



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. 5, September 1996

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EDITORIAL

The fifth ASIST Bulletin focuses on contracting of labour-based road maintenance tasks. Contracting is increasingly replacing force account systems, which were common in Africa and elsewhere. As in any development, some projects will have positive experiences, while other experiences will be negative.

Contracting was the main theme of the fifth annual ILO/ASIST regional seminar for labour-based practitioners in Sub-Saharan Africa. The Seminar was successfully organised by the Department of Feeder roads in Ghana, in collaboration with ILO/ASIST, and attracted a record of 103 registered participants from 17 countries.

Contracting proved to be a controversial issue during the seminar. Implementing contracting systems and developing sustainable local contractors cannot be done overnight. Issues such as training, equipment, loans and suitable contract documents need to be considered. At the end of the day, contractors must be able to survive in a competitive market, and clients must be able to perform their key functions effectively, in order to provide an enabling environment for the contractors.

The editorial board has tried to reflect the discussion on contracting in this bulletin. However, the papers presented and circulated during the seminar are more exhaustive than the bulleting can possibly be. The papers are available, at cost price, from ILO/ASIST in Nairobi and the Development Policies, of the ILO, CH1211, Geneva 22, Switzerland. The proceedings of the seminar, covering the discussions and field visit and summarising the presented papers, are also available.

This bulletin also includes a pull out centre-fold, which this time looks into cost effective techniques and options of road maintenance by contractors. The News and Projects sections keep you up-to-date on recent developments, while the Diary looks to the future.

Lastly, we report on the ASIST Bulletin and TES Survey, which we conducted in our last bulletin. Thank you for your overwhelming response, your very positive evaluation and your suggestions! To prove that we take the evaluation seriously, the next bulletin will address the issue you required most information on equipment and tools. We hope that many of you will contribute to this next issue. Most of you who wrote in seemed eager to do so!

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EDITORIAL TEAM

- **David Mason**

- **Jan Fransen**
- **Collins Makoriwa**

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AT YOUR SERVICE

Advisory Support:

- David Stiedl
- Mike Shone
- Fatemeh Ali-Nejadfard
- Maria Lennartsson
- Collins Makoriwa

P O Box 210, Harare, Zimbabwe.

Tel: -263-4-759437/9

fax:+263-4-748347

tlx: 26208 SAMAT

asist@mango.zw

Advisory Support

- Wilma van Esch
- Marit Due Langaas

C/OILO Area Office, P O Box 9212, Dar-es-Salaam, Tanzania.

Tel: +255-51-66026/9

Fax: +255-51-66004

Tlx: 41126 ILO/DAR

ilo.asist.dar@hnettan.gn.apc.org

Information Services and Training

- **David mason**
- **Jan Fransen**
- **Angela Kabiru**

P O Box 60598, Nairobi, Kenya. Tel: +254-2-560941/5

Fax: +254-2-566234

Tlx: 22486 ASIST KE.

ilo.asist.nairobi@arso.sasa.unep.no

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THE WORK OF ASIST

ASSIST is a broadly based programme of advisory services, information dissemination and training. It was established for the support of construction and maintenance of rural and urban infrastructure works in Sub-Sahara Africa, using labour-based methods.

With the ultimate aim of promoting employment creation and income generation, ASIST provides the following services from a small team of nine specialists based in Harare, Tanzania and Nairobi, who work closely with a network of leading international consultants in the field of labour-based technology and rural transport.

ADVISORY SUPPORT

Provides policy advice technical, organisational and managerial support to labour-based infrastructure projects and programmes in liaison with the Southern Africa Multi-Disciplinary Advisory Team (SAMAT) in Harare, Zimbabwe.

INFORMATION SERVICES

Gathers and synthesises general and specific information on labour-based technology and related fields for dissemination to practitioners and other interested persons. Provides a technical enquiry service to respond to specific requests for information. Maintains a network database of contact persons.

TRAINING

Develops and implements international training courses for engineers, senior technicians and trainers in collaboration with the Ministry of Public Works and Housing, Kisii Training Centre, Kenya. Assist in setting up courses in national educational and training institutions.

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CONTRACTING OUT ROAD MAINTENANCE ACTIVITIES

A world-wide trend

By *Jean Marie Lantran*, World Bank, Washington, USA.

The new role of the Road Authority

In Africa and elsewhere, road maintenance tasks are increasingly contracted out to local firms (contractors and consultants) who are replacing the force account teams and the supervisory technical staff of the local Road Authority. This trend was initiated two decades ago and since 1987 it has been actively promoted by the Road Maintenance Initiative (RMI of the Sub-Saharan Africa Transport Programme (SSATP) The shift has been implemented on a massive scale and at a rapid pace in Eastern Europe and the Former Soviet Union, since the fall of the Berlin wall. However, in Africa, some countries are still in the early stages of the process.



Local contractors lead to increased efficiency and local employment

There are two key advantages in shifting from force account to contracting out road maintenance works. Firstly, the Road Authority (RA) concentrates on its core tasks: monitoring the road maintenance works helps to develop the local private sector and to promote employment.

Decentralisation. The road network is not an objective in itself, but is a tool for efficient transport. From the point of view of a road user, who must be given priority, a decentralized maintenance system works better, because the users' needs are more effectively identified and acknowledged by a local/regional RA representative that by someone in the capital city who rarely has the opportunity to identify on site the repairs that are needed.

Users organisations. Responsiveness to road users is enhanced at the national level by setting up a national road maintenance board where RA management meets with stakeholders such as chambers of commerce, truck associations, contractors and consultants. It works even better when regional committees replicate the scheme at the regional level. Another advantage is that users' organisations politically support the RA and lobby government during budget appropriations.

Focus on efficiency and quality. When RA staff execute the works themselves, they are constrained by the rigid bureaucracy and the cumbersome procedures which are the distinctive features of public organisations. Contractors are able to mobilise equipment and staff swiftly. They purchase spare parts and repair their equipment immediately, without having to wait for a series of approvals. Also, on RA is no longer constrained by rigid allocation of resources at local/regional level in the design and programming of works; the only constraint is the total amount of the budget. Isolated small-scale works can be carried out independently and with limited resources.

Furthermore, competition among contractors acts as a strong Darwinian regulator. A contractor that is not cost-effective or does not provide quality work loses its market share to competitors.

Contractors are more efficient

Take the case of spot patching a short section of gravel road, where 30 tons of laterite must be hauled from the borrow pit to the road. Frequently, the highly equipped force account team wait for its loader to be repaired. They have sent a request up the administrative ladder three months ago, but some visas are still missing. If the machine is available, it requires a day to go to the borrow pit, load the laterite, and return. The small contractor uses a small truck or a platform and hires local workers to extract and load the material by hand. The job is done in a single day.

Focus on quality.

Contracting out provides the flexibility to service various clients, such as the federal highway authority, regional highway authorities, the rural roads departments, city councils, or private customers. There is no need to provide each of these clients with its own brigades, workshop, borrow-pits, etc. The same contractors compete on these segments of the market and maximize the use of their resources. In addition, it is easier for RA staff to control the quality of works carried out by contractors, than to control their own performance!

Competition increases quality

It is very difficult to enforce a contract when there is only one party to that contract. The RA (owner) does not pay in time, so the RA (contractor) does not complain, but does meet the time- schedule and may even cut corners on quality to limit delays. The RA (engineer) tolerates this because it recognizes the constraints of the contractor. When there are different parties involved, each one tends to play by the rules and encourages the others to fulfil the contract.

Private sector development

Development of a suitable market. All roads continuously require maintenance which should be based on the needs. Most activities required for this are simple and can be undertaken by small contract with local, small and medium-sized contractors (SME). These SME's tend to use labour rather than heavy equipment, and local resources rather than imported ones, which promotes employment and reduces the

use of capital and foreign exchange.

The market for road maintenance

The market includes paved roads, gravel roads and trails, and is divided into national/federal roads, state/regional roads, local/rural roads and trails. Under a central planned scheme, paved and national roads tend to capture most of the resources. A decentralised economy is more flexible and more responsive to the user.

Quality promotion.

Most private clients of the SMEs do not care about quality control. The RA compels SMEs to meet contractual quality standards, and also to improve resource and site management practices. Former RA staff can become consultants and design/supervise road maintenance works and reinforce the local consulting industry by encouraging quality.

Small contractors in Ghana

In Ghana, a small/medium size contractor (SME) using light equipment and 300 workers builds a rural road at a lower cost than a fully mechanized force account team of about 30 workers. The use of labour-based methods may shift about 10% of the total cost from capital expenses (equipment purchase and maintenance) to wages. Many tasks can be done by hand or using small machines instead of large ones (powerful small compactors are now available on the market).

Regional development

Due to the dispersion of road maintenance activities, SMEs and consultants can be not only in the capital city, but also in secondary cities or in populated areas of the country-side.

Pre-requisites

- Reliable funding for road maintenance
- The availability and reliability of budget resources :-
in the single most important factor to adequately maintain the road network and develop a competitive market. The RMI has put its major emphasis on this critical priority, through the promotion of road funds and other reliable permanent funding schemes.
- The reliability of the funding is crucial:-
most small scale private contractors cannot survive payment delays. It also provides an incentive for contractors to enter the market and to invest in equipment and personnel in order to improve efficiency.
- Road tolling in Africa:-
Road tolling has little relevance in Africa.
In industrialized countries, a minimum of about 15 000 vehicles per day is needed to make a toll road scheme viable. In Africa, opportunities for road tolling are limited and most of the funds must come from the national budget. However, simple schemes based on the participation of the population in routine maintenance activities (ditch cleaning, pothole patching with local materials) have proved feasible and cost-effective.

- **Business friendly environment:-**

To emerge and grow, private firms need an environment which allows adequate resource management and promotes fair competition. Contractors should be free to buy material, machines and spare parts as they choose; to sub-contract and joint-venture; to borrow and to rent or lease equipment. All this may not be possible immediately, but the government should make it a priority to abolish all unnecessary and detrimental controls on how contractors use their inputs and concentrate on controlling the quality of their outputs.

- **Streamlined contract management:-**

Public contract procedures are often designed for large contracts, while simplified formats are more suitable for small scale works and small contractors. The introduction of standard simplified contract formats and procedures by the AGETIP has been one reason for their massive success for the development of construction SMEs. The single most important feature is the rapidity of payment (less than a week).

- **AGETIP:-**

The Agencies d'Execution de Travaux publics pour l'Emploi (AGETIP) have been created in 17 countries, over the last ten years, (mainly in Africa) as non-governmental organizations. They act as delegate-owner to manage hundreds of small labour-intensive public works contracts (less than US\$100 000). They contract out design, supervision and works and they have been very effective in creating employment and in promoting the development of SMEs.

- **Fair competition :-**

Establishing a fair and competitive environment from the start is crucial in developing a healthy construction industry (the most famous example is Singapore). Privatizing the former force account teams, while maintaining their former captive market, would not promote cost-effective but encourage rent-seeking. Competition is more important than private ownership, because competition eliminates the inefficient from the market.

There are several successful examples of competition between surviving force account organizations and independent contractors (United Kingdom), Nordic countries). The practical issue is to maintain fair competition, which requires the government not to bail out ineffective force account teams. Maintaining their former captive market would not promote cost-efficiency, but encourage rent-seeking.

Training schemes.

The RA staff need to be trained up for their new role, as do consultants who take over design and supervision, and contractors who generally come from the building industry to the road market. Training should focus on managerial and technical expertise. Training programs are a mix of seminars in classrooms (late in the day or on weekends, because businessmen cannot afford long absence from their firms), demonstration works (to show simple works easy to learn) and training works (where contractors are carrying out works under the assistance/supervision of trainers). Training schemes are more effective when beneficiaries pay for part of their costs. *Training schemes* Two schemes may be mentioned as excellent examples:

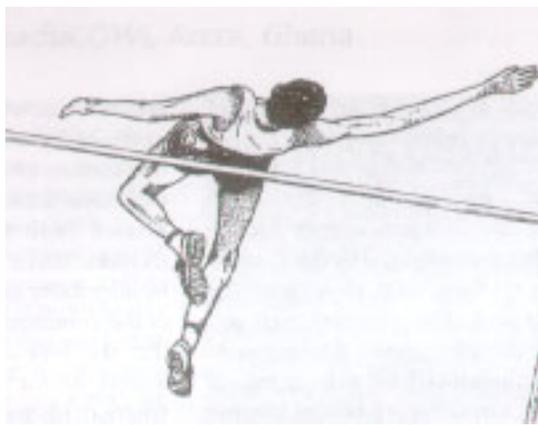
- (i) the ILO-managed training scheme for labour-based contractors in Ghana (and in several other African countries); and
- (ii) the AGETIP-managed scheme for new road contractors in Madagascar.

Equipment rental/lease.

Lack or scarcity of road equipment may be an issue for new road contractors, especially in countries where access to foreign exchange is limited. Passing on the RA equipment to contractors through renting/leasing schemes may help in the beginning. However, the basic constraint is the restricted access to foreign exchange, often associated with import restrictions and poor exchange rates. As long as these conditions exist, contractors are denied full efficiency and business sustain ability.

Financial assistance.

In developing countries, the absence of specialized banks for the construction industry may seem to be a big issue, and these financial schemes are costly and difficult to implement. However, simple and straightforward remedies have proved efficient and feasible: (i) quick payment for works done (and for material brought on site), as mentioned above, and (ii) advance payment granted under the contract for works, especially in multi year contracts. Construction banks should concentrate on financing mortgage loans, which strengthen the housing market.



Competition improves performance

Developing contracting step by step

Countries that are still at the early phase of the shift should look ahead with optimism and realism. The lack of capacity issue is not as insurmountable as it first appears. Every country feels the same in the beginning, but after a few years the problems diminish. It is appropriate to review the capacity of the building industry and to start where it is most vibrant, generally the capital city and the most populated areas. If the RA chooses to keep some force account teams alive, it should use contract-style arrangements aimed at paying for outputs rather than inputs and, also, set up a supervision system independent of the production units. The next step is to introduce competition and to develop it over time. In a few years the RA will discover that the most important and permanent issue, for industrialised and developing countries alike, is how to secure appropriate funding for road maintenance.

Lesotho:- The training in Lesotho was targeted at the contractors themselves rather than including supervisors, as is the case with most other projects. Also, the initial objective was for maintenance and regravelling only, with further training envisaged for rehabilitation at a later date. The Contractors' reaction was an appreciation of the training, but anxiety at the time spent away from their normal income-generating activities.

South Africa:- The resources available in South Africa for the 'mentorship' of contractors, through a

structured development programme, would be the envy of most other countries, and the emphasis is very much on teaching 'tendering' and a 'real world situation' from the beginning.

Uganda and Ghana:- Both developed simplified contract documents for routine maintenance, but in a 'one-client' situation, contractors are naturally reticent to test the documents legally and governments can take unreasonable advantage of this. The report is available from ILO/AIST.

The study team consisted of:-

- *Peter Bentall*
- *Alex Twumasi-Boakye*
- *Ron Watermeyer*

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Community Contracting

By Wilma van Esch, Technical Adviser, ILO/ASIST, Dar es Salaam, Tanzania

A community contract is an agreement between a community based organisation (CBO) and an external support agency (e.g. the city council or a donor agency) to carry out a development activity for the benefit of the community. The community plays a key decision role, along with the government and other external agencies. This is valuable in organising minor construction works which have a direct impact on the living environment of low income communities.

The main advantages of community contracting are that it strengthens the operational and management capacity of community based organizations (CBOs) and prompts the beneficiaries to participate in the project and feel responsible for it. Community contracts also create local employment, develop local capacities and lessen dependence of communities on government services.



Advantages

Community contracting has proved useful in urban unplanned settlements. Two pilot projects, in Kampala (Kalerwe) and Dar es Salaam (Hanna Nassif), involved community contracts for the upgrading of urban unplanned settlements. Although both projects used community contracts in different ways, they both demonstrated the usefulness of this approach as an alternative to the conventional commercial contract system.

Community contracts offer the community an opportunity to participate in their own development process. The community, together with a technical support team, decided on the type of infrastructure improvements. In Hanna Nassif, the detailed designs were continuously discussed with the community in workshops and adjustments were made according to the needs of the community. In this sense it is the community who takes all important decisions, with the technical team and city council there to define options and give technical advice. Technical standards should be affordable and adapted to the real needs of the community. This sometimes means that the official standard cannot be followed, as for example in Hanna Nassif where roads were narrowed in order not to demolish a large number of houses. The work is implemented via task rates which are established in close collaboration with the community. Community members function as gang leaders, storekeepers etc.

A second reason for choosing community contracts is that commercial contractors are only accountable to the government and/or funding agency, but not to the community (the users). For this reason private contractors often face big problems in working in unplanned settlements. The work is often implemented on the doorsteps of the inhabitants and all kind of unforeseen circumstances (illegal water pipes, small kiosk, etc) give rise to severe conflicts between the inhabitant and the contractor. This can result in compensation claims to the City Council. A third reason for using community contracts is that it acknowledges the skills and initiatives available in the community.

Most of the urban poor are living in unplanned settlements and many of them are under unemployed. By involving them in the upgrading of their living environment and providing them with employment opportunities, their capacity will be increased.

Furthermore, the community will probably feel a greater sense of ownership and hence maintenance of the created assets will be encouraged.

Contracting parties

Contracting parties are the authorities and community based organisations (CBOs). A technical team may assist in the implementation of a contract. The role of the authorities is to facilitate the local implementation of the programme.

The community should take care of some problems inherent to construction activities in unplanned settlements, but this must be facilitated through technical assistance and community animation. The community organization in its turn should effectively assume the responsibility for tasks involved in the contract: forming a (legal) association, obtaining additional resources, using local materials, executing the works and ensuring maintenance. The community contract should thus be based on the capacity of the community.

Developing a contract

The community contracts in hanna Nassif and Kalerwe were set up by a technical team in consultations with the community. The community formed a construction subcommittee which worked closely together with the engineer.

The community contract procedures had to be simple and flexible as they had to be understood by the wider community. The type of contract, furthermore, had to reflect the capability of the community and the control of the community over the work. The community contract should further specify the release of funds for construction activities from the city council account to the CDC's account.

Training of community members in designing contracts proved to be essential to develop sustain ability. In the long run the maintenance of the created assets should take place via community maintenance contracts.

Two types of community contracts

Kalerwe project: -the contract only mentioned labour as the responsibility of the community, while materials were purchased by the technical team. *Hanna Nassif project*: the community contracts are more complicated as both labour and materials are ontracted to the community. This is due to the fact that investment funds for the Hanna Nassif project are under direct control of the City Council and the

Community Development Committee (CDC).

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Routine maintenance

Contractors of the feeder road network in Ghana

By **Tonny Baek**, Project Manager, COWI and **Nils Bakke**, Road Maintenance Engineer, Department of Feeder Roads/COWI, Accra, Ghana.

Ghana has decided to base its feeder roads rehabilitation efforts entirely on contracting, and its routine and recurrent maintenance 90% on contracting. In order to plan, administer and monitor the maintenance activities, a maintenance planning and implementation system has been designed and tested (Maintenance Performance Budgeting System - MPBS). Implementation entails the application of both labour and equipment based methods implemented by contractors. Successful pilot implementation has proven field operations to be practical, cost effective and sustainable.

1000 Contractors

Ghana is currently in the middle of a seven-year programme to rehabilitate its feeder road network. The target is to have 12 000 of the total 22 000 km of feeder roads in a maintainable condition by the year 1999, and to keep these roads in a constant good condition by applying systematic and programmed routine and recurrent maintenance. To this end, the country is receiving financial assistance from a number of donor organisations, most notably the World Bank, USAID and Danida. COWI developed the Maintenance Performance Budgeting System (MPBS) under the DANIDA component of the National Feeder Roads Rehabilitation and Maintenance Project.

At the onset of the programme in 1992, only 3,600 km of roads were considered maintainable, and today this figure has reached approximately 6,000 km. To this end, Ghana developed currently about 200 road contractor (Class A1- A4), who carry out roadworks of different complexities, together with about 700 bridge and culvert contractors (Class B1 - B4). In addition, there are 93 contractors trained in varying out labour intensive rehabilitation and maintenance (Class C). Out of these, 54 have been equipped with light equipment (tractors and trailers etc.) under various credit arrangements.

What is the MPBS?

In order to cope with the maintenance workload in a systematic manner, it was decided to develop a Maintenance Performance Budgeting System (MPBS). Performance budgeting allocates resources and schedules activities on the basis of the need for roads to be maintained. It is especially suitable for the programming of routine, repetitive and measurable activities. The main advantage of the method is to concentrate attention on the work that needs to be done, making it especially suitable for planning work to be carried out by contractors. Priorities can be applied to operations.

To effectively manage maintenance, an MPBS should include:

- establishment of maintenance levels
- definition of work load
- determination of resource requirements
- establishment of procedures for planning, implementation, control, management and evaluation
- being simple and economical to install and operate.

Within this framework there are numerous options as to the establishment of standards and various alternative techniques and procedures that can be applied. MPBS can thus adapt to local conditions and procedures, which often proves essential for the success of a System.

MPBS consists of an Annual Budgeting System and an Operational System.

To effectively manage maintenance, MPBS should include :

- establishment of maintenance levels
- definition of work load
- determination of resource requirements
- establishment of procedures for planning, implementation, control management and evaluation
- being simple and economical to install and operate.

Annual budgeting system

The Annual Budgeting System plan maintenance and allocates resources at the national level. Maintenance requirements are based on average traffic density and climatic zones for individual roads. As traffic figures govern the intensity of operations on the individual roads, maintenance funds can be canalised to where the largest benefits are achieved.

In addition, the system can easily adjust the work programme, whenever less than the required budget is allocated. In such a case, it is important to concentrate on the activities which preserve the invested capital on as large a part of the network as possible, and sacrifice the less important activities. The feature starts with reducing the level of comfort by cutting part of the surface maintenance. The various activities are reduced by different proportions depending on importance, until a minimum level has been reached, where virtually only basic survival maintenance is carried out. Further cuts from this point will result in roads being abandoned entirely to preserve the rest. The strength of the feature is that the DFR is able to document the effect of various levels of budget cuts, and thereby are in a better position to argue their case.

The annual budgeting system can be operated manually, or it can run on a PC, using a simple spreadsheet programme. It results in an annual maintenance work programme and budget for the maintainable network in each of Ghana's ten regions, and a summary covering the whole country. The programme provides sufficient documentation for the annual maintenance budget application to Parliament.

Operational system



Part 2 of the MPBS consists of an operational system for implementing maintenance work on the feeder road network. The system operates entirely on the regional level, and although it will be possible to run force account operations, its main emphasis is on maintenance by contract. In line with Government policy, the system can equally well be operated at district level, once districts acquire adequate staffing and budgets.

The regional budgets, made under Part 1 above, serve as a guide for the regions in preparing Bills of Quantities for groups of roads. In order to be directly condition responsive, however, the Regional maintenance Engineer inspects the roads and takes into account the particular maintenance needs of the individual roads. On this basis, the actual works are specified on a monthly basis. The regional network is then divided into contract packages of up to 100 km each, depending on the workload identified in the field.

A Standard Contract Document including General Specifications and Activity Specifications, together with Bills of Quantities, form the basis of the contract. The Activity Specifications define the individual standard maintenance activities, and highlight the factors that are essential for obtaining an acceptable quality of work.

The entire funding for the maintenance operations is provided by the Government of Ghana. In order to operate effectively, funds are transferred to the regions, ideally on a quarterly basis in advance, but effectively as and when they become available. The Regional Engineer and his staff administer the contract and have authority to approve certificates and disburse funds. In this way, delays in payment are reduced, and emergency problems can be solved instantly.

At the end of each maintenance cycle, which normally covers a year, each region will have to issue a regional Quantity Standard Report, to feed back actual field data into the annual budgeting system under Part 1.

The pilot phase

The MPBS has been implemented as a Pilot Project since mid 1994 in Eastern Region and from mid 1995 in Western Region. Currently, about 1000 km of roads are under MPBS maintenance. In July

1995, after a year of pilot operation, an Implementation Report was issued, in order to harvest the experience gained during the first year of operation; to make recommendations for a nation-wide implementation strategy and to revise the 5-year maintenance programme.

During the Pilot phase, the MPBS proved a very flexible system, able to deal with routine operations and backlog maintenance, as well as actual rehabilitation works, in a cost effective manner. The roads have been kept in regular good condition throughout the period, due to the timely intervention built into the System. An important observation made in the Implementation Report is that both funds for routine maintenance and the availability of trained manpower in DFR are putting limitations on the nation-wide rate of expansion of the System. It has therefore been agreed to embark on a gradual expansion which can match the expected increase in budgets, as well as the recruitment and training of supervision staff.

Countrywide implementation

Funds allocated to routine maintenance of feeder roads have grown significantly during recent years. However, it is recognised that the funds are insufficient to counter the considerable maintenance backlog which has built up and to keep pace with the speed with which donor financed rehabilitation projects are completed and handed over to routine maintenance.

The System plans to expand to cover 2400 km in 1996. The length of maintainable roads is expected to have grown to 6,900 km by the end of 1996 and to 12,000 km by 1999, so there is an obvious scope for further expanding the MPBS. The roads that are brought to a maintainable level are however newly rehabilitated, so the challenge will be to keep the backlog maintenance from accumulating on the network. A full nation-wide expansion of the MPBS is not envisaged to be accomplished until the year 2000. In the meantime, the rehabilitated roads in the region without full MPBS will have to be given special attention.

FINDING & CONCLUSIONS

on the Maintenance Performance Budgeting System

- MPBS is flexible. It can handle labour-based and equipment-based road maintenance, routine and backlog maintenance and sectional rehabilitation
- MPBS is cost-effective, since it responds to actual road conditions.
- Roughness measurements have shown that the roads are regularly kept in good condition by the MPBS.
- Donors need to be pro-active in the establishment of maintenance systems. Providing initial funding for the maintenance on a declining scale over some years will enable maintenance systems to be up and running when the rehabilitated roads start feeding into the network.
- Costs of maintenance are lower when regular maintenance work carried out has been between US\$ 800 and US\$ 3,400. The higher costs represent heavy backlog maintenance. In Eastern region, average costs per kilometre have fallen from the first to the second year, due to a gradual catching up with the maintenance backlog.
- Recruitment and training of supervision staff is a key constraint in the expansion of the Maintenance Performance Budgeting System.
- Training of contractor supervisors is important to ensure understanding of the MPBS concept, and of the required standard of workmanship

- The minor contractors see the system as a potential source of steady income which in the long run will benefit their companies, despite the fact that no advance payments are given and work is spread over the year.
- Contractors with experient in practising task work usually find it easier to adapt to working within the MPBS framework. This give the small labour-based contracting companies an advantage over the equipment based companies.

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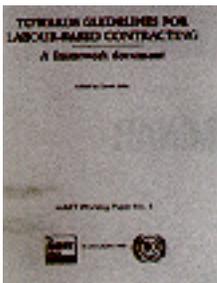
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Towards guidelines for labour-based contracting

Paul Larcher, Research Associate, Institute of Development Engineering, Loughborough University, UK.



Comparatively recently, governments and labour-based practitioners began to realise that they were overlooking a major resource: the potential of the private sector. In the last ten years a number of countries, most notably Ghana, have developed projects that utilise small private contractors to undertake roadworks contracts, rather than using public works departments. While the planners for these projects had access to information regarding the execution of labour-based roadworks, there was a dearth of information on the issues of using private contractors. Unfortunately, although a large amount of experience has been gained on the issues that need to be addressed when using small private contractors, there has been little progress in recording this knowledge.

The Management of Appropriate Road Technology (MART) project set itself the task of producing a set of guidelines on the institutional aspect concerning the development of the private construction sector. ILO/ASIST also acknowledged a growing need for guidelines, and this resulted in a joint MART and ASIST workshop in Harare, Zimbabwe, at the end of November 1995. The purpose of the workshop was to first review the information and experience that existed and secondly to draw up an outline and action plan for the production of the guidelines.

To develop a sustainable system of labour-based contracting, a number of institutional and operational issues should be addressed in the guidelines. Some of these issues are aimed at understanding the system, while others are directed at the design of a project. By addressing both operational and institutional issues, the guidelines address all parties involved in labour-based contracting. While programme designers would require information on all aspects, the institutional issues would be of particular interest to governments, donor agencies, and other policy making bodies. The operational issues would be more important to those on ground, changed with the day-to-day running of the programmes. Only by addressing all parties and all steps in the development of a project, can a sustainable labour-based contracting system be built.

The workshop report '*Towards Guidelines for Labour-Based Contracting: A framework document*' has been published and details the above mentioned issues. The report does not offer any answers to the issues raised, but merely offers a checklist for current practitioners. It provides a short term solution, preceding the production of guidelines on the use of private contractors, to assist policy makers and project designers to ensure that they have addressed the multitude of issues to be resolved when planning a project. The Report is available from the Construction Enterprise Unit, Institute of

Institutional issues to develop contractors

- What is the focus/objective of labour-based contracting?
- What is the market for labour-based contractors?
- What is needed to create an enabling environment for contractors? (commitment, legislation, taxes, etc)
- How should Contracting Development Policies look to develop contracting?
- What funding mechanisms are available and needed to develop contractors?
- What is the capacity of all parties?

Operational issues to develop contractors

- What Project Delivery Systems are needed? (strategies, (donor) support needed, etc.)
- What are appropriate technologies and standards for contractors?
- Who are the contractors? (profile of contractor; selection procedures; etc)
- What are the best contract procedures and documentation?
- What access to credit, equipment and labour do contractors need and have?
- What are appropriate methods of equipment maintenance and management?
- How can clients control and monitor contractors?
- Should labour laws be obeyed? (wage setting; conditions of work; etc.)
- What training programs do all parties need?

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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. 5,](#)
September 1996

Fifth regional labour-based seminar



Opening of the 5th ASIST regional labour-based Seminar

The honourable Minister of Employment and Social Welfare, Mr. D.S. Boateng, third from left, officially opened the fifth regional seminar. In his opening speech the minister said, **"..the (labour-based road) programme would not only lower the cost of construction, but more importantly, it is going to introduce local communities to a simple road maintenance culture, which hopefully might reduce dependence on Central Government and the Donor Communities for assistance."**

The fifth regional seminar for labour-based practitioners in the road sector took place from 22 to 27 April 1996 in Accra, Ghana. It was organised by the Department of Feeder Roads in Ghana, in collaboration with the ILO/ASIST project. The seminar was attended by a record of 103 registered participants, from 17 different countries. This indicates that the yearly regional seminar has increasingly become an important event for specialists in labour-based road-works in Sub-Saharan Africa.

Contracting labour-based road works

The theme of the fifth seminar was contracting development. In the past decade, contracting has to an increasing extent replaced forced account, and this is a trend which is likely to continue. Various countries in Africa, particularly Ghana, have experimented with contractor development with varying degrees of success. It was thus considered to be an appropriate time to share experiences and ideas and to learn from each other's successes and failures.

Outcome of the seminar

The seminar looked into all aspects related to the development of labour-based contracting. To mention but a few:

- Cost and quality comparison. A main concern of the seminar was the comparison of cost and quality of labour-based vis-a-vis machine-based works. these variables are essential in making a technology choice and in promoting labour-based methods. Despite various studies indicating that labour-based methods are in many instances cost-effective, the comparison remains very difficult.
- Training. It was recognised that ministries, contractors and supervising agencies require technical and management training to allow an effective and efficient transition from force account systems to contracting.
- Other forms of support. Small scale contractors need some form of assistance to survive in a competitive market. The assistance may be in the form of equipment, loans or guaranteed work for a number of years. However, one should be careful not to make contractors dependent on assistance, thus creating a non-sustainable system.
- Competitive bidding. Markets all over the world are becoming increasingly competitive. Labour-based contracting is not exception. However, this raises various questions :
 - can small scale labour-based contractors survive in a competitive market?
 - should labour-based and machine-based contractors compete?
 - can labour-based methods survive without government and donor support?
- Contract documentation. Contract documentation for small scale labour-based contractors should be as simple as possible, while still providing protection to the client and contractor.
- Equipment. labour-based contractors should be well equipped. how much equipment is needed, however, is open to debate. The client should create an enabling environment for contractors to equip themselves.
- Minimum wages. Contractors do not always pay minimum wages, nor do they always obey other labour laws. But should labour laws apply at all, and, if so, how can they be enforced? Wage levels should depend on local conditions, considering the cost- effectiveness of labour-based works, market rates of labour and other variables.
- Contractors' associations. Contractors' associations protect the rights of small scale contractors and should be actively promoted.
- Government policies. Government should promote labour-based contracting as part of its employment policy.

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Road maintenance centre-fold

Road condition as perceived by various stakeholders

Road user: to most road users, the condition of the road is judged by the riding qualities of the road. most road users are completely oblivious to things such as the conditions of the drains and the integrity of the substructure. This would only come into the picture if it affects the riding quality. **Engineer:** to the engineer in charge of maintaining the road, the elements that will disrupt the structural integrity of the road are of highest priority. These will vary depending on the terrain, climatic conditions and traffic loading. Thus in high rainfall areas, drainage maintenance of drainage structures will of higher priority to the engineer. **Length-person:** to the length-person, the most visible activities, appealing to the by-passer, give the highest 'reward'. It is thus not uncommon to find the length-person cutting back the grass on a km stretch of road, while the culverts are ignored. After all, well cut grass on the verge of the road is the most visible result of maintenance activities!

Maintenance requirements

The maintenance requirements of unpaved roads are influenced by several factors. The most important ones are:

- climatic conditions
- material properties (or the gravel)
- the level of traffic
- the terrain etc.

The prioritisation of maintenance activities will vary from place to place, but maintenance of the road draining system is generally at the top, since ingress and retention of water into the road structure is the biggest cause of structural defects on roads.

Level of maintenance for you network

The drawings on the following pages pictorially represent the level of maintenance activities that could be carried out with different levels of funding. The 100 and 300 US\$/km refers to the direct costs of maintenance and excludes supervision costs and the cost of tools. The pictures depict three things:

- the minimum level of funds required to carry out effective maintenance of unpaved roads
- the importance of carrying out certain activities over the whole section of road when funds are scarce rather than carrying out all activities over a shorter section
- the need for maintenance activities to be country or region specific taking into account local

traffic, climate and soil conditions.

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Country experiences with maintenance

Lesotho

Lesotho is currently using two systems: force account for 35 per cent of the maintainable network, and contractors for 65 per cent. Contractors appear to be more cost-effective.

Force account operations

A length person is appointed to maintain 1 to 2 km of road, depending on the terrain. He/she is supervised by the Regional Engineer's supervisor, who visits the site on a weekly basis, if mobility allows. The planning and allocation of works is done as the supervisor travels on the road. The length person is a full time employee and paid on a monthly basis.

The cost of this is about US\$ 1,450 per km, of which labour costs include US\$ 800 per km (based on an average of 1.5 km per worker and including supervision and overheads).

Contractors

A contractor is given 30 to 40 km to maintain on an annual contract. The work is scheduled on a monthly basis by the contracts supervisor, who also monitors the progress on a fortnightly or monthly basis. The contract is based on task rates which are set by the client and the contractor, and the number of workdays per month.

Suppose a contractor maintains 40 km of road. the average number of worker days he has available per month is based on 26.6 workers (40/1.5) working 22 days, or 587 worker days/month.

Payment of the contractor is done on the basis of the actual work performed. Therefore, the contracts supervisor measures the work at the end of each month. If tasks covering only 400 worker days have been completed, he/she will be paid for 400 days.

On average, the overall annual cost for this is US\$ 1,300/km. This is already cheaper than force account but the cost is expected to be cut even more as the productivity increases with more experienced contractors.

Zambia

Routine maintenance

The contractor is awarded an annual contract that will run throughout the year, but with a varying monthly turnover. The work is scheduled monthly, based on actual needs. The contractor employs his

workers likewise.

The sum of the contract is based on the engineer's estimate of the work included in the annual contract, and when the contract money is spent the contract ends.

The contract is supervised on a weekly basis, which will be changed to every two weeks after the pilot phase ends.

The work is measured monthly and the contractors are paid according to performance. The pay is US\$ 2.50 per worker, of which US\$ 1.50 will be spent on labour (the minimum wage). The remaining dollars cover tools, supervision and profit. to calculate the total cost of the maintenance, costs of the client have to be added.

Ghana

Planning maintenance

Cost effective maintenance requires a planning system that ensures that roads are maintained according to priority, and that the most important maintenance activities are carried out. The priority setting depends on the funds available, traffic density of the roads, actual condition of the roads, and the work load required. If the available funds decrease, then maintenance should concentrate on those activities that preserve as large a part of the network as possible, while less important activities (and if necessary less important roads) are sacrificed.

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ASIST NEWS

ILO-MART workshop on labour based contracting

In November 1995, the Mart initiative together with ILO ASIST, sponsored a workshop in Zimbabwe on the promotion of labour-based road contracting. The workshop was attended by 30 international specialists. Representatives of the ILO, World Bank, ODA and SIDA joined the MART team and experts from road authorities, universities and consulting and contracting organisations from a number of countries. The wide range of participant experience ensured that all aspects of contracting, planning and implementing of projects were thoroughly discussed.

The outcome was framework document for the preparation of sector guidelines. This will assist many developing countries seeking to generate sustainable employment opportunities, by combining appropriate construction and maintenance technology with private sector involvement. The framework document will be issued as a Working Paper.

MART equipment challenge

The MART Equipment Challenge has been formulated to complement existing MART activities, based on the identified need to develop certain types of intermediate technology equipment. The challenge is open to any individual interested in the appropriate technology sector who is able to draw on their experience and expertise to help with the development of specific items of equipment.

Concept designs are invited for the following types of intermediate technology roadworks equipment :

1. Manually operated one-barrel bitumen heater-distributor
2. Manually operated concrete paver press and testing apparatus
3. (Tractor) towed deadweight compaction roller

The requirements

The designs ultimately developed must be capable of being fabricated in a modest mechanical workshop in a developing country. They must be robust and capable of withstanding the hard in-service treatment expected. The equipment must be cheap to fabricate, using locally available materials and workshop equipment. Spares and maintenance requirements should be at an acceptable and manageable minimal level. The equipment must be capable of allowing work to be produced to appropriate and internationally acceptable standards. The requirements of each item of equipment are set out in their individual specification briefs.

Your role as concept designer

From your experience of the needs and conditions of the developing world, and your powers of creative and lateral thinking, you will prepare and submit a concept design for consideration by a panel of independent international experts. You do not have to be a skilled mechanical engineer to prepare a concept design worthy of consideration by the MART Challenge.

However, sufficient diagrams and supporting information must be provided to convince the evaluation panel of the feasibility of the concept design.

The reward

A prize of 500 (Sterling) will be awarded by MART for the best overall design. A prize of 250 will be awarded for the second placed design.

Applications forms

Further information, application forms and design briefs for each item of equipment are available from Mr Derek Miles at Loughborough University, Loughborough, Leicestershire, LE11 3TU Fax +44-1509 211079

CLOSING DATE FOR SUBMISSIONS : 31 December 1996

MART COMPETITION

The intermediate equipment prize for the competition sponsored by the British Public Works Association is currently being judged. The winner in the category on Contractor Development was Athie Lehobo of Lesotho, and he presented his paper at the Zimbabwe workshop. The competition papers will be edited and issued as further MART working papers.

ILO-MART workshop in Accra

Prior to the ASIST seminar in Accra MART held a two day workshop, in association with the ILO, to discuss issues of intermediate equipment. The 25 participants were drawn from a wide international range of labour-based construction experience.

Through plenary discussions the group produced a list of 28 key issues that were identified as influencing to availability, cost and performance of intermediate equipment. These issues are either institutional, operational, or related to training.

The workshop further identified 70 items of intermediate equipment. These issues are either institutional, operational, or related to training.

The workshop further identified 70 items of intermediate equipment. Those that were considered most important were grouped as either haulage, compaction, structures or otherwise.

The discussion then focused on the operational issues of the most important pieces of intermediate equipment. For each item of equipment the workshop identified the the operational information that was available, and highlighted research and development needs. The discussion concentrated on designs and specifications. In conclusion, the workshop participants agreed on a number of actions to promote research and development, improve standards, and increase availability of intermediate equipment. This is a next step in the development of guidelines on the specification, procurement and management of

intermediate equipment.

Technical Enquiry Service (TES)

The ASIST Technical Enquiry Service situated in the ASIST Nairobi office provides information on and related to labour-based technology on request to enquirers from all around the world. Every year we receive over 300 requests by letter, e-mail, phone, fax, and through visits to TES. TES actively collects and stores documents, both published and unpublished grey literature which is often difficult to access. The collection now has over 6000 records on or related to labour-based roadworks, urban infrastructure development, rural transport, and other related subjects. The documents include text books, technical manuals, training materials, project reports, journals, newsletters, articles, and other ephemeral material from all around the region.

A bibliographic database containing records of all the documents held in both the Nairobi and Harare Document Centres is maintained and updated constantly.

The database contains keywords of all technical documents to facilitate thorough searching and retrieval of relevant information to satisfy the requests we receive.

A commercial version of this database is available for US\$15 which you can install on your own computer for quick access to all the information that is available from the TES. The database software is easy to use and provides an extremely friendly use search interface that allows you to quickly search for information you need. You can then write, fax or e-mail an order to TES for any of the material you would like to receive.

In addition to our large information resources, TES maintains contact with several hundred experts in the field who can be called upon quickly to provide information the TES may not be able to supply from its own information sources.

MART working papers

The Management of Appropriate Road Technology (MART) team is currently finalising and publishing the following working papers (The number is the number of the working paper):

1. Towards Guidelines for Labour-Based Contracting: A framework document
2. The Use of Intermediate Equipment for Labour-Based Roadworks: A review of the current situation.
3. Expanding private Sector Construction Capacity: BPWA prize papers
4. Handtools and Intermediate Equipment for labour-Based roadworks: BPWA prize papers
5. Workshop Report: Intermediate Equipment for Labour-Based Roadworks.

Rural transport sphere of ASIST

By Fatemeh Ali-Nejadfard , rural transport expert of ILO/ASIST, Harare.

There is an emerging awareness in the African region of the scale of the transport burden undertaken by the rural communities, and of the degree to which it inhibits their social and economic development. There is a parallel recognition that conventional approaches to rural transport, with their near exclusive focus on roads and motor vehicles, is largely failing to address the transport needs of rural people.

This growth of awareness is reflected in a small, but growing, number of initiatives which are seeking to redress this imbalance. Such initiatives include measures that improve rural access and mobility such as :

- Accessibility planning to identify, prioritise and address the transport needs of the rural population, and to reduce the need for transport and mobility by siting of services and facilities close to the users (This is called: 'Integrated Rural Accessibility Planning' (IRAP)).
- projects to develop and disseminate low-cost, non-motorised vehicles and carrying devices
- improvements to the off-road, local-level infrastructure, including footpaths, tracks and foot bridges
- the use of labour-based methods in the rehabilitation and maintenance of roads. Certain projects, most notably the ILO- assisted Integrated Rural Transport Projects in Makete, Tanzania, and Malawi, have attempted to fuse several of these initiatives into policies for use in the development of broad programmes.

However, despite growing recognition of the scale of the problems, and of possible innovative ways of addressing them, rural transport generally remains peripheral to the policy-making process and budgetary allocations continue to be meagre. In short, transport continues to be understood primarily in term of infrastructure development and motorised vehicles. There is a substantial potential to promote a shift in the focus of transport policy in the African region. This would involve several components.

- raising awareness of the scale and nature of rural access and transport problems in the region, and of the degree to which and the ways in which they constrain the social and economic development of rural communities
- raising awareness of the range and permutations of policy instruments available to policy-makers to address these problems
- helping governments, aid agencies and NGOs to develop policies and programmes appropriate to the access and transport needs of their rural populations
- providing on-going support and advice to programmes and projects which are established, including training, research and development and participatory planning for rural accessibility.

Towards this end, an ASIST project has been initiated to enable the programme to provide a broader and more complete range of services to its target group. This project effectively started in May 1996 and it is based in Harare. Its services are extended to the Sub-Saharan Africa region; Zimbabwe, Malawi, Zambia, Tanzania and Kenya in particular. You will be learning more about activities of the project in the future.

Appropriate learning materials for civil engineering students

ILO collaboration with Universities from Africa and Asia

By Jan de Even, Senior Engineering Adviser, POL/DEV, ILO Geneva

The previous bulletin featured an article on the development of educational materials on labour- based civil works for use in undergraduate and postgraduate civil engineering education. These materials have now been widely disseminated to universities in Africa and Asia, as well as to those Universities in Europe and the United States with Msc programmes dealing with civil engineering in developing countries.

Recognizing the difficulties faced by many universities, whether these concern introducing new materials, networking or carrying out research, the ILO has embarked on programmes of collaboration with selected institutions. With financial support from the Swedish International Development Cooperation Agency (SIDA), an Inter-regional programme was initiated in September 1995 aiming to assist education institutions in undertaking work related to : (i) labour- based infrastructure development and maintenance; and (ii) rural transport planning. The programme has a duration of 2.5 years and supports initiatives which help to improve the collaboration between the institutions and which facilitate the introduction and acceptance of local resource-based technologies and rural transport planning as part of the courses.

The programme was introduced during a workshop in Johannesburg, and subsequently action proposals were developed by participating University representatives from Ethiopia, Ghana, Kenya, South Africa, Tanzania and Zimbabwe. Another workshop held in Bangkok in October 1995 led to action proposal from the Institute of Technology in Cambodia, a University and Polytechnic in Laos, Universities in Indonesia, the Philippines and Vietnam, and the Asian Institute of Technology in Bangkok (the host of the workshop). The programmes of collaboration include a variety of activities, ranging from research on issues which are relevant to the implementation of labour-based road works and/or rural transport planning in a country- specific context, to the setting up of a network between the learning institutions and initiatives to introduce and test the "development engineering" learning materials which now exist for undergraduate and postgraduate students.

A first stock of the progress was taken with African University representatives at the time of the recent Department of Feeder Roads/ILO ASIST seminar for labour-based practitioners in Accra. The rural accessibility planning component of the programme is being set up in close collaboration with ASIST's Rural Transport Adviser, the International Forum for Rural Transport and Development (IFRTD) and the Rural Travel and Transport component of the Sub-Saharan Africa Transport Programme (SSATP).

Diary of forthcoming events

September/December 1996

Small and micro Enterprise Promotion and Financing, 23 September to 13 December 1996. Venue: Development and Project Planning Centre, University of Bradford, Fee of GBP 7950. - includes tuition, accommodation, and course material, but excludes food.

January/February 1997

Training of Trainers Course, 27 January - 28 February 1997, Kisii Training Centre, Kenya. Cost of USD 3600 includes accommodation, meals, training and course notes.

May/June 1997

International Senior Technicians Course, 12 May - 27 June 1997, Kisii Training Centre, Kenya. cost of USD 4500 includes accommodation, meals, training and course notes.

June 1997

TRL-Intech Associates annual Course on Appropriate Technology Roadworks for Developing Countries. 23-27 June 1997, Easherhampstead Park, UK (Application forms are available).

PINBOARD

KTC study tours

The Kisii Training Centre organises Study Tours for small groups of senior people who want to get a quick but comprehensive overview of how labour-based roadworks programmes are un in Kenya. Study tours will be tailor-made according to your needs.

Bulletin No.6

The next issue of this ASIST bulletin is expected in February 1997. The theme will be: appropriate technology and equipment. The theme has been selected from the findings of the survey conducted in the last bulletin.

Please feel free to write an article on the theme and/or on your project!

AN INVITATION TO LABOUR-BASED ENGINEERS, TRAINERS AND PROJECT MANAGERS

ILO/ASIST invites labour-based practitioners who wish to be registered on the ASIST labour-based practitioners database to forward updated CV's to: David Mason

Training and Information

Services Manager

ILO/ASIST

P O Box 60598

Nairobi, Kenya

Registration on the ASIST database enables the ILO and other labour-based organisations to be aware of the latest contact with labour-based specialists in the event that short term or long term opportunities arise for project managers, technical trainers, labour-based contractor trainers, project evaluators, programme formulators and developers and labour-based researchers.

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BOOK REVIEWS

Road maintenance and regravelling (ROMAR) using labour-based methods. Handbook and Workbook. *C. Andersson, A. Beusch, D. Miles.* 1996, IT Publications Ltd. ISBN 1-85339-349- 5 & ISBN 1-85339-348-7

The Road maintenance and Regravelling (ROMAR) Handbook and Workbook are written for managers of small construction businesses and designed to complement the improve Your Construction Business (IYCB) series. They were produced as part of a contractor development programme in Lesotho, in association with the labour Construction unit of the Ministry of Works and assisted by the ILO. The two books aim to offer the technical and managerial knowledge that would be required for a construction business to expand into the road maintenance and regravelling sector.

Each book has ten chapters covering the same managerial and technical topics. the handbook covers the theories and practices involved with each topic. The workbook offers exercises, with worked example solutions, for the reader to test their understanding of the theories discussed in the handbook. The two books are split into two parts, covering the principles and practices of road maintenance using labour-based techniques.

The initial chapters of the first part introduce the reader to the standards, techniques and terminology use in road maintenance. These chapters lead into the choice and design of equipment and handtools and the organisation of labour-based roadworks. The second part of the two begins with a chapter on road maintenance, covering in general the different maintenance systems and management techniques. This chapter is followed by two chapters which cover in detail the activities involved in maintenance and regravelling. The final two chapters cover pricing and bidding and managing people.

They build on the experience gained from the IYCB workbooks and handbooks concentrating specifically on road works issues.

The ROMAR books are useful for both new and experienced roadworks contractors. They offer essential information for new contractors to expand their business into the roadworks sector, but at the same time allow more experienced contractors to address and improve particular areas of their business by dipping into the relevant chapter.

Paul Larcher

Loughborough University, UK

Available from ASIST Information Service, Nairobi. Price: Handbook: US\$25.00;

Workbook:US\$19.50.

Road maintenance manual Ministry of Public Works, Roads Department, Kenya, November 1992

This maintenance manual explains in detail each maintenance activity that need to be carried out on unpaved roads. It follows very closely the style of the Technical Manual developed under the same programme. The manual is available in very handy A5 format with a wire bound spiral for easy opening.

In the section of maintenance operations, routine maintenance would be the most interesting for technicians actually involved in the execution and supervision of maintenance works. The manual has been written for a lengthman maintenance system and the examples are very specific to the Kenya programme. Nevertheless, it is so comprehensive that it would be difficult to find situations where it would not be applicable.

Collins Makoriwa, ASIST Harare Available from ASIST Information Services, Nairobi. Price: US15.00

Road contractor promotion and employment generation in Africa Eugene Rausch. 1994, GTZ, Germany

Developing a contracting industry in Africa will one way to reduce the growing under- and unemployment. The traditional way of doing this has been to provide emerging contractors with technical assistance. however, over the years the core problem has proved to be the administrative and financial capability of the contracting authority.

Therefore in parallel to developing contractors the main efforts should be to, give institutional support to involve authorities, either the traditional ministries or new agencies, to cope with the transformation. This book addresses problems created by both government institutions and donors and shows how these problems can be solved. It cites country specific examples to highlight certain issues.

Maria Lennartsson, ASIST Harare

Available from GTZ, Transport & Construction Division, OE 4130, P O Box 5180, D-65760 Eschborn, Federal Republic of Germany.

Development of contract documents

The Labour Construction Unit (LCU) in Lesotho has developed a simplified Contract Document for labour-based routine maintenance (40pp) and a bidding document for labour-based rehabilitation/regravelling works (116pp). The documents are available from ASIST Information Services, Nairobi. (Price on application).

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Project News

Project news is based on contributions from various field personnel in the respective countries. Thank you for all your letters.



Training at KTC

Ethiopia

A Sida funded, HIFAB executed, support programme to the road sector in the Amhara Region has just started. One component will be the rehabilitation of 90 km of road using labour-based methods. Other components in the project will be to establish a maintenance system using lengthmen and give general support to the Rural Roads Authority in the region, for them to develop an organisation capable of taking on the Region's rural road network. The project Manager, Leif Oxheden, is placed in Bahir Dar and a Roads Engineer, Kar Sundin, in Desie.

An Italian funded, ILO executed, road programme is about to start in Amhara and Tigray Regions. A total of 60 km of roads will be upgraded, using labour-based methods. The CTA will be based in Mekele and a national professional in Desie.

Maria Lennartsson, ILO/ASIST, Harare, Zimbabwe

Kenya

Training

KTC carried out a lot of training for the Danida funded part of the Minor Roads Programme in the coast province. KTC also completed a training course for MRP stone masons on the construction of stone arch bridges (see picture above). A three span masonry arch was constructed by trainees over the Awach river in Homa-Bay district near lake Victoria.

For the Roads 2000 road maintenance programme, both roads inspectors and roads overseers have been introduced to the concepts and techniques of labour-based routine maintenance and preparation activities. The course participants were a mixture of supervisors from both labour-based and non-labour-based branches of the roads department. The participants were taken mainly from the Eastern province of Kenya, as this seems to be the most likely to commence full implementation of the programme with the aid of donor funding.

The training strategy for R2000 is to hold orientation seminars for the district staff in the KTC, to assist with the planning of implementation, and then hold skill development courses within the districts to get things moving on the ground.

One of the factors within R2 is the use of local labour-based contractors. This requires a contractor development programme with Kenya. A start has been made by the labour-based contractor training programme, assisted by SIDA funding, in Central Province. This programme aims to develop a contracting capacity on the medium size contracting level. Contractors are trained to carry out gravelling contracts on Minor roads. Approximately 20 contractors have been trained so far and are now ready to bid for gravelling contracts tendered by the Ministry. Currently, some six labour based contracts are on-going. David Jennings, Training Adviser; KTC, P O Box 3075, Nairobi, Kenya The Roads 2000 maintenance programme

Roads 2000 is a major initiative by the MOPW & H to improve the maintenance of classified roads (approximately 63 000 km) by introducing appropriate technology on a road network basis for the selective rehabilitation, spot improvement and maintenance of the road network.

The Pilot Project consultants have completed the draft works manual, which explains how to plan, report and monitor in the programme. Also, the KFW have been financing the modification of the Roads 2000 pilot project equipment.

The 1995/96 financial year is the second year of collection and utilisation of the fuel levy to cover road maintenance. All the funds being collected from the levy are being used for road maintenance works and purchase and repair of essential equipment and supervisory vehicles. At present, only 305 of required road maintenance funds are available from the levy and treasury allocations.

The Government is optimistic that the donor community will bridge the gap between the available funds and the optimum requirements until the fuel levy funds and treasury allocation have grown to the level that will make the country self reliant in road maintenance funds. It may take 5-7 years before this level of funding can be reached.

One of the main ingredients of the strategic plan being prepared by the Ministry of Public Works and Housing is the development and encouragement of small and other potential contractors, so that they can gradually take over a bigger share of the road maintenance workload in the country. The aim is for more than 90% of all periodic maintenance works to be done by the private sector. This will include big and small contractors. The Ministry is now considering carrying out trials of routine maintenance through

contracts.

Samson Akute, Chief Engineer (Roads), ministry of Public Works and Housing, Kenya

Lesotho

The Labour Construction Unit has responsibility for about 2300 km of national rural roads, of which only 900 km are currently maintainable. The rest have to be upgraded over the coming years, at the rate of 70 - 100 km/yr, depending on the availability of funds.

Since the establishment of the Unit in 1977, most senior technical positions have been held by expatriate personnel. With the help Of SIDA and ODA, the LCU started training its senior technicians to a civil engineer level to localize all senior technical positions.

The holding of senior technical positions by TA staff reduced from 90% in 1993 to 17% in May 1996. Currently there are only two Tas on direct line position out of thirteen engineer positions.

With the upcoming Road Rehabilitation and Maintenance Project (RRMP), which is planned to commence by July 1996, the Centre's mandate has been increased. It is assumed that the Centre will carry out training with private contractors and with both labour-based and equipment-based contractors. The capacity of the Centre will be increased to accommodate the new responsibility. A dormitory for sixteen trainees will be constructed using the project fund during 1997.

All trained contractors are awarded routine maintenance contracts and one direct regravelling contract. All subsequent regravelling contracts are awarded through competitive bidding. Although some have shown lack of ability in costing and commitment to abide by the contract agreement, the overall assessment is satisfactory.

The first 8-10 successful contractors will be selected to undergo training in construction during 1997/98. They will then be eligible to tender for upgrading works. As construction requires more resources and commitment from the contractors, privatization in this sector will be gradual and some force account units might be working in parallel, mainly in the difficult/mountainous parts of the country.

The Civil Works Section (CWS) is another department that uses labour-based methods to construct access roads in the rural areas. From February 1996 this department has been officially transferred from the Ministry of Home Affairs to the MoW. It is not yet clear what will be the administrative arrangements concerning the new department in the Ministry. There are two recent studies, i.e. the National Transport Study (1993) funded by ADB and the ILO funded Study on the Proposed Merger of LCU and CWS (1995), that recommend the proposed merger. No decision has yet been made. Both reports recommend that the merger has to be carefully planned so as not to affect the performance of the two departments, as they use different approaches to field activities, i.e. LCU uses cash paid labour where as CWS workers are paid in terms of food and a small amount of cash incentive.

Under RRMP a Road Fund and Road Authority will be established. The government has already gazetted the Road Fund legislation and nominated members of the Road Board. Th Board will be functional by July 1996. This will give the LCU a continuous source of income for the maintenance an upgrading of all its rural roads.

Mr Carl Berentsen, CTA Entrepreneurship Development Programme, left Lesotho at the beginning of December 1995 after completing his assignment.

Mr Augustus Asare, Regional Engineer North, left Lesotho at the end of January 1996 after completing his assignment.

Dejene Sable CTA LES/92/M02/LES

Maseru, Lesotho



Preventing erosion by local means.

Malawi

The Pilot Integrated Rural Transport Project (PIRTP) underwent an in-depth review in October last year. The review team recommended to extend the project for another six months to December 1996 to fully test planning methodology on a district wide scale.

Other recommendations of the review were: to further develop and co-ordinate credit schemes for villagers, to enable them to purchase intermediate means of transport (bicycle, trailers, ambulances, oxcarts, etc) to develop guidelines, strategies and recommendations on infrastructure development and self help related issues to further disseminate and promote Integrated Rural Transport Planning in the country and to develop training manuals for district level authorities.

In the light of decentralisation, a District Focus Programme has been introduced. In six districts the programme will build up capacity in the administration of the district, with the aim of empowering the district to plan and execute their own development activities. A District Planning System has also been designed and is presently being tested in six local areas.

PIRTP has started an intensive exercise in Dedza District. The main activities of this exercise are the surveying of 955 villages, using questionnaires and key informants to obtain information on the accessibility of people to different sectoral services. The project has opted for local enumerators to conduct the survey. These are representatives of the Area Development Committees of the nine district areas.

In all villages information is being collected on travel times, travel distances and access problems in reaching public services in all possible sectors (like drinking water, health facilities, markets, etc.). The data is then entered into a computerised database. After data entry, the figures are analysed and the main output is the Access Indicator (AI) for each village. Based on these Ais a planner can set priorities.

The analysis will result in Access Profiles, which include not only hard figures but also priorities given

by the (future) beneficiaries, including main access problems and project proposals.

Access Planning and the District Planning System come together since the District Planning System initiates proposals at the grassroots level and lets these come up through the district administration. At each level the proposals are screened and some forwarded to a higher level. Access Planning will provide the basis for active planning and priority setting. Rob Dingen, ILO/PIRTP, PO Box 265, Lilongwe, Malawi

Mozambique

New arrivals included Tilde Brunnberg and Karin Andersson, Associate Experts, in November and Engineers Antonio Bezerra (April), Jairos Mavhiza (March), Hormoz Mottahedi (April) and Jens-Tranum Kristensen (May). Engineer Carllysle de Souza left in August.

Provisional figures for 1995 show a total of 440km of rehabilitation, about 66% of the target for the year. Overall productivity was reduced down rather by the late mobilisation of some brigades achieved about 80% of their targets.

Currently there are 22 operational brigades and 7 mobilising. Further funding has been secured for another 9 brigades from 1996 onwards and proposals currently under consideration could result in a further 10 brigades, at least some of which will involve contractor development/NGO execution.

Increased management problems are foreseen as a result of this donor enthusiasm.

The institutional geography continues to change rapidly. Latest developments include the establishment of a Tertiary Roads Development and the announced intention that RFP will take over all tertiary road maintenance (about 13800km).

1996 funding for TA has been assured by a cost sharing agreement between ASDI and UNDP. ASDI has also recently extended their General Support to FRP up to the end of 1996.

If there is a future for FRP beyond the end of 1996 it clearly involves the transition from rehabilitation to longer term maintenance. Proposals for extension of donor support to operations and equipment are to be prepared in early 1996. John Clifton, CTA, Feeder Roads Programme, PO Box 4595, Maputo, Mozambique, MOZ/91/007

Namibia

The trial contracts of contractors started in June 1996. This last phase of the training programme required that each contractor tenders for and constructs a one kilometre road section with the assistance of the trainer. The small capacity of the trainee contractors dictates that some form of support be provided to them, especially with regard to equipment. The Department is therefore hiring out the project equipment to the contractors at semi-commercial rates initially, on the understanding that the contractors are free to source equipment from the open market if they prefer to do so.

The trial contracts are expected to be completed in August 1996. Thereafter, the contractors will be required to tender for, and execute, new road construction as well as maintenance works. A temporary equipment pool will be established to assist the contractors proceed with the works until such time that they are able to privately procure the necessary equipment. The contract will contain the necessary amendments to accommodate labour-based operations. A more labour-based specific contract

documentation will be prepared in due course.

During the expanded phase (scheduled to start in September 1996), each labour-based road project will be considered as a district project. Project documents will be prepared, tenders will be called for and through the normal procurement process, contracts will be awarded the successful bidders. Roads constructed in this manner will also be maintained by private contractors. The work will be executed under the supervision of the Department.

There is a need to share labour-based experiences with other sectors of the economy, with the prospect that its wider application would lead to alleviation of unemployment. Presently, a committee charged with the responsibility of drafting a national policy on multi-sectoral application of labour-based works is in the process of being formed. Justin Runji, Department of Transport, Private Bag 12005, Windhoek, Namibia.

South Africa

In June 1996, UNDP entered into an agreement with ILO and the Department of Public Works (DPW) for ILO to participate in an evaluation of the 27 million Rands Community Employment Programme (ECP) of the National Public Works Programme (NPWP). Following the evaluation work of the ILO, a detailed project document of the ILO, a detailed project document of technical co-operation between UNDP/ILO and DPW is envisaged, designed to start in 1996 provided that suitable additional donor support can be arranged.

At this early stage it is envisaged that ILO support would be in the form of international technical expertise in Labour Based Technology, in a wide range of sectors involved in infrastructure works, training (both technical and managerial) and general institutional strengthening to the NPWP.

Mike Shone, ILO/ASIST, Harare, Zimbabwe

Tanzania

ATATAP (Appropriate Technology Advisory and Training Project) This NORAD funded project recently achieved an important milestone with the preparation of the National Programme of labour-based works for the Roads Sector 1996/97 at a workshop on the programme convened by the Director of Roads, Mr Urio.

The planned 1996/97 labour-based roads sector programmes budget will now require formal cabinet approval.

Recent studies on the potential of labour-based works have been followed by labour-based technology awareness-raising seminars for Regional and District engineers. Work is now well underway for the completion of a new labour-based roads sector technical manual in 4 volumes.

A technical training manual for the training of roads foreman and supervisors is also due for completion in 1996

ILO/NCC Labour-based Contractor Training

Mr Osei Bonsu, the ILO advisor assigned to the NCC's Mwanza and Arusha contractor training camps, has recently completed a very successful assignment and new contractors will graduate from the

Mwanza training corps in July 1996. Unfortunately, not all trained contractors currently have access to contract works and they eagerly await the contract procurement changes in the Ministry of Works, as well as the release of funds from the Ministry of Works National Labour- Based Roads Sector programme for 1996/97, which will be funded largely by the Government's own Roads Fund.

The Ministry of Works in Tanzania is also currently working on new arrangements to facilitate access for small labour-based contractors to Government contracts.

NCC are preparing an expansion of their training programmes, designed to help labour-based contractors take on additional rehabilitation and maintenance works in more regions. Mike Shone, ILO/ASIST, Harare, Zimbabwe

Uganda

The Feeder roads component of the Uganda Transport Rehabilitation Project is now being implemented by the Ministry of Local Government with technical assistance provided by Norconsult International A.S. The project is to be implemented within four years in four districts in Eastern Uganda, namely Mbale, Kapchorwa, Tororo and Pallisa. Some issues from the preparatory phase still remain to be completed such as the procurement of the contractor's equipment. As delivery is not expected until December 1996 the standard contracts cannot commence until early 1997. The Project Team has obtained offers from financial institutions for leasing of the equipment to the contractors on behalf of the MOLG. Their charges would however add a considerable financial burden to the contractors and would, as it seems, make it impossible for the contractors to pay back the equipment loans within the project period. An offer to administer a simple pay back scheme without the inclusion of the civil engineering and equipment maintenance aspects in the leasing arrangement is now being considered.

Following a road condition survey, the rehabilitation and maintenance requirements have been matched with the available funds and both the number of contractors and the equipment package for each contractor will be re-assessed.

The categorisation, of contractors into full rehabilitation, spot improvement and culverting contractors as per the project design appears difficult. It is not deemed logical to limit the scope of works for contractors to culverting only as the road sections requiring culverts need spot improvement or rehabilitation to render them passable. Consequently all contractors and their foremen received the same training and are now being tested and screened.

With the delays in the purchasing of contractor equipment, the trial contracts were started with temporary arrangement for equipment. The lack of rollers is of concern as it prevents efficient production in the wet season and under difficult soil conditions. To date only about 20 km roads including the training road have been rehabilitated.

The first training cycle which commenced in September is now complete and to date 15 Foremen (22 weeks), 26 Assistant Foremen (16 weeks) and 14 contractors (workshops totalling 14 days) have been trained. District Administration technical staff have also undergone training, but due to vacancies and non qualified staff filling some of the positions, this effort has to be continued.

In the budget for 1996/97, feeder roads are given top priority which gives some hope towards and improvement in the all funding situation.

Jon Hongue, Project Co-ordinator, Norconsult A.S, P O Box 2237, Mbale, Uganda.

Zambia

The Labour-based division of Roads Training School is operating at its maximum, with more and more clients asking for training support. In addition to the normal course programme of providing training in labour-based techniques for road gangers, the school has on a pilot basis started training small-scale routine maintenance contractors. These contractors have been awarded off-carriageway maintenance contracts on the main highway from Kafue via Lusaka to Kabwe. The contracts are funded from the national Roads Fund. The Board managing the fund are now asking the school to continue training as many contractors as they possibly can, as they would like the same set-up along the major road network.

A new, UNCDF and UNDP funded, ILO executed road project covering five Districts in Eastern Province has just started. The CTA for the project, Frans Blokhuis, will be based in Chipata. The targeted output of the project is to rehabilitate 450-500 km of feeder roads using labour-based methods. The work will be carried out by contractors, and the Roads training School in Lusaka will carry out the training. In addition a maintenance system using small, labour-based contractors for routine maintenance will be set up in the Districts.

Maria Lennartsson, ILO/ASIST, Harare, Zimbabwe

Zimbabwe

The Department of State Roads (DSR), with assistance from donors, intends to train and equip small locally based contractors to undertake the rehabilitation and maintenance of rural feeder roads. This is in line with the governments's privatisation policy. The contractor development programme is a continuation of the DANIDA/SIDA-supported programme. The current programme has three components. These are:

1. Rehabilitation Component: the rehabilitation programme is focusing on the building up of the labour-based rehabilitation capacity from the present 160 km per year to about 320 km per year, by gradually replacing the current four force account units by 16 contracting firms.
2. maintenance Component: this will involve the establishment of maintenance on all rehabilitated roads using labour-based methods, and introduce this system into DSR's regular maintenance programme.
3. training Component: this component involves the preparation of a comprehensive training programme by preparation of appropriate training manuals and identification of training aids and facilities and carrying out training.

The current programme is expected to last for five years from June 1995. This includes one year of preparatory period in which:

1. suitable tender documents and specifications are prepared
2. training needs are assessed, suitable training materials are prepared and training aids and facilities are identified.
3. contractors are identified and recruited based on selection criteria to be developed for the purpose.
4. a labour-based contract supervisory capacity is put in place etc.

The programme is expected to be jointly financed by the governments of Zimbabwe, Denmark and

Sweden. In accordance with the current transport sector assistance agreement between the governments of Zimbabwe and Sweden, SIDA support will be available up to the end of December 1996.

Negotiations are currently underway between the three countries to map out future financing arrangements for the programme. DANIDA/SIDA have jointly engaged a consultant to look into the matter. There are, however, indications that future DANIDA/SIDA joint financing is possible from January 1997.

The programme is coordinated by the labour-based development unit. LBDU is currently staffed by two local engineers, M. Chaka and V. Magaya, and two expatriate engineers, A. Kidanu and U Brudefors. Mr U Brudefors joined the unit as a training specialist in October 1995. Two more engineers are expected to join the unit soon. Asfaw Kidanu, Team Leader, LBDU, CY, 263 Causeway, Harare.

From MART bulletins to transport

The Management of Appropriate Road Technology (MART) initiative published its third and final bulletin in May 1996. Since the Overseas Development Association (ODA) now offers a comprehensive sectoral newsletter, called: 'Transport', it was considered more appropriate and efficient to publish future project updates in the ODA newsletter. The MART team automatically passes names of its readers to the ODA newsletter. The MART team automatically passes names of its readers to the ODA Transport mailing list.

"Transport" will be produced bi-annually by the Transport Research Laboratory (TRL) in England. The objective of the newsletter is to keep readers up to date with all developments in transport activities carried out under its Technology Development and Research (TDR) programme plus other relevant projects funded from other sources.

The newsletter will be available free of charge and the expected readership of ODA Newsletter in 5000.

For more information, contact Linda Pasley at Transport Research Laboratory (TRL), Old Workingham road, Crowthorne, Berkshire, RG45 6AU, UK.

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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. 5](#),
September 1996

Your thoughts

about the ASIST Bulletin and Technical Enquiry Service (TES) Thanks very much for responding to our Readers Survey in our last issue of the ASIST Bulletin, No.4. We received more than 120 responses from over 15 countries, including Nepal, USA, the Netherlands, South Africa, Botswana, Tanzania, Zambia, Ghana, Zaire, Uganda, and Kenya. It was our first Readers Survey and we are most encouraged by your responses.

Evaluation results

- 70% of you think the bulletin is good; 26% think it is very good
- 80% find the bulletin interesting; 15% find the bulletin very interesting
- 75% feel the themes covered were current; 20% feel the themes were very important
- 57% of you feel that the articles are not comprehensive enough
- Most of you find the bulletin's outlook clear and inviting to read
- 71% feel that there should be more issues of the bulletin each year
- Many of you are not aware of the existence of TES, and only 30 per cent of you have actually used this service.

More issues

Much to our surprise we learnt that most of you feel that there should be more issues of the bulletin published each year, and possibly a quarterly publication (or bi-monthly, or monthly!). Currently our resources allow for only two issues annually in the future.

Interesting themes

We have categorized the topics you indicated you would like to read about in future issues of the Bulletin. The theme of this issue as you know is contracting maintenance, and many of you expressed interest in this subject. Other topics you indicated you would like to read more about include tools and equipment, management of labour-based projects, current labour-based techniques and practice, and urban infrastructure development. These will definitely be covered in the next issues.

Your contribution

We are really pleased that most of you would be interested in writing an article for the bulletin. Please feel free to do so and send us articles on the themes, news from labour-based projects and activities in your countries, and any other information you would like to share. The next theme will be: tools and equipment.

Technical enquiry service

We learnt that most of you are not aware of our information services despite the adverts for it in previous bulletins, and we will try to improve this. Though we have limited staff, we will try to develop a more pro-active policy, to reach out to you instead of waiting. One suggestion is to establish an e-mail network.

Yearly, we receive about 300 requests for information. Our bibliographic database covers at present over 6000 documents, and is available on a diskette for US\$15. Please feel free to join those who already make use of the services.

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