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1 Introduction

1.1 Background of the seminar

The fifth regional seminar for labour-based practitioners in the road sector in Sub-Saharan Africa took place over five days from 22 to 26 April 1996 in Accra, Ghana. It was organised by the Department of Feeder Roads in Accra, in collaboration with the ILO/ASIST1 project. The theme of the seminar was labour-based contracting.

The seminar was the fifth in a series of reviews of current practice in labour-based technology. The first seminar was held in Mbeya, Tanzania, in 1990. The second seminar took place in Mhales Hoek, Lesotho, two years later, the third was held in Harare, Zimbabwe, in 1993, and the fourth was organised in Johannesburg, South Africa, in 1995.

The purpose of the regional seminars is to bring together people involved in labour-based roadworks in Sub-Saharan Africa to discuss experiences and ideas. The participants learn from problems, successes and failures experienced in the various programmes and countries, and this, in turn, stimulates further development of labour-based techniques and improves the efficiency of such techniques.

1.2 Structure of the report

The seminar report describes the proceedings (narrative) of the seminar. The presented and circulated papers are published separately in a report called: ***Labour-based Technology: A Review of Current Practice. Papers of the Fifth Regional Seminar***, and can be ordered from ILO/ASIST or the Development Policies Branch of the ILO in Geneva.

Chapter 2 of this report explains the structure and proceedings of the seminar. It also includes a summary of the comments and suggestions the participants made in the evaluation session on the last day of the seminar. The full evaluation report is in Annex 7. Chapters 3 and 4 summarise the various papers that were presented in plenary, and the discussions following the presentations. Full reports on the discussions are given in Annex 5. Chapter 5 reports on the field visit. The key issues identified for group discussions and the outcome of the group work are presented in Chapter 6. The group members are listed in Annex 6.

1 The acronym ASIST stands for Advisory Support, Information Services and Training. ASIST is a regional project serving labour-based road projects and programmes in Sub-Saharan Africa, and is funded by the Swiss Development Cooperation (SDC), the Swedish International Development Authority and the Government of Norway.

2 Labour-based Technology - A Review of Current Practice, Volumes I and II, 26-28 February 1990, Mbeya, Tanzania. ILO Geneva.

Labour-based Technology - A Review of Current Practice, 2- 6 March 1992, Mhales Hoek, Lesotho. ILO Geneva.

Labour-based Technology - A Review of Current Practice, 27 September - 1 October 1993, Harare, Zimbabwe, ILO Geneva

Labour-based technology - A Review of Current Practice, 16-20 January 1995, Johannesburg, South Africa, Volumes I and II, ILO-Geneva.

2. Seminar proceedings

2.1 Seminar objectives

The seminar had three main objectives:

1. *To bring together practitioners in labour-based roadworks so that they can exchange experiences*
2. *To update participants on policies and programmes in labour-based roadworks in Sub-Saharan Africa*
3. *To identify and debate key issues relating to labour-based contracting.*

The first two objectives are common to all the regional seminars while the third objective focuses on the main theme of this specific seminar.

Labour-based contracting

Contracting of road maintenance tasks is to an increasing extent replacing force account systems all over the world. In Africa, several countries are presently contracting out a main part of their road maintenance works. These countries are: Burkina Faso, C.A.R., Cameroon, Chad, Comores, Cote d'Ivoire, Ghana, Madagascar, Senegal, South Africa, Uganda, and Zaire. Other countries may follow their example, in line with a general shift from the public to the private sector.

The introduction of labour-based contracting is a means to develop the local private sector and to create employment. It allows the public sector to concentrate on its core tasks. However, experience suggests that to introduce sustainable labour-based contracting, many issues need to be taken into account. These include training, credit facilities, regularity of orders, contract documentation, selection of contractors, and the provision of equipment.

Various projects and programmes in Sub-Saharan Africa have involved labour-based contracting, with varying degrees of success. The time is therefore appropriate to exchange experiences and draw conclusions.

2.2 From objectives to results

To translate the objectives into practical work and results, the seminar was divided into three main activities: plenary sessions, groupwork sessions, and a site visit. The detailed seminar agenda is presented in Annex 1.

Plenary sessions

The plenary sessions were based on the papers different people had been asked to prepare. In total, 20 papers were submitted for the seminar, of which seven were presented during plenary sessions. The time reserved for each presentation was 45 minutes, after which a discussion session was held. Time allocated for discussion was maximised, in line with the recommendations derived from the evaluation of the previous regional seminar.

Groupwork

In order to generate more intensive and rewarding discussions the participants were divided into seven groups on the fourth day of the seminar. The following topics were selected during the preparatory plenary session before the groupwork began:

Group 1 Employment policy and labour issues

Group 2 Contract documentation

Group 3 Cost and quality comparisons

Group 4 Contractor-client relationships

Group 5 Sustainability, growth and diversification of labour-based road contracting

Group 6 Equipping contractors

Group 7 Training approaches for contractors

The groups reported back to the plenary, after which their findings were discussed.

Site visit

On the third day of the seminar, the participants visited three pilot feeder-road projects in Eastern Ghana and the newly established labour-based training school at Kafiridwa. A social element of the visit included a boat trip with lunch, and a visit to the Akosombo dam.

2.3 Seminar participants

A total of 103 people from 17 different countries registered for the seminar. Among the participants were national and expatriate staff of government organisations, staff of educational and training institutions, consultants and ILO advisers. Participating countries were Botswana, Ethiopia, Ghana, Kenya, Lesotho, Malawi, Mozambique, Namibia, Nigeria, Norway, South Africa, Switzerland, Tanzania, Uganda, United Kingdom, Zambia and Zimbabwe. Annex 2 includes the names and addresses of all the participants.

2.4 Evaluation

The seminar was evaluated by means of a written questionnaire on the last day of the seminar. The questionnaire was filled in by 73 out of 103 participants.

The participants evaluated the seminar as of good to very good. The secretariat of the seminar and the organisation of the registration were considered to be very good, even excellent according to about 35 per cent of the respondents.

The seminar was well organised, according to most participants. The balance between papers and groupwork was generally considered to be right, though about 30 per cent felt that less papers and more groupwork might have further enhanced the learning process. One week was felt to be the appropriate duration for the regional seminar.

The seminar presentations were evaluated as being good to very good by most participants, and addressing appropriate themes. Most people felt that the number and length of presentations were right,

though some added that several presentations were too long. More time for plenary discussion would be appreciated by several respondents.

The hotel accommodation received relatively the lowest evaluation, though it was still considered fairly good. In addition, many participants felt that the seminar venue was too small for the number of participants. As one respondent remarked: "Most people appreciate the problems, which arose since the original venue was not available. The hotel, MapleLeaf, did its best, and the staff were very friendly and helpful". Another participant added: "Great hospitality. Great country". For one respondent, the laundry service was evaluated as "very excellent". The respondent added: "I gave in socks with holes and got brand new ones back". Still, various candidates recommended a very careful selection of the venue for the next seminar.

The outside activities were highly appreciated, and several participants recommended that the next seminar should "follow the excellent example of Ghana". This next seminar should take place in Kenya or Uganda, according to the outcome of the questionnaire, though fourteen other countries were mentioned as well.

Results of the questionnaire are in Annex 7.

2.5 Follow-up of the seminar

During an evaluation session, the participants were divided into seven groups, and asked how ASIST should follow up on this seminar. Most groups felt that ASIST should prepare guidelines on contract documentation, quality control and contractor development in general. A full report on the outcome of the group evaluation is given overleaf.

2.6 Acknowledgements

The ILO/ASIST seminar secretariat wishes to express its thanks to the Department of Feeder Roads (DFR) in Ghana for hosting the seminar and for all their organisational and logistical support. We are especially thankful to Mr Antwi, Director of DFR, Mr A. Twumasi-Boakye, chairman of the organising committee, and the organising committee itself, for the endless hours they put in to make the seminar successful.

We would especially like to thank Mr D.S. Boateng, Honourable Minister of Employment and Social Welfare, who gave us the opening speech, and Dr Ato Quarshie, Honourable Minister of Roads and Highways, who gave the closing speech. The programme and full text of the opening speech are in Annex 3; the programme of the closing ceremony in Annex 4. Unfortunately, the closing speech is not available.

Lastly, we would like to thank all the participants for their attendance and contribution.

Group reports: How can ASIST follow up on the seminar? Why?

| What? | Why? |
|-------|------|
| | |

- To prepare guidelines on quality achievement and quality control.

To ensure quality of labour-based works, particularly as they compete with machine-based works and are used for higher specification works.

To ensure long term sustainability of labour-based methods.

- To prepare guidelines and a position paper on contract documentation, based on country experiences.

These are urgently needed.

- To ensure the development of comprehensive labour-based contracting guidelines.

In order to make use of experiences gained and to avoid repetition of mistakes.

- To prepare standard contract documents and training material that can easily be adapted to country specific conditions.

At present, most contract documents are not suitable for labour-based contracting.

Development of training material is expensive and time consuming, but necessary.

- To prepare technology-neutral guidelines for contract documentation, including: tender procedures, evaluation, data returns, risk sharing, insurances, labour clauses, labour related costs, and safety.

To facilitate a move towards competitive bidding.

To give directions to newcomers in contracting.

To level the playing field for labour-based and machine-based contracting.

- To devise formats for:
 1. cost comparison of equipment and labour-based roadworks;
 2. the design of training courses; and
 3. case studies on contractor - client relationships.

To provide a basis for comparison of experiences.

- To prepare a policy document for Governments to promote sustainability of labour-based contracting.

To promote long term commitment of governments and donors to labour-based contracting.

To create an enabling environment for Labour-based contracting.

3. Labour-based technology - the role of the ILO and the ASIST project

3.1 The role of the ILO

Summary of the presentation by Jan de Veen, Development and Technical Cooperation Department, ILO, Geneva, Switzerland

The Employment-Intensive Works Programme

The ILO has a particular interest in labour-based and local resource-based approaches through its mandate on productive employment, poverty alleviation and social concerns. Since the mid-1970s, the ILO has developed a large technical cooperation programme - the Employment-Intensive Works Programme (EIWP) - which promotes and demonstrates the use of labour-based technologies in the infrastructure sector in developing countries.

Division of responsibilities

The Development Policies Branch (POL/DEV) in ILO Headquarters includes a policy planning unit. This unit performs the following tasks:

- Developing inter-regional and regional support programmes, including: reviewing the planning for ASIST; developing and supporting inter-regional programmes (such as: Jobs for Africa and AGETIP); and developing and supporting programmes on capacity building and rural transport
- Conducting studies and guidelines on key issues (see later)

In the various regions, the ILO has multi-disciplinary teams and regional support programmes. This field structure performs the following tasks:

- Development and backstopping of national programmes
- Collaboration on studies and guidelines
- Training and capacity building
- Information dissemination

At local level, the ILO has projects with the following functions:

- Demonstration, training and replication
- Providing inputs for comparison and case studies

Key issues in the Employment-Intensive Works Programme (EIWP)

ILO assistance is directed to key issues in the EIWP. These key issues are:

1. *Developing macro-economic policies for employment creation and poverty reduction.* Firstly, ILO headquarters performs research into the potential macro-economic impact of employment-intensive works. Secondly, employment strategies and targets are studied. Thirdly,

ILO headquarters analyses employment-intensive and local resource-based sectoral investments. Fourthly, planning units in Ministries of Planning and Finance are assisted in developing employment-intensive strategies.

2. *Democratisation and participatory development.* The ILO believes that policies should not be developed and implemented in a top-down fashion, but in a bottom-up approach, addressing the real needs of the population. This includes developing a transparent system for negotiating and contracting, and developing an innovative environment for contracting to communities and the informal sector. It also includes developing decentralised participatory planning and implementation procedures, and supporting participatory development.
3. *Private sector development.* It has become commonly accepted that the public sector cannot perform all tasks itself, and has to call upon the private sector. This is only feasible if the public sector creates an enabling environment for small-scale contractors. Attention to the technology choice is essential as well, since most small scale enterprises operate with labour-based methods. Consulting and contractors' associations ought to play a leading role in the development of the private sector.
4. *Capacity building.* Countries should have the capacity to develop and implement labour-based construction. To further develop the capacity, the ILO collaborates with educational institutions, and develops training materials and guidelines. Institutional development is also supported, especially in relation to planning units in the area of employment and investment, and in relation to national fora.
5. *Labour standards and conditions of work.* National labour legislation should set an appropriate level of labour standards and conditions of work. For labour-based works, the focus is on laws concerning minimum wages, non-discrimination, forced labour, child labour, workmen's compensation and casual labour. Contract documents and specifications may further specify the relevant labour items and conditions of work.

World Bank meeting, April 1996

In April 1996, Jan de Veen participated in a World Bank meeting on rural transport. The World Bank focuses on rural poverty, within its mission "to reduce poverty and improve the quality of people's lives" (J.D. Wolfensohn). It aims at increasing rural incomes, and facilitating access through national systems, feeder roads, and village tracks. The focus, critical performance indicators, and trends are as follows:

| Focus | Critical performance indicator | Trends |
|--|---|---|
| Rural roads are the first priority to improve market access and mobility | Responsibility assigned and funding systems defined | The improvement is/will be linked to progress on the main roads |
| Village level transport is important to improve productivity and living conditions | Included under community programmes | Pilot efforts are launched in five countries |

Discussion highlights

- The World Bank meeting looked into rural transport planning in addition to physical transport.

3.2 *The role of ASIST*

Presentation by David Stiedl, ILO/ASIST, Harare, Zimbabwe

ASIST - Advisory Support, Information Services and Training - is a project of the ILO whose mandate is to support labour-based road projects in Sub-Saharan Africa. It operates from two offices; the Advisory Support component from Harare and the Information Services and Training components from Nairobi.

The purpose of ASIST is:

1. to increase the use, where appropriate, and increase efficiency in the use of labour-based methods in the road sector
2. to increase efficiency in labour-based road project management.

What ASIST does

Advisory support provides services related to technical, organisational and management aspects of labour-based road projects in 11 countries in the region. In this work, ASIST liaises closely with the ILO Multi-Disciplinary Advisory Team in Harare (SAMAT).

Information services gathers and synthesises general and specific information in order to disseminate it to practitioners in labour-based technology, and other interested persons and institutions.

Training develops and implements, in collaboration with Kisii Training School in Kenya, international courses for engineers and managers, senior technicians and trainers; and assists in setting up courses in national educational and training institutions.

ASIST also provides a **Rural Transport** component in Harare to advise on policies and technologies for improved rural accessibility planning, and an **Urban Poverty Alleviation** component in Nairobi, which promotes labour-based infrastructure development in informal settlements.

4. Labour-based contracting in Sub-Saharan Africa

This chapter summarises the presented papers, and the discussions following the presentations. The full text of the discussion is presented in Annex 5.

4.1 Labour-based Contracting: Practice and Prospects

Summary of the paper presented by Alex Twumasi-Boakye, Department of Feeder Roads, Accra, Ghana.

The paper reports on current labour-based practices in Ghana, Kenya, Tanzania, Uganda, Lesotho and South Africa, as observed by the three-man ILO mission of April-May 1995. The experience in all countries, except South Africa, concentrates on rural roads. However, the objectives and contracting arrangements of the projects differ considerably. The study looked into contractor selection, training, support given to contractors, and contract documentation in each country. A summary of the country experiences is given overleaf.

Based on the comparative analysis, the paper identifies key- issues:

- *Project preparation* should ensure that contractors survive beyond the life of the project. This requires government commitment.
- *Training* is a need of all parties concerned, and is often underestimated.
- *Contract documentation* is often inappropriate for small scale contractors.
- In the *implementation*, the technical assistance should only play an advisory role.

In conclusion, the need for appropriate guidelines on labour- based contracting is stressed. The guidelines should have two parts: institutional, directed at policy makers; and operational, directed at programme designers and implementors.

The paper also stresses the need for sustainability through various means. Governments need to create an enabling environment for small scale contracting. "Protection" of contractors is a tricky issue, since it may make the contractor dependent and lessen sustainability. Sustainability further requires a sufficient market for contractors, beyond the life of the project, and possibly beyond the narrow market in "roads", which tends to be dominated by one client.

Discussion highlights

It was noted that the Ghanaian experience was duplicated in Uganda, without adjustments to the local environment. This is causing various problems.

Summary of project/programme experiences in contracting development in selected countries

| Project/program ● Objectives | Contractor selection | Training | Support | Contract document |
|---|--|---|---|---|
| Ghana <ul style="list-style-type: none"> ● Improved rural accessibility ● Increased capacity in DFR and contracting ● Create rural employment | <ul style="list-style-type: none"> ● Method: news-paper adverts; list of applicants ● Criteria: basic education, experience , location of office | <ul style="list-style-type: none"> ● 18 weeks in classroom & field ● 4 months trial continuation ● Trained are contractors, supervisors, and DFR staff | <ul style="list-style-type: none"> ● Tools ● Equipment ● Guarantee of work for 4 years | <ul style="list-style-type: none"> ● Rates negotiated ● FIDIC (third edition) with price adjustments and adjustments to labour-based works ● Documents prepared by DFR |

| | | | | |
|--|---|---|--|---|
| Kenya <ul style="list-style-type: none"> ● Promote competition ● Increase capacity for contracting ● Create rural employment ● Guidelines development | <ul style="list-style-type: none"> ● Method: news-paper adverts and local notice ● Criteria: equipment, education of owner, location, and experience | <ul style="list-style-type: none"> ● 3 months theory and 12-18 months practice ● Trained are managing directors. Foremen are trained separately | <ul style="list-style-type: none"> ● No tools or equipment ● No work available | <ul style="list-style-type: none"> ● Training: fixed rates ● Contracts: FIDIC with adjustments ● Standard tender and contract documents developed |
| Tanzania <ul style="list-style-type: none"> ● Establish labour-based contracting ● Increase contracting capacity in ministry | <ul style="list-style-type: none"> ● Criteria: registered building contractor with some equipment | <ul style="list-style-type: none"> ● 20 weeks classroom & experience ● 6 months trial continuation | <ul style="list-style-type: none"> ● Hired equipment for training ● Supportive government policy | <ul style="list-style-type: none"> ● FIDIC (third edition), field for adjusted to labour-based works ● New "user friendly" document has been proposed |
| Uganda <ul style="list-style-type: none"> ● Introduce labour-based methods ● Improve capacity in ministry ● Improve roads ● Train contractors | <ul style="list-style-type: none"> ● Criteria: qualifications of Managing Directors, equipment, experience | <ul style="list-style-type: none"> ● 2 weeks on demonstration site ● 4 months detailed site training | <ul style="list-style-type: none"> ● Light equipment and tools | <ul style="list-style-type: none"> ● No data |
| Lesotho <ul style="list-style-type: none"> ● Sustainability ● Reduce government establishment ● Greater efficiency ● Train contractors | <ul style="list-style-type: none"> ● Methods: adverts on radio and in papers; tests; interviews ● Criteria: basic education, experience access to equipment | <ul style="list-style-type: none"> ● ROMAR + IYCB used ● Total of 10 months | <ul style="list-style-type: none"> ● Tools during training ● Routine maintenance guarantee ● Regravelling uncertain | <ul style="list-style-type: none"> ● Simplified contracts for trial routine maintenance ● No provision for fluctuation in contracts |
| South Africa <ul style="list-style-type: none"> ● Employment creation ● Transfer of skills ● Retention of construction costs in community | <ul style="list-style-type: none"> ● Criteria: small contractors, ex-supervisors or labourers | <ul style="list-style-type: none"> ● No information | <ul style="list-style-type: none"> ● Inadequate jobs ● No tools or equipment given | <ul style="list-style-type: none"> ● General Conditions of Contract for Works of Civil Engineer Construction ● General Conditions of Contract (electrical and mechanical works) |

Costs and quality comparisons between labour-based and machine-based approaches are essential, but very difficult since the objective, activities and environment of roadworks tend to differ.

4.2 The development of labour-based road contracting for road works.

Summary of the paper presented by Jan de Veen, Development Policies Department, ILO, Geneva.

Since the mid-1980s the execution of public works through the private sector is increasingly emphasised. The acknowledged financial and technical competitiveness of labour-based technologies for roadworks combined with the growing private sector participation in this field, has led to the establishment of a significant number of labour-based road contracting programmes and projects in developing countries. Many of these have been supported in different ways by the Employment-Intensive Programme of the ILO. General principles of the ILO support to contractor development include:

- Technical ministries need to be reoriented towards the efficient use of labour for roadworks.
- Ministries ought to develop an enabling environment for small scale contractors. The business community should be involved
- in developing policies and implementation. Training programmes, adequate equipment and adequate funding should be available.
- Simple contract documents should be available.
- The formation of employers and workers organisations is encouraged.
- Projects should last three to five years to promote sustainability.

The paper then reviews relevant experience with programmes of this nature in three continents. It concludes that the potential for labour-based road contracting is huge, but requires comprehensive project designs combined with measures to modify the working environment in which small scale road contractors have to operate. The growth in labour-based contracting furthermore results in a growing need for institution and capacity building. The paper also draws attention to the increasing risks of worker exploitation and recommends the development of strategies to minimise such risks.

4.3 *Managing labour in labour-based activities: an approach for sustaining labour-based contracting*

Summary of the paper presented by David Tajzman, ILO/SAMAT, Harare, Zimbabwe.

Labour management under private contracts differs from force account, since private enterprises are more productivity oriented and less bureaucratic. The government is often perceived as "beyond the law". Labour management is impacted by the productivity orientation, since the contractor tends to insist on more regular attendance, lower wage levels, higher labour productivity, and more supervision.

Appropriate salary levels and conditions of work depend on local conditions. On the one hand, labour-based methods should remain cost-effective, which puts downward pressures on wage levels and working conditions. On the other hand, labourers should receive "fair" pay, and a safe working environment, while labour laws should be adhered to. This puts upward pressures on wage levels and working conditions. The appropriate wage levels and working conditions further depend on the project objectives: poverty-relief projects will end to pay lower wages (possibly in the form of food-for-work) than productivity-oriented projects.

All parties have a role to play in setting and adhering to wage levels and conditions of work. The government has to set appropriate labour policies, regulations, and contracting procedures on the basis of tripartite discussions. Contractors, being the employers, need to be motivated to adhere to laws. This requires appropriate laws, contracts which include labour clauses, and training. Contractor associations can play an important role in this regard. Workers, on their part, need to be (made) aware of their self-interest in improving working conditions and salaries; an interest which can be promoted by strong workers' and community organisations.

Discussion highlights

- Minimum wage levels should depend on local conditions, to allow labour-based methods to be cost-effective, while at the same time allowing labourers fair working conditions and salary levels.
- Labour laws are difficult to monitor, since labour inspectorates are often not up to their task.

4.4 *The client/contractor relationship in labour-based construction and maintenance*

Summary of the paper presented by Derek Miles, Department of Civil and Building Engineering, Loughborough University of Technology, UK.

The paper highlights the importance of equitable contract documents to regulate the relationship between small contractors and their clients. A contract is defined as an agreement between two or more parties which is intended to be legally binding, and which defines the risks and responsibilities of both parties. Since contractual complexity can vary according to the nature of the risks to be covered, the ideal contract document in any given case would be the simplest formulation that permits effective accountability.

Risk transfer

Contracts involve the transfer of risk from the client to the contractor. This needs to be paid for; the more risk is transferred, the higher the price. However, excessive risk transfer to small contractors means that the local construction industry will remain fragile and unsustainable.

To determine the risk, its nature and impact need to be identified. The risk must also be measured by assessing and classifying the risky situations, and evaluating the handling of risks by the parties.

In labour-based projects, most risks have no serious consequences for the client, while contractors tend to be small scale enterprises and consequences can therefore be far reaching.

Project risks need to be minimised from the start, by assessing the local situation. Some guidelines are:

- Assess the organisational and management capacity of the host organisation.
- Be open minded on the choice of technology.
- Make sustainability the objective of the project.
- Integrate technical and managerial innovations, also in training activities.
- Work with and through the private sector.

Partnering

Partnering is a route towards more collaborative relationships, which can reduce the levels of conflict and confrontation and permit domestic contractors to play a more productive and developmental role. The principle of partnering is: *Choosing to live by the spirit rather than the letter of the law..... Partnering is not a contract, but a recognition that every contract includes an implied covenant of good faith* (Ron Baden Hellard). Francis Fukuyama mentions trust and reciprocity as essential additions to laws and contracts in preventing conflict.

Contracts should be based on a compromise between the parties. Both parties have to concede, agree to the final contract, and trust its implementation. Thus, a contract becomes viable by establishing a partnership.

Costs per unit

During the presentation, it was noted that costs per unit in construction had remained on more or less the same level over the past 50 years, while costs per unit in most other sectors reduced considerably, and for computers tremendously. Appropriate technology and management and organisational structures might reduce costs.

Conclusions

We need to move from equity to sustainability. This requires:

- developing partnership arrangements, based on trust and an understanding of the cultural differences.
- drawing lessons from field trials of simple contracts, in order to spread risks equably and establish sustainable contractors.

Discussion highlights

- Relationships between clients and contractors are not equal, since most contractors are small and dependent on one client. Strong contractors' associations may address the inequality.
- The development of small scale contractors must be sustainable. Small contractors must be able to compete with large scale contractors, and, in the long run, survive without assistance in a competitive market. Though some hints were given on how to create a sustainable system, the issue remains difficult.

4.5 Force account or contractors? A comparison of Kenya and Ghana

A summary of the paper presented by Gary Taylor, I.T. Transport Ltd, UK.

The paper compares the labour-based programme in Kenya, which is based on force account, with the programme in Ghana, which is based on private contractors.

In Kenya, approximately 12,000 km of roads, including rural access roads and minor roads, were rehabilitated and maintained by labour-based methods in the early 1990s. In Ghana, the project started only in 1992, and approximately 4,000 km of feeder roads are presently in a maintainable state.

Comparison

The two programmes appeared to be surprisingly similar, despite the different approaches. Similarities include:

- Both feeder road departments employ about 1,000 permanent employees, indicating that the use of contractors does not necessarily reduce staff numbers of the client.
- Roads have either been fully rehabilitated or not at all, with little attention to routine maintenance. This is caused by donor involvement. Both countries are now moving to more pragmatic policies.
- Close site supervision proved to be the key to consistency and good quality work in both force account and contractor-executed work. The need to maintain labour-based equipment was underestimated in both projects.
- All equipment is bought with donor support.

The paper notes differences between the two systems as well:

- In Ghana, the labour-based programme has been established as part of mainstream policy from the start, while in Kenya it took the programme 20 years to become part of mainstream policy.
- Lengthmen maintain roads in Kenya, while contractors do so in Ghana. Lengthmen require a lot of supervision, but maintain each section of the roads, while contractors in Ghana tend to postpone or forget maintenance contracts.
- In Kenya, district engineers prepare maintenance plans themselves, while planning is done centrally in Ghana.

Force account versus contractors

In Kenya, contracting has only been introduced in a small way, without being as successful as in Ghana. In Ghana, however, contractors are still not considered ready for open competition. Developing contractors thus requires a significant, long term, and carefully planned programme of assistance.

The use of contractors is potentially more sustainable than force account, but has the risk that contractors may go out of business or into equipment-based methods.

Recommendations

A main recommendation is that donor contributions should be set at the same level for all activities required for the project, to prevent a bias towards activities with higher donor support.

The establishment of a system of routine maintenance should receive priority. Spot improvement and partial rehabilitation should be considered as well, since these options may be more cost-effective than total rehabilitation.

Discussion highlights

- Government policies are essential in promoting labour- based equipment and contracting, though the technology choice depends first and foremost on local economic conditions.
- Donor funding plays an important role in priority setting of government policies. Lobbying should thus be directed to the government and donor community.
- Phil Hendrix gave a presentation on the Division of Roads and Transport Technology of CSIR in South Africa. The division conducts transportation research, development and implementation in Southern Africa.

4.6 A study of the field performance of selected labour- based contractors in Ghana.

Summary of the paper written by S.K. Ampadu and Y.A. Tuffour, Civil Engineering Department, School of Engineering, University of Science and Technology, Kumasi, Ghana.

In Ghana, labour-based methods executed by small-scale labour-based contractors are used side by side with conventional equipment-based methods. In order to generate the required field data to assist in the proper planning and control of labour-based works, a series of studies of various durations on the performance of small scale labour- based contractors in the field was executed between November 1992 and December 1994 with ILO/DFR/UST collaboration. This paper describes the methodology of the study in detail, and summarises and discusses the results of two of these studies.

Organisation of contractors

The contractors consisted, generally, of a Managing Director, supervisors (on average three at a site), operators and artisans (on average eight per site), and casual workers (on average 63 per site). The operators and artisans were well trained on labour-based techniques and management. Of the casual workers, 5 to 46 per cent were female, while on average one third of the workforce was from the local vicinity. Migrant workers tended to spend more time on site.

Productivity

The employment contract system was based on task rates, which were allocated to individuals or gangs, depending on the activity. The task rates varied considerably for contractors and tasks, and "one day work" could thus take 3 hours, but also more than 8 hours.

Productivity depended first and foremost on site management, and especially on transport arrangements. Another important factor was the experience of the workforce. The effect of the site condition on productivity was less clear, with no significant differences in productivity for the dry and wet seasons.

The study resulted in average labour productivity rates.

Quality of the output

Less than 50 per cent of the used gravel materials satisfied the specifications, illustrating the difficulty of obtaining gravel of the required quality. In addition, the level of compaction was rather low, especially on the shoulders of the gravel layer. For two of the eight roads, the thickness of the gravel layer was insufficient (less than 60 mm).

A further analysis has shown that the inadequate thickness of the gravel layer correlates to a high number of casual workers per trained supervisor and high task rates. Nineteen casual workers per supervisor and a task rate of 10 m²/hr appeared to provide the best results.

The quality of the drains was generally sufficient.

Discussion highlights

- Cost and quality comparisons between labour-based and machine-based projects are essential but very difficult. Projects will perform different activities in a different local environment and with different relative costs of labour and equipment. One way to compare costs may be to compare costs of large numbers of roads, instead of

comparing individual roads.

4.7 Enhancing equipment loan repayment for small scale labour-based contractors

A summary of the paper presented by E. Opoku Mensah, OPM Construction Ltd., Accra, Ghana.

Ghana introduced small scale contracting in roadworks in 1986. Under the programme, trained contractors receive equipment costing about US\$150,000 as a loan, for repayment in four years. Out of the present 93 trained contractors, 54 are fully equipped.

Based on the experience, recommendations can be given concerning the role of the three main players in loan repayment: loan management banks, clients, and contractors.

Loan management banks

- The loan should be granted in local currency.
- Interest rates should be at the lowest interest rate level applicable in the country's banks for similar special projects, if not lower.
- Repayment can best be based on the Diminishing Balance Approach, to provide incentives for early repayment, while repayment schedules can be set quarterly.
- The collateral should be low, and the agreements relaxed to suit small scale contractors.

Clients (DFR in Ghana)

- Equipment must be selected carefully, be of good quality and with good after-sales service.
- Equipment must be appropriate for the work, and selected in consultation with contractors.
- During a trial period, the client should manage the equipment and hire it to the contractor at economic rates.
- Contractors should be paid promptly, and prompt payment of labourers by the contractor should be promoted by advancing labour costs.
- Contractors should receive enough money in advance to cover bills for labour, fuel and lubricants. The present 15 per cent of the contract sum is inadequate.

Contractor

- Contractors who have repaid their loans have to produce 1 km of gravel road per month to break even; those with loans have to produce at least 1.3 km per month.
- Contractors should aim at arranging a supply of materials on credit.
- A labour-based contractors' association is a vehicle for discussion and resolution of the specific problems labour-based contractors face.

Discussion highlights

The kind of equipment that contractors need depends on the local circumstances and cost-effectiveness of the equipment. Tipplers may thus be appropriate labour-based technology in certain conditions.

Banks charge interest rates and demand a collateral, which increases the risks of investment for small scale contractors.

4.8 Progress on the MART initiative

A summary of the paper presented by Derek Miles and Paul Larcher, Loughborough University of Technology, UK.

Prior to the ASIST seminar in Accra, MART held a two day workshop, in association with the ILO, to discuss issues of intermediate equipment. This workshop followed up on a workshop in November 1995 in Harare, in which contractor guidelines were discussed. This seminar concluded that guidelines should include institutional and operational aspects.

Guidelines are expected to be finalised in 1997.

Through plenary discussions, the Accra workshop produced a list of 28 key issues that were identified as influencing the 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. Those that were considered most important, were categorised as 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 operational information that was available, and highlighted research and development needs. The discussions concentrated on designs and specifications.

In conclusion, the workshop participants agreed on a number of actions required to promote research and development, improve standards, and increase availability of intermediate equipment. This is the next step in the development of guidelines on the specification, procurement and management of intermediate equipment.

4.9 Panel discussion: Ghanaian contractors

During a plenary session, the participants of the seminar were offered the opportunity to ask questions of five Ghanaian contractors. The moderator of the plenary session was E.N.K. Ashong. The Ghanaian contractors were: E. Opoku Mensah (Managing Director of OPM Construction Works Ltd; National Chairman of LABCA); A.J.K. Mensah (Technical Director of M/s Amensah Construction Works Ltd); Mrs L. Gbedemah (Managing Director of Buro-Buro); S.K. Tandoh (Operations Director of m/s IS-Haque Company Ltd); and B.K. Arthur (Managing Director of Knatto Complex Ltd).

The plenary session brought together various issues raised in the previous papers. The highlights of the discussion were as follows:

- Roads are perceived to be made by machines. Contractors thus have to create awareness that labour-based roads are not inferior to machine-based roads. Otherwise, the local community may feel cheated.
- Labour-based projects have supervisors qualified in management, while machine-based projects do not. Machine-based projects thus require more management assistance of the Managing Director.
- Competitive bidding makes labour-based contractors more effective and efficient, since they will have to compete. However, new contractors continue to need assistance. In Ghana, trained contractors are expected to survive.
- Contractors' associations have an important role to play in a system of competitive bidding.
- In Ghana, contractors have contracts on a continuous basis. Therefore, the need for alternative contracts and use of equipment has not arisen.

5. Field visit

Maintenance Performance Budgeting System (MPBS)

Three roads were visited that were maintained under a pilot project of MPBS. MPBS is a planning system which aims at maintaining roads according to priority. MPBS was developed by the DANIDA component of the National Feeder Roads Rehabilitation and Maintenance Project in DFR. Priority is set on the basis of traffic density, defined maintenance levels, workloads and resource requirements.

MPBS has two parts.

Part 1 is an annual maintenance budgeting system, which plans maintenance at a national level, on the basis of traffic density. The activities that are performed depend on the available budget. With a limited budget, the system automatically selects those activities that preserve the largest possible road network.

Part 2 is an operation system at regional level. The Regional Road Engineer plans the actual maintenance, within the national framework, on the basis of the actual situation of the roads. This results in Bills of Quantities for groups of roads.

Maintenance is performed by contractors, using standard documents. A standard contract document includes general specifications, activity specifications and Bills of Quantity. The Regional Road Engineer inspects and approve the works, after which payment is certified.

Labour-based roads in Eastern Ghana

Labour-based technology was introduced in 1989 in Eastern Ghana, which now has the highest number of trained labour-based contractors (10 equipped and 5 non-equipped contractors). 160 km of roads have been fully rehabilitated, using 640 culverts and spending US\$2,461,000.

Three roads were visited:

- *Amanase-Budu Feeder Road* (3.2 km). The road was rehabilitated between October 1995 and March 1996.
- *Tetekassum-Budu Feeder Road* (19.8 km). Routine and recurrent maintenance of this road formed part of a contract covering 98.2 km for a period of 12 months at an estimated cost of US\$135,000. Rehabilitation of the road was completed in 1994.
- *Aman-Kwesi Darko* (2.05 km). The rehabilitation of the road forms part of a 13.95 km road rehabilitation contract awarded in March 1996, for completion in seven calendar months. The road is located within a major cocoa growing corridor of the region. The participants in the seminar were given the opportunity to observe progress of the works and discuss issues with the contractor and workers on site.

Labour-based training school

Ghana is presently establishing a training school, funded by the Government of Ghana, DANIDA and USAID. The buildings are almost completed, as the participants in the seminar observed. Training is

expected to start within a year.

Akosombo

The participants were offered lunch during a boat trip at Akosombo. After the lunch, the participants visited the Akosombo dam, which is a major power station.

1 Group work

1.1 Identification of key issues

During a plenary session following the presentations, the participants identified issues and questions that should serve as a starting point for group discussions. The issues were grouped together under seven key headings as shown below.

Group Number Key issue

- | | |
|---|---|
| 1 | Employment policy and labour issues |
| 2 | Contract documentation |
| 3 | Cost and quality comparisons |
| 4 | Contractor-client relationships |
| 5 | Sustainability, growth and diversification of labour-based road contracting |
| 6 | Equipping contractors |
| 7 | Training approaches for contracting |

For each key issue a number of sub-issues were identified, which served as guidelines in the group discussions.

After each presentation, other groups were asked to comment on the findings. A list of group members is presented in Annex 6.

1.2 Group 1: *Employment policy and labour issues*

The main question is whether employment and labour issues should be criteria for contract awarding.

Employment issues

Labour-based contracting is a strategy to create employment, and as such should be supported by governments. This should be done by assigning weight to employment intensive tenders and dividing large contracts into small contracts, to suit small scale contractors. Designs, contract documents, tender regulations and procedures should facilitate this approach.

Labour issues

Labour laws should be obeyed, especially in areas that are of mutual benefit to the client, contractor and workers. These areas include child labour, occupational health and safety, and workers' compensation. Labour laws therefore need to be reviewed to identify and, if necessary, ratify those laws that should be applicable to labour-based contracting.

Compliance with labour laws should be ensured by special measures. This includes publishing laws and regulations, and specifying labour issues in contracts.

Discussion

In the discussion, the following points were raised:

- Contractors cannot employ machine-based methods, since the contract will specify labour-based methods. This protects small labour-based contractors from competition from machine-based contractors.
- Compliance with labour laws can be promoted by including labour laws in the contract, setting penalties if these laws are violated.

The chart presented by Group 1 is given overleaf.

1.3 Group 2: Contract documentation

Contract documents are very complicated, and should be simplified and standardised. This raises three questions:

- Do we need different documents for different types of contracts?
- Do we need special documentation and specifications for labour-based contracting?
- To what extent can contract documentation be simplified, while ensuring the protection of clients and contractors?

To answer these questions, the content of a contract document and the factors involved need to be identified.

Content of a contract document

A contract should include:

- Definitions
- Client and contractor
- General obligations
- Starting and completion dates
- Payments and additional payments
- Assignment of sub-contractors
- Statutory obligations
- Liability and insurance
- Disputes
- Price variations

Factors involved

Contract documents list the rights and obligations of the client and contractor, and as such protect them. Simplification and standardisation should not lessen the protection.

Other factors which influence the required specifications of the contract are the size of the works, activities involved, conditions, risks, and the choice of technology. These factors are especially important

in a system of competitive bidding.

Action

The ILO and ASIST should prepare guidelines for contracts on minor works, considering the above mentioned factors. The ILO can appoint consultants with donor funding to study standardisation and simplification, while ASIST can write circulation papers and network. Technical staff of governments can be engaged through country committees to modify contracts to local conditions.

Discussion

The discussion raised the following points:

- Labour-based works are a high risk activity for small scale contractors.
- To promote protection of small scale contractors, contracts need a lot of specifications, which would make them bulky. Contracts may however be simplified by adopting a standard contract document, with an explanatory document attached. Specific tender contracts can then adjust the standard contract to the specific conditions. It must be ensured, however, that the contracts hold up in court.

The chart presented by Group 2 is given alongside.

1.4 Group 3: Cost and quality comparison

In making a technology choice, cost and quality are the main variables. However, comparing costs for the same quality of road is difficult, since various factors are involved in the comparison. There are other factors that affect the technology choice as well.

Factors involved in the cost comparison

In the cost comparison, the construction costs, social, economic and environmental costs ought to be considered. Relative costs of labour and equipment tend to differ for each country and region, complicating comparison.

Items which need to be equal before the costs of two roads can be compared include, among others, the quality of the road, the terrain, material used and earthworks per kilometre.

Factors affecting technology choice

Factors which affect the choice of technology include the availability of labour and equipment, and the time frame in which the work should be finished. Risk of labour disruption, and the estimated social, economic and environmental impact of the works (such as employment creation) are other considerations.

Action

Universities, in collaboration with road departments, should monitor the costs of labour-based works and recalculate theoretical costs for labour- and machine-based roads.

Discussion

The discussion highlighted the following issues:

- A cost comparison between individual projects is impossible, as too many items should be equal. A more suitable method might be to compare costs of a large number of road works. This would balance the various items and allow broad, macro economic conclusions.
- Quality should be compared as well, and the comparison might be based on the funds spent on maintenance. However, such a comparison is not possible when no maintenance takes place. Differences in maintenance costs are furthermore not only caused by the technology choice, but also by the quality of the designs.
- To reduce the cost of roadworks, routine maintenance is more effective than road rehabilitation.

The detailed presentation of group 3 is given on the following page.

1.5 Group 4: Contractor-client relationships

The relationship between contractors and clients is often based on confrontation. To move from confrontation to partnership, contractors, their associations, and client's representatives have to play a role. To a lesser extent, procurement procedures influence the relationship as well.

Role of contractors' associations

The confrontational relationship is caused by various problems relating to the contractors. These problems range from inadequate contractors' performance to inadequate contract procedures, and from bad treatment of workers to contractor's negative perception of clients.

Each problem is caused by a number of factors, including the dependency of contractors and their lack of knowledge, experience and dialogue (see chart).

Solutions to these problems include strengthening the contractors' association and the dialogue between contractors' associations and the client; educating contractors; and improving contract documentation.

Role of client's representative

Problems related to clients that affect their relationship with the contractor include: late payment, the client's negative perception of contractors, and inadequate capacity and management structures of the client.

Several factors contribute to these problems, such as: jealousy of the perceived financial rewards of contractors; negative attitude towards labour-based methods; corruption; inadequate funds; lack of training; inefficiency and resistance to change.

These problems may be addressed through various actions, which aim at increasing the efficiency, effectiveness, awareness, motivation and resources of the client, and at improving the relationship with contractors.

Procurement procedures

Due to lack of time, this issue was not addressed.

Discussion

The discussion highlighted two additional methods to improve the relationship between contractors and clients:

- The contractors' association can assist in the selection of contractors by setting guidelines together with the client.
- The client should improve the remuneration of its staff. The levels of salaries should be set in collective bargaining, to adjust wage levels to the local situation.

More detailed information on the relation between the client and the contractors is presented in the two charts on the following pages.

1.6 Group 5: Sustainability, growth and diversification of labour-based contracting

To promote sustainability, growth and diversification of labour-based contracting, the main questions are as follows:

- How much support should contractors get? For how long?
- When should competitive bidding be introduced? How? Between whom?
- Is sustainable growth of small scale labour-based contractors possible?
- What are the strategies for diversification?

The group tackled the first two questions.

Support to contractors

Support can be provided indirectly and directly. Indirect support entails creating an enabling environment through effective procedures, steady contracts, committed clients and other mechanisms. Direct supports comprises training, coaching, quality control, credit facilities and other forms of support aimed at starting and improving a contracting business.

Direct support should not be excessive, but relate to the needs, since excessive support creates dependency by the contractors. Equipment should be provided to start a business, while training and credit should be available on a continual basis.

Initially, training should be given and paid by the client. Thereafter, contractors should contribute towards the cost of training, to increase their commitment. A training fund can be established from funds received from the registration of contractors in order to create a sustainable system.

Competitive bidding

Competitive bidding should be introduced for all contractors after they repay their loans. Contractors should be introduced to competitive bidding in three stages, with the end stage being that all labour-based and machine-based contractors can bid for the same contract.

Discussion

The discussion raised the following issues:

- Competitive bidding should be introduced, as this system is considered to be sustainable. But will labour-based contractors and labour-based methods survive? The answer should be yes, if

Government wants to support labour-based methods to create employment. Trained and equipped labour-based contractors should be competitive, but new contractors will continue to need assistance.

- Will the client be able to provide a sufficient number of contracts for contractors, if the donors withdraw support? Government commitment towards employment creation then becomes even more important. The government may also consider providing other options, beside roadworks, for labour-based contractors.
- Contractors should try to diversify into other sectors, and/or loan out their equipment when they do not need it. This lessens their dependency and their overhead costs.
- In a system of competitive bidding, designs should be neutral for labour-based and machine-based methods.
- Contractors and clients need to be trained in competitive bidding before it can be introduced.

The detailed presentation of Group 5 is in the chart on the facing page.

1.7 Group 6: Should contractors be equipped?

Contractors need equipment to perform their job. However, do clients need to equip the contractors? Opinions in the group were divided, with six people saying yes, and five saying no. What the client definitely needs to do, however, is to create an enabling environment for labour-based contractors to equip themselves.

The question is what kind of equipment is needed, what the risks are, and what issues are involved.

Equipment needed

How much and what kind of equipment is needed depends on the location. The minimum equipment need of contractors is one pedestrian roller, one pick-up, and one tractor with two trailers, or one tipper. More equipment may be provided, but then the question is how labour-based a labour-based contractor should be.

Risks of equipping the contractor

The risks include:

- Non-recovery of funds
- Contractors moving up-market or into other markets
- Contractors going bankrupt
- Contractors becoming machine-based

Issues

The main problems that need to be addressed to effectively equip contractors, and/or to create an enabling environment for contractors are the following:

- Lack of government commitment to equip labour-based contractors
- Lack of ability of the contractors to repay their loans
- Unsuitability of equipment

- Lack of institutions to manage equipment loans

Discussion

- By ensuring regular contracts, repayment of loans by contractors is promoted.
- The main question is no longer "how can we equip contractors?", but "how can we create an enabling environment for contractors to equip themselves?" This represents a major change in attitude, which is applicable to the training of contractors as well. Such an enabling environment includes providing loans. Experience in Ghana suggests that most contractors will repay their loans, though interest rates are a determining factor.

The presentation of Group 6 is in the chart alongside.

1.8 Group 7: Training approaches for contracting

Training is needed to introduce clients, supervisory agents and contractors to labour-based works and new developments, and to improve their skills in order to enhance effectiveness and efficiency of labour-based works. The training differs for the three parties, since each party has its own role in the contracting process.

Training of clients and supervising agencies

Engineers, supervisors, and private consultants need to be trained to be able to plan, manage and supervise labour-based works. Training should start before the project commences and, for consultants, before the tendering process begins. The benefiting agency (clients or consultants) should pay for their own training.

Training of executing agency (contractor)

All staff of the contractor, from the managing director to the labourers, require some form of training to enable a smooth functioning of labour-based contracting. Generally, the contractor should pay for this, though in some cases the client may co-finance. In the long run, a loan system may be developed for the training requirements.

Discussion

The discussion highlighted the following issues:

- Different target groups require different trainers. They can be accredited trainers, as in South Africa, or experienced contractors, as in Ghana.
- Labour-based contracting should be included in the curriculum of universities.
- Training methodology should include training sessions and field work.
- Induction courses and courses aimed at creating awareness among contractors on the use of labour-based approaches should be paid for by the client. In the long run, however, this is not a viable option, and these courses should then be funded from a training fund or a training loan.

The presentation of Group 7 is in the charts on the following two pages.