familiar. In fact one of the main concerns of the 1993 SIDA Evaluation[41] was the lack of a clear

project framework for the SIDA support, which made it difficult accurately to evaluate the impact.



LCU provides functional rural road communication.

As previously stated, the LCU objectives started with a very broad brief, with the intention of creating as much gainful employment as possible, through the use of labour intensive methods of public works. This has subsequently narrowed to focus on the road sector and the most recent objectives state[42]:

- The primary objective of the LCU is to provide functional rural road communication to promote socio economic conditions of rural people
- The secondary objective is to promote and propagate labour-based construction and maintenance in Lesotho, thus creating both assets and employment

The previous sections of this review have addressed the issues of improving roads and creating a labour based construction operation, as have previous evaluations in some depth. What has not been assessed is the impact of the LCU on the socio-economic conditions of rural people.

A great deal of faith is currently being placed on the ability of Lesotho's rural population to become effective farmers and net exporters to the markets of South Africa. The recent Strategic Economic Options Report[43], lists a series of strategic and policy options designed to help Lesotho emulate the agricultural era of the early twentieth century, when there was "a healthy agricultural economy resulting from an efficient trade driven land and production system". To complement such interventions as restructuring land tenure and curbing overstocking of rangelands, improved road access is seen as pivotal.

In addition, a poverty reduction plan resulting from a recent World Bank Poverty Assessment Study[44] has stressed the need for a major expansion of labour-based

[41] Report on the Joint Evaluation of the Labour Construction Unit, *Miller et al, ILO Geneva,* September 1993

[42] LCU Annual Report 1994/95

[43] Strategic Economics Option Report, Phase II, Summary Document, *GoL/ World Bank,* November 1995

[44] Lesotho Poverty Assessment Study, *World Bank,* 1994

road works to provide isolated areas with all-year-round access, which will facilitate economic development and the extension of basic social services in the remote and impoverished areas of the country.

LCU is creating both assets and employment.

However, measuring the impact of improved access on poor communities is notoriously difficult. Traffic levels are too low and variable for meaningful savings to vehicle operating costs, and agricultural production is mainly at subsistence level, so it is difficult to predict or measure a producer surplus resulting from the improved access. Social benefits to the recipients tends to be the most obvious immediate gain, but putting value on social benefits is even more difficult.

Previous evaluation missions have relied on anecdotal evidence as for instance the 1985 evaluation which states *"our general impression is that the investments have benefitted those whom they were supposed to benefit ..... relatively poor people in the country side"*. However they also noted that one particular road had *"increased economic activity markedly"*, including a ten fold increase in traffic. The findings of two recent studies are summarised below.

4.6.2 The SIDA Socio-economic Impact Study

SIDA financed a study in 1995[45] to measure the socio-economic and environmental impact of the programme with particular emphasis on *"the long term residual effects on living standards within the communities after the construction of all-weather roads using labour from those communities"*.

The study looked at eight randomly selected roads (88 km in total), and carried out household questionnaire interviews on 496 households living in villages within a 5 km influence zone of the various roads.

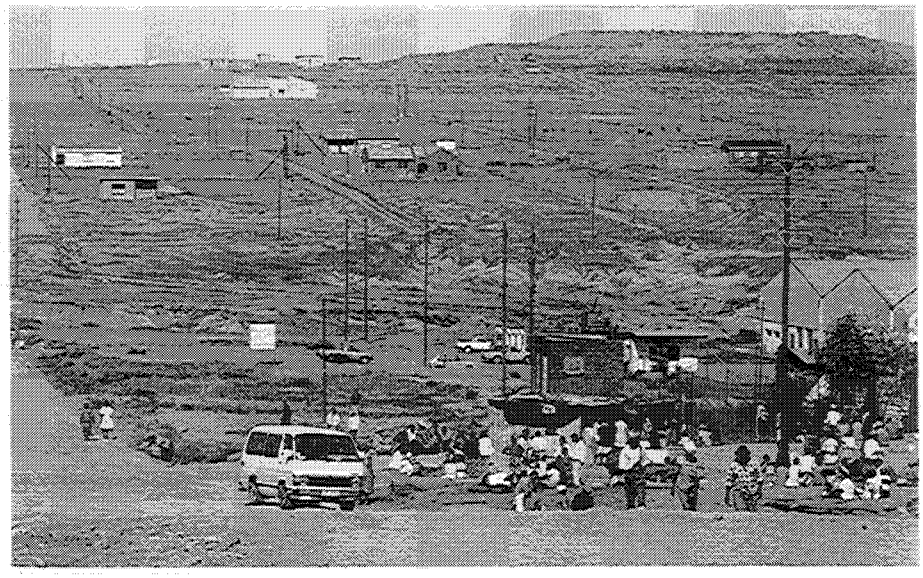
[45] *Bussa / S M Consulting Engineers,* August 1995, op cit

Some of the roads visited had been constructed more than ten years ago; and the study team admitted that some households had difficulty making an assessment relating to income, expenditure and skills acquired over such a time span. In some ways this survey could best be viewed as a baseline for future study. However to be useful as an indicator such a baseline would need to be made before the road intervention was started.

Some of the statements and statistics are very interesting. Firstly 47% of the de facto household heads were female, indicating that male migrant labour is still a very significant factor, which supports the decision in the mid eighties to start employing female labour in the programme.

Of the 2,164 people in the sample, 1,430 or 67% were "economically active" and of these 85% were considered employed. However 47% or almost half of the employed were unpaid family workers. This category largely represents the "under-employed" who would be readily available for the typical short term employment on labour-based projects.

59% of the households were involved in agriculture, but only 22% derived their main source of livelihood from this sector. 32% depended on mining remittances as a primary source. Only 2.5% depended primarily on LCU employment, presumably on maintenance works, as the adjacent roads had been constructed some time before. Migrant remittances and subsistence agriculture are thus the mainstays of the sampled community



Roads allow for a better quality of rural life.

Questions on the usefulness of the road resulted in an over 90% response of "very useful" or "useful", with around 9% feeling there was little impact. This is hardly surprising compared with the alternative of no road at all. However it does perhaps indicate that the standard of road was perfectly adequate for the users, and a more expensive higher standard is not necessary in these situations.

64% of the respondents felt that the road had significantly helped agriculture, but 15% felt it had not helped at all. This presumably depended on the nature of the agriculture. The only clue given by the study is that the highest satisfaction rating of 90% came from the most agriculturally productive area.

The main use of the roads appears to be access to be access to agricultural services, public administration, hotels (bars?), building materials and health services. Agricultural inputs appear to predominate over outputs. Very little commercial activity has been attracted as a result of the improved access, apart from shops and regular transport services; these are very important for quality of rural life, but do not generate much employment in themselves.

In general, the pattern seems to be that the importance and impact of the roads are related to access to the services that make rural life tolerable. A great many other complementary activities will be required before these rural communities can power the nation with high value quality exports.

4.6.3 The Irish Aid Review

As part of a separate review by Irish Aid[46], the consultant interviewed villagers along the route of three recently improved LCU roads. The picture given is very similar to the SIDA study, with all year round access to shops, the hospital (and the mortuary) being mentioned as social benefits; the fact that shopping trips were now possible without having to lodge overnight outside the village; and outreach maternal and child care programmes that can now reach the villages.

On the other hand few businesses have yet been attracted, and although there are increased goods in the local shops which do not have to be brought in by donkey, the prices have not decreased. The consultant also noted that there were no easily identifiable benefits to agriculture in terms of inputs (which could not be afforded) or outputs, however this could be partly explained by the drought that had been prevailing for some time preceding the interviews.

4.7 Planned Developments of the LCU

4.7.1 A New Institution

Over the years the LCU has been transformed from a small pilot project to a department within the MoW with a responsibility for upgrading and maintenance of about 2300 km of rural roads. This transformation has secured the LCU a regular recurrent budget from GoL for the running of the Unit and maintenance of the upgraded roads.

The 1995 *National Transport Study* recommends the integration of CWS with LCU and the appointment of the

[46] Labour Construction Unit, Lesotho, Review, *Mary Jennings, Irish Aid,* January 1996

enlarged LCU as one of two Road Authorities responsible for the National and Rural Roads. This same report recommends the establishment of a single road planning unit within the MoW, responsible for the planning, data collection and policy issues in the road sector. Therefore, the future development of the LCU has to be looked at as an integral part of the whole road sector.

4.7.2 LCU CWS merger

When the merging of CWS and LCU was under serious consideration by GoL, ILO fielded a mission in April 1995 to review the proposed merger and recommend options taking into consideration their different approaches in the implementation of projects. After carefully studying the function of each section, the consultant in his report titled *"Study on the proposed merger of the LCU and CWS*[47]*"* outlined recommendations for the smooth merging of the different sections of the two departments. The report recommends keeping the actual operations apart because of the very different methods and value of remuneration, but the merging of the support sections as far as practicable.

From February 1996, CWS has been officially transferred from the Ministry of Home Affairs to MoW. The establishment list and the budget of CWS are now reflected under the MoW. In spite of the recommendations by the different studies, the position of CWS within the MoW is not yet clear. According to the Works, for the time being CWS will be a department by itself directly reporting to the PS.

4.7.3 Road Fund

GoL's contribution to the LCU in the form of recurrent budget is not enough to improve the maintenance of the roads. Periodic maintenance and regravelling has seldom been carried out. As a result the roads are deteriorating. To counter this GoL has established a Road Fund effective from the 1996/97 Financial Year. According to the *Staff Appraisal Report*[48] for the RRMP *"to ensure the efficient raising and allocation of funds, their timely release, and degree of accountability and transparency, GoL is currently instating the Road Fund based on cost recovery from road users"*. At the moment, the laws governing the Road Fund have been gazetted and the composition of the Road Fund Board that will administer the Fund has been agreed.

4.7.4 Road Authority

Both the National Transport Study and the World Bank have strongly recommended the establishment of a Roads Authority to administer the roads. During negotiations between GoL and IDA for the funding of RRMP, it has been agreed to establish the Road Authority by 1998. It is not yet clear whether there will be two road authorities as recommended by National Transport Study, or only one as recommended by World Bank Staff Appraisal Report for RRMP. It is believed that the roads authority will be an autonomous, commercially orientated body.

[47] Study on the proposed merger of the Labour Construction Unit and the Civil Works Section, *Johannessen, ILO/ ASIST Harare,* April 1995

[48] Road Rehabilitation and Maintenance Project, Kingdon of Lesotho, Staff Appraisal Report, *World Bank* 14988L50, 1995

The Authority might look for ways of retaining its professional staff by restructuring its remuneration packages.

4.7.5 Contracting Industry

In 1992 the MoW initiated a serious of discussions for the establishment and participation of local contractors in the contracting industry. The following year the LCU started the training of small scale contractors to work on the maintenance of roads. It was planned to train fifteen contractors by the end of 1995 from two batches of training. In fact the project trained twenty-four contractors. The training of an additional third batch of twelve contractors is planned to start on 1 April 1996. This will be followed by training contractors in the more complicated aspects of full construction some time during 1998.

The LCU has played, and continues to play, a leading role in the establishment of a local road contracting industry. In the future more and more of the LCU's activities will be contracted out. The LCU will gradually transform itself into more of a contract administration unit than a directly executing unit. To make a success of this transformation, the LCU has to change its activity in the relevant areas, i.e. accounting, contract administration, supervision of work, etc. However although LCU is planning to contract out more and more work to the private sector, it may still keep a small direct labour unit to work in the remote and more difficult areas.

4.8 Current Situation of SIDA Funds

In 1977 the LCU was established in Lesotho. Since 1978 Sweden has supported the programme of the LCU within the Ministry of Works.

Eight Specific Project Agreements have been signed between Sweden and Lesotho for the following periods and amounts (in SEK):

1 July 1978 - 30 June 1980	2,800,000
1 July 1980 - 30 June 1982	5,500,000
1 July 1982 - 30 June 1984	16,700,000
1 July 1984 - 31 Dec 1989	34,400,000
1 Jan 1990 - 31 Dec 1992	21,000,000
1 Jan 1993 - 31 Dec 1994	19,500,000
1 Jan 1995 - 30 June 1995	3,000,000
1 July 1995 - 30 July 1996	2,500,000

The present Specific Agreement between Sweden and Lesotho for the LCU programme originally covered the period 1 January 1993 to 31 December 1994, but was extended to cover another six months, up to 30 June 1995. The Swedish contribution was increased by SEK 3.0 million, thereby reaching the amount of SEK 22.5 million.

Out of reservations from previous allocations to the country programmes for Lesotho, the Government of Sweden has allocated an amount of SEK 2.5 million to LCU for the period 1 July 1995 up to 30 June 1996. Any reservations originating from the agreement on support to LCU, up to 30 June 1995, may be added to the allocation.

The ceiling for the Swedish contribution according to the last Specific Agreement is thus SEK 25.0 million to be utilized before 1 July 1996. SIDA's accounts showed that SEK 21,843,002 had been disbursed per 13 March 1996. The balance up to the ceiling was thus SEK 3,156,998.

The budget for the last one-year extension of the agreement for FY 1995-96 included the following activities:

i) Technical Assistance (ILO)	1,650,000
ii) Training	130,000
iii) Field activities, Roads QN 10 and MF 11	290,000
iv) Buildings, laboratory at TY	330,000
v) Evaluation, unforeseen	100,000
Total	2,500,000

Item i) is fully paid to ILO, item ii) is also utilized. Item iii) field activities is still ongoing, but expected to be completed before 30 June 1996.

Outstanding commitments for the roads,	M 332,432
Estimated costs to completion	M 450,000
Sub-total	M 782,432

Item iv), the laboratory in TY, is a critical expense. According to the procedures of the Ministry of Works, the architectural department has to prepare drawings for the approval of LCU and thereafter call for tenders. After that LCU has to pay the full tender sum in advance which has to occur before 30 June 1996. The problem is that the architectural department has not yet prepared the drawings and is thereby jeopardising the construction of the building for which the equipment has already been purchased with Swedish funds.

Item v) "Evaluation and unforeseen" will amount to SEK 160,000.

In summary, the following payments are foreseen to be made between end of March and the expiry of the agreement per 30 June 1996. The costs are given in SEK where Maloti 1 = SEK 1.8.

i) Technical Assistance (ILO)	0
ii) Training	0
iii) QN 10, MF 11 (M 782,432)	1,408,378
iv) Laboratory at Ty	330,000
v) Evaluation, unforeseen	160,000

Total remaining payments	1,898,378
Balance in Agreement 13/03/96	3,156,998
Total remaining payments	1,898,378
Estimated unutilized 01/07/96	1,258,620

The principal reason for the budget surplus is the weakening of the Maloti from 2.2 to 1.8 in relation to the SEK.

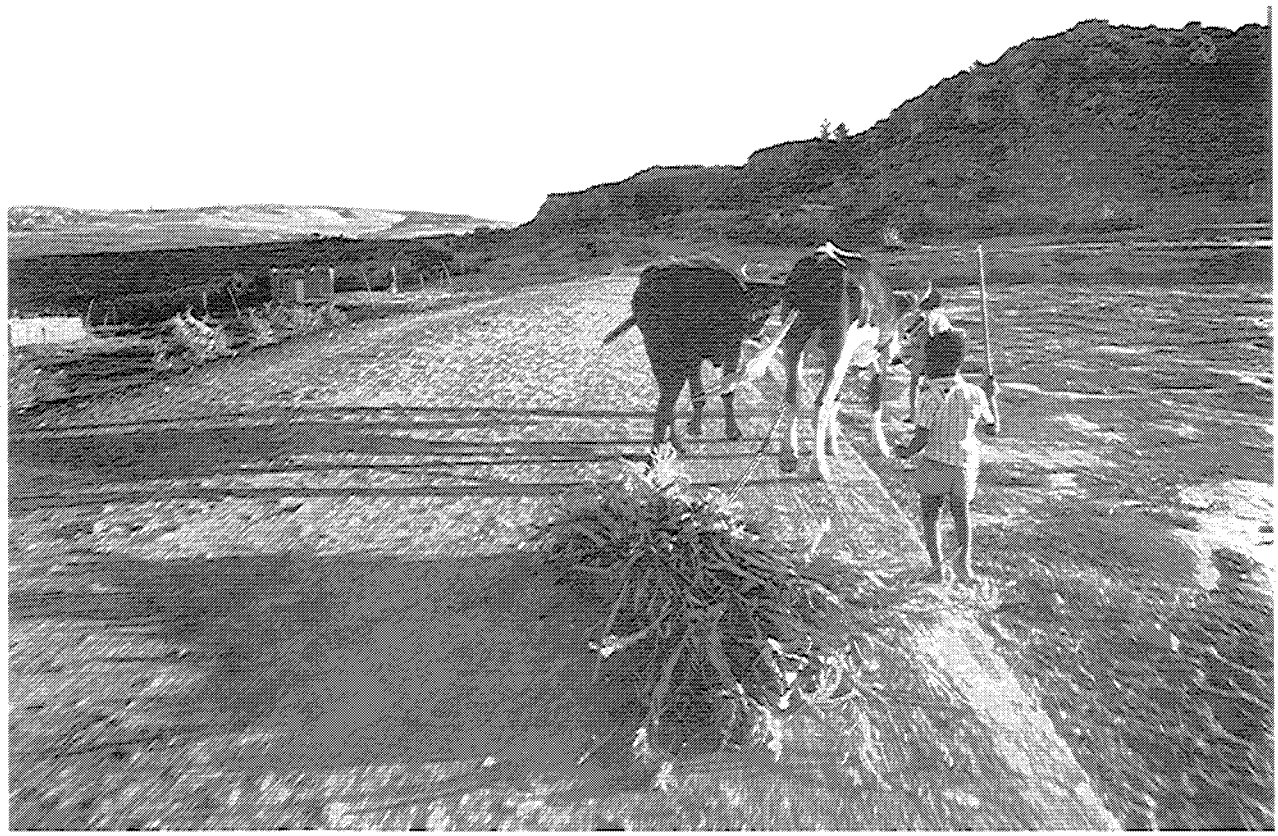


Table 1

Labour Construction Unit

Annual Turnover and Source of Funding

	Annual turnover, million Maloti						Source of funding, %		
Fiscal year	Routine Maint.	Projects	Recurrent	Technical Assistance	Total Actual Cost	Total 1995 Cost	GOL	SIDA	Other
1977-78		0.13	0.07	0.13	0.33	2.84			
1978-79		0.38	0.09	0.13	0.60	4.34			
1979-80		0.19	0.06	0.07	0.32	2.09			
1980-81	0.09	1.14	0.21	0.23	1.67	9.54	28	45	27
1981-82	0.09	1.95	0.26	0.37	2.67	13.99			
1982-83	0.14	2.20	0.17	0.33	2.84	14.20			
1983-84	0.09	1.44	0.14	0.33	2.00	9.52			
1984-85	0.09	2.63	0.16	0.62	3.50	14.09			
1985-86	0.08	3.73	0.30	1.09	5.20	16.74	31	44	25
1986-87	0.22	3.70	0.52	0.71	5.16	14.65	25	22	53
1987-88	0.28	4.04	0.63	1.85	6.80	16.32	26	15	59
1988-89	0.19	4.54	0.86	1.20	6.79	14.16	23	35	42
1989-90	1.82	8.43	1.17	1.92	13.34	24.21	31	27	42
1990-91	1.78	5.98	1.25	1.32	10.33	15.70	50	25	25
1991-92	2.52	7.00	1.73		11.25	15.64	42	14	44
1992-93	3.68	7.95	2.28	1.53	15.44	19.69	42	15	43
1993-94	4.84	7.98	2.62	4.02	19.46	22.48	44	18	38
1994-95	4.64	16.33	3.05	3.91	27.93	27.99	35	18	47

1) Excluding commodities paid by Australia M 5.0 million.

2) Excluding M 0.512 million for scholarships.

3) Excluding TA to LCU.

4) Including contractor training M 2.43 million.

Table 2

Labour Construction Unit

Inflation Indices for LCU Road Construction 1977-95

Year	Costs			Indices			Combined Index
	Labour M/day	Tipper M/hr	Cement M/pack	Labour 0.4 [1)]	Tipper 0.2 [1)]	Cement 0.4 [1)]	
1977	1.60	9.00	1.93	11.60	7.67	9.07	9.80
1978	2.40	9.00	2.50	7.73	7.67	7.00	7.43
1979	2.40	11.00	2.60	7.73	6.27	6.73	7.04
1980	3.40	11.00	2.70	5.46	6.27	6.48	6.03
1981	3.40	12.54	3.30	5.46	5.50	5.30	5.40
1982	3.40	12.54	3.90	5.46	5.50	4.49	5.08
1983	3.40	12.54	4.30	5.46	5.50	4.07	4.91
1984	3.40	14.75	4.70	5.46	4.68	3.72	4.61
1985	5.04	20.50	5.40	3.68	3.37	3.24	3.44
1986	5.04	23.55	7.50	3.68	2.93	2.33	2.99
1987	5.04	31.25	9.00	3.68	2.21	1.94	2.69
1988	6.90	38.95	10.50	2.69	1.77	1.67	2.10
1989	6.90	46.60	10.00	2.69	1.48	1.75	2.07
1990	11.85	46.60	11.00	1.57	1.48	1.59	1.56
1991	11.85	46.60	12.50	1.57	1.48	1.40	1.48
1992	14.82	47.50	14.00	1.25	1.45	1.25	1.29
1993	14.82	47.50	15.00	1.25	1.45	1.17	1.26
1994	17.04	69.00	17.00	1.09	1.00	1.03	1.05
1995	18.56	69.00	17.50	1.00	1.00	1.00	1.00

[1)] Weight factor

To obtain an estimate of the 1995 cost of any road project multiply the actual project cost by the index for the year in which the project was built.

Table 3

Labour Construction Unit

SIDA-funded Roads and Housing Projects

Road No.	Length km	Name
B 37	56.3	Seaka - Phamong
B 38	34.2	Phamong - Ha Nohana
128	4.1	A3 - Ha Mokotane
136	31.5	Tele - Sinxondo
BV 491	11.2	Ha Telu - Khonoana (B 20)
MS 07	16.1	Ha Tlali - Raleqheka
TT 06	20.0	Sehonghong - Matebeng
B 48	64.5	Mt. Moorosi - Mphaki (Rehabilitation)
BR 06	11.5	Ha Moeketsi - Ha Moshati
MF 12	7.5	Ha Ramohapi - Azariel
QT 08	9.5	Ha Ntho - Makatseng
MF 11	16.1	Ha Raletoane - Ha Seeiso
QN 10	11.2	Thifa - Ha Thaha
-		Regional Office, Mohale's Hoek
-		Training Centre, Teyateyaneng
13	293.7	

Table 4

Labour Construction Unit

Selection of Road Projects Completed during 1977-86

Road Object	Construction Period	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	Indices
Mazenod–Moitsupeli	7708-7808											8.22
Masite Nek–Ha Makintane	7809-7908											7.15
Seaka–Nohana	8004-8504											5.03
Mamathe–Masoeling	8202-8209											5.08
Ha Khoali	8210-8304											4.97
LTC Access Tracks	8206-8301											5.06
Libono–Monontsa	8311-8403											4.69
B 41 to Mt. Tabor	8303-8306											4.91
District Roads	8404-8510											3.96
Matukeng–Mantsebo	8502-8604											3.31
Mantsonyane Dam Acc. Rd	8510-8606											3.10
Lebina–Ha Tsekelo Road	8604-8610											2.99
Tele–Sinxondo	8410-8607											3.40

Table 5

Labour Construction Unit

Selection of Road Projects Completed during 1990-95

Road Object	Construction Period	1990	1991	1992	1993	1994	1995	Indices
SRRP 1	9005-9106							1.52
SRRP 2	9002-9107							1.53
MH 06	9102-9109							1.48
LHLCD Roads	9104-9111							1.48
B 48	9104-9207							1.39
LB 08	9104-9301							1.36
P 4	9106-9302							1.34
TDA II	9202-9312							1.27
LB 10	9204-9408							1.21
MH 12	9206-9301							1.29
TDA I	9206-9306							1.28
QT 10	9208-9412							1.17
MF 12	9302-9403							1.21
BR 06	9304-9406							1.19
LB 04	9308-9407							1.13
MS 16	9404-9410							1.05
MS 15	9406-9504							1.03
No. 129	9407-9507							1.02

Table 6

Labour Construction Unit

Outputs and Costs for Roads Constructed 1977-86

Road No.	Road Name	Financier	Terrain Type	Length km	Person-days per km	Wages, % of Total Cost	Actual Cost M/km	1995 Cost M/Km	Remarks
B45	Mazenod–Moitsupeli			30.7	1,547	44	7,090	58,300	
	Masite Nek–Ha Makintane	SIDA		34.8	1,749	46	9,620	68,800	
B37+B38	Seaka–Nohana	SIDA	Mountainous	91.4	3,200	39	35,400	178,100	Remote location
	Mamathe–Masoeling	KfW		11.4	2,071	37	21,700	110,200	
	Ha Khoali	KfW		11.5	1,980	37	21,700	107,800	
	LTC Access Tracks	KfW		7.5	2,993	27	43,460	219,900	
	Libono–Monontsa			5.3	2,444	40	26,325	123,500	
	B 41 to Mt. Tabor			2.6	1,773	48	26,145	128,400	
	District Roads	GOL		56.0	2,221	45	27,833	110,200	
	Matukeng–Mantsebo	IDA/GOL		15.0	4,162	52	46,700	154,600	
	Mantsonyane Dam Acc. Rd	NORAD		8.4	2,058	31	41,700	129,300	
	Lebina–Ha Tsekelo Road	AfDB		7.1	2,525	41	39,156	117,100	
136	Tele–Sinxondo	SIDA	Mountainous	31.5	3,234	39	55,436	188,500	Remote Location
	Weighted average			313.2	2,590	41		133,900	

Source: Scott Wilson Kirkpatric & Partners
LCU Stage II Report April 1980 - March 1987

Table 7

Labour Construction Unit

Outputs and Costs for Roads Constructed 1990-95

Road No.	Road Name	Financier	Terrain Type	Length, km	Person -days per km	Wages, % of Total Cost	Actual Cost M/km	1995 Cost M/Km	Remarks
SRRP 1	Semonkong Rural Roads Proj.	KfW		16.0	1,945	59	50,150	76,200	Gravel width 3.0 m
SRRP 2	Semonkong Rural Roads Proj.	KfW		22.8	2,536	59	44,818	68,600	Formation 4.0 m
MH 06	Old Hoek-Ha Lehloibi	KfW	Flat/Rolling	6.4	2,485	56	60,395	89,400	
LHLCD Roads	Ha Matala, Site & Service	LHLDC	Flat/Rolling	6.1	3,006	41	118,567	175,500	Many drifts & accesses
B 48	Mt Moorosi-Mphaki	SIDA/GOL		26.7	1,383	35	36,094	50,200	GOL (Wages), regravelling
LB 08	Ha Leshoele-Ha Ben	KfW	Flat/Rolling	30.7	2,385	39	80,884	110,000	+ spot rehabilitation
P 4	Ha Mapitse-Ha Seng	KfW	Hilly/Mountainous	14.5	4,399	51	133,230	178,500	
TDA II	Thetsane Dev. Area II	DBSA	Flat/Rolling	4.1	2,770	37	113,831	144,600	
LB 10	Kolonyama-Ha Mafata	KfW	Flat/Rolling/Hilly	23.3	3,063	53	102,446	124,000	
MH 12	Maphutseng River-Ha Monehela	KfW	Rolling (Mount.)	14.1	4,114	47	147,064	189,700	2 major river crossings
TDA I	Thetsane Dev. Area I	WB	Flat/Rolling	14.2	2,276	42	103,760	132,800	
QT 10	Tosing-Ha Ralebona	EU	Hilly/Mountainous	16.9	4,125	49	147,202	172,200	
MF 12	Mokhoabong-Ha Azariele	SIDA	Flat/Rolling/Hilly	7.5	2,900	40	103,521	125,300	
BR 06	Ha Moeketsi-Ha Moshati	SIDA	Flat/Rolling	12.0	2,581	45	74,858	89,100	
LB 04	Hleoheng (A1)-Ha Mosamo	KfW	Flat/Rolling	9.3	3,117	53	112,417	127,000	Long haulage
MS 16	B20-Ha Seeiso	Irish Aid	Flat/Rolling	5.0	1,681	53	122,537	128,700	
MS 15	Ha Paanya-Letlapeng	Irish Aid	Flat/Rolling	8.2	2,684	35	100,132	103,100	
No. 129	Ha Popopo-Ha Motlalehi	KfW	Flat/Rolling	11.9	1,869	41	100,716	102,700	Long haulage
	Weighted average (ex. B48)			223.0	3,024	50		130,500	

Source: LCU Completion Reports

Table 8

Labour Construction Unit

Routine Maintenance Costs

Fiscal Year	Routine Maintenance Responsibility (km)	Annual Funding Allocation (Maloti)	Expenditure M/km, Actual Costs	Expenditure M/km, 1995 Cost
1984-85	36	90,000	2,500	10,062
1985-86	36	80,000	2,220	7,137
1986-87	126	215,493	1,710	4,856
1987-88	250	278,630	1,115	2,670
1988-89	250	189,429	758	1,580
1989-90	485	1,820,168	3,753	6,812
1990-91	473	1,781,041	3,765	5,723
1991-92	618	2,521,124	4,079	5,649
1992-93	745	3,675,755	4,934	6,291
1993-94	777	4,842,782	6,233	7,199
1994-95	802	4,642,073	5,788	5,933

ANNEX I

Labour Construction Unit, Lesotho

Review of Sida Involvement 1977 to 1996

Terms of Reference

1. Background

The Labour Construction Unit or LCU is a Lesotho Government Department of the Ministry of Works, mandated with the responsibility of upgrading and maintaining 50% of the gazetted road network as an equal partner with the Roads Branch.

Where it differs from the usual rural roads authority is that all operations are conducted by labour-based means with the intention of maximizing on employment creation while producing and maintaining cost effective rural access.

SIDA have been involved in the development of this unit from its inception as a World Bank pilot project in 1977. In 1980 they became the principal financiers of the technical assistance responsible for helping improve and expanded the programme and in 1990 entered into an agreement with ILO to help finalize the process.

In June 1996 SIDA will cease their involvement having assisted in the setting up of a fully fledged government department with a staff of 10 Mosotho engineers and an annual budget of 20 million Maloti (approximately $US6 million) of which 58% is currently provided by the Government, 6% by Sida and 36% by other donors.

It is a unique opportunity to document such a long running collaboration between a developing country and development agency on one well defined and documented development programme. This TOR thus sets out the modalities for producing a final summary report and general reference of that collaboration.

2. Purpose of Review

The review is intended to give a concise summary of the achievements of the LCU during the period of SIDA involvement.

It will also provide a description of the current operations of the LCU, its unique technical character, organization structure, and the costs and outputs of the work. This will serve as a reference for current and future labour-based programmes.

Lastly the review will describe the institutional development of the programme, its evolution for demonstration project to full government department, its relationship with and dependence on donor funding, effect of government policies, Technical Assistance arrangement, and the recent moves towards privatization.

The review will include a fully illustrated brochure summarizing the main activities of the LCU, which can be used by the Government of Lesotho, Sida, the ILO, and other interested organizations to demonstrate the labour-based approach in future discussions with donors and recipients in the region.

The review will substitute for the final report (Number 12) of the ILO technical assistance project LES/92/M02/LES.

The Sida representative shall pay special attention to the cost aspect of labour-based road construction and to the financial situation of LCU.

The drafting of the report shall, to as great extent as possible, use Sida's handbook for evaluation as a base.

3. Activities of Review Team

The team will summarize data on the following subjects

- Original project purpose of LCU and major changes in project policy in the period 1977 to 1996.
- Institutional and organisational arrangements of LCU within the government system, 1977 to 1996.
- Annual project physical outputs, unit costs, productivities, and budgets by work type, 1977 to 1996. Particular attention will be given to the aspects of labour-based costs to ensure that they are clear and unambiguous, and include for administrative overheads, equipment depreciation and technical assistance.
- Human resource development including training achievements, localization of management functions and employment creation.
- Development of appropriate technical methodologies, standard and specifications.
- Utilization of technical assistance for development and institutionalization of the labour-based policy dialogue with government and donors on the appropriateness of the labour-based approach.
- Impact of road improvement and maintenance on the rural population.

- LCU achievements against the long term plan and possible future developments.
- The experience with contracting out of works.
- The financial situation of LCU against the background of the short time remaining of Sida's support and the limited funds which still remain to be disbursed.
- All the above will draw on existing data and analysis, but will include a commentary from the team on lessons to be learnt in the development process.

A photographic summary will be made of LCU field activities which will illustrate the principal procedures of the labour-based approach, and completed works both under construction and under maintenance in the various terrain's typical of the country. This summary will be used to prepare an illustrated brochure of LCU activities.

4. Composition of Review Team

The team will consist of:

ILO/ASIST Director, Dave Stiedl

LCU Operations Manager, Dejene Sahle (ILO CTA)

Lesotho Government Representative, John T Masoabi, (Senior Economic Planner, MoW)

Sida representative, Torkel Danielsson (consultant)

Sida representative, Lars Karlsson (Sida Namibia),

Photo Journalist, Fiona McDougall (ILO Consultant)

5. Review Duration and Logistics

The review team will visit Lesotho between March 18th and 29th. A draft report will be produced by ASIST in Harare and circulated to SIDA and LCU on the 1st May for comment before preparation of the final report.

The final report will be available on disk, including illustrations and photographs, for publication if required.

The team will require suitable transport to be provided for the duration of the mission, and office space with secretarial support in the LCU Head Office.

The Photo Journalist will only require five days from the 25th to the 29th, and will require independent transport and an experienced LCU staff member to accompany her for some of this period.

Revised 20 March 1996

ANNEX II

Sida Review - LCU, March 1996

Listing of Key Documents

Final Report to the LCU Coordinating Committee	SWK, April 1980
The Performance and Future Role of SIDA Supported Public Works in Lesotho	SIDA, Karlis Goppers, July 1981
Lesotho, Evaluation of Labour-Based Construction Programmes	SWK, draft, 1983
The History, Current Status and Proposed Future Policy and Development of the Labour Construction Unit	MoW, August 1985
The Cost of LCU Constructed Gravel Roads (1977-1985)	MoW, January 1986
Men or Machines?, An evaluation of Labour Intensive Public Works in Lesotho	SIDA, Edmonds Goppers and Söderbäck, 1986
The Cost of LCU Regravelled Roads (1979-1983)	MoW, February 1986
Labour Construction Unit, Stage II Report, April 1980 - March 1987	SWK, 1987
Project Review of SIDA support to Labour-Based Works in Lesotho	SIDA, Moteane Hagen and Persson, April 1988
The Labour Construction Unit, a proposal for development, Volume I: Roads Upgrading and Maintenance Programme	ILO, Marshall, February 1990
The Labour Construction Unit, a proposal for development, Volume II: Training	ILO, Engdahl, February 1990
Report of the Joint Evaluation of the Labour Construction Unit	ILO/SIDA, Håkansgård, Miller,Persson, Selatile, September 1993
Draft Letter of Roads Sector Policy	MoW, 1995
National Transport Study, Executive Summary, Final Report Vol I, Final Report vol 2 (Appendices), Final Report Vol 3 (Appendices), Final Report Annex (Highway Network Description)	SWK, February 1995
Technology Choice, Man or Machines	ILO, Lennartsson, Stiedl, September 1995
Labour Construction Unit, An Assessment of Socio-economic and Environmental Impacts of Upgrading and Maintenance Programmes	MoW, Mhianga, Majoro, Selatile, Ramabina, November 1995
Labour Construction Unit, Review	Irish Aid, Mary Jennings, January 1996
LCU Annual Report	LCU, 1982/3 to 1994/5
Bi-annual Progress Reports for Project LES/92/M02/LES, numbers 1 to 11.	ILO, 1990 to 1995

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