



ASIST

ADVISORY SUPPORT INFORMATION SERVICES AND TRAINING FOR LABOUR BASED PRACTITIONERS

A Programme executed by the Employment-Intensive Investment Branch (EMP/INVEST) of the ILO

Asist Bulletin no. 1, May 1993

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Editorial

It is now almost two year since ASIST was established with a brief to provide backstopping, training and a comprehensive information service for labour-based technology in the region. During this period, the number of ongoing projects has increased dramatically and we have seen some 70 people attend ASIST courses or participate in study tours. However, despite this massive increase in our target audience, the call on the information services has been small.

In the 1992 Lesotho seminar we were clearly told by the participants that it was no good sitting back and waiting to be asked for our pearls of wisdom, we had to advertise our product and tell people that we had to offer.

So this bulletin is precisely that, it is the first of a series summarising what's available and keeping you informed of development in the region. This issue concentrates on maintenance, a much neglected topic. We have included articles from key practitioners, a summary of available data and a reproduction of Kenya's Headman's manual. Future issues will focus on appropriate equipment, low cost structures, contracting systems, etc. The order and emphasis will very much depend on the feedback we get from you.

We have included items of general interest, letters, news and have even attempted some humour. However, the important this is to make the technical Enquiry Service a useful service for the region and, of course, to support you work in promoting and using labour-based technology.

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Roads 2000 - the way ahead?

By Samson T. Akute, Chief Superintendent Engineer (Unpaved Roads), Ministry of Public Works and Housing, Kenya.

Kenya's road network is falling apart and poor maintenance is largely to blame. The Roads 2000 pilot project intends to build on the good experience of previous labour-based projects to institutionalise and integrate the overall maintenance of Kenya's roads by the year 2000.



The problem of inadequate road maintenance has for some time been recognised as a major factor behind the sorry state of the 63 000 km of roads in Kenya. This has meant that investment in road construction does not provide the anticipated benefits in full. Lack of adequate maintenance has resulted in heavy costs because of the frequent rehabilitation needed to ensure minimal levels of service.

It has become increasingly evident that the problem needs to be tackled at policy level. In Kenya, two main policy areas have been identified: strategies and operational.



Strategic policy options cover the following:

- provision of adequate funds for road maintenance; and
- establishment of an appropriate institution to manage the roads sub-sector.

Operational policies, on the other hand, address the following

- rationalisation of available resources to ensure optimal implementation of maintenance programmes; and
- identification and subsequent application of appropriate technologies to assure minimal costs.

Kenya has benefited from the use of labour-based methods since 1974 when the Rural Access Roads Programme (RARP) was introduced. With abundant rural labour and scarce foreign exchange, labour-based methods provide a local solution to road construction and maintenance.

The Roads 2000 pilot project's primary aim is to institutionalise the experience gained in the RARP and the subsequent Minor Roads Programme(MRP) - a programme in which labour-based methods were extended from building rural roads to rehabilitating the lower end of the classified road network.

The Roads 2000 project involves

- the application of purely labour-based methods of low traffic roads
- a mixed technology of labour-based methods and tractor-towed graders for more heavily used roads
- the use of tractor-based equipment in areas where labour is not readily available.

In addition, the pilot project will tackle the following

- reform of institutional and management systems
- manpower rationalisation
- training
- funding

The pilot project is being carried out in two districts of Kericho and South Nyaza at an estimated cost of US\$1.7 million. The pilot phase will last 12 months and a consultancy company, Intech Associates, has been commissioned to assist in the design and monitoring of the project.

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The work of ASIST

What

Advisory Support, Information Services and Training (ASIST) is a regional project based in Kenya, covering: Botswana, Ethiopia, Kenya, Lesotho, Mozambique, Namibia, Tanzania, Uganda, Zambia and Zimbabwe.

Why

The objective is to improve the effectiveness of the use of labour-based road rehabilitation and maintenance in the region.

How

The ASIST project has three components:

- Advisory Support: by technical experts visiting projects providing advise on technical, organisational and management aspects of labour-based road sector programmes.
- Information Services: by a Kenya-based data centre, to provide advice and resource material, on request, to staff and organisations involved in labour-based roadworks.
- Training: by training specialists, to develop and conduct international courses, seminars and study tours on labour-based road programme management and supervision for
 - engineers
 - supervisors
 - trainers

Who

Advisory Support: Ray Cahoon, Curt Nilson, David Stiedl

Information Services: Collins Makoriwa, David Mason, John Omwanza

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NETWORKING

The Information Services Section of ASIST acts as a network centre for information exchange between practitioners in labour-based technology. This also runs the Technical Enquiry Services.

The emphasis is on information exchange - that is, between you and us. ASIST's ability to provide useful information depends to a large extent upon what it can collect from the filed.

We therefore rely upon you, the practitioners, to help build up a body of knowledge and experience.

In particular, we need to get hold of relevant 'grey' material. Grey material includes anything which is not published, and which is therefore not widely available. Examples are training manuals, research reports, collections of data and statistics, technical briefs, project appraisals and evaluations.

If you have any material of this kind, please send us a copy. It could be of help to others.

Write to us at

P O Box 60598, Nairobi, Kenya.

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A review of present systems

By Jan de Veen of the Policies and Programmes for Development Branch (E/DEV) at the ILO Headquarters in Geneva.

As Africa's road networks deteriorate, governments and donors are reassessing the worth of labour-based techniques in road maintenance. While often cheaper and more effective than other maintenance methods, some governments are slow to commit themselves to systematically implementing such labour-intensive policies.

Road maintenance has been a major issue in developing countries since the early 1980's. As governments have built up their road networks, the earlier lack of attention to maintenance has become apparent. In many cases major investment is required to rehabilitate such networks. In parts of Africa, the road network seems to be deteriorating faster than it is being constructed. Funds for maintenance are often spent on expensive improvement routine maintenance which could have prevented them.



Most international lending institution and donors consider the situation critical and that

- any new construction should run concurrently with a major effort to improve the road maintenance system
- construction programmes should be limited to what is maintainable.

In the past, little thought was given to maintenance, it was considered a minor cost element. While the cost may be low - typically representing annual expenditures of 1 to 3 per cent of the construction cost - the results are disastrous if it is not carried out. Construction or rehabilitation funds often come from abroad where programmes do not compete for government funds, but maintenance costs continue to be borne mostly by the national government. Although maintenance costs are relatively small, any increase has to be obtained from a treasury which is attempting to meet demands from all other sectors of the economy.

In most countries, the maintenance of rural roads falls under the responsibility of local councils or is carried out (irregularly and ineffectively) by the communities themselves. Effective organisations for maintaining minor roads rarely exist in rural areas. Consequently, large investments are made in roads for which there is neither maintenance organisation nor technical guidance.

Governments are now having to consider how best to use their own resources and how to minimise the use of foreign exchange, as well as make difficult choices about the level and scope of maintenance the country can afford.

Governments need to commit themselves to a rational strategy which links available maintenance funds to a defined maintainable road network. In this context, labour-based techniques offer a range of possibilities for cheaper, more effective road maintenance. These may be categorised as follows:

- the classic approach of employing a permanent workforce supported by equipment
- individual or collective responsibility for the maintenance of a section of road;
- agreements between governments and communities
- use of petty contractors for routine maintenance tasks
- use of small-scale private contractors Each of these methods has its advantages and disadvantages and these are discussed below.

The classic approach

Attempts to modify the classic approach have focussed on improving the accountability of managers and maintenance staff and on increasing the productivity of both the permanent labour force and maintenance equipment. Both have proved extremely difficult.

To reduce transport and accommodation costs, some countries have attempted to decentralise their road maintenance labour force, others have reduced the permanent workforce, with all the attendant costs, personnel problems and legal complications.

Individual or collective agreements

"Lengthmen" (locally recruited workers responsible for the maintenance of a given section or length of road) are not of course new. However, they have only recently been recognised as a major element in a routine maintenance strategy. A system relying on individual maintenance workers on rolling contracts can be effective because it reduces costs and ensures continuous attention to the road. Problems relate to the need for regular and timely payments, supervision and the natural tendency of maintenance workers to tackle only the easier, but perhaps the least necessary tasks.

Agreement between government and communities

Possibilities of agreements do exist. However, some form of motivation for the communities is necessary, whether financial or other. The idea that villagers will maintain extensive lengths of road on a self-help basis is not borne out in practice, and in any case constitutes an abuse of the villagers. As with any self-help project, questions of who benefits and what exactly constitutes self-help are critical.

Use of petty contractors

In various projects with ILO involvement, petty contractors are used to carry out by petty

contract if simple contract award, monitoring and payment procedures are adopted. Such contracts can be handled in a decentralised way with a minimum of administration. Small-scale village-based petty contractors with minimal previous experience quickly assimilate the necessary skills to organise and manage a number of workers. Simple contract documentation could take the form of a routine maintenance contract, or a contract related to the provision of labour for a certain period at a set rate.

Use of small-scale private contractors

Using small-scale private sector contractors for road maintenance clearly reduces administrative and bureaucratic procedures and improved efficiency (compared with works carried out directly by the government). However, various problems present themselves. In the first place, in many countries small-scale contractors tend to be inexperienced, with poor financial control and limited technical knowledge. In addition, routine maintenance is more difficult to adapt to the standard measured work contract system. Special efforts have to be made to adapt to the working environment, modify the contractual arrangements, obtain solid productivity data on maintenance activities, and ensure effective supervision.

The growing scarcity of resources will undoubtedly mean that local rural roads will get less attention and funding from central government agencies. Employments-intensive maintenance methods will then have a major role to play in developing decentralised maintenance systems.

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THE ROAD MAINTENANCE INITIATIVE

This is a programme under the Sub-Saharan Africa Transport Programme (SSATP) finance by the World bank and the UN Economic Commission for Africa (ECA).

Objectives of the Road Maintenance Initiative

The World Bank, in collaboration with the ECA and several bilateral donors, has designed the SSATP Road Maintenance Initiative (RMI) for African policy makers and senior managers. It aims to

- increase awareness of, and reach common assessment on, the magnitude of the road maintenance problem, and to increase their motivation and commitment to address the problem by changing attitudes and behaviour
- identify appropriate technical, financial and organisational policy options, and develop policy action plans for specific road agencies and institutions
- give support and monitor the implementation of national policy reform plans, and assess their effectiveness.

As a first phase of the RMI, six regional Maintenance Policy Seminars were held in Accra, Addis Ababa, and Harare (English-speaking countries), Dakar, Libreville and Tananarive (French-speaking countries), during 1989/90. The seminars addressed the following topics:

- Planning, financing and management for road maintenance and rehabilitation programmes
- Operations and management of road maintenance and rehabilitation activities
- Institutional reform and human resources development in relation to road maintenance and rehabilitation.

The second phase of RMI focuses on maintenance problems at national level. Many of the countries involved in RMI phase I responded positively to the suggestion of holding national seminars. Seminars have already taken place in Uganda, Kenya, Rwanda, and Zimbabwe; more countries will follow this year. The purpose of the national seminars is to create nation-wide awareness of road maintenance problems. These seminars will involve all key actors (Ministries of Finance, Works, Local Government, etc.) Who will discuss various strategies and draw up action plans.

The ILO is to provide services to RMI phase II. During the national seminars, the ILO has given presentations on how labour-based methods can play a role in a national road maintenance strategy. The impact of the ILO's presence at the seminars has differed from country to country depending on the ILO's involvement in the country and also on the attitude of the participants.

In Uganda, the national seminar showed that at the political level there was wide acceptance of labour-based methods (they form a part of the policy papers in the two road ministries). However, in practice, labour-based infrastructure projects/programmes have not yet got off the ground. However, in neighbouring Kenya, labour-based methods have been accepted as the principal means of maintaining the major part of the country's road network.

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Lengthmen - a system to maintain?

By Gary Taylor, Project Evaluation and Monitoring (PEM) engineer for the Minor Roads programme (MRP) in Kenya for four years. He is currently working for IT Transport in England.

The lengthmen systems, despite many misconceptions, remains one of the most popular methods of routine road maintenance in Kenya. A review of its strengths and weaknesses shows that the system, while changing over time, now needs refinement.

The lengthmen system is a form of routine road maintenance that involves the allocation of various portions of road specific individuals for regular maintenance.

The use of lengthmen is one of the most popular methods for conducting routine maintenance in labour-based road programmes. However, despite its popularity, a lot of confusion and uncertainty exists over the effectiveness of the system.

Many doubts stem from a lack of concrete evidence. However, opinions are voiced based on anecdotes and hearsay.

The Kenyan Rural Access Roads programme and Minor Roads Programme have a total of sixteen years experience with the lengthmen system. The system is currently used on a network of over 10 000 kilometres of gravel roads throughout the country. The following evaluation of the system provides an insight into some of its strengths and weaknesses.

The original concept was that a lengthman should

- be recruited from the original construction gang
- be responsible for a fixed section of road
- reside adjacent or close to the road
- work three days of his choice per week
- choose what work to do himself
- be paid only if the standard of his section was judged satisfactory.

However, some of these fundamental principles have had to change over time.

First, it was assumed that by recruiting from the original construction gang, the lengthman would be able to plan and carry out the necessary work with a minimum of direction. The need for close supervision soon became apparent, as lengthmen began working in an uncoordinated way, concentrating on cosmetic works such as grass cutting at the expense of more vital but less visible work such as culvert

cleaning.

Consequently, headmen were introduced to oversee up to 10 lengthmen each. Some headmen, had their own sections to work, others had supervisory duties only. Headmen, like lengthmen, are casual labourers but enjoy slightly higher pay (about 10%). Generally, the non-working headmen have performed better than their working counterparts and thus working headmen are used only on short roads with few lengthmen to supervise.

A further development was the gradual increase in work direction by the overseer. Today, the overseer actually specifies the work to be carried out between his visits (usually twice a month). This work is set out on a task rate basis using corms established in Kenya for the standard routine maintenance activities. A direct result of the increase in control by the overseer is that the lengthman cannot work on any three days of his choice but only on those specified to fit in with the overseer's supervision timetable.

Second, it was assumed that because lengthmen were recruited from the original construction gang, they would need no training. This assumption has been proved wrong due to a host of reasons.

Working alone over a period of time, lengthmen tend to become slack. Correct construction methods for scour checks are soon replaced by home devised methods. Certain routine maintenance tasks are different from the equivalent construction task, i.e. the cleaning and reshaping of side ditches which as a maintenance activity is quite different from the step by step construction of a new side ditch.

The correct scheduling of activities throughout the year is vital for routine maintenance. For example, concentrating on clearing the drainage system in advance of the rainy season. Lengthmen need specific training and supervision to ensure that this is achieved.

The approach used in Kenya has focused on the training of maintenance headmen by the overseers. A simple, well illustrated handbook for headmen has been Prepared showing in pictorial form the priority maintenance tasks to be carried out in each season (see centre-fold).



Road maintenance- achieving a sustainable balance between the use of equipment and labour

Third, it was assumed that by recruiting a lengthman locally, pressure from his community would ensure that he carried out his work diligently. It was also hoped that the local community would draw the lengthman's attention to defects in the road.

In practice this has not worked, at least not in the sense of the community taking a continuous and active interest in maintenance work. The reason being that the community only gets aroused when there is a serious problem on the road - and at that pint routine maintenance work is usually long overdue.

An exercise to raise the awareness of the benefit of road maintenance was recently held in Kenya. Local leaders were briefed on the Ministry of public Works approach, which was reinforced by the distribution of pamphlets given further details of the lengthmen system.

Two major issues are now being debated in Kenya with respect to the lengthmen system. The first and most serious concerns supervision and monitoring of the system. Overseers who are poorly motivated and seldom closely supervised, are recognised as a weak link and can rapidly undermine the systems.

Proposed solutions to this problem focus on reducing the overseer's workload by cutting down on the number of lengthmen under his responsibility (currently about 100-150) or by grouping the maintenance workers together in gangs.

These solutions are largely misguided and better supervision and motivation of the overseers themselves is much more relevant. This may involve extra training work by the supervisor and the development of a universal system for measuring the condition of a gravel road and hence the overseer's productivity.

A further issue is whether the lengthmen's input should vary throughout the year to reflect the maintenance needs of roads in different seasons. Though technically sound, this issue raises strong objections from those who think it is unfair on the lengthmen who may be laid off and recruited several times in a year. This raises the basic issue of whether the lengthmen system is primarily a public works programme. The availability of labour is such that in many African countries, in the short term at least, candidates willing to work on a more flexible basis will always be found. Already disruptions in funding create situations where routine maintenance often has to be temporarily suspended and this takes place without serious dislocation of the system.

Studies have shown that carrying out certain maintenance work in the dry season, e.g. carriageway maintenance, can actually cause damage to roads. It is also clear that the maintenance needs of gravel or earth road networks fluctuate throughout the year.

For these reasons and because of the need to keep routine maintenance as cost effective as possible, I believe temporary suspension and increases in the number of lengthmen must be considered seriously. The lengthmen system in Kenya has largely proved successful and remains a sustainable system for routine maintenance. Its main advantage is that at any one time the whole of the network is receiving attention.

The timely attention to minor defects is the most cost-effective method of maintaining a road. More could be done to improve the system but such efforts should be seen as refinements to an already proven and effective method of maintenance for gravel and earth roads.

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THE TECHNICAL ENQUIRY SERVICE

The Technical Enquiry Service (TES) exists to help practitioners in labour-based roads technology gain access to information and advice on a wide range of topics. It can call on all the resources of ASIST and has links with many other information sources throughout the world.

IF YOU CANNOT FIND A BOOK OR PUBLICATION DEALING WITH YOUR PROBLEM, TRY THE TES - WE MAY HAVE THE INFORMATION YOU NEED.

DETAILS FROM:

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The TES is now open for business!

Those of you who attended the regional consultation at Mophale's Hoek in Lesotho last year, will remember being briefed on the TES by Bjorn Johannessen and Gerrit Bosma.

The TES consists of an extensive collection of catalogued and indexed published and unpublished documents, backed up by the living and walking databases of ASIST personnel. The indexed material is stored at the Kisii Training School (KTS) in Western Kenya. The catalogue is computerised allowing searches of material according to subject matter.

How does the TES work?

The TES is there to serve you, the practitioners of labour-based roads technology. Send in your requests for information, advice or assistance which you think ASIST can provide. Use any method to contact us: telephone, facsimile, telex, courier, personal visit, verbal message, electronic mail, carrier pigeon, ...etc

Your enquiry will be sent to the Nairobi office where it will be screened by the appropriate specialist. A search will be made of the computerised database to see what documentary information is available. Other information centres around the world may also be contacted if necessary. If your enquiry cannot be dealt with within a few days, you will be sent an acknowledgement with an estimate of how long we consider it will take us to give you a complete answer.

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Practical Maintenance

In 1991, the Kenyan Ministry of Public Works Roads Department commissioned the production of a pocket size Headman's Handbook for the maintenance of minor and rural access roads.

The Minister has very kindly agreed to allow us to include this handbook in our bulletin. The handbook is reproduced in full, with translations from Kiswahili to English where necessary. The version printed here is half the size of the original, which is in A5 format.

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Diary of forthcoming events

Training Courses at KTS

The following international courses are planned for 1993. They will be held at the Kisii Training School in Kenya.

Course Title	Dates	Fees in US\$
International Technicians Course	19 APR - 28 May	3500
International Engineers Course	30 Aug - 15 Oct	4000

Note that fees do not include transport to and from Nairobi. Application forms can be obtained from The Training Manager, ILO/ASIST, P O Box 60598, Nairobi, Kenya.

1993 Regional Seminar

The third regional meeting to review current practice in labour-based technology is planned for late September 1993. Exact dates will be announced in due course.

Courses at TRL

We have been notified by the Transport Research Laboratory of two courses which they intend to run at East Hampstead Park Conference Centre in southern England.

- Residential Course on roads in Tropical Countries 12 -16 July 1993
- Residential Course on Appropriate Technology Roadworks for Developing Countries 19- 23 July 1993.

Further information can be obtained from Overseas Centre, Transport Research laboratory, Crowthorne, Berkshire RG11 6AV,U.K.

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Letter to the Editor

Send your letters to The Editor, ASIST, P O Box 60598 , Nairobi, Kenya

Tricky triangle

Sir

I notice that various labour-based manuals and handbooks advise using the 3-4-5 triangle for setting out a right angle. While I have every respect for my father's excellent invention, may I draw your reader's attention to my own invention? This is the 5-12-13 triangle.

Using this triangle with the 12m side along the road centerline, and the 5m side across the carriageway, gives, in my humble opinion, a much more accurate right angle.

Pythagoras Jnr
Athens, Greece

There seems to be some disbelief among practitioners (and advisers) that a triangle with sides of 5m, 12m and 13m contains a 90 degree angle! Well, try it and see! - Editor

Trailer tips

Sir

I have recently completed a project in which we were obliged to use trailers that were unsuitable for labour-based work.

These trailers were theoretically self-tipping, but in reality were oversensitive to the position of the centre of gravity when loaded and often needed half a dozen workers swinging on the back to tip the tray; a two hitch requiring time consuming precision when hitching and unhitching twenty times a day; and sides too high to facilitate hand loading.

They also had conventional high pressure wheels, guaranteed to produce rutting in the finished surface.

On other projects, I have seen a variety of designs: self tipping and hydraulic tipping; dropped sides and fixed sides; conventional tyres and balloon tyres and too shallow a tipped angle to easily discharge material.

Surely, after so many years of labour-based experience, a standard trailer can be designed which, with minor modifications to suit local conditions, could be used with success on any project?

My own criteria would be:

1. about 5m struck capacity
2. self-tipping, with the centre of gravity slightly behind the axle to ensure ease of tipping, and with a release mechanism operated by a substantial lever
3. a low trapezoidal tray with fixed sides and no tailgate
4. a large tow hitch eye, with guides, and
5. balloon tyres - sourced from old aircraft tyres perhaps.

I suspect there are many people out there in the field, unhappy with their present trailers, who agree with me. Or are there ?

Charles Williams
Ex- Namibia

Let's hear from all you trailer experts out there - our own engineers, collins Makoriwa and Curt Nilsson are currently investigating people's experiences with trailers. Editor.

The first Surveyor ?

Sir

"Turn to the right, there is no road ahead!" shouted someone in the vehicle. The driver, eyes now wide open, looked at the last bit of road ahead and said "Aha".

This road in Rukwa reminds me of the "first surveyor", the donkey, and someone on the BBC who said "with horses you command, but with donkeys you negotiate".

Donkeys have for years travelled across difficult mountains negotiating both grades and curves. Yes, a nice piece of instinctive "Grade Control".

Zecharia Ali
Sumbawanga,
Tanzania [[Back](#)][TOCNext](#)



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BOOKS REVIEWS

Key references on labour-based maintenance

There really isn't much of a general nature on labour based maintenance. Most of the material consists of country-specific reports by consultants and trainers. Some of this is very good, but there is no international published literature at present. The publications below are recommended by ASIST.

Manuals

Consult I & D. Headman's handbook for maintenance of minor and rural access roads (in Kiswahili). Ministry of Public Works, Roads Department, Republic of Kenya. 1991.A5.14pp.40g

This is the booklet which is reproduced in the bulletin as a centre-fold. The originals printed on thick A5 size paper covered with a thin film of plastic so it can be used in the field without damage. It has a spiral binder. Copies can be obtained from ASIST. Price \$5.

Road maintenance handbook

United Nations Economic Commission for Africa. Road maintenance of Roadside areas, drainage structures and traffic control devices. Carl Duisberg Gesellschaft e V, Postfach 19 03 25, D-5000 Cologne 1, Germany. July 1982. 19 * 11.5cm. 372pp. ISBN 3-920271-02-5.

United nations Economic Commission for Africa. Road maintenance handbook, Volume II: Maintenance of unpaved roads. Transport and Road Research Laboratory, Crowthorne, Berkshire, United Kingdom. July 1982. 19*11.5cm 218pp.

These pocket-sized books were commissioned over ten years ago. They were produced for the classic system of road camps equipped with machines and labour gangs. So they are basically for machine based work. However, they are currently being completely revised and updated by the Transport and Road Research Laboratory (UK).

Robert Petts (Intech Associates). Technical Manual Volumes 1, 2 & 3. Ministry of Public Works, Roads Department, Minor Roads Programme, Republic of Kenya. January 1992. A5. 262pp.

Volumes 1 and 2 deal only with road improvement, but a companion volume 3 dealing with maintenance is shortly to be comprehensive summary of the Kenyan approach.

A Beusch and J J de Veen. International course for engineers and managers of labour-based road

construction and maintenance programmes. ILO Geneva 1991. A4 ring binder. ISBN 92-2-107916-3.

Parts M, N, o and P in volume II cover maintenance. Part M is "Maintenance using labour- based methods"; Part N is "maintenance organisation"; and part P is "Maintenance field works". This is a good starting point and represents the most up-to-date ILO overview for engineers and technicians. Copies available through ASIST or the ILO in Geneva.

Dr R Robinson (Ed). Overseas road note 1: maintenance management for district engineers. Transport & Road Research Laboratory, Crowthorne, Berkshire Rg116AU, UK. 1981. A4.46pp.

These are classic publications and are based on work done by Scott Wilson Kirkpatrick, Consulting engineers. They give a useful overview of the problems and provide general principles for their solution. However, they are not oriented towards labour-based techniques.

Intech Beusch &Co and Rolfjohansen. Management and supervision of labour based road construction and maintenance. Ministry of Works, Transport and Communications, Republic of Botswana. August 1992.A\$ ring binder.

This manual contains training course notes for technical staff of the District Council road units in Botswana. The courses are aimed at technical officers, technical assistants and gang leaders. This is probably the most comprehensive training material on labour based maintenance int text form at the present time. Although Botswana specific, management and organisation information is universally applicable. Write to Rolf Johansen at the Roads Training Centre, Gaborone, Botswana for further details.

Articles

James A Agingu. Labour-based road maintenance- the lengthmen system. In labour-based technology - a review of current practice. Proceedings of a seminar held in Mbeya, Tanzania. ILO, Geneva. 1990. Publication CTP 121.A4.

This article describes in detail the labour based maintenance system which was developed in Kenya as part of the Minor Roads Programme. Of particular interest are the productivity standards and planning & reporting forms included in the appendices. Copies of this article, or indeed of the whole report, can be obtained free of charge from ASIST or from the ILO in Geneva. Much of this work will appear in the Kenyan MOPW technical manual Volume 3.

Gary A Taylor. Improving routine maintenance by lengthmen- a technical or a managerial problem?. In Labour-based technology - a review of current practice. Proceedings of a seminar held in Mhales Hoek, Lesotho. ILO, Geneva. March 1992. Publication CTP 129. A4. 154pp.

Two years on, this paper describes the implementation of the lengthmen system and reviews the main findings of various studies on the system as then operated are identified as a starting point for further discussion.

Andreas Beusch. Appropriate equipment for maintenance. In labour-based technology - a review of current practice. Proceedings of a seminar held in Mophale Hoek, Lesotho. ILO, Geneva. March 1992. Publication CTP 129.A4.154pp

This paper summarises the project Document for Roads 2000. The project should test and develop proposals for improving road maintenance performance with particular emphasis on the appropriate use of labour and tractor-based technology, and increased use of the private sector. There is a lot of material on improved towed-grader and by June 1993 we expect to know the findings of the field tests. Copies of this article can be obtained from ASIST, or from the ILO in Geneva.

For ILO publications write to Publications Branch, International Labour Office, CH1211 Geneva 22, Switzerland.

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ASIST

ADVISORY SUPPORT INFORMATION SERVICES AND TRAINING FOR LABOUR BASED PRACTITIONERS

A Programme executed by the Employment-Intensive Investment Branch (EMP/INVEST) of the ILO

[Asist Bulletin no. 1](#), May 1993

PROJECT NEWS

News about labour-based road projects in the region brought to you with help from E/DEV branch at the ILO head Office in Geneva.

Botswana

In 1980, the Ministry of Local Government and Lands established a District Roads Improvement and Maintenance programme. The ILO has assisted this programme since its inception with funding from NORAD. A field training unit was established in Molepololein 1985. It now covers some 2500 kilometres and continues to expand.

A recent study of the road network as a whole has endorsed the labour-based approach, and recommended its wider application in maintenance activities.



Carl Berentsen (NORAD Technical Assistance), is currently the District Roads Engineer and Oernulf Stryom (Norwegian volunteer) is the training adviser attached to the Field Training Unit.

Ethiopia

Between 1981 and 1987, the ILO has helped the Ethiopian Transport and Construction Authority (ETCA) establish labour-based rehabilitation brigades. The technical assistance component was funded under World Bank road sector credits. This project is currently being revitalised and is linked to various food security programmes.

Kenya

The ILO has long been involved in the implementation of the large scale labour-based Rural Access Roads and Minor Roads Programmes. The ASIST Programme Director helps to coordinate the donor community involved in the Minor Roads Programme (MRP) which is responsible for 12,000 Km of the 52,000 Km of unpaved roads in the country.

The chief Technical Adviser to the MRP, Gary Taylor, completed his four year contract in September 1992 and is now working for IT Transport in the UK.

The Training School in Kisii, which is part of the MRP and is funded by the Swiss Development

Co-operation, continues to provide training in labour-based techniques. The school also hosts ASIST's international courses, and the Technical Enquiry Service. David Jennings is the Training Adviser and A. Okindo the Principal Instructor. The field Training Coordinator, Hans Segessor left in December 1992.

The SIDA-funded soil conservation component of the Minor Roads Programme has just been completed and a well-attended workshop was conducted by the Ministry of Public works and Housing.

The SIDA-funded contractor training project (re-gravelling only) is well under way. Trial contracts have been awarded. These are being supervised by Norconsult, and monitored by ASIST.

The Pilot roads 2000 project is due to be completed in June 1993. Samson Akute at the Ministry of Works continues to oversee the maintenance of unpaved roads. Francis Karanga is the Programme Coordinator for the MRP and the new Project Manager for Roads 2000 is Eng. Murage.

Lesotho

The labour Construction Unit (LCU) of the Ministry of Works is responsible for upgrading, rehabilitating and maintaining of road network of 2,500 Km.

To date, the Unit, using labour-based methods has been involved in the construction and maintenance of gravel roads with low traffic volumes. The workforce consists of 1,500 casual labourers and 250 permanent employees.

Through an agreement with SIDA, the ILO is providing a technical assistance team of five : a training Engineer, an Operations Engineer, a Regional Engineer, and two United Nations Volunteers.

The LCU has now decided to launch a programme financed by the World Bank to develop a cadre of domestic small-scale contractors capable of carrying out labour-based road maintenance works on the gravel road network in the country.

It is anticipated that 15 domestic contractors will be trained in the technical and managerial principles of how to run a labour based road maintenance enterprise. The ILO is providing a Contracts Manager and two Contracts Supervisors.

The post of planning and Design Engineer came to an end in December 1992, and the incumbent, Mike Knowles, has been transferred to Cambodia. His role has been taken over by the Operations Manager, Dejene Sahle. The LCU Manager, Athle Lehobo retires this Month. He is being replaced by Mrs. Pama

Mozambique

The ILO has assisted the National Roads Directorate (DNEP) since 1984 in establishing labour-based road betterment and maintenance brigades in the provinces of Zambezia, Maputo, Gaza and Inhambane. This feeder road programme has now been extended to cover 10 provinces, financed by a number of donors. With effect from January 1992 the UNDP funded ILO core management unit of the labour-based programme has been expanded to six experts with funding until the end of 1996. Mukesh Gupta is the Chief Technical Adviser assisted by a team of experts including Bjorn Persson, Bill Costello, John Bizios, Bill Drysdale and Ted Greenhalf. The project has been well supported by Carlos Frago, the National Director of DNEP and Elias Paulo has worked his way up with the project to now be in direct charge as chief Engineer, Maintenance.

Namibia

The Department of Transport in Namibia has recently launched a programme to complete the construction of proclaimed district roads in Ovambo. Consideration is being given to the eventual use of labour based methods for the construction and maintenance of the less trafficked parts of the network.

A pilot project designed by the ILO and funded by SIDA, commenced in October 1991 to determine the administrative technical and economic feasibility of this approach. The ILO project Coordinator, Charles Williams, provided on the job training and technical assistance. He finished his contract in December 1992. The Project is currently being evaluated by two ILO consultants (Petts and Byrnes) prior to embarking on a Phase II expansion. The Ministry is now running the project with management support from local consultants BICON.



Tanzania

The ILO currently provides technical assistance to several road programmes in Tanzania.

First, the Rural Road Maintenance Programme in Tanga and Mbeya Regions has developed a capacity to rehabilitate and maintain minor roads by labour-based techniques. The programme is now going into a new phase as part of the Integrated Road Project (IRP) coordinated with World Bank assistance.

Over the next four years, with NORAD funding, the ILO will be responsible for the development of an Appropriate Technology Unit in the Rural Roads Division (RRD), a component of the IRP. The unit will aim to institutionalise labour-based training by developing the training resources at Mbeya and Lushoto.

In addition to the Highway Engineers/Trainers at these centres, an ILO Highway Engineer will be based in the RRD as the Adviser to the Director on the use of appropriate technology.



Second, an ILO Engineering Adviser (Mike Clapham) and a field Engineer (Zecharia Ali) are helping the Rural Roads Engineer in Rukwa Region to implement labour based road works. This assistance is provided as part of the NoRAD-funded Rukwa Development Programme (RUDEP).

Third, the ILO is providing the technical assistance for the development of private sector capacity to carry out road rehabilitation and maintenance. This contractor Training project is based in Kilimanjaro region and started in October 1992.

Osei-Bonsu (ex-Ghana) is the Chief Technical Adviser and Joe Connolly (ex-Zambia) the Training Adviser. The National Construction Council Director, Mr. Msita, has seconded Paul Ngalesoni to work on this project.

One of the ASIST Technical Advisers, Ray Cahoon, is based in Arusha and is attached to the Eastern and southern Africa Management Institute (ESAMI), which continues to run road maintenance management and rural transport planning courses. Dr. Mushambi has been appointed director of the Transport Management centre at ESAMI.

Uganda

Under an ongoing UN capital development fund financed feeder roads prooject for which the ILO is the executing agency, government staff are being trained in rehabilitation works carried out mainly by equipment-intensive methods.

However, government staff and small contractors are also being trained in feeder roads routine mainteance using labour-based methods. The technical assistance to this project will end in June 1993. Richard Kurek is the technical manager and Associated expert Aswaf Kidanu the maintenance engineer.

A local government initiative, funded by the world bank Transport Sector Project, aims to develop a conractor training Project for the eastern districts of the country. The ILO has helped put together the project document which is currently being pre-appraised by the World Bank. The project is due to start in 1994.

The ILO is providing inputs through Andreas Beusch of Intech and Aswaf Kidanu



Zambia

The Government, NORAD and the ILO have for six years supported a labourbased Feeder Road Project in support of the District Councils in the Northern Province. This links up with a long-term NORAD rural and agricultural development project.

A field training unit has been set up in Kasama to train supervioers and road maintenance managers both in the classroom and on-the-job. ILO technical assistance comprises one team leader (John de Blacquiere), one training adviser (Hedstron), and a Norwegian volunteer, Sturla Elsveen.

Another project, started in May 1991, aimed at the improvement and maintenance to provincial and destrict earth and tgravel roads in Lusaka Province. This has been under the supervision of Lusaka's Province. This has been under supervision of Lusaka's Provincial Roads Engineer and is a component of FINNIDA-assisted support to the maintenance of roads in Zambia. The project is due to end in June this year.

The government is now looking afresh at the whole management and institutional framework of its road network. ILO has recently provided support with a National Labour-based seminar and it is expected that there will soon be a major expansion in the labour-based activities.

Zimbabwe

The ILO has helped Zimbabwe's Ministry of Transport and DANIDA to prepare a feeder roads project

improving about 150 Km of road using labour-based methods. This will train staff and introduce procedures and systems for a wider application of these methods.

The project began in 1991 with technical assistance provided by a Danish consultancy firm (COWI consult). A major review is scheduled for May 1993. Peter Bentall is the Project Coordinator and Kin Watkins the Training Adviser. They are assisted by two field engineers.

SIDA have embarked on a similar project which will have technical assistance provided by SWEROAD but they will follow the procedures developed by COWI consult.

The director of Roads, Rob Mitchell, has strongly supported the labour-based approach and Mr. Mavhiza has recently been appointed national labour-based coordinator.

The ILO has also assisted the Ministry of Transport to appraise the potential for small-scale contractors to be more involved in the works. The results were positive and will be followed up later this year.

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COMPETITION

Write a caption for the following picture and send it to us. The most humorous one will win a T-shirt.



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