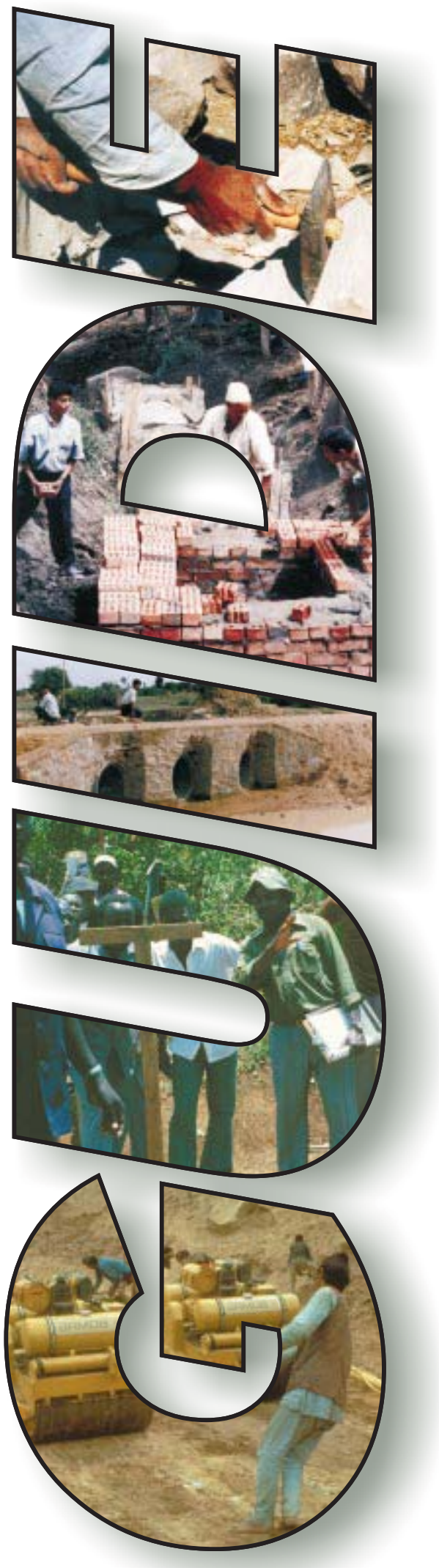
Development Policies Department
International Labour Office
Geneva

Employment - Intensive Infrastructure Programmes:

Capacity Building for Contracting in the Construction Sector



Peter Bentall, Andreas Beusch and Jan de Veen

Employment-Intensive Infrastructure Programmes:

Capacity Building for Contracting in the Construction Sector

Guidelines

The International Labour Organization

The *International Labour Organization (ILO)* was founded in 1919 to promote social justice and, thereby, to contribute to universal and lasting peace. Its tripartite structure is unique among agencies affiliated to the United Nations; the ILO's Governing Body includes representatives of government and of employers' and workers' organizations. These three constituencies are active participants in regional and other meetings sponsored by the ILO, as well as in the International Labour Conference - a world forum which meets annually to discuss social and labour questions.

Over the years, the ILO has issued for adoption by member States a widely respected code of international labour Conventions and Recommendations on freedom of association, employment, social policy, conditions of work, social security, industrial relations and labour administration, among others.

The ILO provides expert advice and technical assistance to member States through a network of offices and multidisciplinary teams in over 40 countries. This assistance takes the form of labour rights and industrial relations counselling, employment promotion, training in small business development, project management, advice on social security, workplace safety and working conditions, the compiling and dissemination of labour statistics, and workers' education.

ILO Publications

The *International Labour Office* is the Organization's secretariat, research body and publishing house. The *Publications Bureau* produces and distributes material on major social and economic trends. It publishes policy statements on issues affecting labour around the world, reference works, technical guides, research-based books and monographs, codes of practice on safety and health prepared by experts, and training and workers' education manuals. It also produces the *International Labour Review* in English, French and Spanish, which publishes the results of original research, perspectives on emerging issues, and book reviews.

Catalogues and lists of new publications are available free of charge from ILO Publications, International Labour Office, CH-1211 Geneva 22, Switzerland. E-mail: pubvente@ilo.org; website: www.ilo.org.

Employment-Intensive Infrastructure Programmes:

Capacity Building for Contracting in the Construction Sector

Guidelines

by

Peter Bentall, Andreas Beusch and Jan de Veen

International Labour Office Geneva

First published 1999

ILO
Employment-Intensive Infrastructure Programmes: Capacity Building for Contracting in the Construction Sector
Geneva, International Labour Office, 1999

ISBN 92-2-111 581-X

ILO Cataloguing in Publication Data

Printed in Italy by the ILO Turin Centre

Foreword

Despite progress in some developing countries, widespread unemployment, underemployment and poverty continue to characterize many low-income countries. In response to this challenge, the ILO has emphasized "employment-intensive growth" through the design of policies and programmes which aim at increasing the employment impact of investments. In this regard, the large-scale public sector investments in infrastructure are ideal areas for action by governments and funding agencies wishing to maximize the employment content of growth.

Well-designed and well-implemented labour-based infrastructure programmes offer specific advantages to the social partners (governments, employers and workers) in developing countries in terms of improved access to public markets, increased employment and better returns to investment. Moreover, they provide a good opportunity to each of these partners to incorporate social policy objectives into infrastructure investment policies. Such programmes also offer better prospects for small entrepreneurs to establish themselves in the domestic market for civil works, which has so far been dominated by large-scale and non-local firms in most developing countries. Finally, such programmes are attractive to donors and governments alike as they respond to employment and poverty objectives, increase incomes and standards of living in rural and urban areas, reduce foreign exchange requirements and strengthen the domestic construction sector.

These Guidelines present the current experience of contractor development programmes which aim to introduce cost-effective employment-intensive approaches to infrastructure works while respecting basic labour standards and correct working conditions.

From an ILO point of view, issues concerning the correct treatment of workers are of particular importance. The contractual systems and documentation can become tools to put a policy of "job creation with social progress" into practice. Promoting labour-based technologies and giving a comparative advantage to contractors who efficiently use locally available resources, ensure a high employment-intensity of the huge investments made in infrastructure. At the same time, relevant labour standards and good working conditions for temporary or contract workers in the infrastructure construction sector must be promoted. The most important of these include: minimum wage; minimum age; non-discrimination (affirmative action in favour of women); elimination of forced labour; workers' compensation for work accidents; and safety and health. We hope that the advice given in these Guidelines will contribute to the development of a healthy domestic construction industry in developing countries, where basic workers' rights are respected and fair working conditions are provided, thus contributing to the long-term objectives of productivity improvement and growth.

Samir Radwan
Director, Development Policies Department

Table of Contents

Table of Abbreviations

AGETIP	*Agence d'exécution des travaux d'intérêt public contre le sous-emploi (Senegal)*
AGETIPE	*Agence d'exécution des travaux d'intérêt public pour l'emploi (Mali)*
DANIDA	*Danish International Development Agency*
DFR	*Department of Feeder Roads (Ghana)*
FIDIC	*Fédération internationale des Ingénieurs Conseils*
ILO	*International Labour Organization*
KIHABT	*Kenya Institute of Highways and Building Technology*
LCU	*Labour Construction Unit (Lesotho)*
MOWTC	*Ministry of Works, Transport and Communications (Uganda)*
MWTC	*Ministry of Works, Transport and Communications (United Republic of Tanzania)*
NCC	*National Construction Council (United Republic of Tanzania)*
NGO	*Non-governmental organization*
RMI	*Road Maintenance Initiative*
ROMAR	*Road Maintenance and Regravelling (Lesotho)*
RTS	*Roads Training School (Zambia)*
SDC	*Swiss Agency for Development and Cooperation*
SFD	*Social Fund for Development (Egypt)*
SLRA	*Sierra Leone Roads Authority*

Acknowledgements

This publication has been prepared by Peter Bentall, independent Consulting Engineer, Andreas Beusch, Intech Beusch & Co., Consulting Engineers, and Jan de Veen, Senior Engineering Adviser, Development Policies Department (POLDEV), ILO Geneva. Its preparation was a follow-up to a workshop of specialists on labour-based contracting, held in Zimbabwe in November 1995 and attended by specialists from the private sector (contractors and consultants), government agencies, learning institutions, the World Bank, donor agencies and the International Labour Office. These Guidelines discuss and examine key operational issues identified by the workshop.

The authors wish to express their appreciation to all who have contributed to the development of this publication. Particular thanks are due to those who have contributed case materials and/or extensive comments to the first draft of this publication, listed below in alphabetical order: G. Banjo, C. Berentsen, E. Bynens, P. Chaudry, W. van Esch, J. Fransen, R. Geddes, W. van Ginneken, H. Goldie-Scot, P. Goovaerts, M. Gupta, M. van Imschoot, J. Majeres, E. Opoku-Mensah, K. Osei-Bonsu, P. van Rooij, D. Stiedl, D. Tajgman (for his previous work related to labour issues), M. Thiam, A. Twumasi-Boakye, M. van Vaals, E. de Vries and R. Watermeyer.

The illustrations for this publication have been produced by D. Amayo. F. Périat, J. Aspin, E. Fortarezza and V. Morra were responsible respectively for the typing, editing, graphic design and production process.

Introduction

PART 1

1. Introduction

1.1 Background and structure of the Guidelines

These Guidelines may look, at first sight, very technical - dealing as they do with contractor development and contract systems, procedures and management for infrastructure projects. However, they show in a pragmatic way how socio-economic objectives - employment, conditions of work, labour standards - can be promoted and integrated into private sector development programmes of this nature. As such, the proposed approach is a policy tool which can significantly contribute to "employment-intensive growth". The Guidelines were prepared in line with recommendations formulated by the participants in a specialist workshop on labour-based road contracting in Africa, held in Zimbabwe in November 1995. They proposed that comprehensive guidelines dealing with contractor development for labour-based roadworks should be prepared to include also experience from outside Africa. Institutional and operational issues were to be covered in separate volumes of such guidelines: a first volume focusing on those issues relating to relevant policies and the creation of an enabling environment, and a second dealing principally with the practical operational aspects of designing, implementing and monitoring labour-based, contractor development programmes.

However, the time and resource requirements for such comprehensive guidelines of this nature are significant. There is an urgent need for practical guidance, particularly for both designers and implementers of labour-based contractor development projects, not only dealing with roads, but also with other types of infrastructure works. For this reason the ILO decided to proceed with the preparation of a summary version of general guidelines dealing principally with operational issues and challenges faced by practitioners working on labour-based infrastructure works projects, carried out with private sector involvement. This publication is the result of this work. It identifies relevant information needs and presents options, complemented by brief case-studies of relevant project experiences. It discusses different options for private sector development - contractors and consultants - the selection and training of contractors, their access to and management of financial and material resources, and contract documentation and procedures. It also deals with labour relations and issues related to working conditions and labour standards,[1] which are crucial if employment-intensive programmes are to expand and last.

[1] *These issues are discussed in detail in "Employment-intensive infrastructure programmes: Labour policies and practices" ILO, Geneva, 1998.*

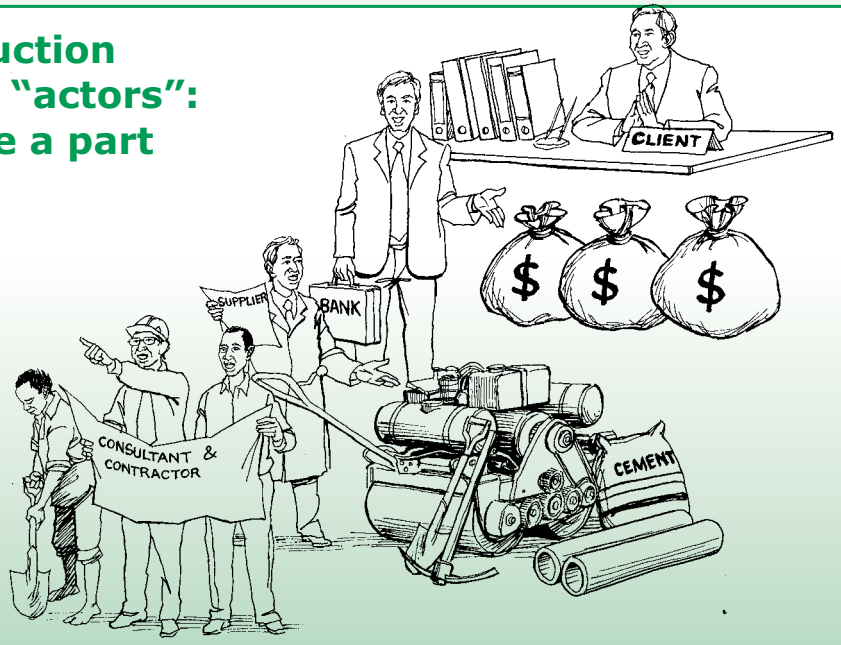
1. Introduction

1.1 Background and structure of the Guidelines

The construction industry: Its agents and potential for job creation

Construction comprises a wide variety of activities and products. Many agents are involved, ranging from those responsible for funding, planning, design, procurement and supervision to those carrying out the work. In the road sector - when works are contracted out - the principal agents include government agencies, banks and other credit agencies, suppliers of goods, services and materials, consultants and contractors. The latter group is widely diversified, ranging from multinational firms to micro contractors, sometimes limited to one person such as the road maintenance "length person" responsible for the routine maintenance of a stretch of road. In order to increase productive and quality employment in the construction sector in developing countries, imaginative and alternative approaches can be applied with different roles and responsibilities for all these actors. In particular the civil works sector - roads, irrigation, water supply, soil conservation - offers a huge potential for job creation through employment-oriented investment policies and strategies.

Construction project "actors": All have a part to play



The potential for realizing socio-economic objectives through construction projects

There are definite relationships between employment opportunities, available skills, entrepreneurship and the use of small-scale enterprises in the creation and maintenance of assets. The construction strategies which are adopted can be used to address social and economic needs and concerns. Also, depending upon how they are structured, such strategies can facilitate the economic empowerment of marginalized groups, e.g., community organizations, micro- or small enterprises, in a focused manner. Thus, the process of constructing assets can be just as important as the provision of the assets themselves.

These Guidelines are structured as follows: the left-hand pages present the key issue, discuss the information required by the different parties involved in the project design and implementation phases, and provide a general summary of the relevant project experience in respect of the key issue concerned. Some guidance is provided at the end of each section, based on approaches developed for various contractor development programmes in different parts of the world. The Guidelines aim to be as practical as possible, providing advice to both designers and practitioners dealing with the development and implementation of contractor development projects of this nature.

The right-hand pages show practical examples and illustrate related project experience. Reference literature, pertaining to the key issue and the practical examples, is provided at the end of each section.

1.1 Background and structure of the Guidelines

An enabling environment for labour-based civil works contracting: The core issues

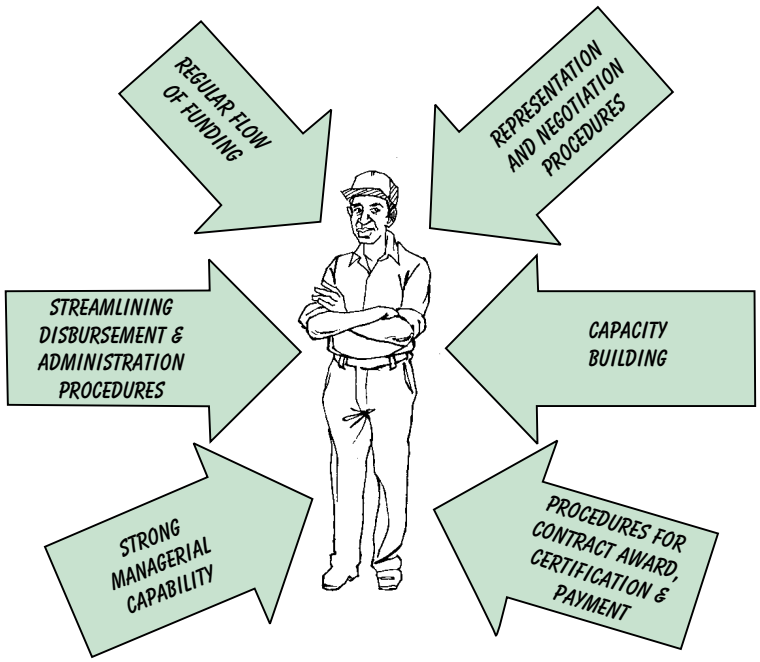
Regular payments to contractors by the contracting agency are crucial for labour-based programmes. Because of the large numbers of temporary workers on their payroll, labour-based contractors are particularly vulnerable to payment delays. Executing contracts requires the successful performance of the contractor, the contracting agency or "client", and the client's agent.[1]

The core financial problems are: (i) the tendency of the contracting agency to award contracts without ensuring that the required funds will be available; (ii) the contracting agency's weak managerial and administrative capability; and (iii) the difficulty in obtaining commitment and support from financial institutions. An enabling environment therefore includes ensuring a regular flow of funding for work, streamlining disbursement and administrative procedures, access to credit facilities and equipment by contractors, a reasonably steady workload and the contracting agency's strong capability to manage contracts.

Contractor associations have an important role to play in representing individual contractors, in negotiating on their behalf and in capacity building.

The contracting agency should ensure appropriate contract documentation and streamlined (and where possible decentralized) procedures for contract award, certification and payment.

Establishing an enabling environment



[1] These Guidelines deal primarily with public civil works, where the "client" is generally a government/funding agency, a municipality or non-governmental organization. For this reason, the term contracting agency is used throughout this document.

[2] It should be noted in this regard that the non-release of approved funding in budgets of contracting agencies is generally beyond the control of such agencies and should be dealt with at the level of the ministry of finance.

1.2 Labour-based contracting: Development strategies

This section provides a general overview of contractor development strategies for labour-based infrastructure works. It follows the same format as used for sections 2.1 to 9.4, and highlights the main issues to be considered at the design stage of a contractor development programme.

Key issue:

What alternative strategies can lead to the development of a large-scale labour-based contracting capacity?

Information required:

- ❑ sections of national development plans outlining short-, medium- and long-term strategies for infrastructure development;
- ❑ national policies (including "targeted procurement" of services) concerning development of the domestic construction industry, in particular small-scale labour-based contractors;
- ❑ programme scope and long-term funding arrangements;
- ❑ existing capacity, skills and resources of the domestic construction industry: availability of different levels and categories of local contractors and consultants;
- ❑ existing capacity of contracting agency to manage numerous small contracts;
- ❑ existing contractor classification system for contract award by type, value and complexity;
- ❑ size of second-hand equipment market and competitiveness of the existing domestic contractors;
- ❑ policies and practices of local financial institutions towards small-scale enterprise development.

Project experience indicates that:

- ❑ options to increase participation by small local contracting firms in civil works include:

1.2 Labour-based contracting: Development strategies

South Africa: Targeted procurement

The targeted procurement system rewards those tenderers who meet or exceed certain specified socio-economic targets. "Development objective" points are awarded to tenderers who make the optimum economic use of one or more of the following in the performance of the contract:

- local labour
- targeted groups of workers
- local resources (including local artisans, local materials)
- certain categories of small, micro and medium-sized enterprises specified in the tender.

Market forces dictate the degree to which contractors will be able to meet socio-economic objectives in the most cost-effective manner. Although these target groups receive a price preference, they still have to submit competitive tenders to be awarded contracts.

(See also box on page 27).

Targeted procurement has wider objectives

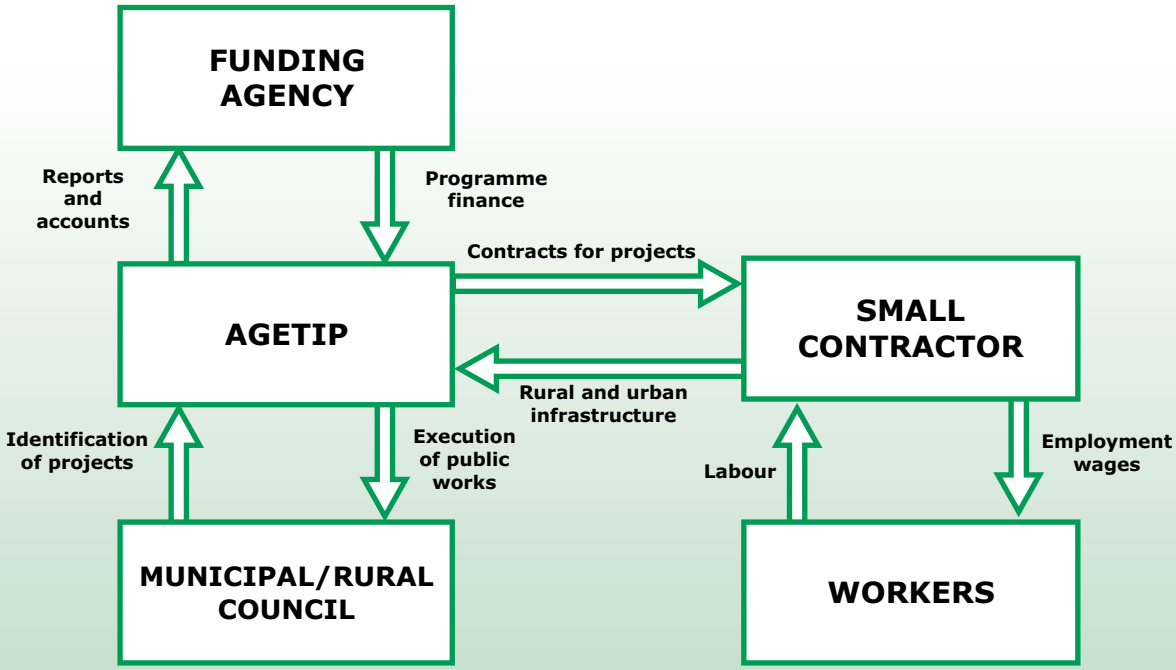
- designing and specifying selected works so as to encourage the use of labour-based methods;
- modifying the role of the government agency away from directly executed works towards contract management, and developing a contracting agency/consultant/contractor relationship for contract preparation and supervision;
- appointing, on a cost reimbursable basis, third party management support to provide construction and materials management services;
- setting up a special agency to deal with local, employment-generating contracting (see AGETIP box on opposite page);
- introducing a system of targeted procurement which encourages the main contractor to actively involve and train local entrepreneurs and communities in planning, implementing and maintaining infrastructure works;
- appointing a managing contractor to be responsible for supervising several small-scale contractors;
- developing decentralized systems for community contracting.

The best option for a given country depends on the state of development of the construction industry (consultant/contractor capacities, experience with contracting). A strategy choice should be made on assessments of a large number of issues highlighted in the following sections of these Guidelines:

- while the immediate needs will be for (re)construction and rehabilitation, the long-term work supply will be in maintenance;
- both external and internal sources of funding should be mobilized, not only for short term (re)construction but also for long-term (routine and periodic) maintenance inputs;
- unless carried out as subcontracts through large public works contracts, labour-based contracting is likely to result in numerous low-value contracts. This will require increased contract management capacity;
- decentralized decision-making and fund control are essential for large-scale labour-based programmes;
- a clear definition of the respective roles and responsibilities is required for each of the strategy options. It is important to clearly spell out the contractual risk of each of the parties involved;
- capacity building must include both the implementer (contractor) and the controller (contracting agency/consultant);
- diversification of labour-based road contractors into other civil and private works schemes (soil conservation, irrigation, water supply, building) should be encouraged. Excellent possibilities can be created for labour-based road maintenance works.

Senegal: An independent contract management agency

A model for non-profit contract management agencies is the Agence d'exécution des travaux d'intérêt public contre le sous-emploi (AGETIP) in Senegal. AGETIP was established in 1989 as a private non-profit NGO with the following objectives: creating employment, particularly in urban areas; providing vocational training to improve the operational efficiency of the local construction industry and the effectiveness of public institutions; demonstrating the scope for increased application of employment-intensive construction technologies; and executing public works that are worthwhile both economically and socially. AGETIP has been given the mission of "owner's delegate" for a programme of small and medium-sized labour-based public works and therefore manages every aspect of the project, including inspection. The agency contracts small-scale contractors directly to execute civil works following strict contractual procedures described in a manual approved by the Government and the World Bank (the "principal system"). It also contracts local consultants - to prepare designs and bidding documents and to supervise works - in order to keep its own staff to a minimum. AGETIP is responsible to a Board in which the government, local municipalities, unions, NGOs and other development actors are represented.



Some guidelines

- It is essential to **develop national policies and an enabling environment in which small-scale contractors can operate**. Areas of work appropriate for small-scale contractors may include new works (e.g., roads, water supplies), rehabilitation (e.g., irrigation channels, rural and urban roads), maintenance (most civil infrastructure).

  - Infrastructure works should be made available through small contracts which are manageable for the entrepreneurs. With regard to rural roadworks, small construction contracts could range between a work output of three to twelve months (5 to 25 km), whereas maintenance contracts could be issued, for example, for a one year period covering road lengths between 5 and 50 km depending on the capacity of and transport means owned by the contractor concerned. The small-scale, low-risk nature of the work should normally allow a reduction of the bond/guarantee/security conditions of the contract.

  - Access to a minimum amount of appropriate light equipment, particularly for hauling and compaction, should be facilitated. When such light equipment can be hired locally at reasonable rates this is a preferable option. Otherwise, hire purchase arrangements administered by a local bank or NGO, backed up by the government agency in terms of contract guarantees for the pay-off period, have proved to be a feasible option. In order to prevent overexposure of the contractors and to permit an early introduction of competitive bidding, hire purchase loans and guarantees should be kept as small as possible while still enabling the contractors to perform. (See part 5, *Contractors' access to resources*.)

  - Wage rates for the temporary village workers should be set to respect the national minimum wage legislation or agreements reached for this category of workers (see section 9.1, *Wages and productivity*). Exceptions or reforms of minimum wage legislation to reflect prevailing market wages in the areas concerned should be negotiated with the social partners (governments, employers' organizations, workers' organizations). Payment in employment-intensive works should generally be productivity-related, i.e., payment would normally be made on a task or piece work basis. Again, the principles of this should be understood and negotiated by the social partners.[1]

  - Access to credit is important for the small contractors for whom cash-flow problems can easily lead to work stoppages and bankruptcy. The contracting agency should ensure timely payments and - if this cannot be guaranteed - assist the contractors in their dealings with banks. The provision of a letter of guarantee could be considered for this purpose.

[1] *See "Employment-intensive infrastructure programmes: Labour policies and practices", chapter 4,* ILO, Geneva, 1998.

Cambodia: Systems and procedures development

The following approach was proposed for government capacity building in a small-scale infrastructure contractor development project in Cambodia:

Immediate objective:
To strengthen the capacity within provincial authorities to plan, design, implement and monitor infrastructure (irrigation, roads) improvement and maintenance works using the most cost-effective construction techniques: labour-based methods, primarily based on the use of locally available resources, and with the participation of the private construction industry.

Outputs	***Activities***
Technical manuals for the construction of rural roads and waterworks using labour-based methods to the maximum extent possible.	Prepare rural roads manuals covering: geometric standards; quality specifications; work methods, organization and norms; and criteria for appropriate balance of labour and equipment on different types of infrastructure works.
A maintenance management system based on decentralized organization using small contractors recruited from villages in the vicinity of the works to be maintained.	Develop a system detailing the full organizational set-up needed for human resource requirements; recommend appropriate planning, supervision and contracts procedures; make cost estimates and recommend procedures accordingly in relation to the timing of maintenance, monitoring and control, and fund-raising.
Guidelines and procedures for planning, estimating, budgeting, personnel recruitment and employment conditions.	Review and prepare in close collaboration with responsible authorities administrative procedures important for the planning and implementation of a labour-based infrastructure programme. Make specific recommendations in terms of labour recruitment and employment conditions for casual labour recruited both by public and private sector institutions including issues such as remuneration, incentive schemes, organization of unions and employers' associations, and safety and health.
A comprehensive reporting and monitoring system to ensure feedback of correct and comparable information from field projects that can be used as an effective management tool.	Establish uniform monitoring and reporting procedures to be applied in different labour-based infrastructure projects in the various provinces.
Complete training packages developed and tested, targeted at: (i) provincial ministry staff in the management of labour-based rural infrastructure projects; and (ii) small contractors in the technical aspects of labour-based infrastructure works, as well as in business management.	Prepare training modules for use in the training programmes to be organized at provincial level. Identify national bodies able to carry out the training programmes in the future after ILO technical assistance has ended.
Provincial engineers and technicians trained in selection, planning, design, implementation and management of contracts for infra-structure rehabilitation and maintenance by local small-scale contractors.	Establish a training centre in the project area where small-scale contractors and government staff will be provided with training in the technical and managerial principles related to labour-based infrastructure works.

- **Appropriate administrative procedures and contractual documentation are necessary (and likely to be different) for the various options.** At the pilot stage it is recommended to reserve contracts directly for labour-based contractors under their own classification.

  - Labour-based road contractors are very vulnerable to payment delays. Disbursement and payment systems and procedures should permit **both regular and timely** payments. Decentralization of responsibilities for, and control of, funds should be encouraged to the maximum extent possible. Financing for works should ideally be available to the agency administering the contracts **before** works are tendered for. In most countries, however, government funds are released on a monthly or quarterly basis in accordance with the receipt of revenues. This means that, in practice, the contracting agency can only ensure that contract funds are budgeted for and that the agency exerts its influence to ensure the timely release of these budgeted funds.

  - Design specifications should be developed to allow (and encourage) the use of labour-based methods.

  - Unit rates for labour-based construction and maintenance activities should be developed reflecting attractive and competitive basic wages, productivity rates attained by workers using good quality hand tools on well-organized and well-managed sites, depreciation of tools and light equipment, contractor overhead and profits, and cost of social protection (occupational safety, accident insurance).

  - When small contractor development projects include project-induced financial commitments, such as hire purchase loans for equipment, competitive bidding should only be introduced once the contractors have reimbursed a substantial part of the related bank loans. If this is done too early, medium- to large-scale contractors - in order to keep working, particularly in countries with large stocks of second-hand equipment and a shrinking construction market - are likely to underbid labour-based contractors by lowering prices to operating costs, at least in the short term.

- **Technical and management training combined with a trial contract period - and possibly a mentorship phase with management support - is essential to build up contractors' capacity** in labour-based technology, estimating, pricing and bidding as well as in the organizational and financial management of the enterprise. Different supervision and facilitation arrangements for small contractor development are feasible, depending on how well the local construction industry is established.

  - Where construction and materials management capacity is available, the South African development team approach can be applied (see box on opposite page). Following different informal and formal training periods, the contractor gradually assumes more responsibility and bigger contracts. The more experienced contractors can be supported through a mentorship approach, where the contractor him or herself assumes responsibility for the financial, administrative and operational aspects of the contract but is guided by an experienced consultant on aspects related to tendering and

South Africa: Development team approach

The existence of experienced consulting and contracting firms in South Africa has made it possible for them to play an active role in small contractor development. Experienced and suitably qualified personnel of such firms - who together form the development team - assist small contractors in the following areas:

- administration and management
- technical training
- engagement of specialist contractors.

The contractor-trainee signs a contract with the contracting agency and the development team is appointed by the contracting agency on a fee or cost-reimbursable basis. This team comprises:

• Design engineer	*Design and supervision*
• Engineer in charge of works	
• Construction manager	*Construction management, orientation, advice, training and provision of equipment (if required)*
• Materials manager	*Procurement, storage and distribution of materials*
• Procurement agent	*Handles the supply of materials and equipment.*

A different level of support is provided to contractors in their different stages of development.

Level of contractor	Type of support	Contractor's contractual responsibilities	Degree of development support provided
1	Construction and materials managers	Provide labour Provide small tools	Offer advice, practical assistance and training Provide and transport materials to site Provide (light) equipment other than small tools Arrange for specialist work Arrange for fortnightly wages
2	Construction and materials managers	Provide labour Provide small tools Transport materials from yard to site Provide certain materials	Offer advice, practical assistance and training Provide most materials Provide (light) equipment other than small tools Arrange for specialist work Arrange for fortnightly wages
3	Construction and materials managers	Provide labour Provide small tools Provide site office and certain storage facilities Provide all materials	Offer advice, practical assistance and training Provide (light) equipment other than small tools Offer materials for purchase Arrange for monthly wages Arrange for specialist work
4	Mentoring	Provide labour materials and plant Provide 5% surety Engage specialist contractor Finance all contractual obligations	Conduct a tender workshop Advise, guide and instruct contractor Assist in setting up proved systems to enhance management and business skills
5	Mentoring	As for level 4 Provide 10% surety	As for level 4

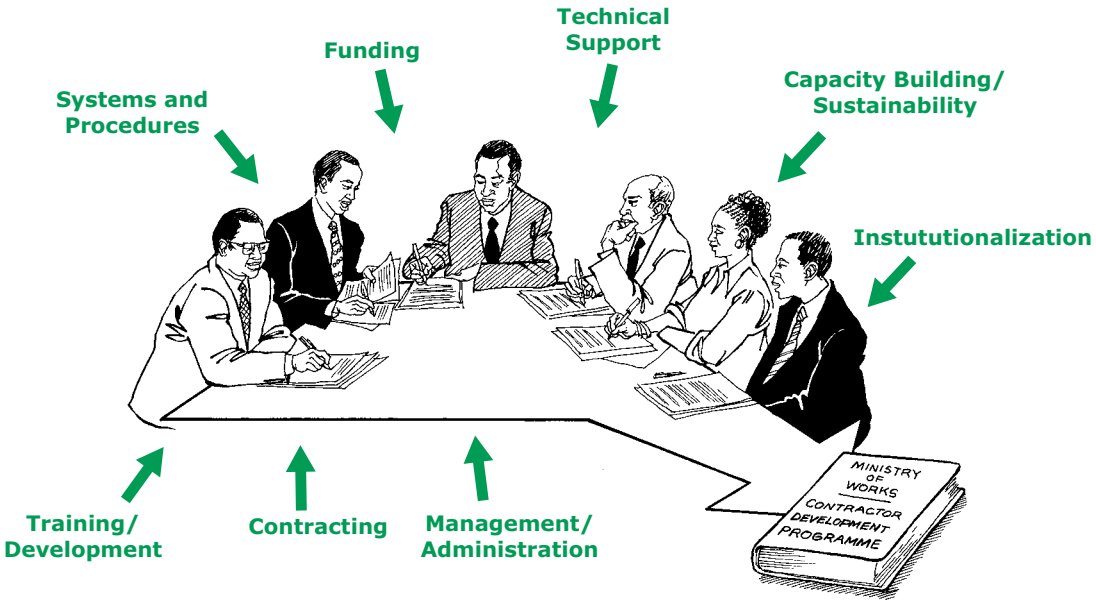
business management. However, very few local (or international) consultants and NGOs have labour-based technology experience and so training is needed if this approach is to be used.

- Where medium- and large-scale contractors can be suitably motivated, for example through targeted procurement (see box on page 7), a system of subcontracting works to labour-based contractors can be implemented. The "main" or "managing" contractor deals with the administrative, financial and procurement aspects, subcontracting suitable parts of the work to small contractors and/or communities, while including training as necessary. This implies that the main contractor will have to make investments in training and investigating alternative construction methods using locally available resources. The contractor is motivated to do this because of the contract award mechanism. This not only considers the usual factors and price of a tender, but also takes into account how the contractor will meet specified socio-economic objectives.
- Where experienced labour-based contractors are available, these can be instrumental in training new entrepreneurs. Both the labour-based contractors' association and training institution(s) can play an important role in enabling such training.

Technical and administrative training is essential to build up the contracting agency's capacity in labour-based technology, procedures of tendering, award of contracts, certification of works, payment and general contract administration.

- In many countries only the contracting agency (for civil works usually a ministry or government agency) has the capacity, in terms of human and material resources, to carry out the contract management role. Because most government agencies in developing countries have, until the mid-1990s, directly carried out civil works through their own means (force account), they need reorientation in order to become effective contract management organizations. This implies that both system and procedure development and training are indispensable. In a situation where neither suitable procedures, nor specialized capacity exists, a pilot/demonstration project with external technical assistance will be needed for a period of at least three years to develop an enabling environment and train the core staff. In order to cater for the demand for management and supervisory capacity in the medium-term local consultants should also be involved and trained at as early a stage of the programme as possible.

1.2 Labour-based contracting: Development strategies



Many components of a contractor development strategy contribute to a practical policy

Indonesia: Local resource utilization for road maintenance

Between 1993 and 1996 a pilot project in Indonesia researched and developed innovative techniques for a range of low-cost surfacing options for district roads, making optimum use of locally available resources. The project experience demonstrated that the introduction of the "length person" system for routine maintenance through micro contracts could extend the life span of the roads by as much as 50 %. The small-scale contractors could apply labour-based work methods extensively and efficiently after short training periods (three to four days) and follow-up on-the-job training. Through good organization, planning and site management, the contractors achieved labour productivity well above the norms applied by the Ministry of Public Works. The project highlighted the need to use and develop the considerable private consulting resource base in Indonesia as a complement to building the capacity of the district authorities (the contracting agencies) for contract document preparation, survey and engineering design, and work supervision.

Vanuatu: An integrated approach to capacity building for the private and public sectors

Following a massive destruction of housing and infrastructure caused by a cyclone in 1987, emergency assistance was provided to the Pacific island of Vanuatu, but at the same time a capacity-building effort was initiated to cater for the long-term needs of the construction industry. The capacity-building project included: (i) institution building - through courses, practical training and mentoring of public works supervisors, and the establishment of improved procurement and stores organization; (ii) contractor development - through the creation and implementation of modular courses and comprehensive training and assistance packages for 20 small firms; (iii) vocational training - through capacity strengthening of the vocational training centre and direct training in skills such as carpentry and electrical wiring; (iv) improved housing construction technology dissemination; and (v) feasibility studies and design related to infrastructure reconstruction in different sectors. The project was very successful in achieving its short-term objectives, but a subsequent evaluation mission noted that the absence of longer-term support to enable the domestic contractors to become firmly established jeopardized the sustainability of the results.

Bibliography

L. Frigenti and A. Harth with R. Huque: *Local solutions to regional problems: The growth of social funds and public works and employment projects in sub-Saharan Africa*, World Bank, Washington, D.C., 1998.

Draft white paper on labour-based works policy, Department of Transport, Ministry of Works, Transport and Communication, Republic of Namibia, Windhoek, April 1998.

R. Watermeyer: *The development of contractors from marginalized communities in South Africa*, Soderlund & Schutte Inc., South Africa, Johannesburg, August 1997.

J. de Veen and T. Tessem: *Labour-based contracting on the road to the 21st century*, ILO/SAMAT, Harare, 1996.

G. Gopal: *Procurement and disbursement manual for projects with community participation*, World Bank Discussion Papers, Africa Technical Department Series, World Bank, Washington, D.C., 1995.

Habitat/ILO: Shelter provision and employment generation, Nairobi/Geneva, *1995.*

L. Péan and P. Watson: "Promotion of small-scale enterprises in Senegal's building and construction sector: The AGETIP experience", in *New directions in donor assistance to microenterprises*, OECD, Paris, 1993.

R. Young: "Policy biases, small enterprises and development", in *Small Enterprise Development*, Vol. 4 No. 1, Intermediate Technology Publications, London, 1993.

R. Spence, J. Wells and E. Dudley: *Jobs from housing: Employment, building materials, and enabling strategies for urban development*, Intermediate Technology Publications, London, 1993.

Ph. Egger: *Les travaux publics et l'emploi pour les jeunes dans une économie sous ajustement: L'expérience de l'AGETIP au Sénégal*, ILO, Geneva, 1992.

R. Neale: *Construction management and technology: A bibliography for developing countries*, Gower, United Kingdom, 1987.

J. Wells: *The construction industry in developing countries: Alternative strategies for development*, Croom Helm, London, 1986.

References for the boxes in this part

The construction industry: Its agents and potential for job creation. G. Edmonds and D. Miles: *Foundations for change: Aspects of the construction industry in developing countries*, Intermediate Technology Publications, London, 1984.

The potential for realizing socio-economic objectives through construction projects. R. Watermeyer: *Socio-economic responsibilities: The challenge facing structural engineers*, paper submitted for publication in the South African Journal of Structural Engineering, Johannesburg, April 1998.

An enabling environment for labour-based civil works contracting: The core issues. J. de Veen: "*Using local resources to meet the needs of rural areas*", *the Courier* Africa-Caribbean-Pacific, European Union, No. 169, May-June 1998. A labour-based approach to roads and rural transport in developing countries, *International Labour Review*, ILO: Vol. 131, No. 1, ILO, Geneva, 1992.

South Africa: Targeted procurement. S. Gounden, D. Letchmiah, S. Shezi and R. Watermeyer: *Targeted procurement: A means by which socio-economic objectives can be realized through engineering and construction works contracts*, Journal of South African Civil Engineers, Johannesburg, March 1998.

Senegal: An independent contract management agency. E. Stock and J. de Veen: *Expanding labor-based methods for road works in Africa*, World Bank Technical Paper No. 347, World Bank, Washington, D.C., 1996. L. Pean: "AGETIP: Delegated Contract management for public works in Senegal and in other African Countries", in *Success stories in West Africa*, World Bank, Washington, D.C., 1996.

Cambodia: Systems and procedures development. B. Johannessen: Project document, *Technical assistance to the labour-based rural infrastructure programme*, ILO, Bangkok, May 1996.

South Africa: Development team approach. P. Bentall, A. Twumasi-Boakye and R. Watermeyer: *Labour-based contracting: A study to develop guidelines for project formulation and implementation. Phase 1: Collection and collation of data. Volume 1: Overview assessment of key issues, general analysis of projects, brief project descriptions. Volume 2: Country reports - applicability of projects, alternative approaches. Volume 3: Overview South Africa Soweto CDP, contract documentation,* ILO, Geneva, 1995. R. Watermeyer: *Engineering and construction contracts, contractor development: A practical approach*, Johannesburg, 1998.

Indonesia: Local resource utilization for road maintenance. M. Knowles: *Pilot labour-intensive road project (INS/92/01/IBRD) - Terminal report*, Directorate General Bina Marga, Bandung, Indonesia, March 1996.

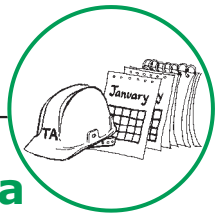
Vanuatu: An integrated approach to capacity building for the private and public sectors. D. Miles: "A decade of small contractor development in Asia: Lessons from project experience", in *Public Works Management and Policy,* Vol. 1, No.3, Sage Publications Inc., London, January 1997.

Employment-Intensive Infrastructure Programmes:
Capacity Building for Contracting in the Construction Sector

Project Delivery Systems

PART 2

2. Project Delivery Systems



2.1 Contractor development through a government contracting agency

Key issue:

What level of technical assistance (including local consultants) will be needed for labour-based contractor development programmes implemented directly by a government contracting agency?

Information required:

- contracting agency's capacity to manage and administer contracts and provide necessary support;
- private sector capacity to provide necessary support (consultants, contracting associations);
- technical and managerial capacity of the participating contractors;
- an assessment of the labour-based technology expertise within the country.

Project experience indicates that:

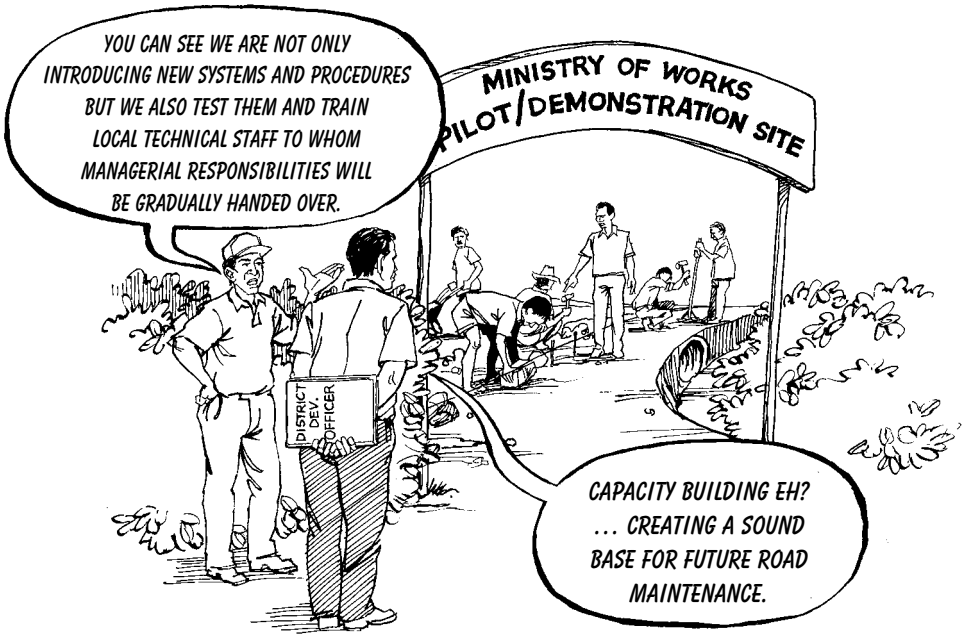
- technical assistance needs are generally seriously underestimated and often do not include capacity-building interventions for local institutions;
- competent counterparts and local specialists are frequently hard to find and a strategy needs to be developed as early as possible, before or at the project start, to establish appropriate positions and attract suitable individuals;
- regional/local expertise is often ignored or undiscovered and not utilized adequately;
- a strategy should be agreed at the project start, defining the roles of technical assistance personnel. This strategy should outline the changing role of technical assistance when line management responsibilities are progressively handed over to local staff;
- specialized technical support will generally be required for (i) the development of central/regional/district planning, monitoring and control capacities; (ii) the development of a local training capacity for technical and managerial/business skills; (iii) the setting up and running of pilot/demonstration sites; and (iv) the

2. Project Delivery Systems

2.1 Contractor development through a government contracting agency

Uganda: Contracts for routine maintenance of rural roads

In 1993, the introduction of contract routine maintenance in the Ministry of Works, Transport and Communications in Uganda was based on policies worked out within the framework of the Road Maintenance Initiative (RMI - a World Bank-coordinated road maintenance policy programme for sub-Saharan Africa supported by a donor consortium). For reasons of sustainability the Ministry used its own resources for the introductory and implementation phases of this maintenance contractor development programme, rather than involving external donor agencies. The Government supported the Ministry through policies and decisions, for example, on the introduction of decentralized procedures, the approval of training initiatives, etc. For the development process the human resources already available in the Ministry were utilized. The technical assistance component for a programme to introduce contract routine maintenance over approximately 8,700 km remained limited to punctual short-term inputs providing international experience and conducting programme formulation and training workshops.



Essentials of capacity building for sustainabililty need to be in place at the start

Local consultants in Zambia

An approach to the Association of Consulting Engineers of Zambia resulted in an enthusiastic response from a number of local firms, at their own expense, to send members of their staff for labour-based technology training under the Eastern Province Feeder Roads project. At the end of a short course, the staff of each firm prepared contract documents for which the firms were paid a per kilometre fee. Following this initial success further involvement of local consultants was envisaged.

- specialized technical support will generally be required for (i) the development of central/regional/district planning, monitoring and control capacities; (ii) the development of a local training capacity for technical and managerial/business skills; (iii) the setting up and running of pilot/demonstration sites; and (iv) the development of systems and contractual procedures suited to labour-based contracting;

- the amount of training required both for contractors/consultants and contracting agency staff is generally underestimated. Often management/ business training has to be organized in tandem both with technical training and with training in the application of systems and procedures. During a pilot or demonstration period technical assistance staff may have to assume certain executive managerial responsibilities, which should subsequently be handed over gradually to local staff from the contracting agency and - as applicable - local consultants. It is important to clearly define whether and, if so, to what degree technical assistance staff will assist in the management of the risks of the contracting agency;

- systems and procedures usually have to be modified to suit the requirements of labour-based contracting (e.g., need for prompt payment, transparent contractual procedures, decentralized responsibilities).

Some guidelines

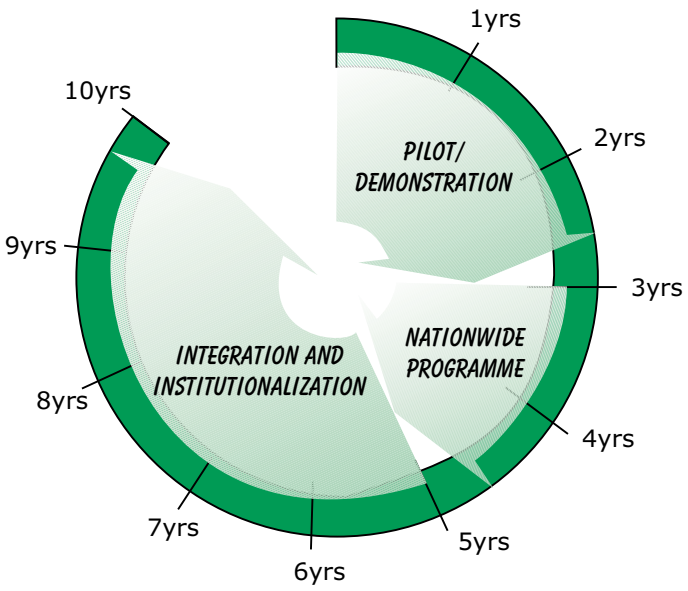
- Technical assistance should primarily focus on strategy development for the implementation of government policies in this field, on institution and capacity building, and on the development, testing and introduction of systems and procedures.

- Initially, contractor development projects may start with a pilot phase with an emphasis on training, gradually evolving into an expanded programme phase with increased local capacity in management and training, and reduced reliance on external resources. Administrative systems and contractual procedures need to be developed and introduced during this phase. Specialized expertise will normally be required for this purpose.

- At the start of the project a decision needs to be taken on how and where to institutionalize the training for the contracting agency/contractor/consultant for long-term development and sustainability.

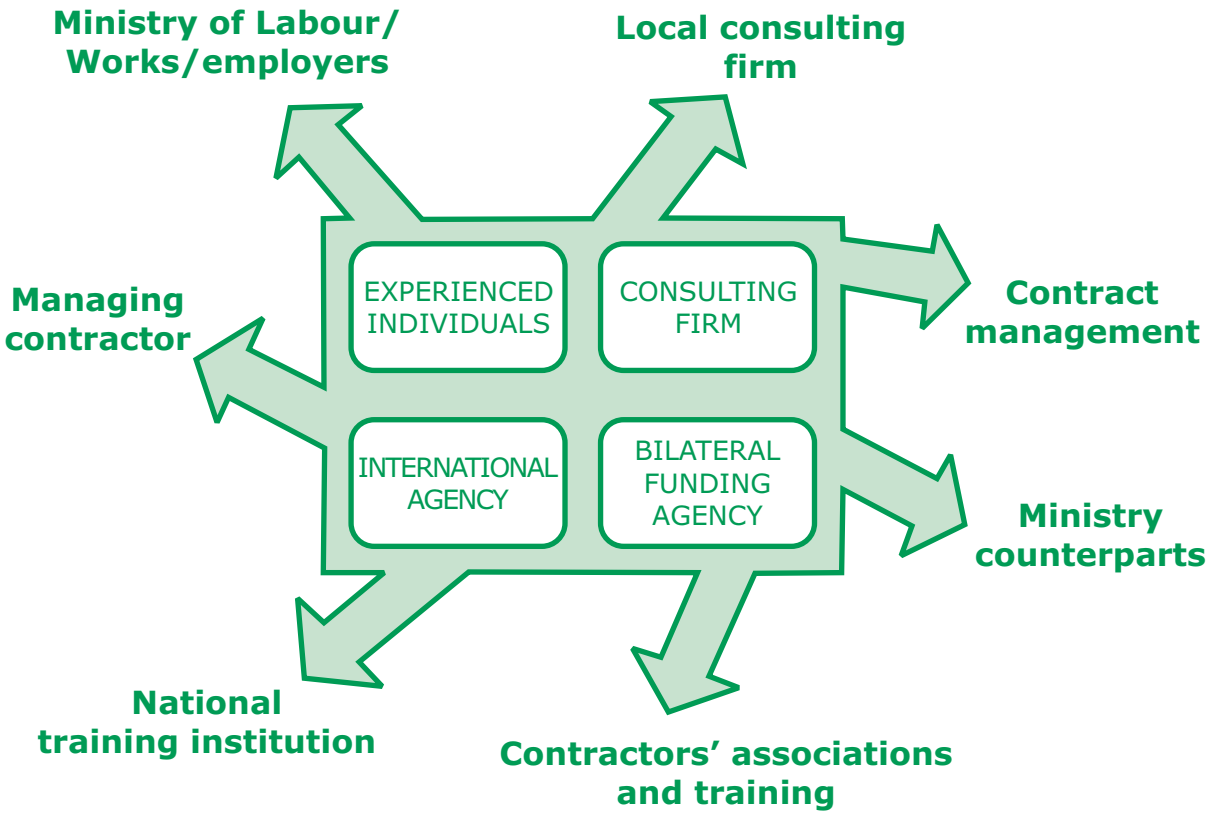
- Technical assistance options include the use of:
  - experienced individuals with established credentials;
  - consulting firm of known experience (national or international);
  - international agency (UN or NGO);
  - experts provided by a bilateral funding agency.

2.1 Contractor development through a government contracting agency



The time required for phased contractor development is longer than one might think

Various options exist for the different stakeholders to obtain help



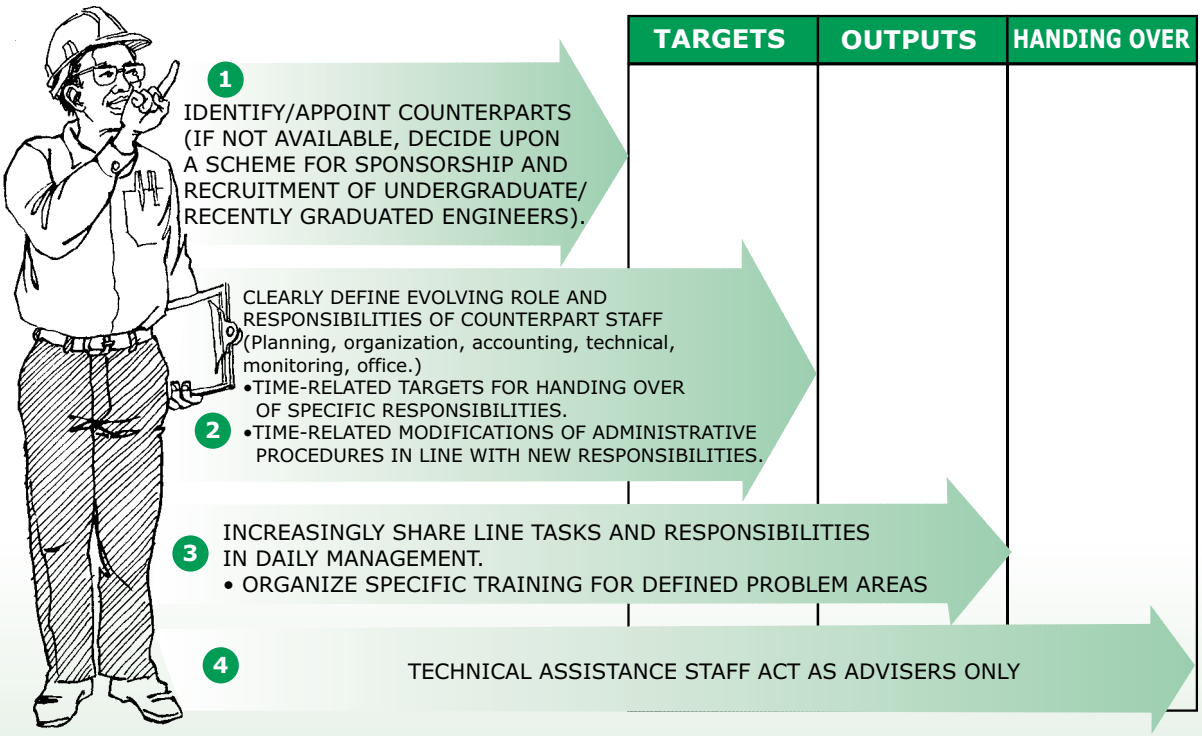
- A great deal of experience and published material is available from other projects, study tours, seminars and courses to develop local expertise.[1]

- Terms of reference for external assistance should preferably to be based on programmed inputs against specific objectives and outputs, which should include handover of responsibilities to local professionals at an indicated time.

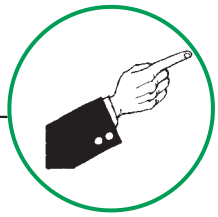
- With an adequate enabling environment (including political support) and suitable planning, resource allocation and procedures for administration, small pilot projects can develop into large-scale programmes within a period of two to three years. However, a long-term perspective (five to ten years) is necessary in respect of capacity building and the creation of a sound institutional environment for labour-based contracting.

[1] *For example, from ILO/ASIST in Nairobi, Kenya: Advisory Support Information Services and Training for Labour-based Programmes. Fax: +254 2 566234; e-mail: iloasist@arcc.or.ke.*

Adopting a phased approach to technology transfer



2.2 Contractor and consultant development through an appointed agent



Key issue:

Is it feasible to use experienced local consultants or organizations as development agents for labour-based contract management?

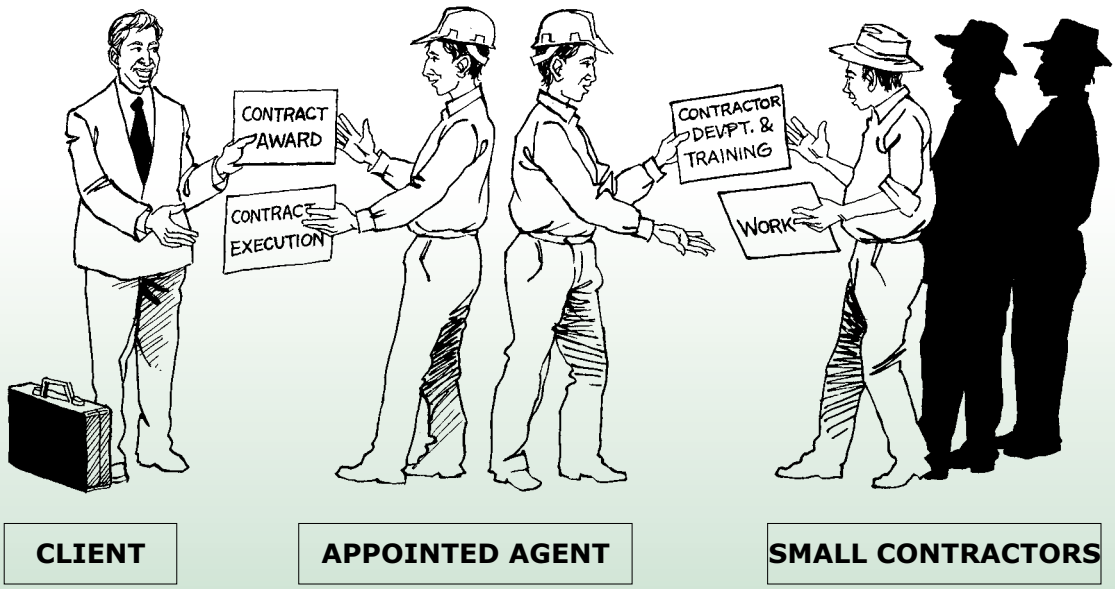
Information required:

- national policy on private sector construction development;
- level and availability of local technical personnel and material resources appropriate to labour-based construction technology;
- availability of suitably experienced local organizations or skilled local capacity within the private sector (contractors, consultants) who could assist in establishing a "development team" approach through contract management teams. An assessment of the advantages and disadvantages of developing a private sector capacity to perform a contractor development role should be made.

Project experience indicates that:

- in expanding programmes contracting agencies rapidly become overburdened with the increasing contract management responsibilities leading to accumulating delays in contract implementation;
- the development team approach includes the actual management of the works by a consultants' team led by a construction manager and a materials manager, with contractors initially supplying only labour and tools. With experience, the contractor assumes increasing responsibility for materials procurement, transport, storage, provision of securities and financing contractual obligations. The development team approach has been very successful in countries where a high level of technical resources is available in the private sector;
- projects in developing countries with less developed local construction capacity may be able to utilize a non-governmental organization or parastatal agency in a construction management role. Such organizations or agencies will primarily adminster, monitor, process and pay small-scale infrastructure contracts. Local consultants are hired for design and supervision; local contractors or community organizations will implement the works. It will be necessary to introduce refined procurement and contract management procedures (appropriate for the type of contract), as well as targeted training for consultants and contractors.

2.2 Contractor and consultant development through an appointed agent



"Appointed agent" relationships in contractor development

Developing contractors through targeted procurement

Construction essentially consists of four elements: construction management, materials management, materials supply and physical work. There are different ways in which the responsibility for these functions may be shared. In a development team approach, the contracting agency (or employer) appoints a technical support team to assist the contractor with those functions he cannot undertake alone. In joint venture contracts, the functional responsibilities are shared by two or more partners, while in "prime" contracts, one contractor is responsible for all construction aspects.

"Targeted procurement" (see also box on page 7) means that resource specifications are used in a competitive bidding environment, to secure the participation of targeted groups (communities, small contractors, local suppliers, etc.). In order to comply with these resource specifications, a "prime" contractor will manage, on a voluntary basis, all necessary construction and handling of materials, and supply any materials which may be required to secure the participation of targeted groups. In joint venture contracts, the partners will follow a similar approach, while at the same time the senior partner may undertake those functions which his developing partners cannot. Alternatively, several developing contractors may pool their resources to perform all four functions related to the contract.

Some guidelines

- Different options for providing management support may be considered. Such support can be given directly through the appointment of a team, or indirectly by requiring the contractor to meet given socio-economic objectives (e.g., resource specifications through targeted procurement. See boxes on pages 7 and 27).

- If the appointed agent approach is chosen, the scope of contractual responsibility for the contracting agency's agent must be clearly defined. This may be restricted to supervision of the contractor(s) on site with the contracting agency retaining the Engineer position, through to the agent performing all design, preparation and contractual responsibilities as Engineer.

Different ways of capacity development: The AGETIP experience

In their initial phases, most small contractor development programmes have provided material assistance and implemented technical and business management training to establish small firms to carry out such works. With the growing number of these firms, development programmes have usually shifted the focus towards the training of consultants and the development of a comprehensive contract management capacity within the contracting agency. TIP (Travaux d'Intérêt Public) agencies, operational in 1998 in 13 African countries and organized as a network called AFRICATIP, have approached this capacity development from a different angle. As private sector contracting agencies, the AGETIPs were well able to mobilize and use small local contractors and consulting companies very quickly, and only subsequently focused on the introduction of cost-effective labour-based methods and business management skills. Although quality and employment aspects were not dealt with as well as desired, the size and scope of the AGETIPs, as well as the fact that they were often very successful in mobilizing and recruiting qualified local staff, compensated for such deficiencies and reduced to some extent the need for training. Nevertheless, once well established, the AGETIPs recognized the lack of technical (labour-based) and management skills of their local contractors and consultants, and were keen to set up appropriate training programmes.

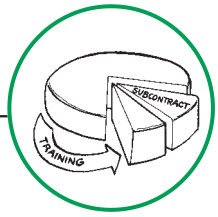
United Republic of Tanzania: National Construction Council

The role of the National Construction Council (NCC), a parastatal organization, may be described as an "appointed agent" approach to contractor development. NCC is the Government's implementing agency (supported by a technical assistance team). As labour-based contractors were not "classified" they were not eligible for contract awards. NCC was therefore awarded the contracts and enabled to have practical training sites for contractor development and training. Subsequently works were directly subcontracted to the trained contractors. In this way, NCC always remained contractually responsible to the contracting agency (the Ministry), in addition to being responsible for contractor development and training.

Road sector employment creation: Importance of guidance on implementation approaches

Although agencies such as AGETIP in Senegal have been instrumental in increasing employment, they have had limited success in the road sector for two reasons. First, road contractors are often required to own specific heavy equipment. This favours large established contractors, who are used to certain - capital-intensive - methods of construction. Second, contractors are required to employ more labourers by stipulating in the contract documents that a certain proportion (around 10 %) of the total costs of the road project must be spent on labour wages. This proportion is not very high compared with labour-based roadworks in countries such as Ghana where wages make up 40 % of contractors' total project costs. In addition, requiring contractors to spend a share of total costs on labour wages does not encourage them to use labour productively - they can begin to meet the labour obligation by "hiring ten watchmen instead of two". It should be noted here that the limited success of agencies such as AGETIP in expanding labour-based methods in the road sector is not a function of weaknesses in the model itself, but rather a function of the way in which contracts are set up. An agency model that specifies local resource use and methods, and that contracts are made primarily with small firms, rather than large ones, can be an important tool for expanding labour-based methods in the road sector as well.

2.3 Contractor development through subcontracts



Key issue:

How can the general contracting experience of large contractors be used for the benefit of developing labour-based contractors through subcontracts?

Information required:

- number and capacity of experienced large and medium-sized contracting firms operating nationally or at provincial level;
- possibilities to motivate such contracting firms to adopt different work methods and a less traditional role, including a training component, as managing contractors for several small-scale, developing contractors;
- the desirability and feasibility of regulating subcontracts.

Project experience indicates that:

- large- and medium-scale contracting firms may feel threatened by the idea of developing potential rivals and losing work opportunities in the long term;
- the experience of large firms with small-scale contractors is mainly in terms of controlling subcontractors;
- large- and medium-scale firms use heavy equipment principally for civil works and focus on ways of increasing equipment, rather than labour utilization. Training and reorientation of managing contractors will be needed, even when their attitudes are favourable;
- a contract with the managing contractor should specify a well-defined training component, both structured and on-the-job, for the support and management of a predetermined number of small-scale contractors. The contracting agency designs and pays for this component under the normal contractual conditions, or engages a training manager to oversee training provided by separately appointed training providers;
- unless specifically defined as a training component, subcontracting has its drawbacks. Subcontracting generally remains limited to labour-only contracting for small-scale contractors, who as a consequence, do not develop skills beyond labour management. Also, the conditions of work and compliance with labour legislation may be negatively affected in this model. Larger firms may simply transfer these responsibilities to small subcontractors who are more numerous and more difficult to control. As a result, the risk of worker exploitation may increase.

2.3 Contractor development through subcontracts

South Africa: Merging of subcontractors

In South Africa, experienced larger-scale contractors play the role of managing contractor for smaller emerging firms or communities. Initially, the appointed managing contractor meets and agrees with the local community on its involvement in certain project components. These are split into nominated subcontracts for small contractors or community groups for which the managing contractor supplies training, materials and mentoring. In most of the communities, skills exist from previous experience in construction work. One favourable side-effect of this approach is that subcontractors (with a mentor) managed to join forces to form a medium-sized construction company.

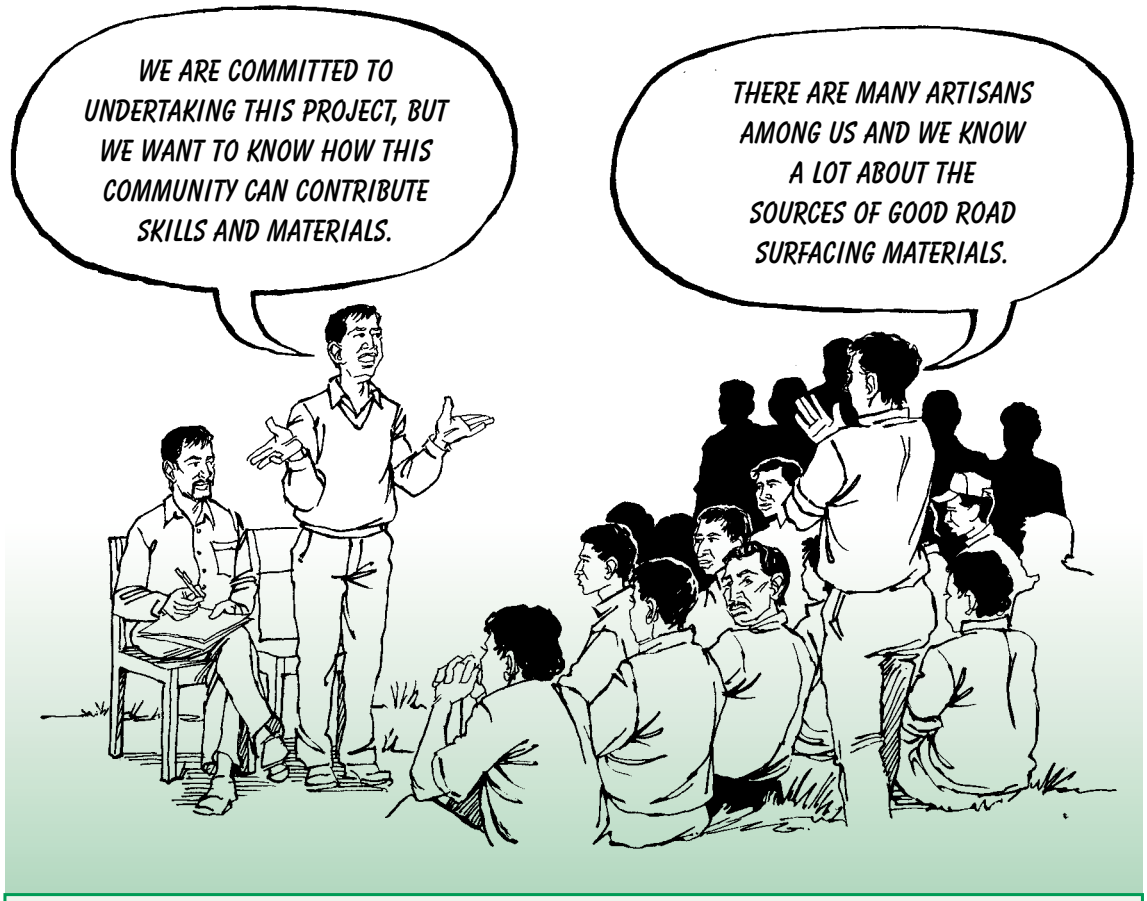
Subcontracting and complementary support leads to skills development and employment

Some guidelines

- The managing contractor approach can be successful only if the contractor concerned is adequately motivated by the contracting agency to include development and training elements in the contract. The contracting agency may ensure this either by making it attractive to the contractor to freely incorporate such elements in the tender (see box on page 7), or specifying in the tender that such elements are part of the contract. The latter option places the responsibility for the design of these components on the contracting agency and will generally require more follow-up. The targeted procurement approach leaves more freedom to the contractor to either include or leave out these components, but also to design and develop his or her own approaches.

- Targeted procurement encourages the contractor to actively look for ways to meet the socio-economic targets indicated by the client. Bids which meet or exceed these targets - generally concerned with an increased use of local resources and community participation - earn a financial bonus, making them more competitive. The contractor should be required to indicate **how** the targets will be met and who the partners will be.

Involving communities in all aspects of the project is the way to sustainability

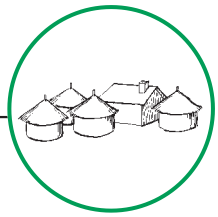


South Africa: Specifications for engagement of subcontractors

The targeted procurement system applied in South Africa (see box on page 7) includes provisions to ensure that subcontractors enter into written subcontract agreements, and that they are treated fairly. The employing contractor is financially penalized if the subcontract includes:

- authoritarian rights given to the employing contractor or his agent, with no recourse to independent mediation in the event of a dispute arising;
- payment procedures based on a pay-when-paid system;
- a dispute-resolution procedure which does not include inexpensive procedures such as mediation, but only uses formal arbitration proceedings;
- unreasonable retention percentages and periods of retention after completion;
- a requirement for a surety to be provided in contracts below US$ 16,000;
- conditions which are more onerous than those of the main contract;
- clauses increasing the risks of the subcontracts in favour of the employing contractor.

2.4 Community contracting



Key issue:

Is there a role for community participation and contracting in local infrastructure construction and maintenance?

Information required:

- national policy on decentralization to local community level of project implementation responsibility;
- national projects being implemented in a decentralized system;
- policies and practices for financial decentralization and control;
- the type and scope of projects or programmes which could be suitable for a community participation and contracting approach (e.g., labour only, labour and materials, labour, materials, funding and equipment);
- the advisory role which locally based NGOs might play in this type of project.

Project experience indicates that:

- many projects supported by development banks or donors (social funds, rural development programmes) offer possibilities for community participation and contracting, which are often not fully exploited;
- village committees or user associations are well able to prioritize and coordinate the execution of minor infrastructure works including drainage rehabilitation, forestry, urban infrastructure works, rural road maintenance, and rehabilitation and maintenance of small irrigation schemes and village paths;
- obtaining beneficiaries' participation and consent is essential for project identification, selection, design, construction, operation and maintenance;
- taking account of the availability of local resources during project planning and design leads to greater participation and utilization of local labour and skills;
- community-based construction groups (labour gangs led by a community works organizer, who is generally an unlicensed contractor) can effectively carry out the unskilled and semi-skilled works;
- communities are willing to raise funds, organize and carry out maintenance work for infrastructure provided that: (i) the infrastructure concerned is of direct benefit to them; (ii) a suitable institutional framework exists; and (iii) initial external inputs are made available for system development, funding, demonstration and training.

2.4 Community contracting

Community organization and contracts: Nepal

Relying on the rights of community members to organize themselves into bodies recognized in law ("legal personality") and to undertake obligations, in the Dhaulagiri Irrigation Development Project in Nepal, Farmers' Irrigation Associations (FIAs) and their democratically elected Water Users' Management Committees (WUMCs) have been organized. These bodies are the foundations for a decentralized system of irrigation construction and maintenance. Through contractual arrangements with the government District Irrigation Offices (DIOs), community-based construction groups and contractors undertake works under the supervision of community-based Water Users' Construction Committees (WUCCs). The contractual arrangements make rights and obligations clear.

Step 1	FIA formed and WUMC registered
Step 2	WUCC formed
Step 3	FIA/DIO agreement
Step 4	FIA/DIO workplan
Step 5	Community works organizer trainees selected

Compulsory contribution completed; provided by minimum of 50% of beneficiaries

Community works organizers trained in basic construction skills

Step 6	Training evaluated; community-based working groups selected
Step 7	Licensed contractors nominated

Tendering (quotation) of licensed contractors

Step 8	Licensed contractors selected
Step 9	Contracts awarded for execution of piecework

Construction supervision by FIA and DIO

Step 10	Completed works evaluated
Step 11	Observation of labour standards checked
Step 12	Further contracts awarded

Continued construction supervision by FIA and DIO

Step 13	Community works organizers licensed (those who have performed satisfactorily)

Operation and maintenance of completed irrigation schemes by FIA

Step-by-step procedures for implementing a decentralized contracting system of construction and maintenance of irrigation schemes: Experience from Nepal

Similar approaches have been undertaken in projects in Guinea, Haiti, India, Madagascar, Mali, United Republic of Tanzania and Zaire.

Some guidelines

- For rehabilitation work, simple contracts should be negotiated and signed wherever possible, specifying well-defined activities, quantities of work, conditions of employment, the rights and obligations of beneficiaries and those of the sponsor. The terms of such a contract should be negotiated and not imposed. Selected representatives of the village committee or association can be designated as being jointly responsible for the complete and proper execution of the works by the community or association members.

- Rehabilitation of village access roads should only be undertaken where there is a firm commitment by the local administration/village committee to maintain them. The maintenance contract should be written, taking into consideration traditional ways of mobilizing workers.

- Community focal points (mobilizers) can be used to create awareness at village level of community involvement in fund raising, planning, programming and executing maintenance works. Subsequently, these tasks can be entrusted to a specially established village committee, dealing with the sector (e.g., irrigation, water supply, roads) concerned. Focused technical training should be given to the village maintenance supervisor.

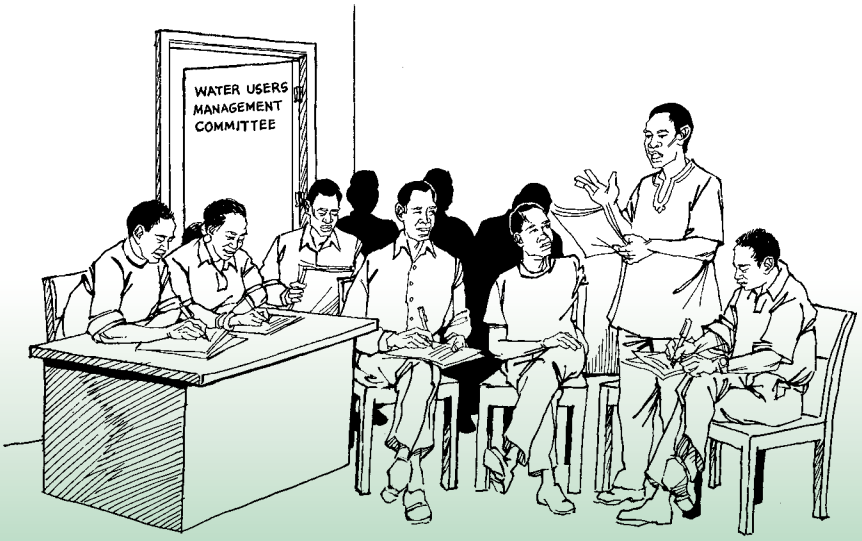
- The legal framework should permit decentralized fund raising and management. Systems and procedures need to be developed with and approved by different levels of administration (from the central to the community level). Relevant by-laws should be established. Different representative bodies, e.g., city and municipal councils, should be given decision-making authority in planning, resource allocation, project execution and sharing of benefits.

- The project designers should address the following issues in developing a community contracting/participation approach:
  - the project prioritization system needed for ranking project proposals from many communities;
  - the level of technical advisory or preparation support needed in the communities for project implementation;
  - the contract systems and procedures to be developed for this type of micro project;
  - the quality control and audit systems necessary for such implementation;
  - the management of risks pertaining to the project including cost and time overruns;
  - the monitoring and evaluation procedures to be put in place to progressively evaluate the success or otherwise of the project outputs;
  - the definition of and agreement on the roles, responsibilities, risks and obligations of all participating parties;
  - the allocation of responsibility for appointing consultants or service providers between the community, the funding agency and the implementing agent.

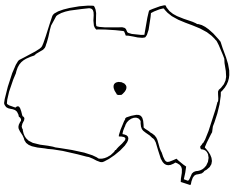
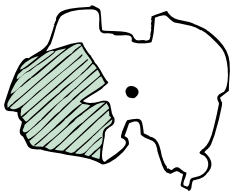
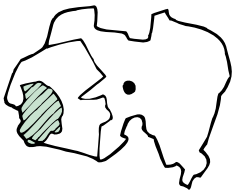
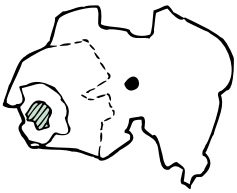
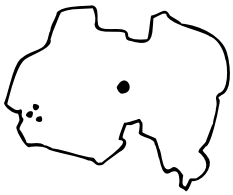
Malawi: Community participation in rural infrastructure selection and implementation

In Malawi, a World Bank-supported "social fund" includes the financing of rural community infrastructure projects covering several sectors including health, education, agriculture and transport. Community bodies (village councils or committees) decide on local priorities and propose projects for funding. On approval the community body is responsible for managing the implementation of the project by agreed means (e.g., through local contracts, paid labour/unpaid labour freely provided by the community with material support).

Participation means involvement in planning, organizing contributions, implementation and maintenance



RESPONSIBILITIES

CENTRAL (Headquarters)	PROVINCIAL	DISTRICT	COUNTY/ PROJECT	COMMUNITY/ SUBPROJECT
				
Fund raising Planning Programming Overall monitoring and control Reporting to funding agency	Programming of district inputs Management and control of funds Disbursement to district level Reporting to central level	Programming of county projects Management and control of funds Contracting Payment of large contracts Reporting to provincial level	Contracting Supervision Payment of contracts Reporting to district level	Participation Execution of works Subproject reports

At each level, roles and responsibilities need to be clearly defined

Bibliography

R.A. Reed: *Sustainable sewerage: Guidelines for community schemes*, Intermediate Technology Publications, WEDC, 1995.

M. Engler: *Participation in rural infrastructure programmes: A process-oriented approach to bridge building at the local level in Nepal*, Helvetas, Zurich and LBL, Lindau, February 1994.

E. Rausch: *Road contractor promotion and employment generation in Africa*, Transport and Construction Division, GTZ, Eschborn, Germany, 1994.

G. Edmonds and J.J. de Veen: *Technology choice for the construction and maintenance of roads in developing countries: Developments and guidelines*, CTP 128, Geneva, ILO, 1991.

J.-M. Lantran: *Contracting out road maintenance activities, Volume 1: Developing domestic contractors for road maintenance in Africa*, ECA, SSATP, World Bank, Washington, D.C., 1990.

J.-M. Lantran: *Volume II: Contracts for road maintenance works agreements for works by direct labour*, ECA, SSATP, World Bank, Washington, D.C., 1991.

D. Dieng: *Introduction au management des programmes d'entretien et réhabilitation des routes rurales en Afrique, utilisant les techniques à haute intensité de main-d'oeuvre*, ILO, Exposé de stagiaire, ILO, Geneva, 1990.

References for the boxes in this part

Uganda: Contracts for routine maintenance of rural roads. P. Bentall, A. Twumasi-Boakye and R. Watermeyer: *Labour-based contracting: A study to develop guidelines for project formulation and implementation (Vols. 1-3)*, op. cit, ILO, Geneva, 1995.

Local consultants in Zambia. P. Bentall and R. Schultz: Mid-term evaluation report: *Rehabilitation and maintenance of feeder roads in Eastern Province*, UNCDF, Lusaka, August 1998.

Developing contractors through targeted procurement. S. Gounden, D. Letchmiah, S. Shezi and R. Watermeyer: *Targeted procurement: a means by which socio-economic objectives can be realized through engineering and construction works contracts*, Journal of South African Civil Engineers, Johannesburg, March 1998.

Different ways of capacity development: The AGETIP experience. *ACTIF, Appuis et Conseils aux Travaux d'infrastructure et Formation pour l'Emploi et l'Entreprise en Afrique*, Document de formulation d'un programme conjoint, Africatip, ILO, Geneva, April 1997.

United Republic of Tanzania: National Construction Council. *Labour-based contractor training for rural road maintenance and rehabilitation*, ILO: project document:URT/90/004, ILO, Geneva, 1990.

Road sector employment creation: Importance of guidance on implementation approaches. E. Stock and J. de Veen: *Expanding labor-based methods in road works in Africa*, World Bank Technical Paper No. 347, World Bank, Washington, D.C., 1996.

South Africa: Merging of subcontractors. P. Bentall, A. Twumasi-Boakye and R. Watermeyer: *Labour-based contracting: A study to develop guidelines for project formulation and implementation (Vols. 1-3)*, op. cit, ILO, Geneva, 1995.

South Africa: specifications for engagement of subcontractors. Republic of South Africa, Department of Public Works, 1998 Website, www.pwdprocure.co.za.

Malawi: Community participation in rural infrastructure selection and implementation. L. Frigenti and A. Harth with R. Hugue: *Local solutions to regional problems: The growth of social funds and public works and employment projects in sub-Saharan Africa*, World Bank, Washington, D.C., 1998.

Employment-Intensive Infrastructure Programmes:
Capacity Building for Contracting in the Construction Sector

Contractor Identification

PART 3

3. Contractor Identification

3.1 Contractor profile

Key issue:

Should existing contractors be targeted or should a new cadre of appropriate small-scale enterprises be developed?

Information required:

- existing contracting capacity and classification system in the civil and building construction industry, including numbers and capability/experience of:
  - international contractors
  - local, registered and classified contractors (according to national system)
  - informal sector small-scale contractors;
- assessment of the future construction workload matched to the perceived capacity to form a judgement about the potential and needs of the industry;
- assessment of the specific contracting capacity in the infrastructure sector concerned. Particularly in the road sector, experience (apart from international companies) may be limited due to the traditional use of force account organizations. Capacity is potentially needed to undertake:
  - new road construction (rural and urban)
  - road rehabilitation and improvement of different categories of roads
  - routine, recurrent and periodic maintenance.

Project experience indicates that:

- contracting capacity assessments are undertaken in many developing countries within the context of Government policies aimed at the greater involvement of the private sector in infrastructure;
- established, equipment-orientated contractors may have an interest in lobbying against the development of a small-scale contracting industry unless they are actively involved in its development. Protective measures (such as earmarking special funding and workload for trained small-scale contractors until these have paid off project-induced equipment loans) may be necessary for a defined period;

3. Contractor Identification

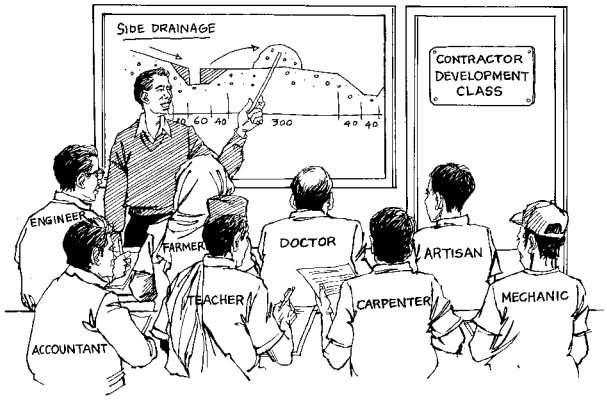
3.1 Contractor profile

Emerging labour-based roadwork contractors in Lesotho: Background and experience

Lesotho is a relatively small country with few qualified contractors. In 1993, within the framework of the labour-based road maintenance programme of the Labour Construction Unit (LCU), small local firms and individuals were invited through the media to apply for the contractor training programme. After interviewing, testing and screening of all the applicants a predetermined number of trainees were selected. Due to the small (virtually non-existent) local private construction sector, the selected trainees had very different backgrounds and work experience as illustrated below.

Trainee 1	had a trade test in bricklaying and carpentry, owned a small building construction company and one small truck.
Trainee 2	finished secondary school, owned a car hire company with one small truck and two pick-up trucks.
Trainee 3	had an adult education diploma, owned a small company for building renovation and painting; also worked as a building instructor and owned a 4-ton truck.
Trainee 4	had a diploma in social administration, owned a fruit and vegetable business and a private car.
Trainee 5	had a trade certificate as a mechanic, owned a small construction company for gravity water systems, one tractor and two pick-up trucks.
Trainee 6	was a qualified motor mechanic, and owned two tipper trucks.
Trainee 7	had completed secondary school, owned a commercial pig farm and a 4-ton truck.
Trainee 8	had a diploma in civil engineering, having worked as a technical officer in the architect branch of the Ministry of Works; owned a small building construction firm with three small trucks, a mixer and a dumper.

All of them completed the training programme successfully and became registered labour-based contractors for routine maintenance and regravelling.



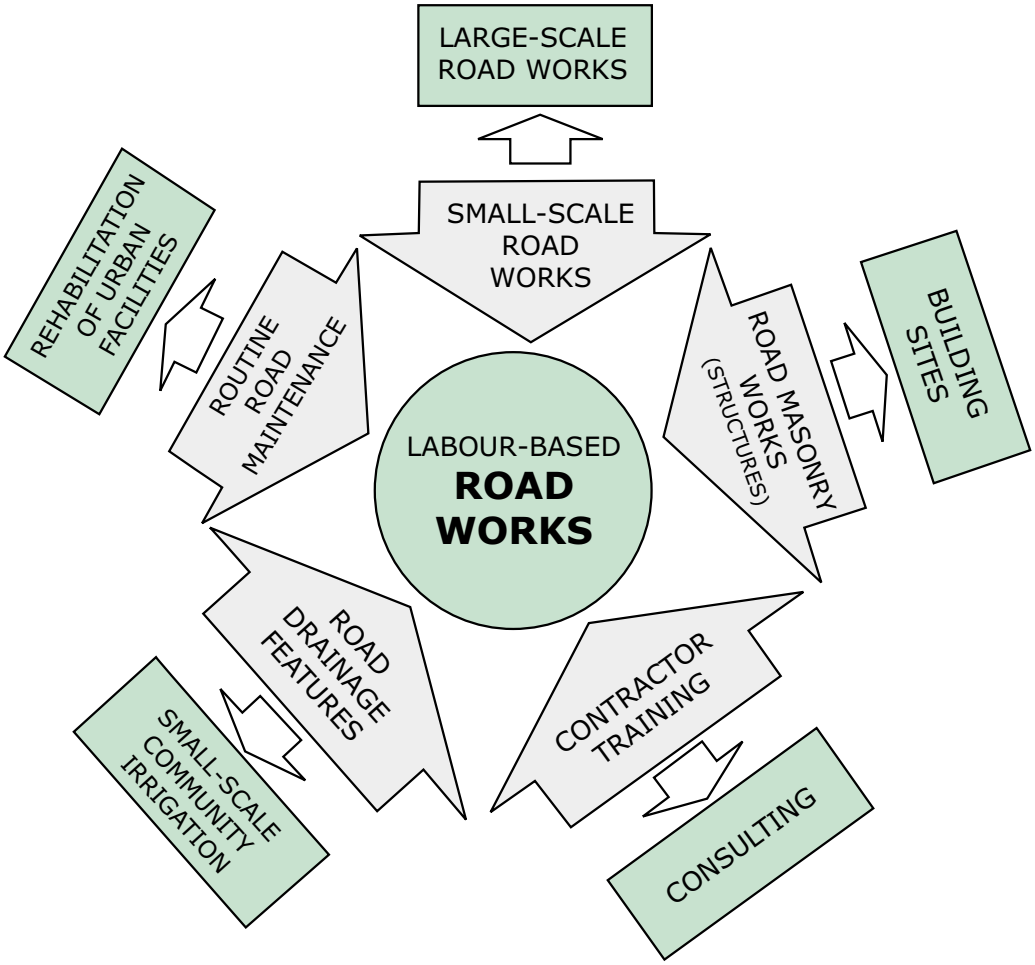
Aspiring contractors have many different backgrounds

- contractors naturally wish to develop their potential to a level they are comfortable with and may be discouraged if they are restricted in that growth;
- contractor development programmes attract many entrepreneurs, both with and without entrepreneurial or relevant technical experience. Selection procedures should take this into account (see Part 3);
- contractors should be encouraged to diversify their range of operations to increase their flexibility in carrying out different types of work;
- possible options to create a new cadre of small-scale labour-based contractors include:
  - the introduction of established equipment-based contractors to labour-based construction technology;
  - the conversion of building contractors or entrepreneurs (not necessarily with construction experience) to labour-based civil works;
  - the development of civil servants with relevant background and appropriate motivation into viable contractors (in countries where structural adjustment has caused retrenchment of civil servants);
  - the formation of community contracting units for local work;
- a significant and appropriate training input will be required for each of the options. This should not be underestimated.

Some guidelines

- New construction or rehabilitation of the civil infrastructure (irrigation, water, soil conservation, roads) is well within the capacity of properly trained small contractors provided that they have access to appropriate light equipment (see section 5.2). Maintenance can be contracted out to single-person contractors, small contractors (labour only) or community units.
- It is feasible to start with a contractor development programme at a low level and one area of work (e.g., routine maintenance or regravelling) and subsequently to upgrade the capacities of the successful contractors to carry out higher level works. It is equally feasible to train local contractors directly for higher level works, provided that steps are taken to ensure that back-up systems and procedures are developed simultaneously.

Skills learned on roadworks can be used for other construction work



Indonesia: Contractor profiles

A contractor development and training project carried out in Indonesia in the mid-1980s focused on small building contractors and *mandors* (labour-only subcontractors). The first category were, in general, high school educated and had been trained in different management and technical subjects. They were interested in remaining building contractors but welcomed the possibility of diversifying into other areas such as civil infrastructure. Roughly one-third of the contractors' time was spent on overall business management, with roughly equal proportions of the remaining time devoted to planning, finance, administration and supervision.

The *mandors* generally had high school or vocational technical training and at least six years experience in construction. Most did not expect to be able to move from subcontracting into contracting.

3.2 Selection procedures

Key issue:

How to devise a process for candidate contractor screening and selection which is both seen to be fair and which opens opportunities to a wide range of potential participants?

Information required:

- the level of interest amongst entrepreneurs in the introduction of labour-based construction technology;
- the type of contractor assessed as best suited to the objectives of the project;
- the size, scope and timescale of the proposed project(s) or programme(s) for which contractors are to be chosen;
- the number and type of contractors required at the different stages of the programme(s) based on the anticipated continuity, typical contract size, geographical spread and diversity of future work;
- need (or not) for selection criteria discriminating positively in favour of special target groups. For example, government policy may require special consideration for civil servants that have been made redundant following a restructuring of their ministries or small, emerging contractors with minimal resources. This should be weighed against the need to provide more extensive support to such contractors, both in terms of material, equipment and capacity building.

Project experience indicates that:

- a good way to assess the interest of entrepreneurs in this field is national media advertising followed by introductory/awareness workshops open to all interested parties;
- entrepreneurial "flair" is a fundamental requirement for a successful contractor, above educational and technical qualification or experience. (A combination of all three is ideal.) Securing experienced technical personnel should weigh heavily in the selection;
- small-scale contractors with minimal resources are motivated to succeed with the application of labour-based technology because they:
  - see a once-in-a-lifetime opportunity to develop themselves;
  - have no diverting interests;

3.2 Selection procedures

Different country projects have adopted different procedures to screen and select labour-based road contractor trainees. The outcome of this process in selected countries is illustrated below.

Ghana (1985)

Pre-project information seminars were held in the project areas to encourage local contractors to participate. Questionnaires were then given to interested contractors, most of whom were very small-scale but with some experience of civil construction. The questionnaires requested the following information:

General Information

- office location
- year of establishment
- areas of operation
- type of work undertaken

Detailed information

- management/staff
- experience
- vehicles/plant/equipment holding
- financial status
- capital assets

Each item was given a certain percentage weight. Firms scoring above 55% were eligible for final selection.

Kenya (1991)

The selection procedures of the Kenya labour-based gravelling contractors emphasized educational qualifications, years of experience, equipment holding and financial status. An initial assessment and subsequent interviews were carried out for 64 applying firms. Firms were given a rating for equipment availability, their business location, contractor's educational background and previous work experience. Each of these factors was given an equal weight. Initially, a fifth criterion of supervisor capacity was included but few contractors had sufficiently qualified staff and the item was dropped. The 24 applicants with the highest ratings were interviewed and a final 12 selected. Two of the selected firms were classified as Class A contractors (authorized to tender for all sizes of project) and a number of others were Class B (authorized to bid for medium-sized projects). Fifty per cent of the contractors were civil engineers and almost all had professional qualifications. None was totally dependent upon labour-based contracts.

Lesotho (1993)

The initial media advertisement targeted small-scale enterprises to become Road Maintenance and Regravelling (ROMAR) contractors. Most respondents had some slight involvement in the construction field (small building works). Some applicants had worked as foremen for larger contractors. Only one had a relevant technical diploma. The project approach was targeted specifically at the level of this type of candidate. The initial screening used a numeracy and literacy test, complemented by an interview to check the technical and business skills of the candidates. The selection procedure and related time requirements were as follows:

Step

1. advertising on radio and in local newspapers (weeks 0-4)
2. applications by firms and individuals (weeks 4-6 : 70 applicants)
3. reviewing and screening applications (2 weeks)
4. workshop and written test (1 day: 35 applicants retained)
5. screening and reviewing test results (1 week)
6. invitation for personal interviews (15 applicants)
7. verification of information and final selection (2 weeks)
8. payment of training fee by trainees (12 trainees).

Uganda (1993)

The Ministry of Works, Transport and Communications (MOWTC) introduced routine maintenance contracts. These were district-based and awarded to single individuals (2 km) or groups (up to 30 km). Initial contractor screening was done through local political committees. Names were submitted to district engineers for final selection using pre-defined criteria, with preference being given to civil servants who had become redundant following the restructuring of different technical ministries.

- join with a very cooperative attitude;
- quickly experience the benefits and commit themselves;

- the failure rate is very low in well-planned labour-based programmes where appropriate training and support inputs are included. The failure risk is greater where medium-scale contractors are concerned, because these are invariably more set in their ways and have diverging interests.

Some guidelines

- An appropriate selection process and selection criteria for contractor firms may be based on one or more of the following:
  - detailed questionnaire on company registration or experience, staff qualifications, equipment held, fixed assets, financial status, geographical base, and educational background of principal staff;
  - project information workshops, interviews, and written test assessment;
  - short tendering training exercise for all participants followed by competitive bidding test for final selection.

- The selection of trainees (submitted by the contractor) for training should be made through interviews and testing, certifying that these trainees meet the predetermined conditions. Suitable candidates can then be registered and accepted, but it would be advisable to insist upon the contractor or the trainee submitting a copy of a signed contract of employment between the two parties, before the candidate starts his or her training.

Egypt: Selection of candidates for contractor training

The contractor training programme of the Social Fund for Development (SFD) in Egypt selects its contractor trainees from candidates aged 25 to 35 and having a university or technical high school degree. For the first batch of 24 trainees, 162 candidates were selected through interviews and testing. The selection and screening of the applicants were carried out by representatives of the SFD together with an externally appointed Egyptian training consultant. Over 90% of the finally selected trainees were university graduates with a wide range of degrees, including engineering, architecture, commerce and tourism. The time period from advertising to the start of the training courses for the selected group was as little as one month.

Egypt: Small-scale contractors trained to work for a diversified market

Many contractor development projects aim to develop contractors for one type of infrastructure, e.g., buildings, irrigation or rural roads. The trained contractors usually find it difficult to venture into other work, both because of the kind of training they have received, and because of their ties and financial commitments - such as the repayment of an equipment loan - to the contracting agency and local credit institution.

In Egypt the SFD created a public works programme with the twin objectives of creating employment through labour-based methods and meeting community needs through developing community infrastructure in rural areas. The work under this programme includes construction and maintenance of roads, potable water schemes and environmental projects (mainly canal maintenance). The work is executed by small-scale local contractors. An ambitious training programme for 150 emerging and 30 established contractors throughout the country has been established. The contractors are trained to take on all types of infrastructure work so as to allow them to compete in various sectors and to create more avenues to successful jobs.

- A small independent selection panel can be formed to ensure transparency in accordance with established selection criteria. Members could include representatives of the contracting agency, the training institution, the contractor association and technical assistance staff.

- In establishing selection criteria, the following questions may be considered:

  - What is the nature and size of a typical contract, and will the contractor need to make significant investments? (This varies for building work, water works, irrigation or roadwork.)
  - Can competition play a part in the selection of candidates? What criteria can be developed to determine entrepreneurial flair?
  - How important is the criterion that contractors should be local to the work area?
  - Should local communities have an input in the selection of local contractors, e.g., for routine maintenance of infrastructure constructed by the programme?

- It is recommended that the relevant contractor association is consulted and involved in determining the obstacles regarded by emerging contractors as the main barriers to entry to the world of contracting, and how these barriers may be overcome.

3.2 Selection procedures

United Republic of Tanzania: Contractor selection questionnaire

In the United Republic of Tanzania, small-scale contracting firms for road rehabilitation works were selected on the basis of pre-established criteria. A questionnaire was issued to firms applying to be considered, to be completed by the contractors and certified by the relevant government department and the local bank, supported by technical assistance staff. The following criteria were used and given various weightings.

Vehicles & plant held	20%	Work experience	10%
Landed property	15%	Location of office	5%
Qualifications of staff	25%	Experience with labour	5%
Working capital	15%	Other specific considerations	5%

Good selection criteria help to make contractor selection more objective and transparent

South Africa: Urban infrastructure renewal

For the Soweto Contractor Development Programme, the following approach was adopted to promote the use of local human resources (small contractors, consultants and communities) and local materials:

- Meeting with civic organization(s) to obtain acceptance and define a common goal, comprising technical, social (participation in project planning and execution) and economic objectives.
- Mass meeting in the community to explain the project and to outline the training programme (500+ participants).
- General assessment of the capability, motivation and interest of all applicants (200).
- Testing and screening of applicants on knowledge of English and numeracy (150 applicants).
- Testing of screened applicants on their knowledge of measuring and calculation instruments (75 applicants).
- Teaching of the preparation of bids and tenders, explaining and discussing tender procedures (25 trainees).
- Tendering a specified number of contracts and inviting bids from trainees (10 trainees).
- Awarding three contracts on the basis of price (unrealistic offers at 10% or more below engineer's estimate were rejected) and technical offer.
- Allocating small jobs within the main contracts to the 22 remaining trainees.
- Monitoring and mentoring contractors.
- Allowing all 25 trainees to tender for future work.

3.3 Contractor registration

Key issue:

How best can labour-based contracting be formally established within an existing national registration/classification system for the construction industry?

Information required:

- national construction industry registration or classification system, its legal basis, its practical effectiveness, any reform proposals, and government policy initiatives;
- whether contractors are classified nationally according to type and/or volume of work, and whether a new class for certified labour-based contractors is desirable;
- the existence of professional bodies such as contractor associations to which new, labour-based contractors may belong in order to influence registration and/or classification issues.

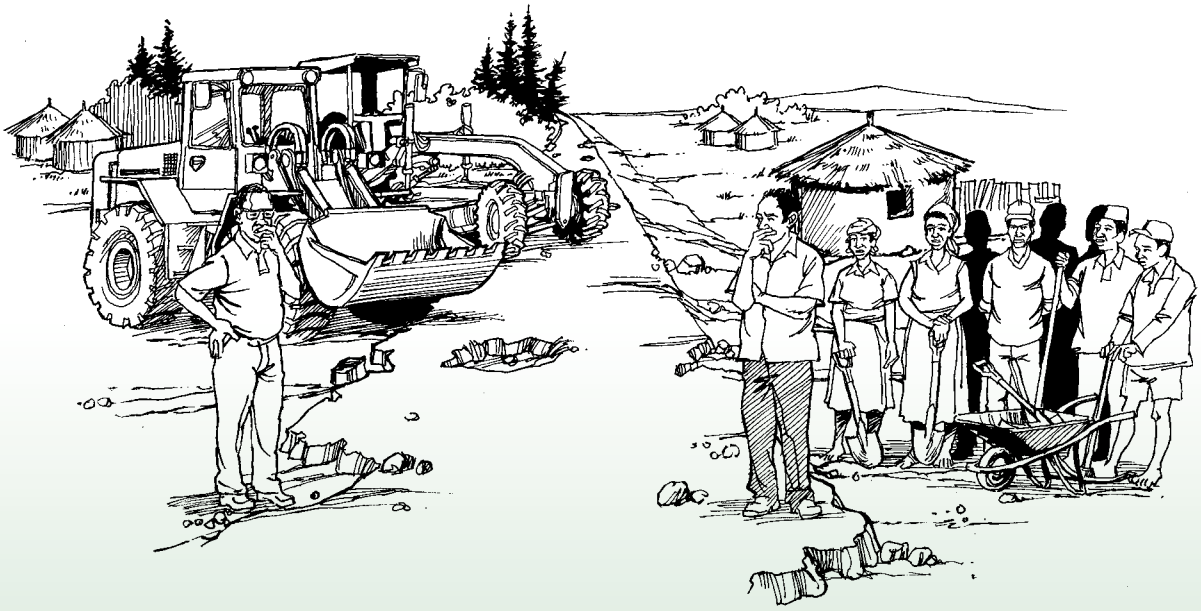
Project experience indicates that:

- the registration system serves a purpose in regulating and monitoring the industry in terms of codes of conduct and participation, but is open to abuse and may lead to exclusion of new entrants;
- registration requirements may prevent potentially good participants from joining a programme. The positive and negative effects of registration requirements should be assessed;
- some classification systems allow contractors in a higher category to bid in lower categories. The risk that this may adversely affect small-scale contractor development should be assessed;
- registration of individuals rather than companies can cause problems (e.g., in the event of death, resignation or emigration);
- separate classification for labour-based contractors can be introduced. With regard to roadworks, labour-based companies have been registered as a special category, thus qualifying to bid for labour-based works following the successful completion of special training for contractors and their staff;
- autonomous "agents" such as AGETIPs (see section 2.2) have set up their own registration and pre-qualification procedures, which may be defended as an interim solution to national registration;

3.3 Contractor registration

Ghana: Contract classification

The Ministry of Roads and Highways classifies contracts for road and bridge works by value and complexity. Contractors are registered within the appropriate category based on their capacity and experience. With the start of the labour-based feeder roads contractor development project, a new classification of "labour-based contractor" was introduced, restricted to those contractors who had successfully completed the full labour-based training programme. These contractors also became members of the Labour-based Contractors' Association.



- the establishment of strong contractor associations has significantly aided labour-based contractors.

Some guidelines

- Existing registration criteria are generally based on human and financial assets, equipment held and work experience, thereby excluding emerging contractors. There is likely to be a need to modify such existing registration criteria to:
  - reflect the contractor's potential to mobilize and manage resources;
  - include joint ventures between emerging and established contractors; or
  - include a special category of labour-based contractors.

- Project designers should consider the following issues in respect of the registration of small contractors and their obtaining a share in the domestic market:
  - the organizations that are or should be involved in national registration and certification;
  - the need for projects to be suitably packaged for small-scale contractor participation (contract size and duration);
  - the modalities to certify contractors as competent in labour-based works, e.g., after successful participation in a training programme;
  - any requirements to certify contractors as individuals with relevant experience, as distinct from companies;
  - the modalities to encourage the formation of a labour-based contractor association so as to lobby particular interests of the members.

Public sector procurement reform in South Africa

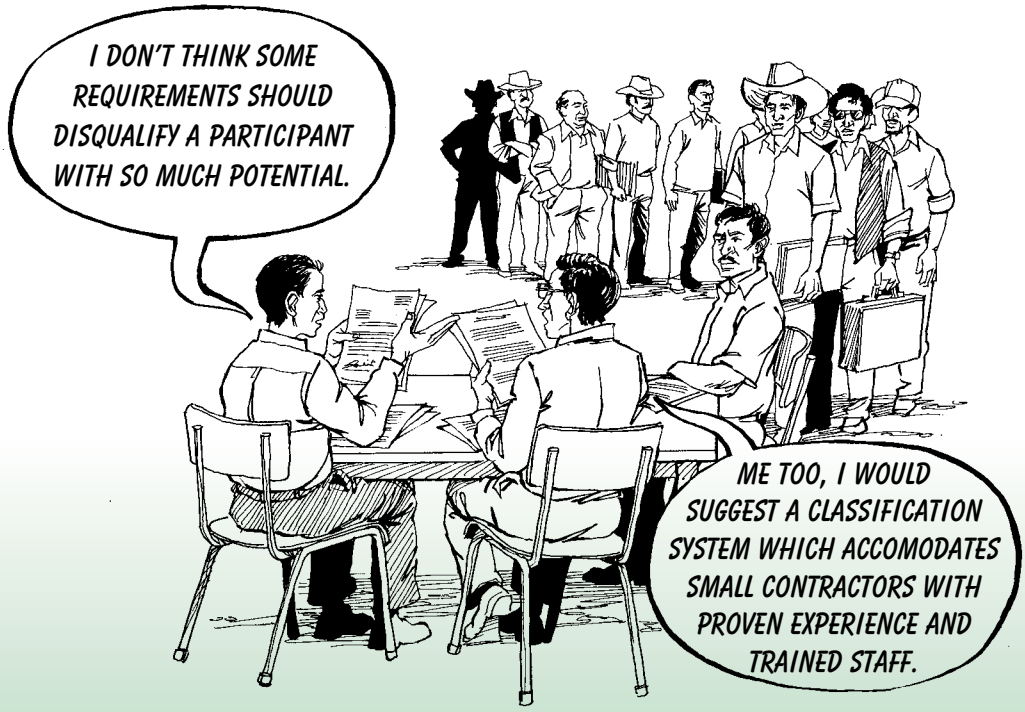
The South African Green Paper on Public Sector Procurement Reform suggests that registration must be instituted as a means of:

- compiling a database for the packaging of contracts and identifying target groups;
- regulating participation in public sector procurement;
- promoting good business practices and adhering to statutory regulations and requirements; and
- censuring those who transgress codes of conduct, fail to pay their tax, levy or service charge obligations, or obtain work in a fraudulent manner.

According to the proposals, non-registered suppliers, service providers and contractors should not be permitted to participate in public sector procurement activities.

The paper proposes that registration be subject to the observance of a **code of conduct** which should, among other things, require that signatories undertake to:

- tender only on projects which they are capable of executing with the resources they can marshall in accordance with the terms and conditions of the contract;
- remunerate staff as per relevant labour legislation;
- pay applicable social security charges, taxes and service charges as appropriate;
- observe safety and health regulations with regard to their workers;
- engage subcontractors at reasonable prices so that they have the potential to adhere to labour standards;
- not engage in auctioning of subcontracts in order to drive prices down; and
- comply with environmental standards.



Small contractors may need special consideration over registration

Bibliography

E. Rausch: *Road contractor promotion and employment generation in Africa*, GTZ, Eschborn, 1994.

D. Miles and R. Neale: *Building for tomorrow: International experience in construction industry development*, ILO, Geneva, 1991.

ILO: *Guidelines for the development of small-scale construction enterprises*, ILO, Geneva, 1987.

References for the boxes in this part:

Emerging labour-based roadwork contractors in Lesotho: Background and experience. P. Bentall, A. Twumasi-Boakye and R. Watermeyer: *Labour-based contracting*: *A study to develop guidelines for project formulation and implementation (Vols. 1-3)*, op. cit, ILO, Geneva, 1995.

Indonesia: Contractor profiles. D. Miles: *A decade of small contractor development in Asia: Lessons from project experience*, Article in Public Works Management and Policy, Vol. 1, No.3, Sage Publications Inc., London, UK, January 1997.

Selection procedures. P. Bentall, A. Twumasi-Boakye and R. Watermeyer: *Labour-based contracting*: *A study to develop guidelines for project formulation and implementation (Vols. 1-3)*, op. cit, ILO, Geneva, 1995.

Egypt: Selection of candidates for contractor training. *Training programme for small-scale labour-based contractors*, Work plan, Social Fund for Development, Public Works Programme, Cairo, September 1998.

Egypt: Small-scale contractors trained to work for a diversified market. *Training programme for small-scale labour-based contractors*, Work plan, Social Fund for Development, Public Works Programme, Cairo, September 1998.

United Republic of Tanzania: Contractor selection questionnaire. H. Hlaing: *Final report: Labour-based contractor training, URT/90/004*, ILO, Mwanza, December 1995.

South Africa: Urban infrastructure renewal. P. Bentall, A. Twumasi-Boakye and R. Watermeyer: *Labour-based contracting*: *A study to develop guidelines for project formulation and implementation (Vols. 1-3)*, op. cit, ILO, Geneva, 1995.

Ghana: Contract classification. P. Bentall: *Aspects and background for labour-based contracting - the Ghana Experience*, in G. Bosma and B. Johannessen, eds., *Labour-based technology: A review of current practice. Report of proceedings*, March 2-6, ILO, Geneva, 1992.

Public sector procurement reform in South Africa. Green paper on Public Sector Procurement Reform in South Africa, Government Gazette, Vol. 382, Pretoria, 1997.

Contracting Procedures

PART 4

4. Contracting Procedures

4.1 Tendering procedures

Key issue:

How can appropriate tender procedures help to develop viable small-scale labour-based construction firms?

Information required:

- the national policies in respect of domestic construction industry development, employment and community participation;
- the national tendering procedure for small-scale contracts in terms of classification of contracts and contractors, tender boards and competitive bidding;
- the availability of appropriate design specifications, allowing small-scale local contractors to compete and deliver the works using locally available resources;
- can exceptions such as fixed rate contracts be made, if necessary, for restricted tendering?
- can appropriate simplified documentation be introduced as part of a contractor development programme?
- can the labour-based contractors be initially favoured with restricted, fixed rate or nominally competitive contracts? If so, for how long, and when should genuine competitive bidding be introduced and the protective measures removed?
- to what extent can targeted procurement of engineering and construction works be introduced, i.e., can the tender documents include socio-economic objectives which reflect national policies and priorities such as employment creation and use of local resources? Can local participation, subcontracting and training be encouraged in this manner?

Project experience indicates that:

- targeted procurement of civil works and services can be a powerful instrument to encourage large-scale contractors to use local resources in their work. Contractors **can** respond to socio-economic targets specified in tenders through subcontracting and designing initiatives for community participation and training;
- standard design specifications are generally inappropriate for the use of local materials and labour-based work methods;

4. Contracting Procedures

4.1 Tendering procedures

South Africa: Tendering in a targeted procurement system

Targeted procurement - on contracts with a defined minimum financial threshold - requires tenderers to compete on the basis of both price and proposed approach. The successful tender in a targeted procurement situation is the one who is awarded the most points for an approach which includes a combination of technical, financial and socio-economic aspects. The contracting agency provides resource specifications requiring the contractor to meet socio-economic objectives, such as the involvement of local communities and/or the use of local resources. All tenders are subject to the acceptability of technical factors, previous contractual performance and recommendations, financial references, unit rates and prices, alternative offers and qualifications. This system:

- enables tenderers to use their skill, knowledge and creativity in arriving at a favourable mix between economic and development objectives;
- puts those firms which fall outside the special target groups, or which offer to meet certain socio-economic objectives to only a limited degree, at a disadvantage. However, it does not preclude them from tendering in a meaningful manner;
- discourages those who fall within a special target group from making unrealistic bids, because the price advantages accorded to them will be outweighed by the loss of points incurred through uncompetitive tender prices.

Contracts are awarded to the best offer in terms of tendered price and proposed approach. Different formulas are used for the awarding of points for (i) the financial offer - which generally gets a 90% weighting - and (ii) meeting the development objectives. On small contracts below a pre-established financial threshold, a direct preference - in the form of a fixed number of points - is accorded to targeted enterprises. Tenderers in such circumstances are nevertheless required to compete on the basis of price.

- contractors benefit from initial concentration on technical and managerial aspects of labour-based construction, but have to learn simultaneously to deal with the complexities of competitive bidding;
- if fixed rate contracts are used, there is a key role for a contractor association in negotiating fair rates with the client;
- sometimes national regulations for tendering have been waived for labour-based "pilot" projects leading eventually to a permanent change;
- labour-based contractor associations can develop a practical working dialogue with the contracting agency over all aspects of labour-based contracting, including tendering procedures;
- tendering is not an easy skill to acquire. Specific training and extended mentorship are necessary to develop the required capacity of the emerging contractor to tender competitively;
- training of the contracting agency's staff is necessary to enable the changeover from force account operations to contract management.

Some guidelines

- A range of initiatives can be taken towards neutral specifications and tender procedures, for example:
  - considering different alternatives at the design stage;
  - making construction specifications suitable for different work methodologies;
  - developing tender documentation specifically to allow alternative tenders.
- Measures are needed to streamline or decentralize the tendering process for small-scale works so that the access to work by successful contractors can be improved and the local capacity to manage contracts can be developed. Such measures should be linked to ongoing decentralization processes, but the contracting agency should retain (delegated) control over certification and payment.
- Following the termination of a contractor development project, all parties concerned have to comply with the tender procedures then in force, which would not normally grant any concessions to the contractors trained and promoted during the project period. It is important that both the contracting agency and the contractors involved are aware of the timing and implications of these changes and are prepared for the post-project stage.

Sierra Leone: Unit rates

In Sierra Leone, in an ILO-supported labour-based road contractor development project, the unit rates for various items of work were analysed and evolved jointly by the contracting agency (the Sierra Leone Roads Authority - SLRA), the contractors and the technical assistance team. These rates were reviewed in biannual workshops. This approach enabled the contractor association and individual contractors to become involved in negotiating fair unit rates based on prevailing market wage rates, labour productivity, plant hire rates and their own overheads. The technical assistance team represented the workers' interests by providing data on workers' productivity. Work studies of average worker performance over an eight-hour day with acceptable rest periods provided the basis for these productivity estimates. The unit rates thus evolved and approved by the SLRA subsequently formed the basis for the engineer's estimate of individual contract costs.

Tendering means preparing of a bid which deals with all the requirements

4.2 Competitive bidding

Key issue:

At what point can developing small-scale contractors be expected to enter a full-scale competitive bidding environment?

Information required:

- ❑ are all contracts to be awarded under full competitive bidding terms?
- ❑ are exemptions desirable or possible for a contractor development programme?
- ❑ is the contract documentation suitable (see section 4.4) and do the design and work specifications allow the use of locally available resources and the participation of small contractors?

Project experience indicates that:

- ❑ considerable training investment must be made in developing labour-based contractors' and clients' management staff; precautions should be taken not to waste this investment through hasty introduction of competitive bidding;
- ❑ development banks generally insist on competitive bidding for contracts, although the accepted procedures often relate more to the form than to a genuine competitive bidding process. Exceptions can usually be negotiated for a training or demonstration phase, allowing direct contracting of the selected contractors;
- ❑ collusion between established contractors is a big problem in many countries. This has to be taken into account in contractor development programmes;
- ❑ small numbers of available contractors can manipulate competitive bidding rates to their advantage by operating a cartel;
- ❑ the introduction of competitive bidding immediately after initial training can eliminate some technically more competent contractors who are aware of realistic costs;
- ❑ in remote rural areas, it may not be possible to find the minimum required number of bidders (usually three);
- ❑ contractors may be pressured to take contracts at the engineer's estimate after competitive bidding has resulted in tenders outside the acceptable range;
- ❑ contractors may be awarded fixed or negotiated rates contracts years after entering training programmes;
- ❑ some procedures have a superficial appearance of competitive bidding aimed more at fulfilling funding conditions than establishing a genuine system;

4.2 Competitive bidding

Bidding collusion and other practices

In many countries, the risk of collusion and corruption to obtain lucrative public works contracts is significant. The bigger the contract, the greater the opportunities for easy profits, but even relatively small contractors have a significant chance can become involved, willingly or otherwise, in collusion. A recent article in a newspaper in South-East Asia described three common types. One is fake competition, where several companies meet and decide which one is to win the bidding and at what price (usually 25-40% higher than a realistic honest bid). The losing companies agree to submit higher or invalid bids. The bidding companies share the profit and the authorizing (government) officials receive "commissions". A second method is to discourage outsiders from participating by spreading rumours about their competence or by outright threats against them. Another method consists of "fixing" the specifications or terms of reference for the contract, so that only one or a few selected companies qualify for the bidding. Again, handsome "commissions" are paid.

The practices described above are more difficult when numerous small-scale and well-controlled contracts are concerned. Nevertheless, even then demands for "contributions" to political parties or "commissions" to corrupt officials are common.

Collusion and corruption: What can be done?

The combat of collusion and corrupt practices must be initiated through policy and system changes, and the creation of an environment which is transparent and provides incentives for honest behaviour. Recent recommendations made by the ILO in the context of a large-scale proposed public works programme in South-East Asia, with hundreds of small to medium-sized projects, included the following:

First, the design documents for the various projects should clearly designate the correct target groups and beneficiaries, as well as indicate the modalities of how these target groups/beneficiaries are to be involved and reached. A specially appointed monitoring committee or panel would have to screen project documents for this purpose and recommend modifications as necessary. This could be done in line with model approaches preferably previously developed by the committee in collaboration with all participating and beneficiary partners. Proposed project budgets and staffing tables should correspond to the proposed and approved implementation modalities of the project concerned. Subsequently and on a random basis, inception reports and progress reports could be checked by the panel and compared with reality as well as with the original project description.

Second, the procedures for recruitment of professional and administrative staff as well as for the procurement of equipment and services should be agreed upon and transparent. Competition of candidates to fill project posts and bidding for the supply of goods and services should be encouraged. Where contracting is used, the Engineer's Estimate should provide guidance on reasonable cost figures for works.

Third, there is the problem of how to deal with corruption at operational levels. This is principally a matter of correct accounting, controlling, monitoring and auditing the management of specific projects. This is a huge task and a first initiative should concern the development and/or modification of accounting and auditing procedures, as well as defining, with the other parties involved, the consequences and penalties for those who violate rules and procedures.

The composition of a committee of this nature is very important. Well-placed representatives of all parties involved should be part of it and there should be a possibility for workers, employers and government representatives to have a serious dialogue on the - probably numerous - contentious issues. Of course, for a committee of this nature to be effective, its status and authority should be clearly defined and agreed upon by the relevant government authorities.

- one way to make the transition from negotiated contracts to competitive bidding is to introduce a three-stage bidding process. The time requirements for each stage will vary in each country with the experience and capacity of the contracting agency and the performance of the trained contractors:
  - at stage one, bidders are provided with a bill of quantities and a schedule of unit rates (e.g., US$ 1.50 for 1 m^3 of excavation) which cover all direct costs (i.e., labour, equipment, materials and site overheads), and are only required to add percentages for indirect costs (management and supervisory expenses), risk and profit. This ensures that all direct costs are recovered by the contractor;
  - at stage two, a bill of quantities and expected workday inputs for each bill item are provided (e.g., 1000m^3 of excavation at 3m^3 per workday). Bidders then price the direct costs (estimating unit rates themselves based on their own experience with worker productivity and site organization) and add a margin for indirect costs, risk and profit;
  - at stage three, bidders price all items fully in a competitive bidding situation.

Some guidelines

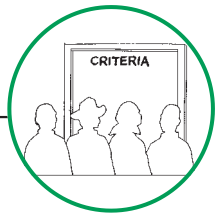
- In the initial stages of a contractor development project, it is unlikely that there can be a genuinely competitive bidding situation, because there will be more projects than available contractors. Also, a certain period of protection of trained contractors is needed for them to become established in the market. Genuine competitive bidding can generally only be introduced after a period of training and mentorship, and following the termination of project-induced financial commitments (e.g., equipment loans).
- Failure at competitive bidding - when it is introduced too early - can eliminate potentially competent contractors. On the other hand, too long a protection period may also be detrimental.
- The involvement of the contractor association in negotiating rates is highly desirable and helps to develop a capability for full competitive bidding.
- Contractors all need good worksite experience (not less than 18-24 months) to gain sufficient practical information for the competitive bidding process.
- One way to introduce competitive bidding immediately is first to teach tendering to a large group of potential participants and train only the successful tenderers.
- Competitive bidding based on the engineer's estimate with plus and minus percentage cutoffs is a possible staged approach, and there may be several ways to accomplish the transition from fixed rate to competitive contracts in a staged bidding process. (See project experience above.) This will have to be developed with and approved by the contracting and financing agencies.

Competitive bidding makes contractors face the realities of the market-place

Mozambique: Feeder road contractor development project

Two years after the opening of the initial training site in Zambezia Province, when six contractors had proved their ability to profitably manage their firms and predict their own costs accurately, a decision was taken in principle to introduce competitive tendering for all future contracts. This was seen as an important step in the development of the contractors to: (i) prepare them for the competitive environment that they would encounter after the end of the project; (ii) provide the local provincial road department with experience in the preparation and evaluation of tender documents; and (iii) ensure that the work would be undertaken at economical rates. The first tender bids were characterized by poor arithmetic, incomplete submissions and some late entries. A seminar was held following the receipt of the tenders to reflect on the process and help the contractors to improve their bids in the future. A feature of the introduction of competition was that "project" contractors were encouraged to bid for "non-project" contracts, while "non-project" contractors could bid for "project" contracts.

4.3 Tender adjudication



Key issue:

How can a transparent, fair and appropriate adjudication procedure for small-scale labour-based contracts be established?

Information required:

- current national procedure for tender adjudication including the role of tender boards; technical tender report recommendations; and the evaluation criteria.

Project experience indicates that:

- main contractors are interested in, and able to meet, socio-economic targets provided that the contract adjudication system rewards them for their efforts;
- it is important that the contracting agency recommending an award to the tender board also makes the payment for the contract;
- in adjudicating tenders, the engineer's estimate plays a useful role in eliminating excessively low or high bids. Also, within the framework of a contractor development programme, the technical tender report (the contracting agency's recommendations) should carry substantial weight;
- many apparently competitive tendering procedures result in awards similar to the engineer's estimate due to the wide range of submitted bids;
- exceptions to normal practice made for pilot projects may lead to permanent changes in adjudication procedures.

4.3 Tender adjudication

Opening the sealed bids (at a given time and location) by a designated committee starts the contract award process

Contract awarding

Kenya

In Kenya, the bid price is the main criterion for award of contracts, but during the initial stages of the labour-based contractor development programme other factors were considered, with weighting as follows:

Price quoted	: 70%
Past performance	: 20%
Uncompleted work	: 10%

Tenders which were unreasonably low (15% below the engineer's estimate) were disqualified.

Lesotho

The bids received from the contractors trained by the project were evaluated in relation to the engineer's estimate which allowed a 7.5-10% profit margin on the cost of similar operations carried out by force account. Ideally the successful bid was expected to be within 5% of this estimate. In the first exercise, all tenders received were excessively high and the lowest tender had to be negotiated down to be in line with the engineer's estimate. Subsequently, two contracts were retendered to obtain prices within the 5% range.

Some guidelines

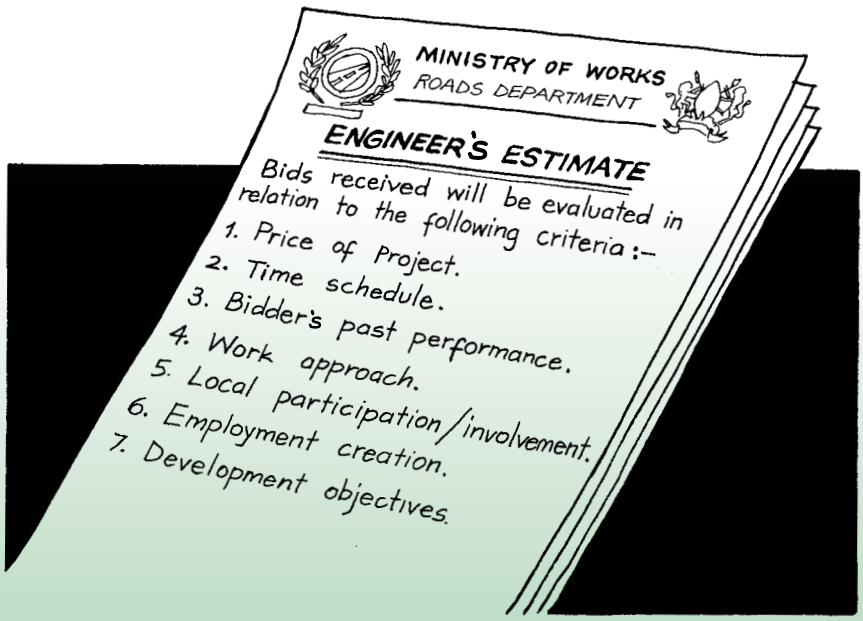
- If targeted procurement of civil works is an option (see section 4.1), a price mechanism should be introduced which rewards tenderers in the first instance for their financial offer, and in the second instance for the level to which their offer responds to the socio-economic targets specified in the tender. This means that adjudication criteria will not necessarily favour the lowest bid, but will also consider quality and other criteria (e.g., proposed work approach, local participation, level of employment creation).

- For fixed rate contracts, it may be feasible to negotiate with the tender board so that its role is limited to the approval of rates on an annual basis.

- For locally based small-scale contracts, a decentralized adjudication procedure is likely to be advantageous.

- The time-scale of the tendering and adjudication procedures should be reduced to a minimum, in order to ensure continuity of awards, taking account of the fact that there are likely to be many, low-value, contracts.

Contract award criteria are established in advance in line with the engineer's estimate



South Africa: Special award procedures for development contracts

South Africa's constitution requires that all public bodies contract for goods and services in accordance with a system which is fair, equitable, transparent, competitive and cost-effective. A procurement policy was introduced permitting tenders for development contracts (contracts in which the contracting agency provides third-party management support to contractors) to be awarded in the following manner:

- the person responsible for drafting the tender document or for providing third-party management support prepares an estimate for the contract. This is kept secret until its disclosure immediately prior to tenders being opened;
- all tenderers whose prices are more than 10% below the estimate are eliminated;
- the contract is awarded to the tenderer immediately above the cut-off point subject to the following:
  - compliance with the conditions of tender
  - tender price make-up
  - ability to supervise and control labour
  - current work situation
  - potential ability to complete the contract within the time stipulated
  - rates and prices in balance.

4.4 Appropriate contract documentation

Key issue:

What type of contract documentation is appropriate for labour-based contract work, adequately describing the works and identifying the rights, obligations and risks of the parties?

Information required:

- the national legal framework existing for the construction industry;
- the standard documentation, i.e., conditions of contract, specifications, form of agreement, drawings and bills of quantities in use and their effectiveness in the award, administration and management of contracts;
- what measures can be taken to reduce the financial and technical risks on the labour-based contracts? Is there a need for financial guarantees (bonds, normal level of retention, advance payments, liquidated damages for labour-based contracts) and, if so, to what level?
- the need for all interested parties (contracting agency, contractor association, workers' organization, ministry of labour) to have an input in the evolution of standard labour-based documentation.

Project experience indicates that:

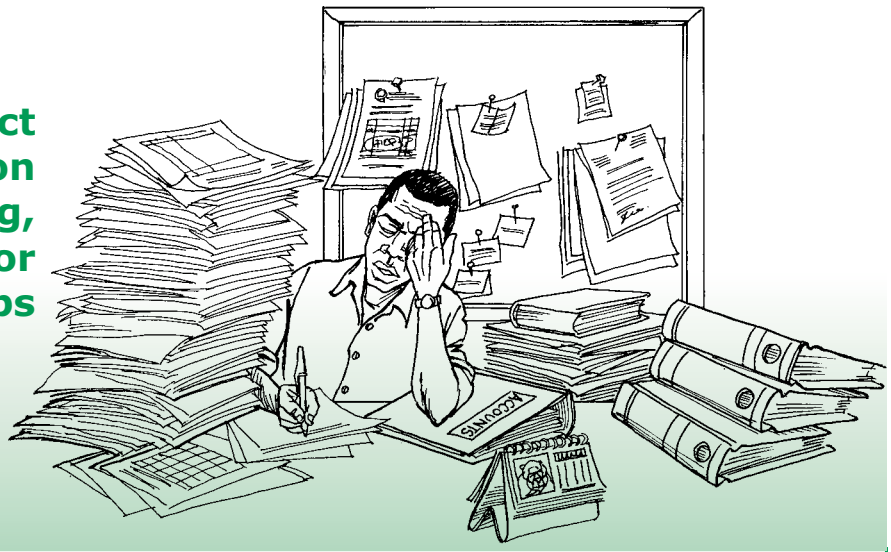
- generally, standard contract documents are large and contracting agencies waste resources in making them available for relatively minor contract work. For minor and micro types of contract, the documentation should be as limited as legally acceptable and easy for the contractors to understand. The full version of international conditions (e.g., FIDIC) is widely included in small-scale contracts but reduced versions of legally tested documentation (see *Some guidelines* below) may be more suitable to small-scale labour-based contracting;
- standard specifications for construction work are generally drawn up for a specific - normally capital-intensive - technological approach. Where consultants are used, these also tend to recommend designs which do not favour the use of local materials, resources and labour-based work methods;
- contractors who are heavily dependent on a single contracting agency rarely exercise their rights under the contract, for fear of repercussions on their future workload;
- many "project designed" documents used for labour-based contracting have been assembled from various sources, thus losing legal and technical consistency. Few have been subject to any national legal scrutiny;

4.4 Appropriate contract documentation

Zimbabwe: Legal approval of contract documentation for labour-based roadworks

In 1996, the Department of Roads of the Ministry of Transport and Energy (MOTE) developed tailor-made bidding and contract documents for the new labour-based road rehabilitation project. The Permanent Secretary of the MOTE sent the draft documents to the Director of Legal Advice of the Attorney General's Office. This Office examined these documents from a legal perspective. Besides some minor changes, the Office advised the Permanent Secretary to ensure that Special Conditions of Contract (for labour-based works) were included in the contract document together with General Conditions of Contract as these two sections were complementary. While all other parts of the bidding and contract documentation had been specifically developed for small-scale labour-based contracting the General Conditions of Contract were the conventional conditions for construction work based on the South African General Conditions of Contract for civil engineering construction. These, the Attorney General's Office advised, should not be rewritten to suit particular requirements of the small-scale contractors and should therefore remain generally applicable in the civil engineering sector. In the short term, this was disadvantageous to small contractors as they had to familiarize themselves with hard to understand and not totally relevant Conditions of Contract. In the medium and long term, however, this familiarity with generally applicable conditions will allow them to better integrate into the sector and help them to tender for larger contracts.

Contract administration is demanding, even for small jobs



Sierra Leone: Contract documentation

In Sierra Leone, contract documentation was split into two categories: general and contract-specific. The general documentation - which included conditions of contract and general specifications of labour-based roadworks - was given to the contractors only once at the time of their formal registration. The contract-specific documentation for each contract was limited to a bill of quantities, form of agreement, special conditions of contract (if any) and drawings/line diagrams. This limited both paperwork and costs, important given the large number of relatively small contracts.

- both the contracting agency and contractors are short of experience in this field and training is needed;
- simple contract documentation for labour-based maintenance works (roads, irrigation, micro contracts) has proved to be workable and well understood by small contractors and village communities, although such documentation has generally not been tested for legal validity;
- it is necessary to introduce common and transparent price adjustment factors. Particularly for contracts in local currency in countries with high inflation, price adjustments should be regular and automatic.

Some guidelines

- Different levels of documentation should apply to different categories of contract, such as major works, minor works and micro works.
- Contract documentation should as much as possible be appropriate to the level of contractor development. In other words, it should be feasible for contractors to work their way up from micro works to major works using similar types of documentation, but adapted to the contract category.
- All contracts are legal documents and require national legal approval to be valid, workable and appropriate at all levels. For labour-based works it is not advisable to develop special documentation. Instead, specifications, special clauses and works information should be added to existing and tested documentation.[1]
- Special conditions are generally needed for labour-based works, specifying labour recruitment and termination procedures, working conditions, rates of pay and other labour issues.[2]
- Specifications may be "method" or "performance" based, acknowledging that:
  - construction standards are the same whatever technology is used;
  - small-scale contractors will not usually have access to testing on-site and method specifications may be more appropriate;
  - many national standard specifications are not applicable to labour-based methods where method descriptions are used;
  - performance indicators used for the certification of works should be simple, while allowing an objective assessment of the quality of the completed works.

---

1 *For example, "Short form of contract" ("Green book"), test edition issued by FIDIC in 1998 (see Annex 1); "ICE Conditions of contract, Minor works", 1998 (see Annex 2), prepared by the Institution of Civil Engineers (United Kingdom); and the World Bank's "Procurement of works, Smaller contract".*

2 *See "Employment-intensive infrastructure programmes: Labour policies and practices", ILO, Geneva, 1998.*

4.4 Appropriate contract documentation

Conditions of contract

The common practice on many projects has been to use established FIDIC Conditions of Contract with special conditions written to cover the specific requirements of labour-based construction. There is no known case of such special conditions being tested under contract law. The legal validity of such contract documentation is therefore still uncertain. The conditions of contract used in six African countries in 1995 were as follows:

Kenya: FIDIC (1977) with special conditions.

United Republic of Tanzania: Purpose-written conditions (26 clauses) for smaller contracts and FIDIC for larger projects.

Uganda: MOWTC has developed simplified contract documentation for routine maintenance contracts consisting of six articles of agreement relating to:

- Obligations of the contractor (single person or group)
- Obligations of the employer
- Contract price and mode of payment
- Start, duration and termination
- Modification
- Settlement of disputes
- Annexes
- Bill of quantities
- Specifications
- Tools supplied to contractor
- Half-year workplan

Ghana: Originally, FIDIC with special conditions in line with the Department of Feeder Roads equipment-based contracts. New purpose-written conditions for labour-based contracts have been proposed.

Lesotho: Routine maintenance contracts:
Similar articles of agreement to those used in Uganda.
Periodic maintenance contracts:
The conditions for labour-based construction comprise 13 articles and 7 additional "special" articles. The general articles cover definitions, obligations of contractor, obligations of employer, contract price (measurement and method of payment), commencement, duration and termination, modifications, settlement of disputes, understanding of contract documents, insurance of works, third-party insurance, excepted risks, insurance of workers and maintenance of works.

South Africa: General Conditions of Contract for Works of Civil Engineering Construction (1990). In addition, at the lowest level of contract, special conditions have been prepared to cover the following items relating specifically to labour-based construction:

- Definition (construction/ materials manager)
- Duties and powers
- Contractor's obligations
- Waiving of surety
- Training contractor's personnel
- Control and supply of materials
- Insurance (employer/contractor)
- Method of measurement
- Reduction of time for claims
- Greater variations in contract price
- Materials reconciliation certificate
- Lump sum tenders
- Financing fortnightly wages
- Value added tax
- Exclusion of contract price adjustments

- Where specifications for project design are drawn up by local or external consultants, the terms of reference for their work need to be very specific on how locally available human and material resources can be used and incorporated in the design specifications.

- An ultimate objective should be to produce designs and documentation which are technology-neutral so that labour-based approaches can equally be applied[1].

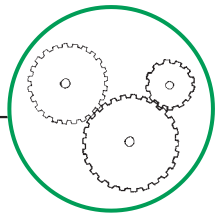
- Wage rates need to be regularly reviewed in relation to inflation and wage rate changes in comparable sectors of the economy. Labour ministries, employers' associations and workers' associations should be involved in such reviews.

[1] *"Guide to competitive bidding on construction projects in labor-abundant economies",. World Bank and Scott Wilson Kirkpatrick and Partners, Washington, D.C., June 1978.*

4.4 Appropriate contract documentation

Some contractors learn about conditions of contract the hard way!

4.5 Contract administration



Key issue:

How can effective contract administration procedures be established for small-scale labour-based contracts?

Information required:

- will the contracting environment be centralized or decentralized?
- assessment of the contracting agency's capacity to prepare and manage an increasing number of small-scale contracts resulting from the introduction of local labour-based contracting;
- assessment of local consultants' capacity to prepare and administer contracts.

Project experience indicates that:

- contracting agencies can quickly become overburdened with the administration of large numbers of labour-based contracts;
- more use can be made of local consultants for contract administration;
- contracts covering work quantities for a one-year period are workable;
- signature approvals for work completed/payments are often required from numerous officials with no direct legal responsibility under the contract;
- contracting agency personnel are frequently, at least initially, unaware of their administrative responsibilities under the contracts;
- work inspection is critical for labour-based technology. The contracting agency may need the permanent site presence of a designated supervisor both for quality control and daily work decisions (e.g., road alignment, culvert positions). Also, the contracting agency's site staff or representative are required to be closely involved in work measurement and certification which need to be done on a regular basis for labour-based works;
- contracting agency staff will be required to monitor whether the contractor complies with the conditions of contract (e.g., labour recruitment, working conditions, prompt wage payments);

4.5 Contract administration

Capacity to administer, monitor and control contracts

After a ten-year period in which it had dealt with an increasing number of contracts, the Department of Feeder Roads (DFR) in Ghana reported a major constraint .... "the non-inclusion of local consultants in the project denied them the opportunity of learning about labour-based technology. This has resulted in a situation where the design and supervision of all labour-based contracts rest fully on the DFR staff, a burden which is too heavy for the staff to bear."

Zambia, in common with several other countries, has a decentralization policy which aims to empower local councils at district level to be responsible for the administration of small-scale infrastructure contracts. However, these councils seriously lack human, material and financial resources (which explains the National Roads Board's reluctance to decentralize its funding). The situation in these two countries highlights the need to see the development of the private sector in its overall context of appropriate client management structures.

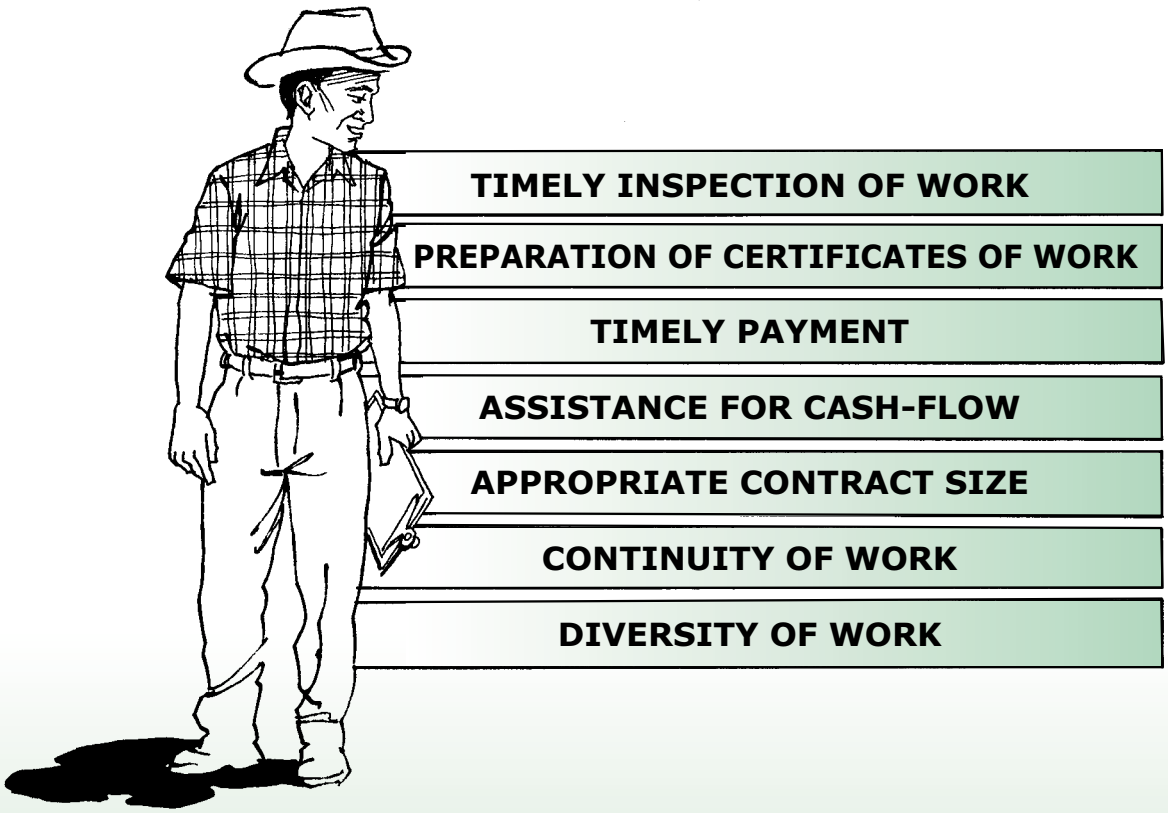
Many contracts together stretch management and administrative capacity to the limit

- initially, during the training and establishment phase of the contractor development project, measures will need to take into account small-scale contractors' cashflow requirements for labour wage payments. Such measures could include:
  - making an advance payment at contract signing;
  - paying labour wages against certified muster rolls promptly at each month end, in advance of interim certificate measurement (involves additional administration for contracting agency);
  - estimating percentage payment for works promptly at each month end, adjusted retrospectively by measurement (needs careful auditing);
- contract preparation planning is important to ensure regular work opportunities for the trained contractors.

Some guidelines

- To the maximum extent possible, contracts should be managed at a local level in order to:
  - ensure close supervision;
  - motivate contractors to be present on site;
  - streamline administrative procedures;
  - build and utilize local capacity.
- While the contract size should be compatible with the programme's time-scale and the contractor's capacity, the administrative burden of numerous low-value, short contracts should be limited as much as possible through adequate contract packaging (e.g., by issuing routine maintenance contracts to groups rather than individuals).
- The contracting agency should establish a clear system of delegated authority to cover and streamline technical and financial control by the representative.
- Work certification procedures should be streamlined to the minimum number of signatures necessary for effective control.
- Local consultants should be used where available and training in contract administration should be provided.

Issues essential to the survival of the emerging contractor



4.6 Payment procedures

Key issue:

What is required to establish effective and transparent payment procedures which comply with the conditions of contract?

Information required:

- contracting agency's payment procedures for other civil works contracts and an assessment of their application in the labour-based (and possibly decentralized) context;
- assessment of the contracting agency's capacity to manage more numerous and more frequent payments required for labour-based contractors;
- assessment of the past performance and constraints experienced by the contracting agency in making regular and timely payments;
- the applicable contractual obligations regarding payments.

Project experience indicates that:

- the implications of payment delays for labour-based contractors are more serious than for equipment-based contractors. A regular cashflow is essential to pay the workforce and avoid labour problems. Particularly in the early stages of the project, special payment arrangements are needed for small-scale contractors to meet the contractor's need for a consistent cashflow to pay the monthly wage bill;
- the timescale for payments is particularly critical for small-scale contractors with loan reimbursement commitments and little access to credit;
- numerous small-scale contracts create additional burdens for the contracting agency's administration resulting in delays or errors in payments. The contracting agency's accounting and auditing procedures may need modification to allow for the control of more numerous smaller-scale payments;
- the contracting agency may not be in a position to comply with its contractual obligations regarding payment. In general, the contractor will be reluctant to exercise his or her legal rights against his or her principal client, even where there is a compensation clause for late payments in the conditions of contract;
- the contracting agency's own cashflow needs to be secure and accurately forecast to ensure available funding for contract payments. With the introduction of labour-based contracts, disbursement and payment procedures need to be more timely and regular.

4.6 Payment procedures

Wage payment is a very sensitive issue for workers - and it is not always within the contractor's control

Ghana: Advance payments

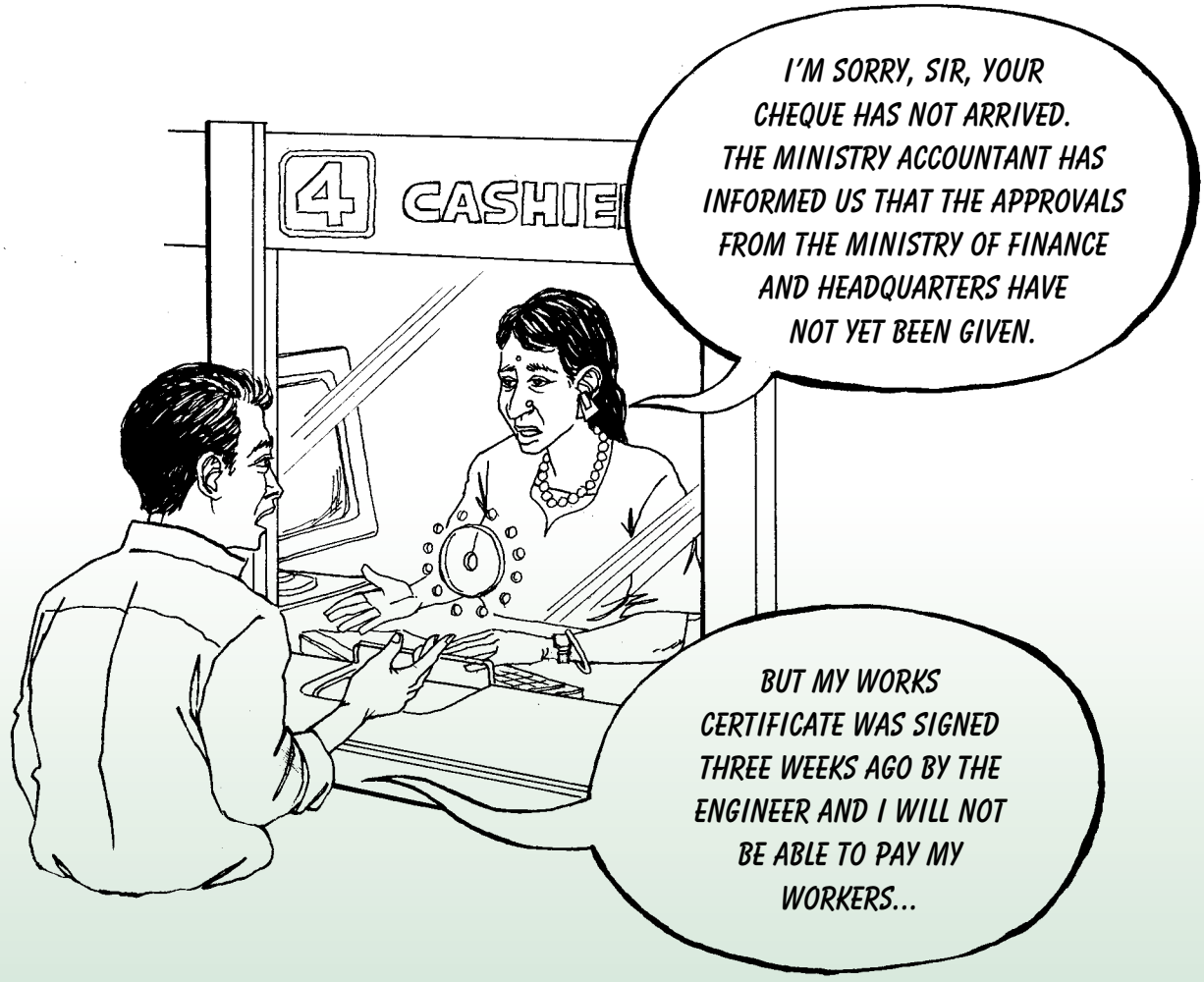
The importance of enabling the contractor to pay the workforce in a timely manner was recognized as crucial to the project's success. To this end each contractor submitted the labour return before the end of each month and this was paid promptly (plus 15% for overheads) to allow payment to workers at the beginning of the following month. This labour payment was subsequently deducted from the contractor's interim payment certificate. For administrative reasons this arrangement was only possible when a relatively small number of contractors were involved. Subsequently, mobilization advances were given under the contracts, allowing the contractors an adequate cashflow to pay initial wage bills.

Some guidelines

- Over-bureaucratic approval systems inevitably lead to delays and a waste of contractors' resources and time. Therefore, actual payments should be decentralized as much as possible to avoid contractors having to travel to headquarters to collect their payment.

- Adequate and prompt payment of labour is essential on labour-based contracts. Contracting agencies have an obligation to ensure this. The applicable payment procedures should be described in the conditions of contract or special conditions as appropriate.

4.6 Payment procedures



The contracting agency has contractual obligations in respect of payments to the contractors - there should be no excuses

4.7 Planning and reporting

Key issue:

How can planning and reporting procedures, which are succinct, relevant, interactive and standardized, be developed and introduced?

Information required:

- assessment of contracting agency's planning and reporting system and reporting/feedback responsibilities of different levels of supervisory and managerial staff;
- assessment of any modifications needed for labour-based contracting;
- assessment of reporting requirements and obligations to funding agencies.

Project experience indicates that:

- planning and reporting procedures are often **not**:
  - adapted to the private sector;
  - well designed and standardized;
  - informative and comprehensive on essential issues;
  - targeted for action and feedback by the appropriate manager;
  - given due importance;
  - produced in due time;
- computerized systems can make planning and reporting of basic facts/statistics simple and interactive, producing summarized information for management action. Initially, however, computerized systems should be introduced with great caution and backed up with a functioning manual system;
- serious omissions (e.g., failure to report costs, state and utilization of equipment) often deny project managers vital inputs for decision making;
- the importance of good planning, monitoring and reporting as a primary function of effective management tends to be underestimated.

4.7 Planning and reporting

General planning and reporting systems	Contractor's internal system	Contracting agency's system
Daily	• Resource use: ◆ muster roll ◆ equipment • Materials • Tasks • Planned and actual outputs • Problems on site	Daily site diary Daily site record of works
Weekly	• Resource use: ◆ equipment ◆ materials • Planned and actual outputs • Costs • Problems on site • Forecasts	Record of site instructions Weekly works measurements Inspection reports
Monthly	• Resource use: ◆ equipment ◆ materials • Planned and actual outputs • Costs • Problems on site • Forecasts	• From site to management: ◆ progress ◆ statistics ◆ financial ◆ problems ◆ forecasts -->Summary to senior management (contracting agency)
Quarterly / yearly		From management to government departments and external funding agencies: • Summary progress report ◆ Financial report ◆ Plan of operations ◆ Reviews /evaluations / studies

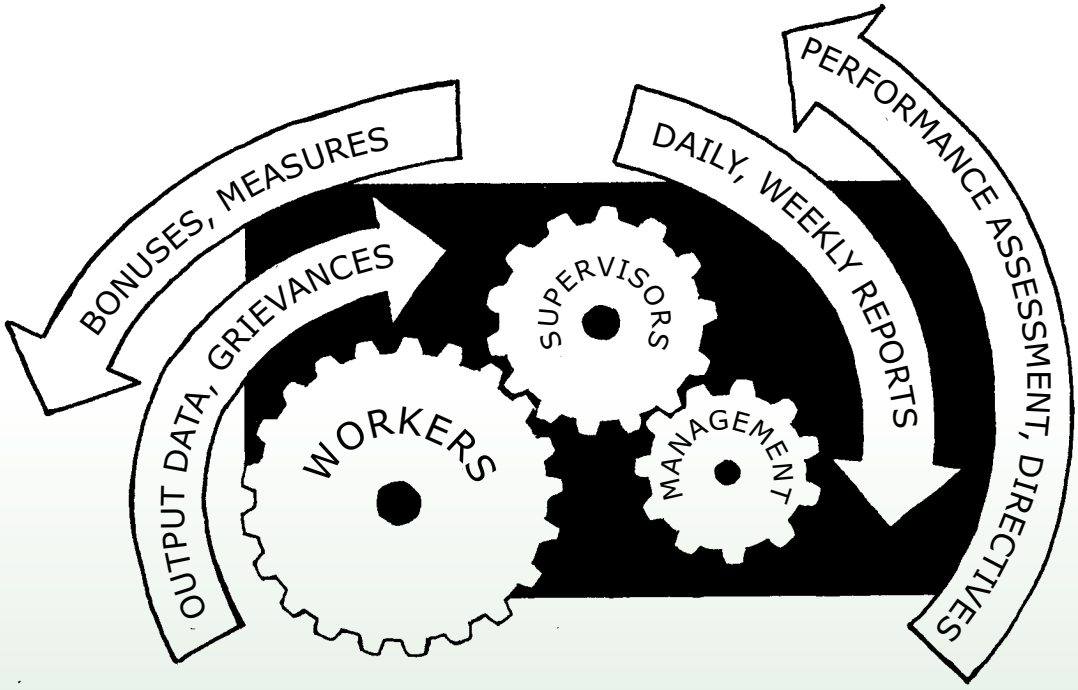
Timely and coordinated planning and reporting will improve the contractor's performance

Some guidelines

The following reports are the basic minimum for labour-based works projects:

- **Contracting agency**
  - Various levels of report for users from site managers and senior managers to funding agencies;
  - monthly reports from site level to next management level, including progress statistics, financial data, forecasts and potential problems;
  - monthly executive summary for senior managers at contracting agency headquarters;
  - quarterly progress and financial reports by contracting agency headquarters for government planning or financial units and external funding agents, including budget forecasts.
- **Contractor**
  - Daily, weekly and monthly planning and reporting at worksite level, to include resource planning and monitoring, tasks, productivity, control, costs and problems;
  - contractors' own internal planning and reporting system geared to control expenditure and increase productive efficiency.

4.7 Planning and reporting



Work planning and reporting are useful tools for improving performance

Bibliography

FIDIC: *Short form of contract, Test edition 1998 (Green book)*, FIDIC, P.O. Box 86, Lausanne, 1998.

Institution of Civil Engineers: *ICE conditions of contract, Minor works*, ICE, 1-7 Great George Street, London, 1998.

D. Stiedl: *A note on the draft ICE Short Contract and its application to developing countries*, MART Working Paper No. 11 (draft), 1997.

Labour Construction Unit: *Standard procedures for the procurement of works*, IT Transport, Labour Construction Unit, Ministry of Works, Maseru, Lesotho, 1997.

Labour Construction Unit: *Contract documents for routine road maintenance*, Labour Construction Unit, Ministry of Works, Maseru, Lesotho, 1996.

Labour Construction Unit: *Bidding document for road rehabilitation/regravelling works*, Labour Construction Unit, Ministry of Works, Maseru, Lesotho, 1996.

D. Miles: *The client/contractor relationship in labour-based construction and maintenance*, Fifth ASIST Regional Seminar, Accra, 1996.

South Africa Bitumen and Tar Association: *Labour-enhanced construction for bituminous surfacings*, *Methods and procedures, Manual 12,* SABTA, 1994.

J.-M. Lantran, J. Baillon and J.-M. Pagès: *Contracting out road maintenance activities. Volume V: Road maintenance and the environment: Guidance for taking care of the environment when preparing and carrying out road maintenance activities*, ECA, SSATP, World Bank, Washington, D.C., 1994.

P. Garnier and M. van Imschoot: *The administration of labour-intensive works done by contract: Practical guide*, ILO, Geneva, 1993.

D. Miles: *Financial planning for the small building contractor*, Intermediate Technology Publications, London, 1992.

A.D. Austen and R.H. Neale: *Managing construction projects: A guide to processes and procedures*, ILO, Geneva, 1990.

D. Miles: *Accounting and book-keeping for the small building contractor*, Intermediate Technology Publications, London, 1986.

D. Miles: *The small building contractor and the client*, Intermediate Technology Publications, London, 1986.

References for the boxes in this part

South Africa: Tendering in a targeted procurement system. Taken from R. Watermeyer, S. Gounden, D. Letchmiah and S. Shezi: *Targeted procurement: A means by which socio-economic objectives can be realized through engineering and construction works contracts.* Paper accepted for publication in the Journal of the South African Institution of Civil Engineering, Johannesburg, 1998.

Sierra Leone: Unit rates. Agricultural Sector Support Project, SLRA/ILO project SIL/93/01/IDA, progress and thematic reports 1993-1966, SLRA/ILO Freetown.

Bidding collusion and other practices. Suvicha Pouaree: "Sharing the wealth", in *Bangkok Post*, Bangkok, 25 October 1998.

Collusion and corruption: what can be done? N. von Einsiedel: "Understanding corruption and how it can be curbed", in *Bangkok Post*, Bangkok, 25 October 1998. Recommendations by ILO Development Policies Department to ILO Area Office, Jakarta, Geneva, 10 November 1998.

Mozambique: Feeder road contractor development project. DNEP/DFID Feeder Roads Project Zambezia 1997-1998, Quarterly reports prepared by Scott Wilson, Maputo, Mozambique.

Contract awarding. P. Bentall, A. Twumasi-Boakye and R. Watermeyer: *Labour-based contracting*: *A study to develop guidelines for project formulation and implementation (Vols. 1-3)*, op. cit, ILO, Geneva, 1995.

South Africa: Special award procedures for development contracts. P. Bentall, A. Twumasi-Boakye and R. Watermeyer: *Labour-based contracting*: *A study to develop guidelines for project formulation and implementation (Vols. 1-3)*, op. cit, ILO, Geneva, 1995.

Zimbabwe: Legal approval of contract documentation for labour-based roadworks. *Labour-based contractor development programme*, Contract documentation for feeder road rehabilitation works, Ministry of Transport and Energy, Department of State Roads, Zimbabwe, Harare, 1998.

Sierra Leone: Contract documentation. Agricultural Sector Support Project, SLRA/ILO project SIL/93/01/IDA, progress and thematic reports 1993-1966, SLRA/ILO Freetown.

Conditions of contract. P. Bentall, A. Twumasi-Boakye and R. Watermeyer: *Labour-based contracting*: *A study to develop guidelines for project formulation and implementation (Vols. 1-3)*, op. cit, ILO, Geneva, 1995.

Capacity to administer, monitor and control contracts. E. Ashong: "Labour-based contracting in Ghana": paper by in *Labour-based technology: A review of current practice*, ILO/ASIST, Nairobi, 1996.

Ghana: Advance payments. E. Stock: *The problems facing labor-based road programs and what to do about them: Evidence from Ghana*, World Bank, Washington, D.C., 1996.

General planning and reporting systems. Labour-based Development Unit: *Labour-based contract administration manual*, Ministry of Transport and Energy, Department of State Roads, LBDU, Harare, June 1997.

Employment-Intensive Infrastructure Programmes:
Capacity Building for Contracting in the Construction Sector

Contractors' Access to Resources

PART 5

5. Contractors' Access to Resources

5.1 Access to credit

Key issue:

How does the small-scale contractor access the financial credit required to start and develop a viable enterprise?

Information required:

- the policy of the government and funding agencies in providing credit;
- the financial institutions available and willing to extend credit to small-scale contractors and their terms and conditions;
- the requirements and the relevance of contract bonds and guarantees for small-scale works; and the risks to the contracting agency and ways to minimize this risk.

Project experience indicates that:

- some contracting agencies play an active role in taking some of the financial risk and/or guaranteeing credit to banks and suppliers;
- traditional systems of bonds and sureties for civil works contracts are not appropriate for minor works contracts, where the contracting agency's actual risks are small;
  - the procurement reform programme of the South African Government set different levels of performance bonds for different categories or sizes of contracts as follows:
    - major contracts: 10-12.5%
    - minor contracts: 2.5-5% (2.5% for contract value not exceeding 1 million Rand)
    - micro contracts (value less than 100,000 Rand): nil;
- commercial banking procedures are often too rigid to be useful in extending credit to small enterprises;
- access to credit is one of the major barriers to entry identified by small-scale contractors;

5. Contractors' Access to Resources

5.1 Access to credit

Sierra Leone: Credit for equipment through the Roads Authority

Generally, for equipment hire-purchase, commercial banks insist that small-scale contractors provide collateral. Most of these contractors find it extremely difficult to meet these requirements. In Sierra Leone, the Roads Authority waived the requirement for collateral but insisted that the contractor arranged for a "guarantor's certificate" to ensure repayment of the loan. The contractors were generally able to arrange such certificates through the informal circuit. In general, special arrangements will be necessary to improve small contractors' access to credit.

Different status often means different treatment

- the failure of contracting agencies to meet their contractual obligations of making prompt payments may jeopardize the survival of labour-based contractors;
- local bank interest rates are generally high, and overdraft facilities are not a realistic option even if collateral/securities are available.

Some guidelines

- Commercial banks are generally reluctant to offer credit to small-scale contractors without collateral or sureties (which contractors do not possess). Therefore, the contracting agency and/or funding agency normally has a role to play in assuming some of the financial risk. Small business credit agencies could be considered for playing a role in providing credit.
- Labour-based contractors usually require less start-up capital than equipment-based companies. For example, contract advances may be all that is necessary for routine maintenance contracts, and regular interim payments for the payment of wages would go far in easing the contractors cashflow problems.
- At least during the establishment phase of the project, the contracting agency should consider giving credit guarantees to materials suppliers and others, and making direct payments from interim certificates.
- Equipment suppliers and agents can be encouraged to operate hire-purchase agreements for contractors, if they are given suitable guarantees by contracting agencies.

Zambia: Hire-purchase schemes

A labour-based road contractor development project needed to identify a suitable local organization to be responsible for the procurement and financing of the equipment package to be provided to the contractors (valued at more than US$ 100,000 per contractor). First, an assessment was made of the suitability of existing financial organizations in the country of varying experience and different approaches to provide credit for equipment purchase or leasing. These organizations included leasing companies of cars and equipment, NGOs dealing with, among other things, the provision of financial services and business training, and local commercial banks. As a result of this, a hire-purchase scheme was opted for. A Zambian NGO with countrywide experience in the provision of financial services, including the provision of machinery through hire-purchase schemes, was selected. Services to be provided by the NGO included training of the contractors in business management and equipment maintenance, in administration, and in control of the hire-purchase contracts.

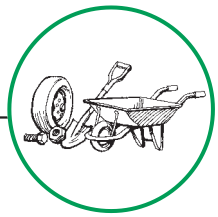
Under a hire-purchase scheme, the contractor makes regular payments or pays rent until, at the last payment, ownership of the equipment is transferred to him or her. This type of scheme makes it easier for lenders to recuperate the equipment as credit collateral in case of loan default and therefore makes it more attractive for lenders to become involved in financing small enterprises.

Contractors in the Eastern Province have recently begun to be charged competitive interest rates, confronting them with realistic costs of operation and (hence) a better insight into the costs and benefits of their businesses, which in turn should enhance the sustainability of their enterprises. In addition, by showing their ability to pay for market costs of capital on the basis of their payment record, these contractors will be in a much better situation to continue to have access to capital through existing financial organizations, even after the completion of the project.

Madagascar: An assessment of borrowing limits for small contractors

Local commercial banks were willing to provide loans to small contractors provided that these met certain pre-established conditions, and in a situation where an external project guaranteed a certain minimum workload to the entrepreneurs concerned. The loan reimbursement capacity of the borrowers was estimated - by themselves and the banks - to be in the order of 15% of their turnover. The financial conditions applicable for medium-term loans or hire-purchase schemes were identical: 20% down payment, a two-year credit period for second-hand equipment or a four-year credit period for new equipment, monthly repayments and an interest rate of 25%. The study concluded that under these conditions small enterprises with a turnover of some $120,000 per year and a three-year workload could afford to buy a second-hand truck and second-hand compaction equipment, while keeping a 40-day cashflow reserve. For an enterprise to be able to afford to buy the same equipment new and to reimburse the loan while keeping an adequate cashflow, a minimum annual turnover of $350,000 and a three-year workload would be required.

5.2 Access to tools, equipment and spares parts



Key issue:

What is the most practical and cost-effective way in which a small-scale contractor can have access to the appropriate tools, equipment and spare parts for labour-based works?

Information required:

- the realities of the in-country availability of appropriate tools and equipment (e.g., tractors, trailers, compactors, hand tools, ancillary equipment), in terms of models, numbers, mechanical condition, availability for purchase or hire;
- current government policy on equipment costing and management;
- availability of a central plant pool or private sector possibilities for plant hire or hire-purchase, and information on hire rates;
- funding mechanisms available to the construction industry: direct purchase loans, hiring, hire-purchase, leasing;
- foreign exchange controls and availability;
- assessment of the appropriate level of equipment held for contractors to balance the potential financial burden against maximum productivity and profitability.

Project experience indicates that:

- access to equipment is a major issue for small-scale contractors;
- availability of appropriate, reliable equipment in good order is usually overestimated;
- hire rates offered by government equipment pools do not often reflect true equipment costs. Also, despite government regulations, open market hiring rates are related to scarcity, level of need and geographical working location. Contractors may be exploited, particularly if they are operating under fixed rate or negotiated contracts;
- several years' continuity of work may be required for repayment of procurement loans for new equipment;
- where no allowance for equipment procurement is made for contractors, serious problems often occur in terms of contractor performance;

5.2 Access to tools, equipment and spare parts

Namibia: Government equipment hire rates

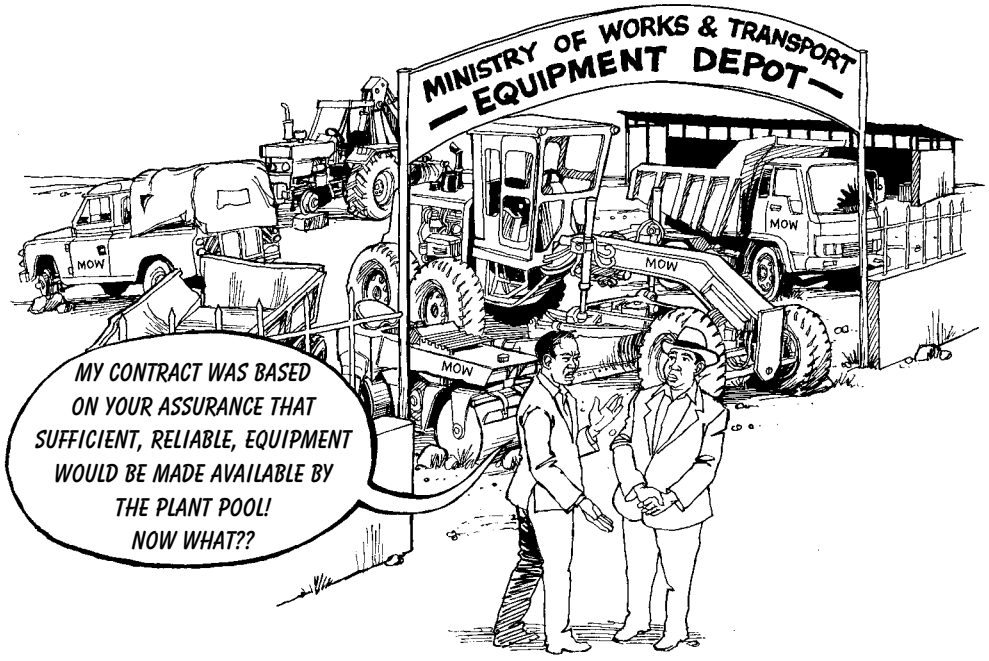
The aim of the initial contractor training programme (1995/96) of the Department of Transport (DOT) of the Ministry of Works, Transport and Communications, Namibia was to develop local small-scale contractors to become qualified labour-based contractors, with viable firms able to efficiently carry out road construction and maintenance contracts.

The DOT selected five contractors with their site supervisors for the training programme. As part of the training, each contractor was given a trial contract to exercise a real contract situation.

None of the contractors under training possessed any piece of equipment required for the construction work. The DOT had considered that its own plant pool, plus equipment from the private sector, would be sufficient for the contractors to hire from. As a consequence, the contractors were tendering using the official government hire rates for equipment, although they were frequently cautioned by the management that they might also have to hire from the private sector.

The hire rates offered by the Government did not reflect the true market rates. A tractor-towed trailer, for example, was hired out for a daily rate of US$ 0.40, whereas a more realistic market rate would have been about $15. The government rates were used by the contractors to bid for the trial contract. The trial contracts were issued with the engineer's estimates based on the government hire rates.

The trial contract programme was planned in a very ambitious way with tight deadlines which put the government hire plant pool under strain. As a result, the contractors had difficulties in securing equipment when they required it, which led to long delays. When the contractors were asked by the programme managers to hire the missing equipment from the private sector so as to meet the contract time limits, they were unwilling to do so. Prior to the training programme, no study had been carried out to determine the exact private sector equipment holding, back-up services or prevailing hire rates in the relevant regions in Namibia. It soon became evident that the contractors could not get any equipment at the government rates used in their bids. Workers had to be laid off and the overheads of the contractors became much higher than originally calculated. Finally, the client had to both allow all the contractors to extend their contract time, and make allowances for some of the additional overheads.



- encouragement of local manufacture of tools or simple equipment (e.g., trailers, water bowsers) needs serious attention in terms of quality control;

- few equipment suppliers or agencies operate direct hire-purchase arrangements for small-scale contractors, and special arrangements to provide an adequate supply of light equipment are normally required.

Some guidelines

- It is essential to ensure that appropriate plant and equipment in working order is available to all contractors, so that scarcity does not distort hiring costs. Most contractors aspire to own some equipment and project arrangements should address this. However, procuring new equipment for contractors through a project implies a heavy financial burden on the participating contractors, which is likely to necessitate a guaranteed workload to facilitate repayment. Therefore, purchase, hire or hire-purchase options need to be balanced in terms of available funding, workload, access to finance and contractors' capacity to grow.

- An advance mobilization payment of 10-15% of the contract value could be considered for inclusion in the contract to provide the contractor with the opportunity to buy second-hand equipment for the works. It could be stipulated that all (or part) of this advance payment would be payable to equipment suppliers only, on written justification by the contractor. This approach would provide a credit line to the contractor, while giving the option to prioritize the acquisition of essential equipment, as well as the types and models to purchase.

- In the context of a contractor development project, the contracting agency has a responsibility for ensuring fair and reasonable financing terms and conditions for contractors' access to equipment. The contracting agency may need to provide certain guarantees to banks or suppliers in order to obtain reasonable terms and conditions.

Access to equipment

Different road contractor development projects have adopted different approaches to provide the contractors with access to essential equipment.

Bhutan

The Ministry of Communications has established an autonomous Mechanical Division responsible for hiring equipment and providing mechanical services on a commercial basis to both public and private sectors. This has the advantages of a uniformity of hire rates and of ministry engineers quickly learning the real costs of equipment use. This, in turn, has encouraged a better understanding of the need for effective equipment management in all areas of road construction and maintenance. Three main workshops have been strategically located to cover the whole country.

Cambodia

The minimum equipment package proposed for small contractors includes two pedestrian vibrating rollers, two light Etan trucks (one with a pump and water bowser and the second with a trailer for general site use, including moving workers and materials), one pick-up truck for contractor mobility and transport of tools and materials, and two motorcycles and bicycles for the supervisors. In addition, essential hand tools have been included. The entire package cost US$ 65,000 (in 1996).

Ghana

The project included the provision of a full set of light construction equipment (US$ 150,000 - in 1986) for each contractor. These loans were administered through a local bank at an interest rate of 20% on the dollar value, to be paid back over four years. Contractors were guaranteed work for this period but contractual payments were in local currency, which rapidly lost its value against the dollar. For most contractors, repayments had to be renegotiated as the original conditions proved impossible to meet. For a subsequent (grant-aided) phase, a more flexible approach was adopted by another bank denoting loans in local currency with the contracting agency standing as guarantor.

Lesotho

The project was established on the basis of the contractors hiring equipment within the local market. Some contractors bought (old) equipment using their advance payment. Subsequently some items of equipment were procured for acquisition by the contractors, if they wished, with repayment periods of 12 months. However, no continuity of work was guaranteed to ensure that repayments could be made.

Uganda

The Uganda approach was based on the Ghana model, but included equipment packages ranging from US$ 95,000 to $192,000 depending on the contractors' performance during the trial contracts. The size of the package also depended on the ability of the contractor to pay for the cost within the stipulated period.

Zambia

A finance company (a local NGO) was hired by the project to: (i) manage equipment loans to the contractors; (ii) advise and train them in business and financial management; and (iii) ensure good mechanical maintenance practice. Once the finance company was appointed, contractors were required to sign loan agreements for a complete equipment package despite the original intention to allow them the options of continuous hiring, purchase loans, or a combination of the two. This "all or nothing approach" did not follow the principle of introducing contractors to the commercial realities where the choice of the best option should be left open and made by the contractor, based on technical and commercial considerations.

- The Government may play a role in establishing a public or private sector plant pool facility to ensure equipment availability. Selling public sector equipment on preferential terms to small-scale contractors may also be considered.

- Equipment leasing companies could be established (or strengthened) to provide a complete service to contractors - such as management advice and mechanical back-up - under agreed fee conditions financed through the project.

- The local manufacture of basic equipment or hand tools should be encouraged. This is likely to require positive action from the contracting agency in the form of raising awareness among tender boards and manufacturers of the need for good quality, well-designed hand tools and equipment. Also, procurement should be biased towards local suppliers, as long as these can provide quality items and back-up services.

- Project requirements for competitive procurement of equipment may lead to types and models being procured which are not the preference of the contractors. The contractor association could play a role in influencing the equipment specifications and procurement process.

- Discussions on the choice and comparative costs of equipment, as well as realistic equipment costing models, should be introduced during contractor training. This is essential to create an awareness of true equipment costs and to enable contractors to tender realistically and compare technology options.

5.2 Access to tools, equipment and spare parts

Mozambique: Feeder road contractor development project

Although it was intended from the outset that ownership of project equipment would revert to the contractors, either through hire-purchase or by purchase at residual value, import procedures required that initial ownership remained with the Government. For the first two years, because the contractors fully anticipated to become the owners of selected items of project equipment, there was no resistance to the payment of hire charges which reflected market rates and were fully covered in the calculation of the billing rates. However, continued bureaucratic delay in making progress on the timing and process of the change-over of equipment ownership led to a loss of confidence by the contractors. The problem primarily related to the fact that the only way state equipment may be sold to the private sector was through public auction. Selling the equipment in any other way required approval by the Ministry of Finance or a new Act of Parliament. Not wishing to wait any longer, several of the contractors expended the reserves they had built up and entered hire purchase contracts with local suppliers at high interest rates. As a result of this, cashflow problems led to the late payment of wages on some of the sites.

Reliable equipment and well-designed, good quality hand tools are crucial to labour-based works

Zimbabwe: Cash-backed guarantee provided by a donor agency

The Zimbabwe labour-based road contractor development programme, supported by an external funding agency, used the following approach to provide equipment to trained contractors:

- The specification of the equipment is determined by the Department of Roads (DOR) together with the contractors.
- Each contractor signs a loan agreement with the local bank selected by the project, and the bank lends each contractor Z$2 million against a cash-backed guarantee provided by the funding agency.
- The bank conducts its independent credit evaluation before approving the loan. It also uses its own lending criteria in scrutinizing the contractors' creditworthiness.
- The contractors are expected to pay back the loan within five years.
- The contractor pays a subsidized interest rate of 10% in the first year. This rate is increased by 5% in each of the subsequent years until it is equal to the commercial rate applicable at that time.
- The cash-backed guarantee provided by the funding agency serves to support the donors' payment guarantee to the lending bank.
- Furthermore, the guarantee's interest is used to finance the interest subsidy for the benefit of the contractors.
- The guarantee can only be accessed by the bank if the contractor defaults on the loan, and if all legal avenues to recover the loan have been exhausted.
- The actual procurement of equipment is carried out by an agent appointed by the funding agency.

5.3 Access to materials

Key issue:

How does the small-scale contractor ensure the timely supply of materials in a cost-effective manner?

Information required:

- ❑ assessment of government control of prices for materials and of free market conditions;
- ❑ assessment of availability of essential construction materials.

Project experience indicates that:

- ❑ in respect of roadworks, the supply of materials is rarely critical to contract progress because material costs are usually less than 10% of total road construction costs, and works can generally be executed in such a way that the negative effects of material shortages are minimized;
- ❑ fixed rates based on government-controlled prices are not realistic, because material shortages directly affect the contractor's ability to complete the work and/or the profitability of his operations (if forced to top up materials supplied at market prices);
- ❑ the transition from labour-only to fully-fledged contracting (supplying both labour and materials) is difficult for emerging contractors. To assist in this transition, the client may need to adopt short-term measures such as directly paying suppliers for materials delivered. In such cases an additional performance guarantee is necessary;
- ❑ some externally funded projects do not reimburse the tax component of construction materials. Securing tax exemption puts a heavy administrative and time burden on local contractors.

Some guidelines

- Essential materials required for civil works contracts (e.g., cement, sand, aggregate, culvert pipes, timber, fuel) may be subject to government price controls but may be scarce, and available only at black market prices. In some cases, the contracting agency may be able to issue permits to contractors for access to material supplies. Also, guarantees of payment may be given to private suppliers before supplying contractors. However, ultimately contractors need to operate in the realities of the materials market, and credit lines should be opened between suppliers and labour-based contractors.

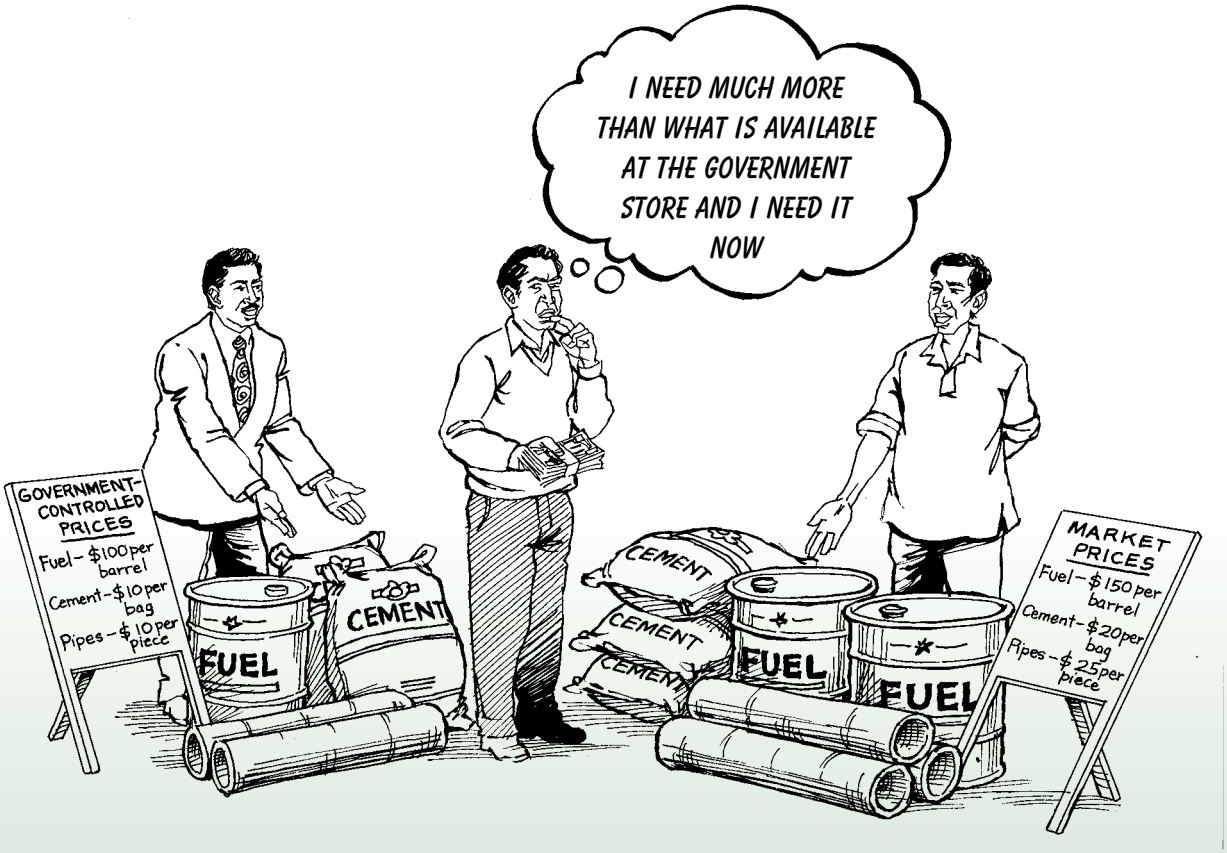
- With several contractors involved in a project, bulk-buying by a central organization should be considered.

- Under a management team approach, a materials manager can be made responsible for materials procurement and distribution.

5.3 Access to materials

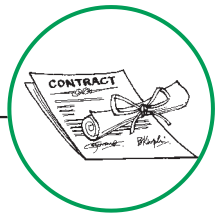
South Africa: Supply of materials

The Soweto project required large quantities of water supply and plumbing materials which were the responsibility of the materials manager of the development team. As the contractors progressed, they became less reliant upon this service and at levels 4 and 5 (see box on page 13), they were independent of it.



Contractors soon learn the realities of the market-place

5.4 Access to works



Key issue:

How much and for how long (if at all) should contractors be supported in obtaining contracts?

Information required:

- government policy on the allocation of construction work within the private sector;
- the legal environment and procedures for tendering and award of contracts. The "real life" situation faced by emerging contractors, when entering a market dominated by vested interests.

Project experience indicates that:

- contractors benefit a great deal from initial support in starting the development process, in terms of access to finance, continuity of work, and training inputs. This initial investment in human and material resources is likely to be high and is worth protecting through contractor support or mentorship;
- some labour-based contractor development projects have encouraged financial commitment of emerging contractors through the facilitation of loans for equipment. Subsequently, such contractors were unable to secure jobs through competitive bidding and had no alternative opportunities for work. The financial vulnerability of firms with medium-term equipment loan repayments must be recognized and measures taken to protect them from bankruptcy owing to a lack of work opportunities. Projects with a short-term perspective may leave contractors short of future work prospects and with outstanding debts;
- some contractors have been supported with continuity of work well beyond any practical need;
- few efforts have been made to create opportunities for contractors to diversify out of roadworks. Coordination with different technical line ministries and funding agencies is crucial for this purpose.

Some guidelines

- Contractors with financial commitments - e.g., equipment loans, which they have been encouraged to take on - are likely to need special consideration for guaranteed work, at least for the period when they have to make loan repayments.

5.4 Access to works

Ghana: Continuity of work through negotiated contracts

Throughout the first ten years of the Ghana contractor development project, the trained contractors had a certain measure of guaranteed access to works. This continued even beyond the point when some of them had paid off their equipment loans. All contracts were awarded at fixed rates negotiated on an annual basis between the contractor association and the contracting agency. The decision by the contracting agency not to introduce competitive bidding procedures was out of line with World Bank regular procurement procedures and led to the withdrawal of World Bank funding for labour-based works. Other donors continued to fund negotiated labour-based contracts, as these provided high quality outputs at competitive costs with many socio-economic advantages.

In this case the free market procedures used for project work funded by the World Bank excluded a group of highly trained and competitive firms (the labour-based contractors) from bidding, and did not lead to cost reductions. However, the implications of totally opening up the market - including the market segment reserved for labour-based contractors - might have been negative, because large firms could have been tempted to underbid - for a period - in order to eliminate the competition.

The contracting agency needs to strike a fair balance in its dealings with different categories of contractors

- Governments could consider packaging works contracts in sizes manageable by small-scale contractors.

- A specific allocation of construction works could be made to the various contractor classification levels as part of a national policy for private sector development, specifying some contracts for labour-based contractors only, who have been certified through a training programme.

- Where civil works are concerned, small-scale contractors may initially be in a "single client" situation for their development. Positive action is likely to be required to enable such contractors to diversify to other construction sectors where the technology is equally appropriate. Project (technical assistance) staff should identify infrastructure programmes that could provide suitable works in fields such as building, water supply, soil conservation, irrigation and roads. Liaison between the project staff and the management of related projects should be established both for reasons of synergy (e.g., joint training activities) and to widen the market for trained contractors.

- The need to improve the transparency of the legal environment and procedures should be assessed. A certain amount of protection of emerging contractors is likely to be required in the establishment phase.

- In general, labour-based and equipment-based contractors have not competed for project work on an equal basis. Technology-neutral tenders will have to be developed for this purpose (see box opposite).

- Targeted procurement has been found to be an effective means of securing the participation of small enterprises and the utilization of local resources in construction projects, both in terms of cost and levels of participation. It also provides a means to integrate trained contractors into mainstream contract work.

- Advisory support, e.g., from specialized firms or organizations dealing with the public contract system and commercial and labour laws, is needed to ensure that the legal environment and procedures are transparent and understandable to small enterprise managers.

Specifications for works

For a number of reasons, procurement procedures continue to be biased towards the use of equipment-based technology. Tenders should be designed in such a way that this bias is eliminated as much as possible from the procurement procedure. The following principles are particularly important in this respect:

- It is frequently necessary to prepare alternative designs adapted to construction by either labour or equipment. This usually implies that alternative specifications are also required.
- In a technology-neutral contract, the technology-neutral designs and specifications are reflected in alternative items and corresponding quantities in the bill of quantities. With regard to the use of labour-based methods, the tender may also incorporate different billing methods and more detailed breakdowns of work items than are currently customary for equipment-based operations. The bidder chooses the method he or she wishes to adopt and prices the bill section or item accordingly.

The design specifications should be such that they favour an optimum use of locally available materials, simple equipment, locally established firms and organizations, and the development of small local firms. Also, structural designs should be adapted to allow an optimum use of local materials, labour and skills. No compromise needs to be made on quality standards, although the designer should not unnecessarily overspecify quality and performance standards so that they can only be achieved by heavy equipment.

When small-scale contractors are involved, the use of method specifications could be considered. In this way, inexperienced contractors can be guided both on how to carry out the work and on the types of equipment, hand tools, etc., and labour to be used for the different construction activities. In practice, this means that bill items should correspond as closely as possible with the way in which the work is carried out by the contractor.

Of particular significance is any operation involving haulage, as illustrated by the following labour-specific considerations:

- longitudinal hauls along the road should be avoided where possible by excavating to waste and borrowing to fill;
- earthworks should be carried out by cross movements rather than in the longitudinal direction;
- for gravelling works, use can be made of small borrow pits located at more frequent intervals than is customary.

Employment-intensive base and subgrade design options include hand-pitched stone, dry-bound macadam, wet-bound macadam and stabilized soils. Pavement options include gravel surfacing, pozzolan or clay bricks, concrete paving, asphalt blocks and bituminous paving. Other design considerations concern the material specifications as they relate to the thickness of the sub-base and pavement layers.

Bibliography

E. Stock: *The problems facing labor-based road programs and what to do about them: Evidence from Ghana,* Sub-Saharan Africa Transport Policy Program Working Paper No. 24, Environmentally Sustainable Development Division, Africa Technical Department, World Bank, Washington, D.C., 1996.

J. Fransen, A. Kabiru and D. Mason (eds.): *Labour-based technology: A review of current practice*, papers of the fifth Regional Seminar on labour-based contracting, Accra, Ghana, ILO/ASIST, Nairobi, 1996.

J. Levitsky: *Innovations in the financing of small and microenterprises in developing countries*, ILO, Geneva, 1993.

C. Relf and A. Austen: *Guidelines for the development of small-scale construction enterprises*, ILO, 1987.

References for the boxes in this part:

Sierra Leone: Credit for equipment through the Roads Authority. Agriculture Sector Support Project, Feeder roads 34, SLRA/ILO project SIL/93/01/IDA, *Progress report no. 7*, SLRA/ILO, Freetown, January 1997.

Zambia: Hire-purchase schemes. P. Bentall and R. Schultz: *Rehabilitation and maintenance of feeder roads in Eastern Province*, Mid-term evaluation report, UNCDF, Lusaka, August 1998.

Madagascar: An assessment of borrowing limits for small contractors. M. van Imschoot and Y. Dhont: *Projet de routes rurales et d'équipement des PME du BTP en appui du développement des régions de Vakinankaratna et d'Amoroni Mania*, Rapport principal, January 1998.

Namibia: Government equipment hire rates. A. Beusch and C. Makoriwa: *Labour-based small-scale contracting of road works*, Final evaluation workshop report, ILO/ASIST Harare, October 1996.

Access to equipment. Bhutan: P. Bentall, *Permanent works for feeder roads in the eastern zone*, Supervision mission report, UNCDF, Thimpu, March 1998; Cambodia: B. Johannessen, *Technical assistance to the labour-based rural infrastructure programme*, Project document, ILO, Bangkok, May 1996; Ghana, Lesotho, Zambia: P. Bentall, A. Twumasi-Boakye and R. Watermeyer: *Labour-based contracting*: *A study to develop guidelines for project formulation and implementation (Vols. 1-3)*, op. cit, ILO, Geneva, 1995; Uganda: Transport Rehabilitation Project, Feeder roads component, *Final report on leasing arrangements for contractor equipment,* Ministry of Local Government, Kampala, April 1997.

Mozambique: Feeder road contractor development project. Scott Wilson: *Quarterly reports* DNEP/DFID Feeder Roads Project Zambezia, 1997-1998, Maputo, Mozambique.

Zimbabwe: Cash-backed guarantee provided by a donor agency. *Labour-based contractor development programme: An overview*, Labour-based Development Unit, unpublished, Harare, September 1998.

South Africa: Supply of materials. P. Bentall, A. Twumasi-Boakye and R. Watermeyer: *Labour-based contracting*: *A study to develop guidelines for project formulation and implementation (Vols. 1-3)*, op. cit, ILO, Geneva, 1995.

Ghana: Continuity of work through negotiated contracts. E. Stock: *The problems facing labor-based road programs and what to do about them: Evidence from Ghana*, Sub-Saharan Africa Transport Policy Program Working Paper No. 24, Environmentally Sustainable Development Division, Africa Technical Department, World Bank, Washington, D.C., 1996.

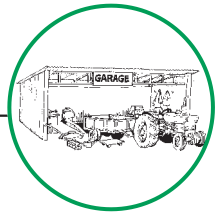
Specifications for works. World Bank and Scott Wilson: *Guide to competitive bidding on projects in labour-abundant economies*, Washington, D.C., 1978.

Employment-Intensive Infrastructure Programmes:
Capacity Building for Contracting in the Construction Sector

Management of Tools and Equipment

PART 6

6. Management of Tools and Equipment



6.1 Maintenance options for equipment

Key issue:

What is the most appropriate arrangement for equipment maintenance for small-scale contractors?

Information required:

- assessment of mechanical support capacity within the private sector;
- existence of national public or private plant pool with mechanical support services;
- availability of mechanical training facilities.

Project experience indicates that:

- most contractors want to own equipment rather than rely on the uncertainties of hiring;
- projects often overlook the need for the training of contractors' staff in preventive maintenance and basic repairs;
- most existing plant pool operations are unsatisfactory. Much of the plant and equipment available is inappropriate for small-scale labour-based construction;
- the most critical and vulnerable item of equipment for labour-based contractors is the pedestrian vibrating roller, or comparable light compaction equipment. The contractors often violate the daily working-hour norms for these machines in order to achieve more progress;
- most contractors complain about the timeliness, level and quality of mechanical backstopping if this is outside their control (e.g., provided by a plant pool or the contracting agency's workshop);
- the maintenance needs of agricultural tractors, trailers and water-bowsers are not demanding and can be dealt with at district level by local expertise;
- most maintenance problems can be overcome by selecting appropriate sturdy and heavy-duty brands of light equipment with suppliers' maintenance services available in the country.

6. Management of Tools and Equipment

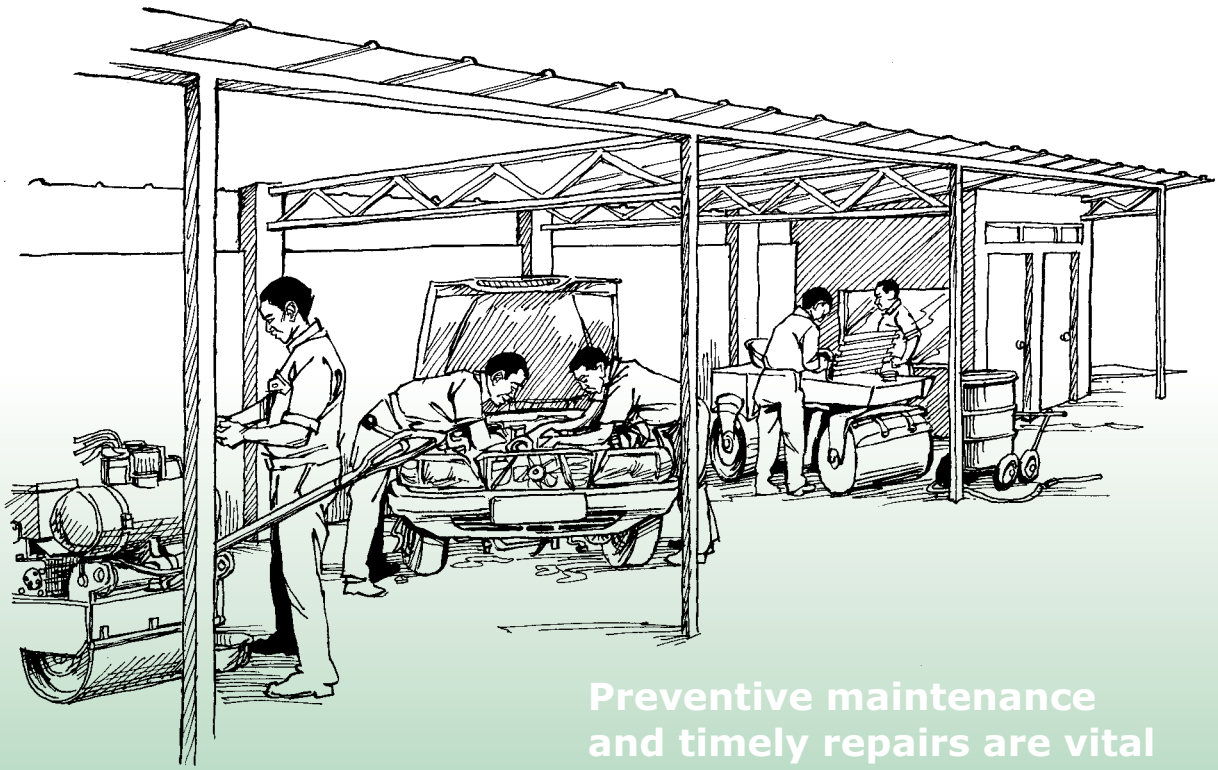
6.1 Maintenance options for equipment

Ghana: Local bank support

Under a contract drawn up between the Agricultural Development Bank and the Department of Feeder Roads, for the management of equipment loans to contractors, the Bank agreed to:

- provide guidelines for regular and periodic equipment servicing and maintenance;
- carry out periodic site visits to check that the equipment was regularly serviced and maintained;
- advise on measures to be taken to ensure that servicing and maintenance were adequate;
- liaise with equipment suppliers on behalf of contractors to ensure that after-sales service, preventive maintenance and spare parts were made available by the equipment suppliers;
- assist contractors on measures to be taken for major repairs to equipment;
- in the event of key equipment breakdown for a long period, help contractors to find alternatives on a rental basis to maintain progress.

The project training programme also included training of contractors' staff in preventive maintenance and basic repairs.



Preventive maintenance and timely repairs are vital

Some guidelines

- Equipment maintenance should be seen in a long-term perspective in view of the capital investment involved.

- The following possibilities for establishing mechanical support capacity can be explored:

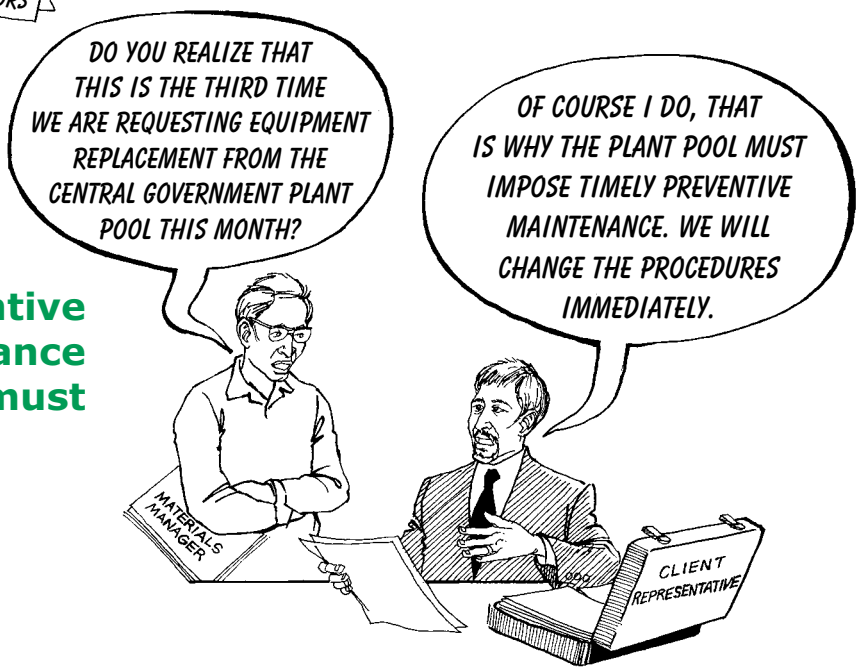
  - developing contractors' own capacity for basic preventive maintenance and repair of equipment;
  - utilizing existing private sector mechanical maintenance facilities;
  - establishing a public or private plant pool on a long-term basis for the construction industry;
  - reorganizing (possibly privatizing) existing public sector, central mechanical maintenance and repair facilities;
  - negotiating suppliers' maintenance contracts for new or refurbished plant and equipment procured by contractors.

Zimbabwe: Maintenance by suppliers

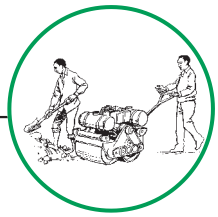
Although the first labour-based road-rehabilitation programme was a force account operation, equipment maintenance contracts were established with the suppliers' agents for regular servicing and training of mechanics and operators (of tractors and vibrating rollers). These proved to be both expensive (in terms of time and travelling costs) and unsatisfactory in performance. Major breakdowns were blamed on the operators and the failure of routine preventive maintenance procedures in the periods between the suppliers' agent service team visits.

Reliable mechanical support is essential for all contractors

Preventive maintenance is a must



6.2 Effective use of tools and equipment



Key issue:

How can contractors best gain an understanding of the importance of effective use of tools and equipment?

Information required:

- ❑ reliable data on equipment costs and use;
- ❑ assessment of the local availability and costs of tools and light equipment, including local manufacturing and repair facilities.

Project experience indicates that:

- ❑ few contractors (and technical staff) understand the real costs involved in operating plant, equipment and tools. Central government plant pools often operate with equipment donated by aid agencies at less than commercial hire rates;
- ❑ small-scale contractors do not operate good preventive maintenance and repair programmes for equipment;
- ❑ including full equipment costs in construction unit rates can increase tender prices significantly;
- ❑ good quality hand tools are difficult to find on the local market and special efforts are likely to be necessary to encourage their manufacture and procurement;
- ❑ contractors appreciate good tools and appropriate equipment, but frequently have to use what is less than ideal.

Some guidelines

- It is essential to introduce and use appropriate specifications for tools and equipment for small-scale labour-based works. Hand tools and light equipment are the main means of production and their quality and design have a direct and important bearing on the productivity of the workers. Good quality hand tools should be developed and introduced with the additional objective of promoting some local manufacturing and repair capacity.
- The project designer should ensure that suitable tools and equipment are available for contractors, either to hire or buy.
- Mechanical support, and training and advisory services can be provided either through the public or the private sector.
- Realistic costing models for equipment should be developed and introduced.

6.2 Effective use of tools and equipment

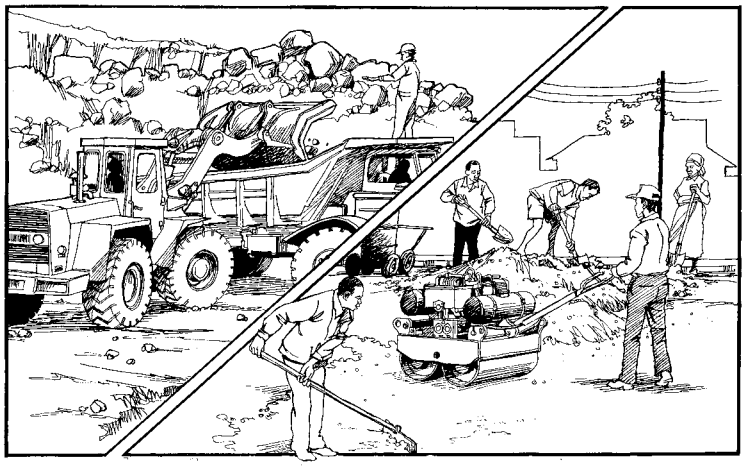
United Republic of Tanzania: Back-up services through an equipment support unit

Initially, the intention was for contractors to hire equipment but it became clear that appropriate plant was not readily available. The decision was made to procure sets of equipment; the National Construction Council (NCC) then established an equipment support unit for contractors. Mechanics employed by the NCC were posted in the regions where the works were carried out. The equipment support unit's objectives were to:

- hire out appropriate light equipment to labour-based contractors;
- support the NCC contractors' training programme;
- ensure efficient planning, utilization, maintenance and management of the equipment; and
- become sustainable and self-financing.

What is essential equipment?

When the question of appropriate equipment for labour-based operations was discussed with Ghanaian contractors, each insisted that a tipper truck was essential (although site haulage was by tractor-trailer combinations). Possession of a tipper was seen as a way to become involved in profitable haulage operations elsewhere. It was not related to the effective use of the tipper for labour-based operations which was only for a few days a month.

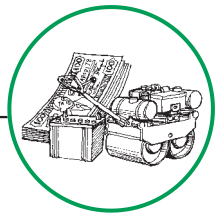


Heavy equipment is appropriate for heavy jobs; labour with light equipment is suitable for most other works

Equipment hire-purchase: What can the contractor afford?

In the Sierra Leone contractor development project (see box on page 63), the size of the original package of US$ 96,000 was considered too high in view of the repayment capacity of labour-based contractors over a period of three years. This package was scaled down to US$ 40,000, comprising one 75 horsepower agricultural tractor, one trailer, one water bowser trailer, one pick-up van and one pedestrian vibrating roller. In order to meet additional equipment requirements of the contractors, the Roads Authority established a plant pool with other items which could be hired by contractors.

6.3 Equipment replacement



Key issue:

Equipment procurement is often project-linked with no provision for sustainable replacement.

Information required:

- can financial institutions or equipment suppliers establish equipment investment funding mechanisms to give contractors the means to replace worn-out equipment?

Project experience indicates that:

- the establishment of equipment replacement funds is extremely difficult for contractors in situations where equipment loan repayments are in hard currency and contract payments in local currency, when the latter is devaluing. If the devaluation factor is not adequately taken into account at the time the loan is negotiated, bankrupties of even competent contractors may ensue;
- contractors' short-term and immediate financial commitments take priority over longer-term planning for equipment management;
- non-commercial public sector (plant pool) equipment hire rates - which artificially reduce the unit rates for construction work - distort the market when commercially run equipment-hire schemes and contracts are the means of production.

Some guidelines

- Training in business and financial planning needs to address equipment replacement in the context of the country concerned, taking into account the different options available to the contractor (second-hand market, etc.).
- Real equipment operating costs need to include the appropriate replacement components (even if this increases construction costs).
- Contractors, through institutional arrangements, need to ensure that a dedicated equipment replacement fund is established, making due allowance for inflation.
- Contracting agencies may have to introduce payment arrangements which assist contractors in operating such replacement accounts (e.g., allow a foreign exchange account for the sole purpose of equipment purchase).

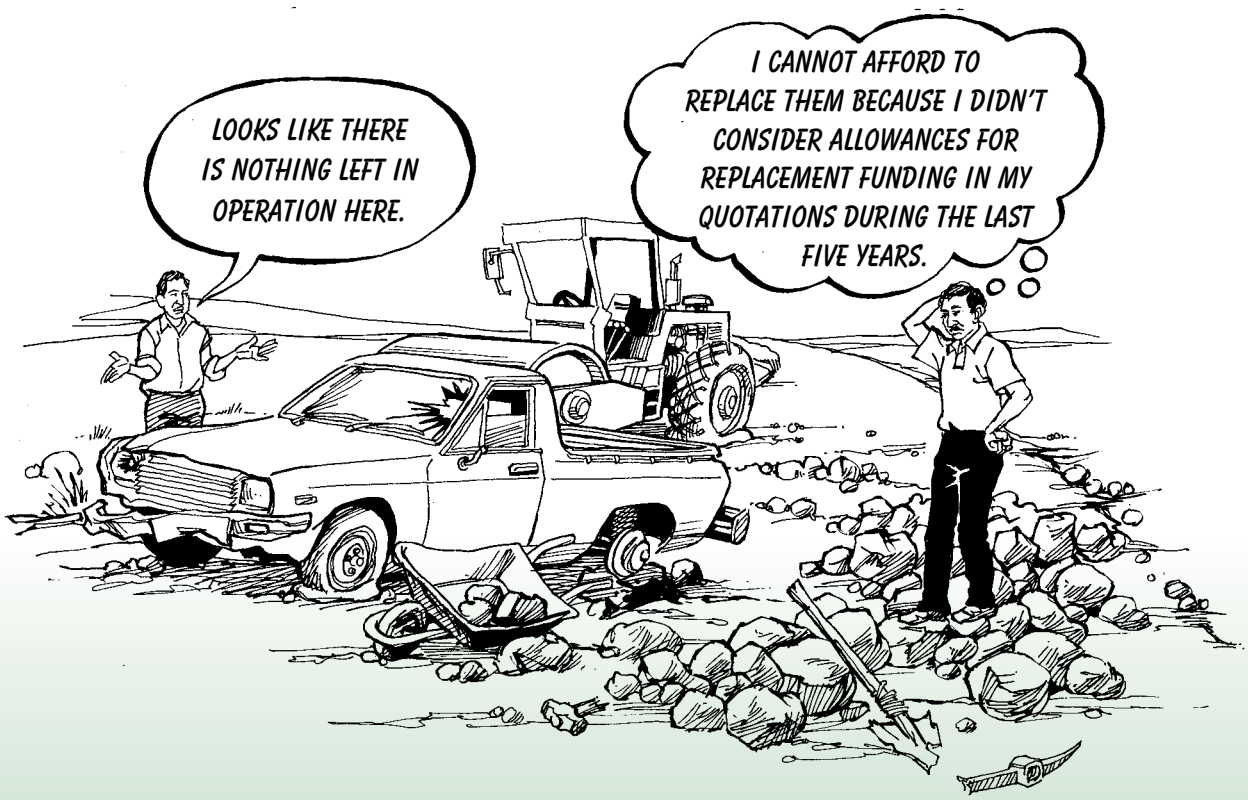
6.3 Equipment replacement

Ghana: Revolving fund for equipment replacement

In the Ghana contractor development project, an initial donor grant had been made available for equipment procurement. A commercial bank managed the contractors' loan for the hire purchase of this equipment. Subsequently, the contractors' repayments were used by the bank to establish a revolving fund for purchase of spare parts or additional equipment.

In a different scenario where equipment was procured by another commercial bank under a loan provided by the World Bank to the Government of Ghana, the contractors' repayments to the commercial bank were returned to the central bank for the repayment of the loan in due course (one contractor who managed to repay his loan early was able to purchase additional equipment, but this was exceptional).

The contractors' association established through the project is considering playing a role in setting up a fund for equipment replacement and spare parts.



When contractors cannot afford to replace their equipment, their business is likely to fail

Bibliography

J. Hamper, D. Mason, D. Jennings, C. Makoriwa and D. Stiedl: *Designs and specifications for a standard trailer and hitch for labour-based works*, ASIST Technical Brief No. 1, third edition, ASIST Nairobi, Kenya, 1997.

Intermediate equipment for labour-based roadworks, *Workshop report*, MART Working Paper No. 5, MART/ASIST/DFR, Ghana, Accra, 1996.

G. Bosma and B. Johannessen: *Labour-based technology: A review of current practice, Report of proceedings*, 2-6 March 1992, Mohales Hoek, Lesotho, 1992.

J.-M. Lantran and R. Lebussy: *Contracting out road maintenance activities. Volume III: Setting up a plant pool*, ECA, SSATP, World Bank, Washington, D.C., 1991.

ILO: *Guide to tools and equipment for labour-based road construction*, ILO, Geneva, 1981.

J. de Veen: *Productivity and durability of traditional and improved handtools for civil construction*, CTP 9, ILO, Geneva, 1981.

References for the boxes in this part:

Ghana: Local bank support. P. Bentall, A. Twumasi-Boakye and R. Watermeyer: *Labour-based contracting*: *A study to develop guidelines for project formulation and implementation (Vols. 1-3)*, op. cit, ILO, Geneva, 1995.

Zimbabwe: Maintenance by suppliers. P. Bentall: *Progress reports*, Rural Feeder Roads Pilot project, Harare, 1991-1994.

United Republic of Tanzania: Back-up services through an equipment support unit. P. Bentall, A. Twumasi-Boakye and R. Watermeyer: *Labour-based contracting*: *A study to develop guidelines for project formulation and implementation (Vols. 1-3)*, op. cit, ILO, Geneva, 1995.

What is essential equipment? P. Bentall, A. Twumasi-Boakye and R. Watermeyer: *Labour-based contracting*: *A study to develop guidelines for project formulation and implementation (Vols. 1-3)*, op. cit, ILO, Geneva, 1995.

Equipment hire-purchase: What can the contractor afford? *Progress and thematic reports 1993-1996,* Agricultural Sector Support Project, SLRA/ILO project SIL/93/01/IDA, SLRA/ILO Freetown.

Ghana: Revolving fund for equipment replacement. P. Bentall, A. Twumasi-Boakye and R. Watermeyer: *Labour-based contracting*: *A study to develop guidelines for project formulation and implementation (Vols. 1-3)*, op. cit, ILO, Geneva, 1995.

Employment-Intensive Infrastructure Programmes:
Capacity Building for Contracting in the Construction Sector

Enabling Environment for Contracting

PART 7

7. Enabling Environment for Contracting

7.1 Funding and payment

Key issue:

How can appropriate financial control systems be established which will also enable regular and timely payments to be made to contractors?

Information required:

- national policy on decentralization of procurement and management of public works contracts;
- availability of secure dedicated funding (e.g., through a road maintenance fund earmarked for roadworks) for regular payment for small-scale contracts;
- constraints of current government financial procedures with regard to the regular and timely contractual payments to numerous small-scale contractors.

Project experience indicates that:

- irregularity of payments causes labour-based contractors immediate problems with the labour force;
- quality of work is often severely affected when the contractor spends much time chasing payments in head office;
- the establishment of an effective payment system allowing timely and regular payments to small-scale contractors increases the administrative workload for the contracting agency. Personnel need to be allocated for this purpose;
- many payment certificates still require numerous different approval signatures. Localized approval for interim payments has proved successful;
- earmarked government funds (e.g., a road fund in respect of roadworks) and/or dedicated donor-fund accounts greatly facilitate cashflow and payment procedures;
- some contracting agencies ignore their contractual obligations, relying on the reluctance of small-scale contractors to seek legal redress.

7. Enabling Environment for Contracting

7.1 Funding and payment

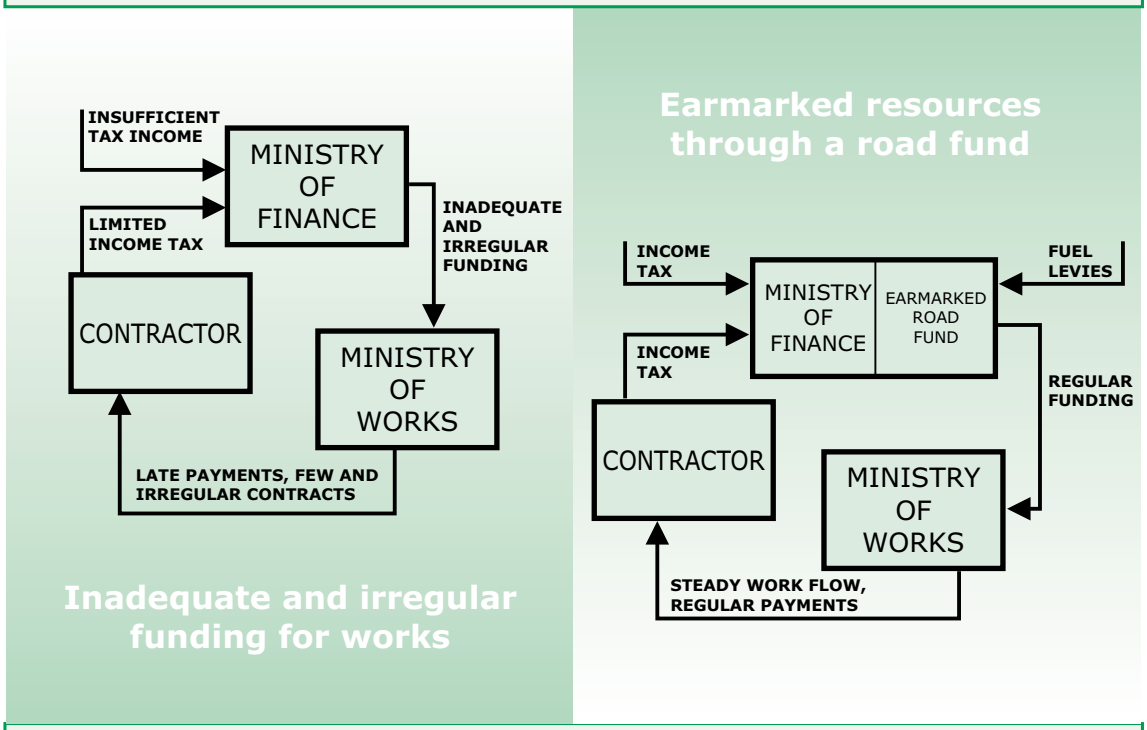
Funding for roadworks

Many countries are adopting the recommendations for financial and organizational autonomy for roadworks made through the World Bank-coordinated Road Maintenance Initiative (RMI) and are moving towards a restructuring of road network financing and management. This generally involves the establishment of a roads authority, or agency, provided with a dedicated road fund financed from fuel levies, and responsible to an independent national roads board.

Although a major step forward in ensuring regular funding for roadworks, experience with this system is not yet conclusive because of procedural deficiencies. In Zambia, for example, payments to maintenance contractors from the Road Fund were delayed because they were administered centrally by the National Roads Board after initial scrutiny of both the contracts and payment certificates by the Ministry of Housing and Local Government (Feeder Roads Section). In addition, the Ministry of Finance was inconsistent in its transfers to the Road Fund, so that often the available funds were inadequate to make timely payments. This combination of centralization, bureaucracy and cashflow deficiencies was a serious disadvantage to locally based contractors in the Eastern Province and illustrates the importance of streamlining procedures.

Ghana: Other sources of funding

In addition to a road fund, the Ghana Cocoa Board contributes a dedicated fund for the rehabilitation and maintenance of feeder roads in cocoa-producing areas, calculated as a proportion of annual cocoa revenue.



Kenya: Contractual payments

Contracts are prepared by district engineers of the Ministry of Works and the Ministry awards the contracts. However, funding is decentralized to the district administrations for contractual payments, resulting in a situation where those named in the contract (employer and engineer) do not actually control the funds. This is a disadvantage for both legal and practical reasons.

Some guidelines

- Labour-based contractors can only operate if their labour force is paid regularly and promptly. Contractors should be paid as near their work locations as possible to avoid essential site management time being wasted in chasing payments. Contract payment systems need to operate in accordance with these realities.

- Monthly interim payments against the contractors' labour wage bill in the initial stages of a contract or development project are effective in alleviating the contractor's cashflow problems.

- Recovery of money from contractors (e.g., advance payments, equipment loan instalments) may be institutionalized using the commercial banking system and joint contractor/bank accounts.

- Contractual methods of work measurement for smaller, labour-based construction contracts may be made simpler than those for major works contracts (e.g., interim payments could be on a percentage completion basis).

- Contracting agency personnel need to be made aware of their contractual obligations under the conditions of contract in force.

- An interim solution in contractor development projects with third party management includes the provision of a float account to an administrator belonging to the development team. This person would process - on behalf of the client or contracting agency - payment certificates certified by the client's agent or the contract administrator. In this manner the client or contracting agency only needs to top up the float account at specified intervals by making a single payment against reconciled contract payments.

- Decentralized payment systems are recommended for practical reasons, but payment responsibilities should be delegated - with appropriate audit and control mechanisms - to a representative of the contracting agency (see Kenya box opposite). Decentralized payment procedures are likely to require different financial control and audit procedures than those normally used by contracting agencies.

- In several countries, autonomous contract management agencies have been set up to act as the client's representative (see boxes on pages 9 and 29). The strength of these agencies lies primarily in the fact that they employ competitively paid, motivated managerial and administrative staff, and that they are able to keep the monitoring, control and payment procedures simple, effective and fast.

United Republic of Tanzania: Disbursement procedures

In the Tanzanian labour-based contractor development project (see box on page 29), the National Construction Council (NCC) acted as the main contractor, subletting the contracts to "unclassified" project contractors. The payments to the contractors, however, were made by the regional engineer of the Ministry of Works, Communications and Transport (MWCT) based on interim certificates, as follows:

- 60% of the contract sum was transferred from MWCT headquarters to the regional engineer on award of the contracts;
- the remaining 40% was transferred when 75% of the first tranche was expended.

The contractors submitted invoices for certification and processing by the NCC project team, which forwarded the interim certificates to the regional engineer. Payment was made between one and three days after receipt of the certificates *when funds were available*. Availability of funds depended on the regional engineer applying early enough to the MWCT for replenishment of funds.

Ghana: Payment procedures

During the pilot phase of the contractor development project, there was special provision for funds to be transferred to the site area to enable interim payments for construction works. Moreover, immediate monthly payments were made for the labour wage bill (plus 15% for overheads) to enable workers to be paid early the following month. The expansion of the project to a nationwide programme resulted in this system becoming unmanageable for administrative reasons.

During the nationwide programme phase up to 1998, the standard measurement and payment procedure became:

- joint measurement on site (contractor and regional engineer)
- regional engineer prepares interim payment certificate) 2-3 days
- interim payment certificate sent to regional administration 2-3 days
- interim payment certificate sent back to regional engineer 1 day
- regional engineer forwards to head office 2-3 days
- registered in head office through deputy director to national coordinator 1 day
- checked by quantity surveyor 1-2 days
- to accounts and audit section, Ministry of Roads and Highways 1-2 days
- returned to Department of Feeder Roads (DFR) to prepare payment voucher 1 day
- approved by DFR Director - to Accounts to prepare cheque 1 day
- director signs cheque; to Ministry of Roads and Highways for counter-signature 1-2 days
- cheque to contractor (not less than 14 days after measurement)

Peru: Funding for road maintenance

In Peru, the responsibility for maintaining the roads rehabilitated under the Rural Roads Programme is transferred to municipalities after the two-year term of maintenance organized and financed under the programme has expired. This means that the municipalities have to contract road maintenance (preferably through the small contractors established during the Programme) from their own resources. However, an ILO study has shown that the financial possibilities at local level do not leave enough room to cover all costs related to maintenance of the local road network. The problem is that only 20% of the *Fondo de Compensación Municipal* (FCM or government transfer to municipality) can be earmarked for recurrent costs, a category to which maintenance also belongs. Even with road tolls, the municipalities do not have enough income to match the costs (traffic volumes are still limited). Recommendations in this respect therefore include:

- an increase in the FCM's share of recurrent costs or the introduction of a specific budget line for road maintenance within it (leaving the overall amount of the transfer unchanged)
- the establishment of a road fund at national or regional level, cross-subsidizing rural roads that are not yet self-financing.

7.2 Audit and control

Key issue:

What appropriate technical audit and control systems are necessary to ensure the specified quality of labour-based works?

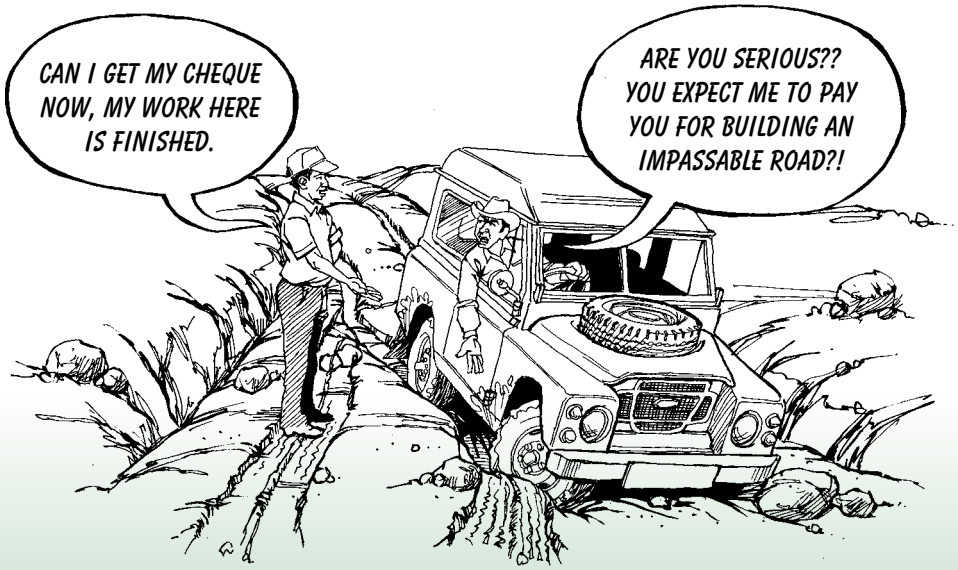
Information required:

- availability of appropriate specifications for labour-based works;
- the national policy on method or performance specifications;
- the availability of, and access to, testing facilities for small-scale contractors.

Project experience indicates that:

- few specifications have been purpose written for labour-based construction;
- the use of method or performance specifications is not well understood. Sometimes both are used for the same operation;
- contractors have little experience of quality control and no access to testing facilities. In general, there is a complete reliance on the contracting agency's staff, with no independent back-up;
- there are suggestions that labour-based construction produces low-quality results because appropriate quality control procedures are not adopted or included in contracts;
- performance control using simple testing equipment (e.g., the Dynamic Cone Penetrometer) gives good results;
- regular (e.g., monthly) quality control by specialized personnel giving instant results is effective and appropriate for small-scale works;
- traditional specifications generally over-specify the quality of work required, for example, for low-volume roads;
- independent financial and technical auditing of contracting or executing agencies is useful to ensure compliance with agreed procedures and to formulate recommendations in order to improve these procedures.

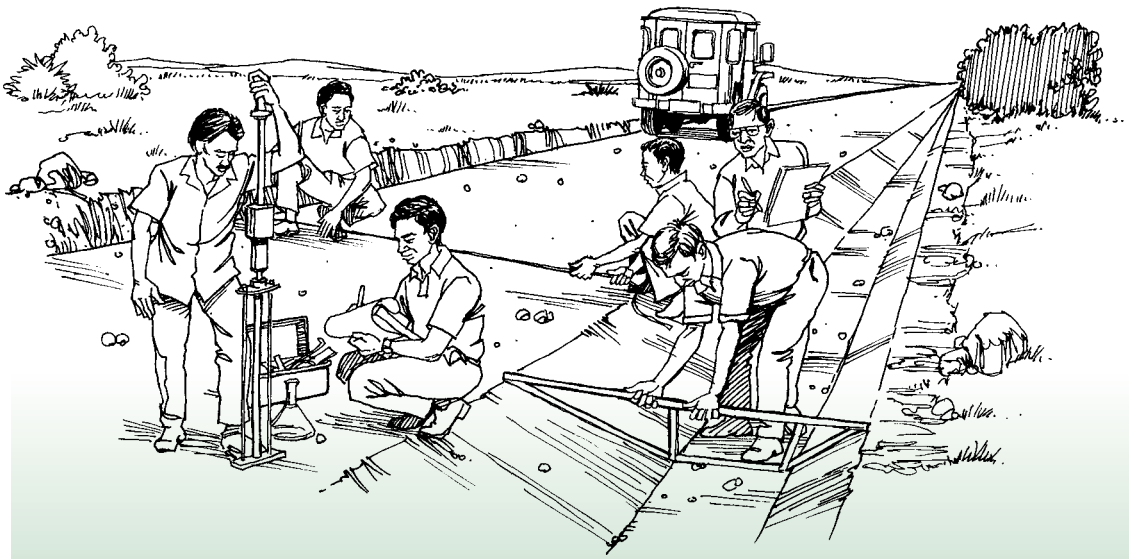
7.2 Audit and control



The contracting agency's obligation is to ensure value for tax-payers' money

Lesotho: Compaction control

Quality was controlled by staff of the Labour Construction Unit by regular use of a nuclear density meter. This device enables instant results on the level of compaction to be given to the contractor on site. Monthly payment to the contractor is conditional upon whether the required compaction specification has been achieved.



Inspection and testing prior to certification are in everyone's interest

Some guidelines

- Current works specifications - like most standard documents - are oriented to major equipment-based operations and are often inappropriate for labour-based construction techniques. Method specifications - at least during an initial period - may be more realistic for small-scale construction, based on the contracting agency's experience or conducted trials. Method specification arrangements should be supported by a technical performance audit system from the contracting agency using spot testing.

- Small-scale contractors are unlikely to have access to testing expertise or facilities. The contracting agency's role in respect of quality control should be specified in the contract, e.g., by appointing laboratory test teams doing performance control. A clear and simple specification of standards to be achieved will be essential (e.g., compaction standards, concrete strength in structures, bituminous mixes).

- The contractor training component should include quality control aspects.

- Good quality control reporting systems should be developed and introduced.

- Independent financial and technical audits can be instrumental in improving and adapting administrative and monitoring procedures on a national scale, which is important for the expansion of a pilot project to a nationwide programme.

Mozambique: Feeder road contractor development project

Supervision and certification of contracts. The form of contract officially approved by the Ministry of Finance included so few bill items, at centrally fixed rates, that contractors could not realistically expect to make a profit on some types, and location, of roads. Agreement was, however, reached with the contracting agency on special conditions of contract which included a much larger number of bill items, creating a direct link with projected costs by the contractors. This was crucial in attracting prospective contractors to the project. Although a relatively large number of bill items helped the contractor calculate costs, it complicated the process of contract supervision to the point that the ability of the contracting agency's staff to supervise the contractors began to hamper the implementation of the programme. The contracting agency staff and the contractor needed to agree upon the quantities for the full list of bill items on a monthly basis for the preparation of the payment certificate. It was necessary to divert technical assistance resources from contractor training to contracting agency support for the supervision of the works. With the introduction of competitive bidding, the contractors are required to submit lump-sum bids. The contracting agency provides details of drainage structures, sections of road to be gravelled, the location of gravel pits and an estimate of the total quantities of work. The contractor is required to confirm or adjust the quantities of work in his bid. These quantities are not subject to remeasurement. These measures reduce the burden on the contracting agency, but require the contractors to calculate their bids from first principles using the full list of bill items.

Compliance with specification. An early problem encountered on the project was how to find a way to decide in an objective manner when a gravel layer was required over the road formation. Without the direct involvement of the consultants in exercising their own judgement, both the contractor and the contracting agency staff were inclined to gravel more than was necessary or could be justified on economic grounds. With assistance from the United Kingdom Transport Research Laboratory, criteria based on simple grading and shrinkage tests were developed to assist the contracting agency staff to decide when gravelling was required. The criteria were based on the principle that fine-grained, sandy soils must be gravelled in all circumstances to control erosion during rain, and plastic soils must be gravelled on steep slopes to provide traction. The local contracting agency's soils laboratory undertook the necessary tests on project roads at the contract preparation stage.

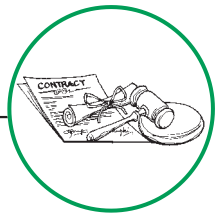
Sierra Leone: Contractor performance evaluation

In Sierra Leone, the contractor development project (see boxes on pages 63 and 119) introduced a performance evaluation exercise for newly trained contractors. This evaluation comprised:

	Weighting
• timely payment of wages	20%
• compliance with labour standards	10%
• contractor's attendance on site	10%
• quality of work	20%
• progress as per workplan	20%
• quality of supervision by contractor's staff	10%
• handling of equipment by contractor	10%

The assessment was carried out on a monthly basis, jointly by the technical assistance team and Sierra Leone Roads Authority staff. The best contractor was declared "contractor of the month" and received an award of Leone 50,000. This created a positive competitive spirit amongst the contractors and their staff.

7.3 Legal rights and obligations



Key issue:

Is the contractual arrangement appropriately clear and simple such that each party fully appreciates its legal obligations?

Information required:

- what legal system governs the construction contracts?
- does the system operate on standard contractual documentation with proven legal validity?
- what arbitration arrangements exist for dispute settlement?

Project experience indicates that:

- much contract documentation is biased against the contractor with the contracting agency accepting little or no risk (e.g., no interest paid on late payments);
- legal obligations, such as payment timescales, are often ignored by contracting agencies;
- small contractors are reluctant, or lack the understanding or resources, to challenge the contracting agency over their legal rights;
- much documentation uses legalistic jargon and is inappropriate to small-scale construction works;
- contractors' associations can play a significant role in highlighting contractual issues for small-scale contractors. Associations have better access to legal resources than individual contractors.

7.3 Legal rights and obligations

Both parties have legal rights and obligations - they should be clearly defined and adhered to

Some guidelines

- The use of shortened, legally tested standard documentation is recommended, provided that it is appropriate to the level of the contract and that suitable modifications are made that take account of local circumstances and socio-economic objectives.

- The roles, responsibilities and contractual risks of each party (including any third-party management or technical assistance personnel) need to be clearly stated in the documentation and understood by all parties. Training is necessary for this.

- An appropriate dispute settlement system is needed to ensure that the contractor can exercise his or her legal rights without fear of future discrimination. Legal advice should be available and used by both parties to ensure that contractual obligations are fairly established. The FIDIC and ICE (see *Bibliography* on page 90) among others, use an approach of appointing adjudicators to resolve matters before the courts become involved. These adjudicators are appointed as part of the contract and provide a way for both the contractor and the contracting agency to resolve matters. Claims are called compensation events in a spirit of trying to avoid a confrontational approach. Such an approach would contribute a great deal to provide an avenue of appeal to small contractors, once the contractor development project has terminated.

Madagascar: Timely payments by the contracting agency

The *Fonds d'Intervention pour le Développement* is a programme funded by the Government of Madagascar and the World Bank. It effectively uses local consulting companies and small local contractors to design and build rural infrastructure in the whole of the country.

Although recognized as being very successful, it ran into payment problems during its first phase in 1993 and 1994. With regard to contractual payments a standard contract clause was used in recognition of the cashflow problems of small local contractors. This clause stipulated that payments to the contractors were to be made within a two-week period, and that in case of late payments interest was to be paid. In practice, in the early stages of the programme, it has often been difficult for the contracting agency to respect this contractual obligation. Projects in the remote provinces of the country were particularly affected as interbank money transfers from the capital to these provinces could take up to one month.

Important additional delays were experienced when the programme, after having started a large number of projects, experienced internal cashflow problems principally due to a delay in the replacement of the programme's general manager. Because for a period payments could not be authorized, the programme accumulated a significant number of unpaid bills. When the problem of the payment authorization was resolved, the special account of the programme had to be replenished several times to allow the settlement of these outstanding bills. The related procedures took a great deal of time and led to payment delays of several months for many contractors. In turn, these payment delays had a negative impact on the programme as a large number of the projects had to be stopped or slowed down. Even after all outstanding payments had been made, it proved difficult to restart some of the projects. The cashflow problems in this period forced many contractors to stop working and to bear the associated unproductive costs of the projects. The banks were mostly unwilling to provide credit and the informal moneylenders charged extremely high interest rates of up to 50% per month. In some cases the payment delays seriously compromised the contractors' financial situation. During the second phase of the project measures were taken to avoid these problems.

Lesson: It is crucial to anticipate funding requirements and only to contract out new projects when funds can be made available at short notice. It may be necessary to adapt the size of a revolving fund or to modify replenishment procedures in line with the programme's development. Back-up arrangements should be agreed upon to compensate for a possible absence of a person authorized to sign for payments. Also, when responsibilities are not clearly defined and financial resources are not earmarked for the purpose, it will prove difficult in practice to pay interest due to payment delays. Agreements for externally funded programmes should therefore include special financial arrangements and clearly define responsibilities both for the making of contractual interest payments and for compensating for subsequent extra damage when payments are seriously delayed. Moreover, both for internally and externally financed programmes, the nomination of a body able to arbitrate between the contracting agency and the contractors is crucial.

7.4 From force account to contract management

Key issue:

How may force-account organizations be best transformed into contract management organizations?

Information required:

- ❑ national policy on the use of the private sector for small-scale construction works;
- ❑ experience and capacity of contracting agency staff in the contracting environment;
- ❑ experience and capacity of local consultants with contract management and supervision.

Project experience indicates that:

- ❑ many contracting agency staff find the transition from force account to contracting operations confusing and disorienting;
- ❑ little specific retraining is carried out within the contracting agency;
- ❑ at site level supervisors are particularly uncertain about their new roles;
- ❑ developing contractors need both advice and supervision from contracting agency or technical assistance staff;
- ❑ suitable training courses are needed for contracting agency staff and local consultants to enable trainees to: (i) become fully conversant with the labour-based technology, so that they can advise and train the contractor's staff in the field; and (ii) become totally familiar with the contract management process.

7.4 From force account to contract management

Uganda: Routine maintenance of rural roads by contract

In 1992, as a consequence of the Road Maintenance Initiative, the Ministry of Works, Transport and Communications revised and reformulated its policies and strategies for the maintenance of the core road network. The Government decided that an increased proportion of the work would be contracted out. It was noted that the local contracting industry was ill-equipped and could only develop gradually through action by the Government.

One of the strategies adopted to introduce roadwork contracting to local private entrepreneurs was to enable "porters" (individuals previously employed by the Ministry to maintain a defined section of a particular road) and local small-scale contractors to become routine maintenance contractors. Within three years the entire core road network of approximately 8,700 km was put under contract maintenance. Contract management was carried out by the Ministry's district staff.

For the Ministry's managers this meant a drastic shift from the supervision of work to the management of contract work. The policies, strategies and capacity to manage a large number of small contracts had to be developed at district level within a short period and with limited resources.

The Ministry decided to gradually build the required capacity through a number of steps:

- make required policy decisions for the implementation of contract work through a decentralized district-based system
- generate local funding for the maintenance works, reducing the dependency on external funding sources
- establish a separate "quick disbursement" system of routine maintenance funds to the districts
- emphasize capacity building of own personnel at headquarters, regional and district levels as a priority
- conduct continuous training for contract supervisors and contractors
- transform locally available ex-routine maintenance workers into routine maintenance contractors on a "length person" system (2 km sections)
- reduce the supervision burden of the district staff through the gradual introduction of larger maintenance contracts - up to 50 km or more - based on the capacity of the contractors to grow.

The result was a sustainable maintenance organization, established micro-scale contractors and improved routine maintenance along Uganda's main roads.

Some guidelines

- A radical change in philosophy and working practice is required to transform a force-account approach into a contract management approach. Changes in management structure are likely to include the establishment of a project contracts management unit. Clear roles, responsibilities and job descriptions for the staff of such a unit should be defined and formalized as they carry legal implications.

- A structured training programme is likely to be required for both technical and administrative staff at different levels in the contracting agency:

  - the technical part of the training would include the process affecting technology choice, specifications for works, design and planning, surveying, drainage, tools and light equipment, resource planning and monitoring, work programming, implementation methods, recruitment and management of labour and social issues such as working conditions and regulations, labour standards, welfare concerns and gender issues;

  - the part dealing with contract management should discuss preparatory documentation related to labour-based works, the tendering process, quality control, and contracts administration and management with particular emphasis on the different roles of the contracting agency, the engineer, the construction management consultant and the contractor.

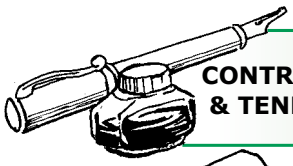
- It is important to include the development and training of local consultants in the development project in order to: (i) establish private sector capacity for the design, formulation and supervision of labour-based infrastructure programmes; and (ii) complement the contracting agency's management and supervisory capacity at the expansion stages of the infrastructure programme.

- The payment system and procedures may need radical revision to ensure that contractual obligations can be met. Designs, contract preparation, tender and award procedures may need to be introduced or modified. New technical and financial audit systems may need to be set up.

Lesotho: Capacity development for contract management

After 20 years as a successful force account organization after its establishment in 1977, the Labour Construction Unit in Lesotho revised its organizational structure to develop capacity for contract management. The objective was to gradually transform itself into a contracting agency with responsibility for contracts, including the capacity to plan and design contracts, issue tenders, award contracts and monitor and control contracts, while dealing with budgetary and financial aspects of contracts. The shortage of local human resources meant that several of these tasks had to be carried out by expatriate technical assistance. The need for investment in the development of systems and procedures, as well as for capacity building through training and experience, was generally underestimated.

The change from force account to contract operations has implications for the contracting agency's management structure



CONTRACT DOCUMENTATION & TENDERING PROCEDURES	**Legal section (development) Ministerial committee (approval) Quantity survey section (implementation)**
CONTRACT AWARD	**Ministerial Committee**
MONITORING OF WORK	**Supervisors Local consultant**
CERTIFICATION OF WORKS	**Laboratory staff Engineers**
PAYMENT	**Certifying officers Accountants**

Bibliography

R, Watermeyer: *Mobilizing the private sector to engage in labour-based infrastructure works: A South African perspective*, paper presented at the Sixth Regional Seminar for labour-based practitioners, Jinja, Uganda, ILO/ASIST, Nairobi, 1997.

J.-M. Lantran: *Contracting out road maintenance activities. Volume IV: Managing small contracts: Practical guidance on how to streamline and manage small contracts for public works and services*, ECA, SSATP, World Bank, Washington, D.C., 1993.

ILO: *The rainmaker*, ILO, Geneva, 1992.

References for the boxes in this part:

Funding for road works. I. Heggie: *Management and financing of roads: An agenda for reform*, Technical paper No. 275, World Bank, Washington, D.C., 1995.

Ghana: Other sources of funding. P. Bentall: *Final report,* GHA/84/008, Ghana feeder roads project, Labour-based rehabilitation and maintenance, CTP 116, ILO Geneva, May 1990.

United Republic of Tanzania: Disbursement procedures. K. Osei-Bonsu: *Progress report 1994*, URT/90/004, Labour-based contractor training for rural road maintenance and rehabilitation, Project URT/90/004, MWCT, Dar es Salaam, 1994.

Kenya: Contractual payments. P. Bentall, A. Twumasi-Boakye and R. Watermeyer: *Labour-based contracting*: *A study to develop guidelines for project formulation and implementation (Vols. 1-3)*, op. cit, ILO, Geneva, 1995.

Ghana: Payment procedures. P. Bentall, A. Twumasi-Boakye and R. Watermeyer: *Labour-based contracting*: *A study to develop guidelines for project formulation and implementation (Vols. 1-3)*, op. cit, ILO, Geneva, 1995.

Peru: Funding for road maintenance. Estudio de resultados en programas de mantenimiento rural en Colombia, Peru y Uruguay, ILO, Lima, 1997.

Lesotho: Compaction control. P. Bentall, A. Twumasi-Boakye and R. Watermeyer: *Labour-based contracting*: *A study to develop guidelines for project formulation and implementation (Vols. 1-3)*, op. cit, ILO, Geneva, 1995.

Mozambique: Feeder road contractor development project. Scott Wilson: *Quarterly reports* DNEP/DFID Feeder Roads Project Zambezia 1997-1998, Maputo, 1997-1998.

Sierra Leone: Contractor performance evaluation. *Progress and thematic reports 1993-1996:* Agricultural Sector Support Project, SLRA/ILO project SIL/93/01/IDA, SLRA/ILO Freetown.

Madagascar: Timely payments by the contracting agency. *Rapports d'activités annuelles,* 1994 and 1995, FID, Antananarivo.

Uganda: Routine maintenance of rural roads by contract. P. Bentall, A. Twumasi-Boakye and R. Watermeyer: *Labour-based contracting: A study to develop guidelines for project formulation and implementation (Vols. 1-3)*, op. cit, ILO, Geneva, 1995.

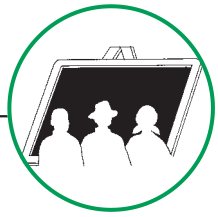
Lesotho: Capacity development for contract management. J. Clifton, D. Miles and J. de Veen: *The development of labour-based contracting for road works: Lessons from Ghana, Mozambique and Lesotho*, paper produced for International Workshop on rural infrastructure, World Bank, Washington, D.C., May 1997.

Employment-Intensive Infrastructure Programmes:
Capacity Building for Contracting in the Construction Sector

Training

PART 8

8. Training



8.1 Supply and demand

Key issue:

Who is the target population for a contracting training project, what are the main training requirements, and what is the required role and capacity of the training institution?

Information required:

- assessment of the functions, numbers and experience levels of those who will be involved in the contractor development project, usually:
  - decision makers (from government ministries, funding agencies, local administration, etc.);
  - contracting agencies' staff (engineers, supervisors, mechanics, office staff) responsible for implementation, including staff from government agencies and autonomous contract management agencies (such as the Senegalese AGETIP - see box on page 9);
  - consultants (project management, supervision, support), representing the contracting agency;
  - contractors and their site agents, supervisors, mechanics and clerical support staff;
  - trainers;
- assessment of existing capacity and competence of the target groups, in terms of contract management and technical skills, for labour-based works and small-scale contracting;
- assessment of existing capacity and competence of local training institutions and local contracting associations to provide the kind of training required;
- assessment of the need to provide external assistance for the training of trainers;
- market forecast of medium-term workload, both funded through the project and from other programme sources. This assessment should determine the numbers of staff to be trained and the programming of this training over a long-term perspective.

8. Training

8.1 Supply and demand

Namibia: Capacity building for training

Since there was no institution for roads training in the country, and since it was the policy of the Government to reduce government services, the training of the first batch of labour-based small-scale contractors was contracted out to the private sector. As no local enterprise could be found for this, a specialized foreign firm was invited. Unfortunately, this firm had immense difficulties in adapting to the local conditions and did not have the required professional experience in labour-based roadworks. Although specialized short-term back-up services for labour-based institution development and capacity building were provided to the foreign firm, the training programme faced enormous problems and insufficient local training capacity was created.

Training for different target groups

Project experience indicates that:

- training is often seen as a major activity of a contractor development programme, and additional inputs to training have been shown to provide important returns to the contracting agency and the private sector. Nevertheless, necessary training support is often underestimated both in terms of training requirements for different categories of staff and the necessary subject coverage of the training (technical, business, procedures, teamwork, labour issues):
  - training support provided by external funding agencies concentrates more on the provision of physical facilities than on institution building. Adequate support for training institutions needs to be provided for a period of at least ten years;
  - retraining of staff of the contracting agency for a contracting environment is critical;
  - well-trained site supervisors are essential to the efficient management of labour-based work and they are the key to the profitability of the contractor's operations;
  - training of local consultants to take over some of the contract management functions in an expanding programme is important;
- in most developing countries there are too few local consultants. Where they do exist they are usually based in the capital only, with little or no experience in the design and supervision of labour-based works. Fee rates of established local consultants are usually high and comparable to international rates;
- in countries where a steady workload over a period of several years can be ensured (e.g., with a medium-scale contractor development programme, AGETIP or social fund), local consultants willing to work for acceptable fees in rural areas can be developed. This requires special training;
- adequate attention is often not given to important aspects related to the creation of an enabling environment for successful contracting, the establishment of adequate contract supervision capacity and for the setting up of adequate training capacity. The training providers have to collaborate closely with the managers of the contractor development project to design a comprehensive training programme for different target groups (contracting agency staff, local consultants, contractors) and to establish an institutional capacity for training;

Matching training outputs and inputs

To achieve the identified training output, a corresponding input has to be provided. The following has to be considered when planning the input:

- staff
- buildings
- furniture
- teaching aids
- training manuals
- transport facilities, e.g., for field work
- equipment for field work
- funds
- administrative framework

The total number of instructors needed depends on how many courses will be run simultaneously and how much theory and field work is to be carried out.

The time distribution for the instructors is likely to be as follows:

- preparation: 20-30%
- organization: 20-30%
- theoretical training: 20-30%
- field training: 30-40%

The limiting factors for training planning are generally: (i) the available training capacity in terms of available and capable trainers; (ii) the unresolved training prerequisites to be dealt with before the start of the training; and (iii) the time constraints imposed by the project. The training manager usually has to make compromises among all these competing imperatives.

- most national road training institutions do not have the capacity to cope with demand. There is a need to develop sustainable training capacity in these institutions, and external resources are generally required for this;

- contractor training programmes are often carried out by national public training institutions which have little or no experience of training for the private sector:

  - these institutions are generally inadequately prepared for training delivery for new programmes: experienced and well-trained instructors are not available, training programmes are insufficiently developed, training funding is not secured, and training materials and facilities are insufficient;

  - local expertise from other sectors or institutions is often ignored or undiscovered and not included in the training programme;

  - job positions and remuneration of trainers in public institutions are generally below the required level and the status of trainers is generally low. Therefore, it is difficult to attract candidates with good potential for training posts;

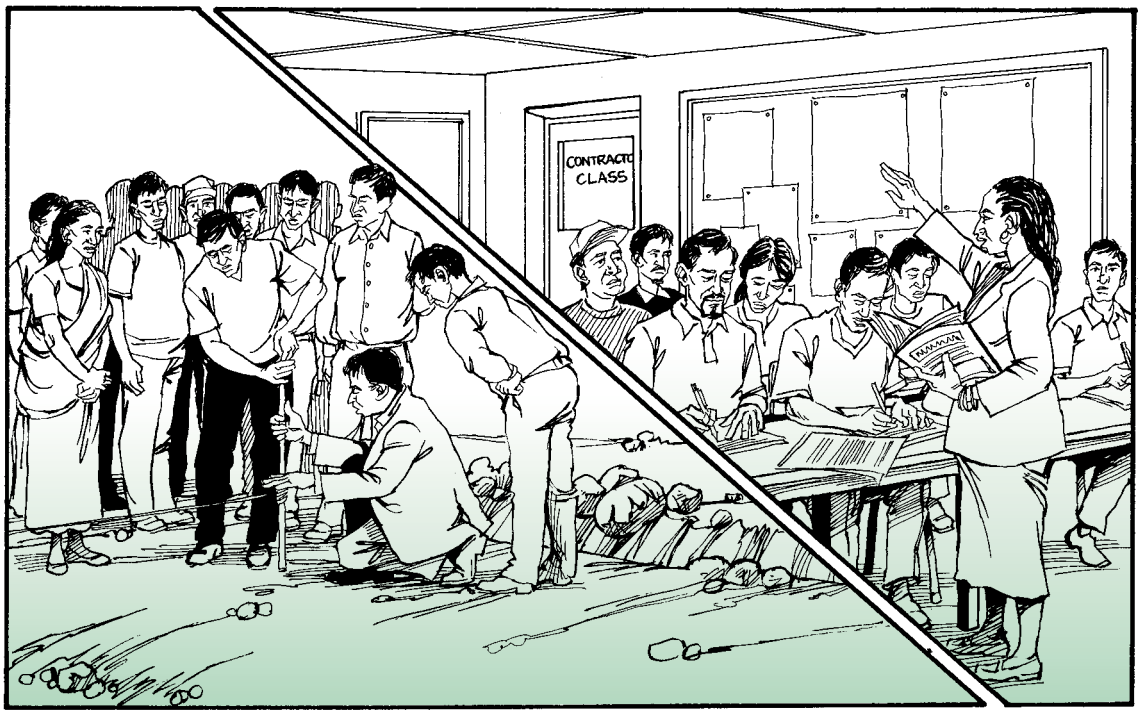
- very few engineers or technicians have received relevant training in technology choice and management of labour-based infrastructure works at higher education institutions:

  - a network of universities in Africa and Asia has started to introduce course materials on technology choice and labour-based methods into civil engineering courses at undergraduate and postgraduate levels[1];

- study tours organized in countries with operational labour-based contractor development projects have proved to be highly effective in convincing decision makers and practitioners of the relevance of this type of approach.

[1] *John Howe and Hans Muller: "Undergraduate course on labour-based road engineering" and "Postgraduate course on labour-based road engineering", Course notes. IHE Delft and ILO, Geneva, 1995, provisional edition.*

Good training includes practical and classroom work



Road building: An accredited craft in Kenya

Generally, training for labour-based projects aims to fulfill short-term objectives, ensuring that the technical personnel are able to operate as quickly as possible. This sort of training is not usually accredited and therefore lacks recognition by national authorities and the private sector.

The Kenya Institute of Highways and Building Technology (KIHaBT) of the Ministry of Public Works has realized that this situation is not sustainable for countrywide adoption of labour-based work methods in particular and road-building skills in general. The Institute has also considered the growing need of the private sector to search access to trained and skilled personnel for road works. As a result the KIHaBT proposed to the Kenya Institute of Education (KIE) the development of a road builder craft course. The KIE approved the development of the course curriculum for a national accredited course.

The duration of the course will be three years. It deals with materials and equipment management, design and drawing skills, public and private sector enterprises, administration and monitoring, and the utilization of labour-based and equipment-based techniques for roadworks. It is open to school-leavers who meet the minimum entry requirements, and to staff currently working for the various government road agencies. At the end of the course, successful candidates will receive a nationally accredited certificate that enables them to work on any road construction site in the country, whether capital- or labour-based and whether for the government or the private sector. Those who would like to continue their academic career can, at the end of the course, join diploma courses in civil engineering provided they meet the entry requirements.

Some guidelines

- The training programme should be designed in response to the training requirements of the different categories shown in the figure on page 147.

  The major training requirements are:

  - *for contracting agencies and their representatives (local consultants):*
    - awareness of infrastructure construction and maintenance management, funding, technology options and contract management;
  - *for trainers:*
    - labour-based work methods, contract and business management, and training techniques;
  - *for contractors:*
    - labour-based work methods, contract and business management (tendering, estimating, pricing, bidding, accounting), administration and mechanical support;
  - *for contractors' site supervisors:*
    - labour-based work methods, planning, reporting, site administration, labour issues and mechanical support.

- Training in labour-based work methods should include: the factors affecting the choice of work methods; specifications for works; design and planning; surveying; tools and light equipment choice and management; resource planning and monitoring; work programming; implementation methods; recruitment and management of labour; and social issues such as working conditions and regulations, labour standards, welfare concerns and gender issues. Contract management training should deal with contract documentation; the tendering process; quality control; and contracts administration and management with particular emphasis on the different roles of the employer, the engineer, the consultant and the contractor.

- Established local consultants can be encouraged to take on, at reasonable rates, design and supervision works of several infrastructure projects in one area, packaged in one contract.

- Promotional approaches to encourage greater participation by local consultants include:

  - providing opportunities to young graduates to establish a consulting engineering office in the province or district;
  - developing and providing appropriate training courses;

Training supply and demand in a large programme

The maximum yearly number of training courses, for a large programme, can be estimated as follows:

Duration of one course > *6 weeks:*

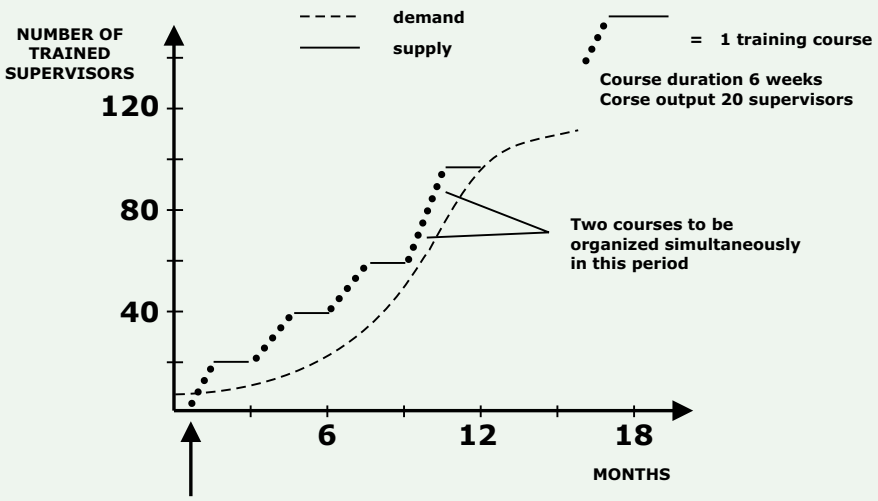
$$\text{No. of courses per year} = \frac{Wy - 6}{Wc + 1} = \frac{46}{Wc + 1}$$

Duration of one course < *6 weeks:*

$$\text{No. of courses per year} = \frac{2(Wy - 6)}{2Wc + 1} = \frac{92}{2Wc + 1}$$

where: Wy = weeks per year
Wc = weeks per course

These formulas allow time for preparatory work and logistics such as getting the trainees to the site where the practical work is ongoing. They provide a useful indication of the number of courses feasible, but this number very much depends on the prevailing local circumstances and organization. The rate of training should ideally be parallel to the expansion of the construction programme(s). This can rarely happen since the true expansion of a programme seldom follows the planned rate of growth and training cannot easily, without substantial extra input, be adapted to unplanned fluctuations. It has to be accepted that there may be periods when supply and demand are out of synchronization. However, planning programme and training development helps to minimize this problem.



The training programme starts before or directly after the construction programme gets off the ground.

The type and total number of training courses per year determines: the number of instructors required; the type, size and number of training facilities; and the funding requirements for training.

- setting up a reference centre with documentation on employment-intensive infrastructure;
- assisting in the formulation of an association of consulting engineers.

- Training needs have to be assessed by specialists with an appropriate teaching and technical background, examining the requirements of the individual job level (e.g., a consultant able to supervise contracts), as well as the need for team work performance (e.g., a consultant able to interact with the contracting agency and contractor).

- The attrition rate of trained supervisors is usually overlooked when training demand is assessed. It is important to encourage standardized contractual agreements between supervisors and contractors to minimize the exploitation of supervisors by contractors.

- The existing training capacity of the private market (and other training institutions) needs to be explored and utilized (e.g., contractor and consultant associations, banking and credit institutions, management institutions, other private sector development programmes).

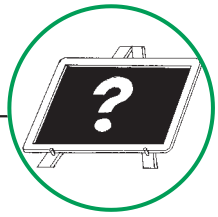
- The roles and functions of the various project or programme stakeholders and managers have to be clearly identified. The role of training is to increase skills and knowledge. All other necessary management functions for the success of a project or programme need to be carried out by the managers.

- Project or programme procedures and management systems should be developed before training starts (e.g., contract documentation written, labour-based technology documented, maintenance management system established, contractor support programme set up).

- Efforts should be made to introduce courses dealing with technology choice and labour-based management into relevant craft, diploma, undergraduate or postgraduate courses at national level.

Lack of trained staff is a major constraint for contractors

8.2 Preparation for training



Key issue:

What needs to be identified and arranged before the start of training to ensure that it will be effective?

Information required:

- project proposals or project appraisals of planned projects for which the training is intended;
- policy statements on the choice and use of technology, project-relevant operational procedures, work programmes, technical manuals, support programmes for contractors and consultants, contract documentation, etc.;
- the roles and functions of the project's key personnel (job descriptions, project log-frame, project organization charts);
- cost estimates for theoretical training courses, field training interventions, trial contract training support, mentorship support, study tours, seminars, etc.;
- existing and required training capacity in terms of capable instructors and physical infrastructure;
- training or specialized inputs to the training programme which can be provided by other local resources (e.g., contractor association, consultants, NGOs, management specialists, technical colleges and training colleges);
- the additional new material which has to be developed.

8.2 Preparation for training

Zambia: Over-reliance on one training institution

In a contractor development project in Zambia, training was seen as the principal means to introduce labour-based contracting for roadworks and to respond to fast increasing demands from the Government and funding agencies. However, the different projects had not clearly defined the roles, functions and responsibilities of the various project managers. In the circumstances, the training institution was forced to take the lead role in propagating the labour-based roadwork option and developing contracting procedures and documentation. This role, however, demanded significant resource inputs from the institution, which had limited capacity in terms of staff and resources.

Regular funding for contractor training must be ensured through projects and contributions

Indonesia: Output-oriented small contractor and "mandor" training

In the mid-1980s, a small contractor training project aimed to improve the performance of local contractors active in the public works market. The Indonesian business environment was already geared to the use of the private sector, but training and management development was needed to enhance the competitiveness of the contractors. Training courses dealt, on average, with 35 participants over two weeks. Training outputs were high (some 4,000 contractors and an equal number of *mandors* (labour-only subcontractors) over 15 months), but the training did not allow practical experience and participatory, problem-oriented approaches. A project review considered this type of training to be deficient, because it was too conventional, excessively formal and instructor-based.

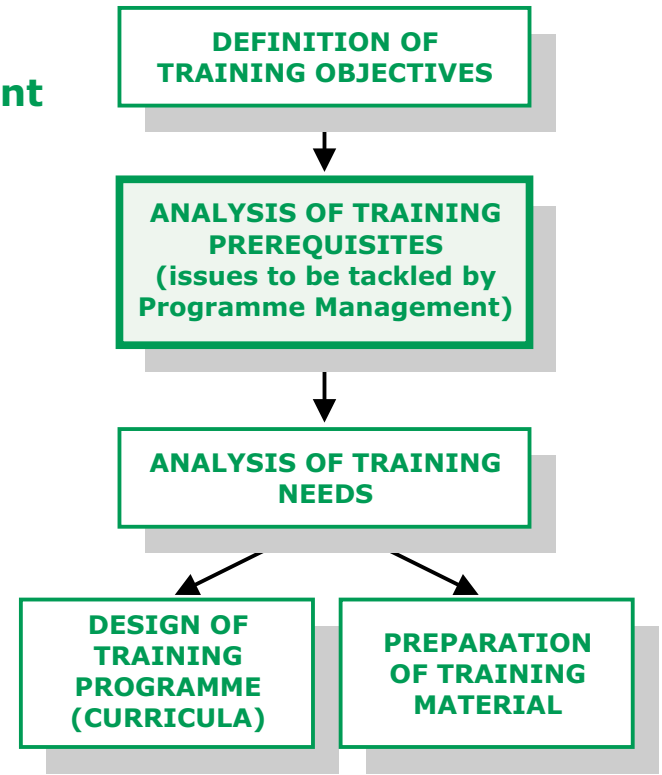
Project experience indicates that:

- in many cases, training preparation is seen as the production of training material while other preparatory activities are underestimated or not tackled at all:
  - the training institution is often not only the provider of training but also the technology and procedure development unit, despite the fact that most training institutions do not have the required professional capacity, personnel and funding for these sorts of activities;
  - identification with the contracting agency of precise training objectives is often overlooked;
  - local training capacity is usually very limited and most training institutions have to rely on specialized external support;
  - in most developing countries, the private sector is not yet in a position to take over the majority of training delivery;
  - existing training material can generally be adapted quite easily to local conditions;
- business management, accounting, bookkeeping, estimating and bidding are subjects in which small contractors have inadequate capacity and experience. Training and backstopping are vital in these areas;
- efforts are required to teach the firms' managing directors and supervisors the importance of good human relations and adequate working conditions to ensure motivated staff at all levels.

Lesotho: Systems and procedures for contracting

During the early stages of the Road Maintenance and Regravelling (ROMAR) project training programme for routine maintenance contractors, it became apparent that the Government's Labour Construction Unit systems and procedures for contracting were inadequate. Contract documentation for routine maintenance contracts was poorly developed, productivity guidelines were missing, unit rates were unavailable and the maintenance management system did not allow for work to be carried out by contractors. The trainers therefore had to develop adequate procedures during training and at the same time convince the contracting agency that these procedures were required. This caused confusion among the contracting agency's staff and among the trainers and trainees. The procedures developed in this way were also untested and had not been formally approved. Subsequently, revisions had to be made and the trainees retrained.

Training development



Uganda: Participatory development of contract documents and specifications

The Ministry of Works, Transport and Communications training programme, developed in a comprehensive workshop attended by relevant district engineers, simplified contract documents and detailed specifications for all routine maintenance activities, including the required productivity rates, unit prices and operational guidelines. These documents and procedures were updated later during a similar workshop. An additional benefit of this development process was the engineers' view that these procedures were their own products. Consequently they considered themselves as the true owners. The trainers acted as the facilitators during the workshops and are now using these procedures for their training programme.

Some guidelines

- Much general training material exists that is relevant for contractor development programmes, and that can be adapted to the project. The development of new material is generally only necessary for special purposes and target groups.

- The identification of the overall training objective(s) is an essential precondition for meaningful training that needs to be carried out by the training institution together with the contracting agency. The figure on page 159 shows a recommended approach to training development. The training objectives constitute the overall basis of the training; they also set the standard by which the success of the training is measured. It is therefore important to set realistic and specific objectives that can be achieved.

- In respect of contracting for labour-based infrastructure works, the following training prerequisites need to be addressed before training can be effectively planned and implemented:

  - policy framework and enabling environment;
  - identification of the levels of work which will be carried out by small-scale contractors;
  - management role of the contracting agency;
  - identification, screening and selection procedures for contractors;
  - labour-based contract specifications, contract procedures and contract documentation suitable for small-scale contractors;
  - appropriate technical manuals and operational procedures;
  - management systems;
  - resource plans for small-scale contractor support;
  - synergy functions with development initiatives in different fields (water and sanitation, urban works, irrigation, roads, soil conservation);
  - institutionalization of private sector training at an appropriate location.

Sierra Leone: Human relations

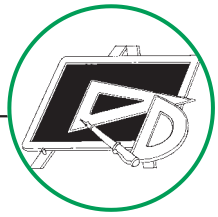
The importance of human relations in ensuring motivated staff at all levels and good progress of the works was recognized at an early stage by the contractor development project (see box on page 63). Special training sessions and workshops taught contractors and their senior staff how to jointly identify and analyse problems related to work methods, working conditions and human relations, and to work out solutions. It was found that these courses helped significantly in improving site organization, management of the workforce and the general environment in which both supervisors and workers operated.

Some of contractor staff need training in special technical skills

Ghana: Target groups and training approach

The Ghana contractor development project first focused on the practical training of contractors' site supervisors. In addition, the contractors themselves received management and business guidance aimed at increasing their management abilities and work productivity. At a later stage, specific contractor training for senior executives was provided in a structured manner, partly through a local management institute and partly through the government training establishment.

8.3 Design and implementation of training



Key issue:

What are the essential issues for effective training design, what is the correct sequence of activities and how do they interrelate?

Information required:

- overall training objectives and related training needs assessment for all categories of trainees (see section 8.1);
- training opportunities offered by other institutions which could supplement certain parts of the planned training programme;
- training methodology to be applied, e.g., mixture of theoretical and practical training, trial contract arrangements, mentorship arrangements;
- financial and material resources available for training.

Project experience indicates that:

- a comprehensive training programme for contractors can best be divided into four main phases:
  - preparation, consisting of all necessary arrangements to start the actual training process;
  - training implementation, comprising the formal courses and field training;
  - trial contract, where contracts are issued on a trial basis; and
  - mentorship, which provides the contractors with support and guidance during their initial period as independent contractors.

  The necessity for, and duration of, each phase is determined by the training and support needs of the various categories of trainees and the kind of contract work they will be required to do;
- the majority of potential course participants tend to have an existing level of work experience which needs to be utilized. Generally, contractor trainees have businesses or jobs and cannot be absent for a long period to attend comprehensive training courses. This implies that the training should:
  - be as short and concentrated as possible in terms of time;
  - be strongly linked to the work experience and the problem-consciousness of the participants;

8.3 Design and implementation of training

Egypt: Training programme for 150 small-scale contractors

In many contractor development projects, the training comprises two distinct phases, first the theoretical and practical formal training courses and second, one or two trial contracts. After these two phases, which typically last in total from 10 to 12 months, the contractors are supposed to be independent.

In Egypt, the Public Works component of the Social Fund for Development was established to support labour-based public works throughout the country using local small-scale contractors. In order to facilitate this, a training package dealing with labour-based roads, potable water and environmental works was launched. This comprised four phases, i.e., theoretical and practical formal training courses, apprenticeship with an established contractor, trial contract work, and standard contract work. The trainees only graduate as independent labour-based contractors after successfully completing all four phases.

The interesting new element of this approach is the apprenticeship with an established contractor. In Egypt, there are many successful medium-sized contractors and traditional apprenticeship relations are deeply embedded in Egyptian culture as a learning method. It was therefore decided to tap this resource for the training programme. So that the established contractors can act as mentors for labour-based infrastructure works, they participate in a crash training programme on labour-based technology and management, and basic teaching skills. Subsequently, they are integrated into the training programme. Each trained established contractor is responsible for the on-the-job training of four trainee-contractors. The apprenticeship phase lasts about two months and is closely monitored and supported by the training consultant. Regular site meetings between the contractors, the trainees and the trainers are organized to discuss the progress and problems of the training and to develop management procedures.

Training approaches

Different projects have had different approaches to training and to targeting trainees. These approaches reflected the size and duration of the projects and the capabilities of the domestic contractors.

Ghana
Four to five supervisors per contractor were trained in full rehabilitation on site over an 18-20 week period. The contractors themselves also attended some management training sessions. More formal management training was only introduced after the programme had expanded significantly, eight years after the start of the pilot project. Training in maintenance was also formally integrated at this later stage.

Kenya
Contractors were trained in management while a separate group of supervisors were given practical field training. Contractors without their own supervisors in training also followed the practical training.

Lesotho
Only the Road Maintenance and Regravelling" contractors were trained, over five months, in both management and technical subjects. These subsequently trained their own supervisors during the trial contract period. The training initially concerned routine maintenance only, and subsequently regravelling. Special training materials (a road-related version of the ILO's *Improve your construction business* series) were used for training the contractors in estimating, bidding and tendering, as well as in other business aspects of road contracting.

South Africa
On the contractor development project described in the box on page 13 contractors were first taught to tender for simple construction works. The successful bidders were then trained on site under the comprehensive mentoring support system of the Development Team management approach through five levels of reducing assistance.

United Republic of Tanzania
Contractors' supervisors (initially five and subsequently three from each firm) undertook six weeks of classroom training followed by 14 weeks of practical site training. A two-week specialized course in contract management was run for site agents and managing directors to improve their management skills.

- directly relate to the training objectives identified; and
- be well prepared by trainers, whose principal role is to assist the participants in dealing with practical problems and case materials;

- most of the training institutions which are expected to deal with private sector training are experienced in force account operations but lack adequate experience in commercially oriented training.

Some guidelines

- The following training needs assessment procedure is advisable for labour-based infrastructure works programmes:
  - review the characteristics and data of the programme (technical and administrative procedures, production data, costs, planning, reporting and monitoring procedures, tender and contract procedures, legal aspects, labour laws, etc.);
  - interview the management to identify the client's/contracting agency's training expectations;
  - interview the future trainees to find out their current level of understanding and knowledge through discussions and questionnaires;
  - where feasible, observe the product through site visits and compare the actual with the anticipated performance;
  - where feasible, organize a problem identification workshop with representatives of all levels of potential trainees plus the programme management.

- Clear criteria should be developed for the selection of trainees. It is advisable that the trainers should actively participate in the selection of contractors and their staff. Minimum qualification limits should be set and assessed through simple tests.

- Criteria and procedures for training examination and qualification should be established and approved, prior to the start of the training. Training certificates should have a recognized value.

- The methodical approach for labour-based contractor training should generally be based on three principal educational requirements:
  - training for adults with or without experience of infrastructure works and business management;
  - vocational training (skills and knowledge to master a trade, such as water supply schemes); and

8.3 Design and implementation of training

Ghana: Practical training approach

One approach to practical training for labour-based roadworks which has been used in several projects is the "Ghana model" and consists of:

- a demonstration model road site (5 - 10 km) managed by the contracting agency and technical assistance staff on which all the appropriate labour-based activities are taught to contractors and (usually) supervisory staff of the contracting agency. This is effectively a direct labour operation. Trainees are assessed and awarded certificates of competence;
- a trial contract (around 5 km) is given to each contractor at fixed rates based on the productivity achieved on the model site. The contracting agency gives close advisory supervision and the contractor's performance is assessed;
- a full contract (10-20 km) is awarded to each competent contractor, still under fixed rates (which may be adjusted following the trials), but with otherwise standard contract conditions. The contracting agency's advisory role is greatly reduced as the contract proceeds.

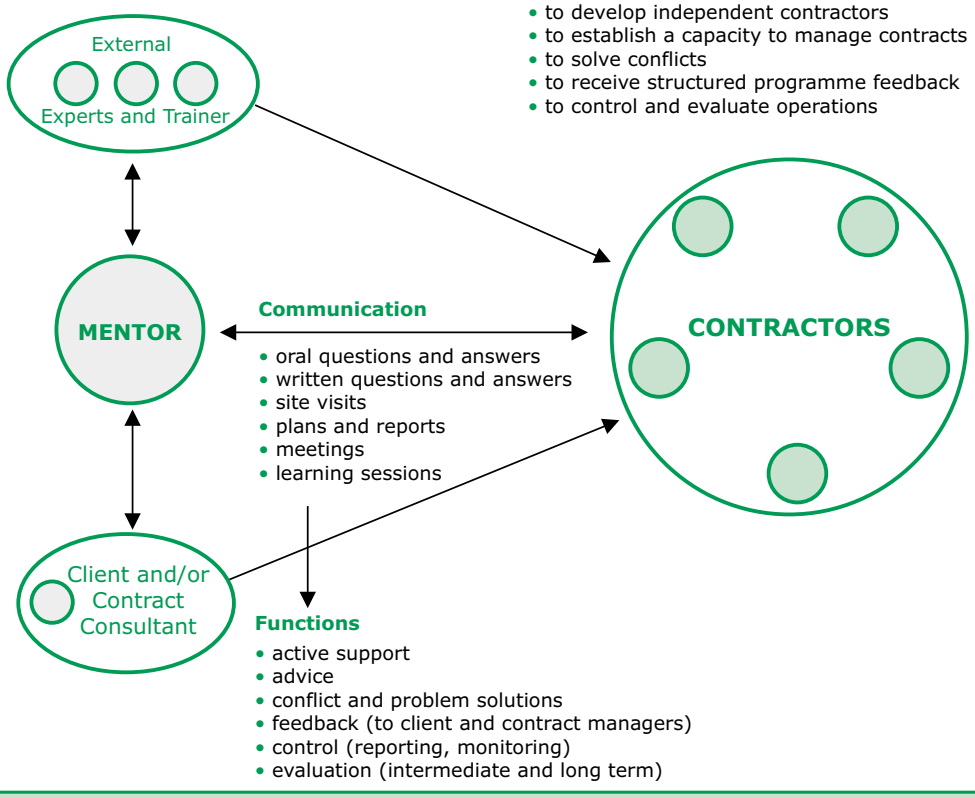
These three stages (up to two years duration) constitute the full training programme.

Namibia: Follow-up to training

During the formal training programme of a first batch of construction contractors and their supervisors, it became apparent that after the trial contracts they would still not have the full competence to act as competitive and independent contractors. It was obvious that these emerging contractors were still very vulnerable and would require further support in terms of advice and guidance. A mentorship programme was therefore scheduled to start immediately after the trial contracts.

Note: Ideally, the mentor would be an independent contractor who is fully conversant with the specific problems which contractors usually encounter.

Mentorship arrangements



- management training (skills and knowledge to manage contracts and business).

- Training of local consultants should have both theoretical and practical components. A specially designed training course of three to four weeks should include:
  - employment-intensive methodologies for infrastructure works using local resources;
  - collection of basic socio-economic data, to justify the infrastructure investment;
  - structures (different types of concrete and wooden structures, taking into consideration the capacity of local contractors and the use of local materials);
  - basic hydraulics;
  - administration of contracts (tender preparation and evaluation, establishment of unit prices and engineer's estimate, supervision tasks, certification, handing over);
  - theoretical knowledge and practical demonstration of the recognition and classification of different soils, compaction standards and quality control.

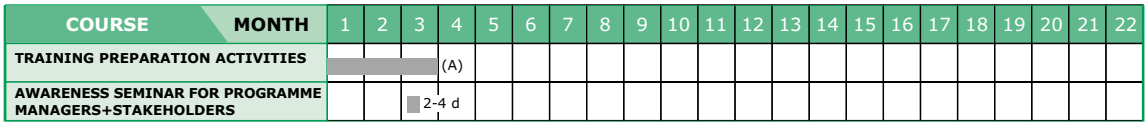
- Specific training materials should be developed as most of the training materials used for contractor's training are either too simple or incomplete to train engineers or senior technicians who will be responsible for the design and supervision of infrastructure works including structures.

- Commercially oriented training requires:
  - detailed and professional training planning;
  - careful definition of training objectives;
  - identification of the role of the trainers during the different theoretical and practical stages of the training, including trial contracts;
  - establishment of performance assessment procedures;
  - well-structured mentorship during the initial independent phase of new contractors.

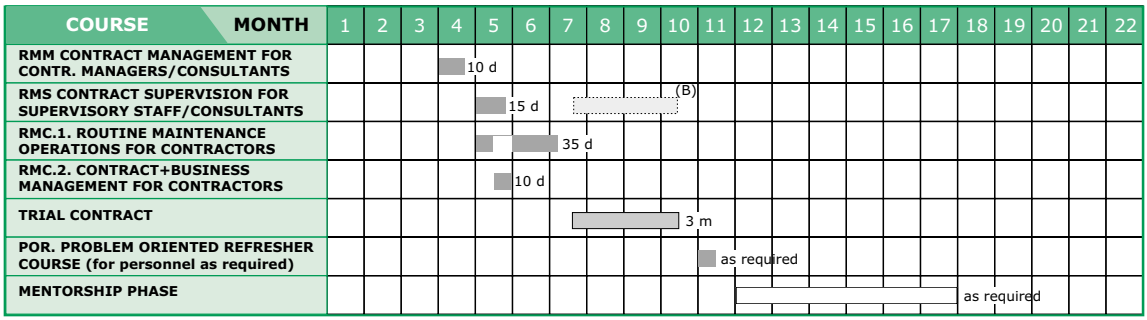
- A continuous training evaluation system has to be put in place from the beginning of the training programme to allow an assessment of training performance against the pre-set objectives.

Zambia: Training Course Programme

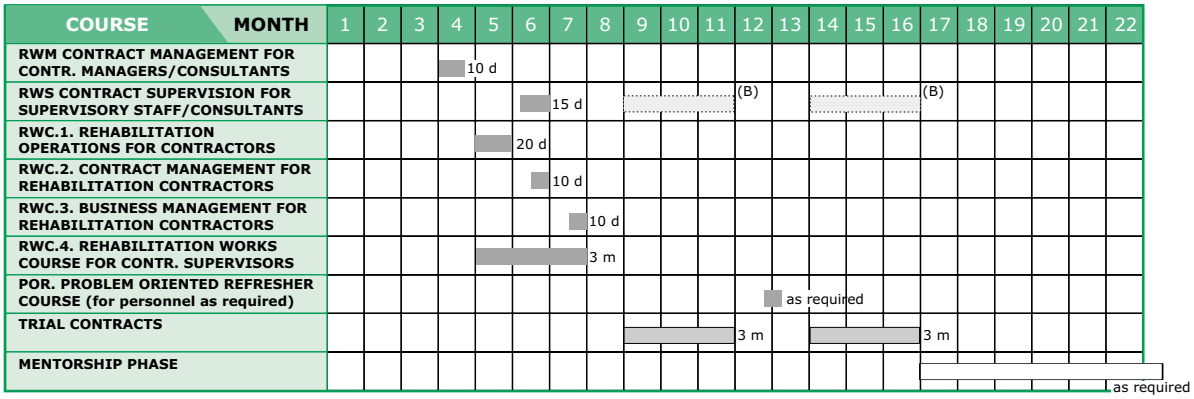
TRAINING PREPARATION AND AWARENESS CREATION



ROUTINE MAINTENANCE COURSES

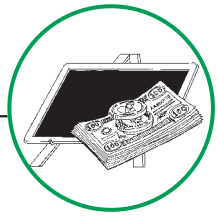


REHABILITATION WORKS COURSES



The number of parallel courses depends on the training capacity of the Roads Training School, and the capacity of the programme's management to issue and handle trial contracts and to supervise the work. These factors are as important as the training capacity, with respect to the development and implementation of the construction programme.

8.4 Funding for training



Key issue:

What are possible sources of sustainable funding for training?

Information required:

- the commitment of the users and donor agencies to contribute to the training costs;
- potential training clients and the training requirements for their projects;
- basic training cost estimates for formal training courses, trial contract training inputs and mentorship participation.

Project experience indicates that:

- training costs tend to be underestimated because, in general, not all related costs are taken into account. Training inputs are usually tied to a single project with a definite end. For institution capacity building, adequate funding over a longer period of time is required;
  - training for contracting requires a minimum of 4% of the total related project funds. If more extensive training is involved, this figure may rise to 8%. This amount would cover the costs of all formal courses, field work training, and training support during the trial contracts and during the mentorship programme for one year;
  - although substantial financial contributions from the trainees (site supervisors and emerging contractors) cannot be expected, minimal contributions and training bonds are viable options.

8.4 Funding for training

Funds for training are always scarce: if possible, pooling of resources from different projects is desirable

Kenya: Minor Roads Programme

To secure adequate funding for training, a special funding clause for training was included in bilateral agreements between the donor and the Government. Through this arrangement funds for training were directly channelled to the training institution. These funds were deducted from the project funds issued to the road authority. This system had been adopted by several donor agencies and was commonly known as the "Dutch Formula", because the Government of the Netherlands was the first donor to apply this system.

Some guidelines

- Funding for training needs to be carefully estimated and has to include all training-related activities. The cost of mentorship programmes after the formal training has to be included in training cost estimates.

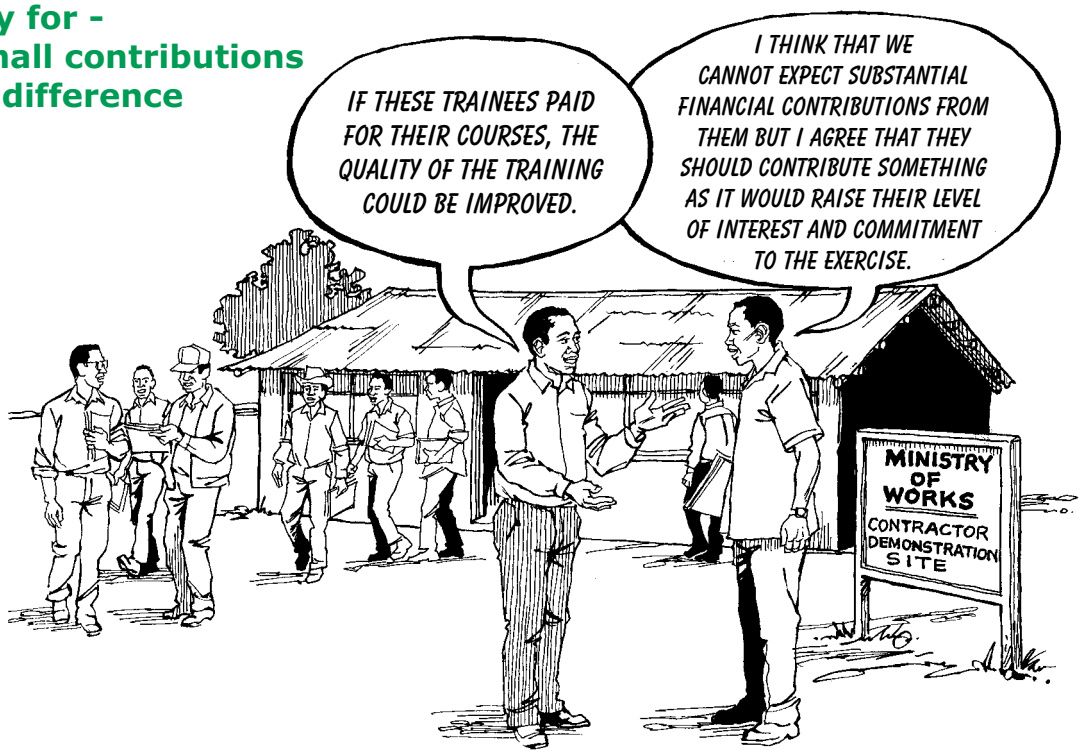
- Training institutions as service providers for public sector work will, in most cases, have difficulty in becoming self-financing and are likely to remain - partially - dependent on subsidies from the Government or other financing agencies. Financial participation of the contractors and consultants themselves for their training is likely to be minimal.

- The raising of a training levy from contracts for small-scale civil works contracts is not yet common. Mechanisms to introduce such a levy and channel the proceeds to the relevant training institutions could be considered.

- In order to rationalize training costs and efforts, potential synergies with other private sector development programmes (building sector, management training programmes) need to be explored.

8.4 Funding for training

People value more the things they pay for - even small contributions make a difference



Payment for training

There is no uniform approach to payment for training by contractors in different country projects (see the different countries below). To judge the level of interest of the contractors and to contribute to the self-sustainability of training, an increasing measure of financial participation by the contractors is desirable. Such financial participation can be increased depending on the stage of development of both the programme and the contractors involved in the training.

Ghana
The contractors' supervisors were paid for the tasks they performed on the training site and the contractors provided board and lodging expenses.

Lesotho
Contractors paid a minimal training fee but were provided with board and lodging during the five-month training period.

Namibia
Contractors' supervisors were engaged and paid as site supervisors during their training on site. The contractors did not pay any training fee for these supervisors, but met the accommodation costs.

Nepal
Contractors paid for the accommodation expenses of their supervisors as well as their own during the formal training courses.

Sierra Leone
The contractor development project met the entire board and lodging costs for the contractor trainees during the training period of two months.

United Republic of Tanzania
The contractors' supervisors received a small daily allowance while under training, and the contractors covered other expenses and board and lodging.

Zambia
Contractors paid a nominal training enrolment fee while all other costs were borne by the contractor development project.

8.5 Training providers

Key issue:

Who are the potential national and international training providers for all categories of personnel?

Information required:

- details and location of local and international training institutions already providing training for contractors and contract supervisors in terms of technical knowledge, construction management, contract management and business management;
- available local training institutions with a potential to take over elements of the training;
- the potential of local contractor associations or construction industry councils to become involved in training.

Project experience indicates that:

- government training institutions responsible for training for the private sector do not often have the necessary remuneration schemes and incentives to attract qualified personnel and to render the necessary services;
- training programmes are very often detached from other private sector development programmes and insufficient effort is made to coordinate and pool training resources;
- donor-supported infrastructure projects are frequently combined with the development of emerging contractors. The respective training programmes are generally designed to respond to the very particular needs of the project but usually fail to consider the longer-term challenges to be faced by emerging contractors in a non-project environment;
- trial contracts and continuing mentorship support are generally indispensable to ensure the survival and growth of small and indigenous firms.

8.5 Training providers

Kenya: Kisii Training Centre (KTC)

The KTC has an international reputation for being a specialized training centre for labour-based roadworks offering courses not only for the Kenyan market but also for a wider international clientele. Study tours, courses for engineers, technicians and trainers are run for participants from Africa, Asia and other parts of the world. The centre was established in 1984 with the support of the Swiss Agency for Development and Cooperation (SDC). SDC's involvement was twofold: (i) to provide the required investments for the establishment of the buildings and facilities, and the operational costs; and (ii) to assist in the development of the required capacity (institution building). The continual commitment provided by SDC was an important element in KTC securing its good name.

Some major lessons learned include:

- it takes four to six years of specialized training for a trainer to become fully competent after his or her initial education as an engineer or technician;
- it is very difficult to attract capable engineers to join a civil service training institution and remain there for a long period of time. Career and income opportunities are limited and training is seen as a "dead-end job". KTC therefore prefers having a different institutional status, as a semi-autonomous training agency, allowing it to top up salaries and run more commercially oriented training;
- a study carried out in 1996 showed that even with all its training sold at commercial rates, KTC could not become totally independent of subsidies. The Government of Kenya is aware of the importance of its services and continues to subsidize its operational costs.

Some guidelines

- In most countries, the capacity for contractor training is poorly developed. The establishment of a self-sustaining capacity in this field requires a long-term commitment from the training institution and a funding agency.

- International courses can be a means to train contract managers (project planners, senior staff of the contracting agency). Training for contractors and their site supervisors has to be carried out locally.

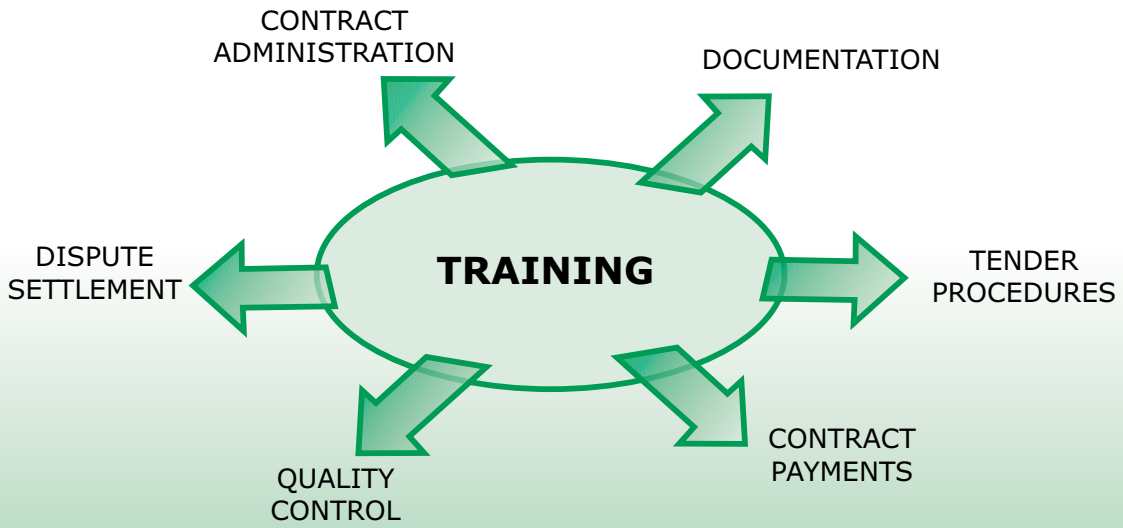
- Training opportunities offered by local management and business training institutions should be explored. Private sector development programmes in different civil works sectors may also provide useful training and offer opportunities for synergy.

- Training by consultants should be provided within the framework of a local training institution and coupled with the responsibility of assisting in developing local training capacity. Possibilities to improve the sustainability of training (through, e.g., privatizing local project-related training institutions that become financially autonomous through delivering specific paid training services to infrastructure programmes or projects in different infrastructure sectors) should be explored. Ideally, training for contractors should be provided within the framework of contractors' associations and training for contract supervisors through engineers' and architects' associations. In practice, in most developing countries training is provided by government institutions. However, the early involvement of such associations - where they exist - is highly desirable.

Zambia: Roads Training School (RTS) moves towards financial autonomy

In the context of a road contractor development project, the Ministry of Local Government and Housing contracted the RTS of the Ministry of Works to provide private sector training. This was the first step for the RTS to move towards greater financial autonomy as a training institution based on commercial operations. Technical assistance was provided to plan for this gradual change.

Training should deal with all contract management activities.



Decentralized training in Egypt

One of the objectives of the contractor training programme of the Social Fund for Development (SFD) in Egypt is to ensure the sustainability of the capacity-building effort through organizing training throughout the country rather then concentrating it in one central location. The training programme covers 19 districts (governorates) and is carried out at six training centres; 150 emerging contractors and 30 established contractors have been trained by the programme. All training centres have developed a locally based training capacity for labour-based contracting, which includes the training of contractors who are already well established in the area.

In order to ensure the coordination and continuity of the training, the SFD hired a full-time national training consultant, supported and monitored by a project team of SFD staff and external specialists. International consultancies are kept to a minimum and are only used to provide essential international expertise which may not be available in Egypt.

All training material, including the *Improve your construction business* package of the ILO, has been translated into Arabic.

Bibliography

A. Beusch: *Labour-based road contracting development in Zambia: Training curriculum, trial contract arrangements and training assessment*, CTP 146, ILO/ASIST, Harare, 1996.

C.-A. Andersson, A. Beusch and D. Miles: *Road maintenance and regravelling (ROMAR) using labour-based methods*, Handbook and workbook, Intermediate Technology Publications, London, 1996.

C.-A. Andersson, D. Miles, R. Neale and J. Ward: *Improve your construction business series. Pricing and bidding. IYCB 1*, Handbook and workbook, ILO, Geneva, 1994. *Site management. IYCB 2*, Handbook and workbook, ILO, Geneva, 1996. *Business management. IYCB 3*, Handbook and workbook, ILO, Geneva, 1996.

D. Mason: *Trainer's toolbox of training techniques*, ILO/ASIST, Nairobi, third edition,1995.

A. Beusch and J.J. de Veen: *International course for engineers and managers of labour-based road construction and maintenance*, four volumes, ILO, Geneva, 1991.

Special Public Works Programme: *Illustrated training elements and technical guides for personnel in labour-intensive works programmes*, ILO, Geneva.

Anti-erosion ditches, Booklet No. 1 and trainer's copy, 1991.
Stone masonry, Booklet No. 2, 1991.
Gabions, Booklet No. 3 and trainer's copy, 1986.
Gully correction, Booklet No. 4 and trainer's copy, 1985.
Small earth dams, Booklet No. 5, 1988.
Tree nurseries, Booklet No. 6, 1989.
Planting techniques, Booklet No. 7 and trainer's copy, 1993.
Stone-paving blocks: Quarrying, cutting and dressing, Booklet No. 8, 1992
Community water supply: A community participation training element for SPWP user beneficiaries, 1987.

J. Antoniou, P. Guthrie and J. de Veen: *Building roads by hand: An introduction to labour-based road construction*, Longman, Essex, UK, 1990.

Workshop on technology choice in civil engineering, 12-16 March 1989, CTP 134, ILO, Nairobi, 1989.

T. Hernes and D. Miles (eds.): *Training contractors for results. A guide for trainers and training managers*, ILO, Geneva, 1988.

T. Hernes and D. Miles: *Interactive contractor training. Module 1: Estimating and tendering; Module 2: Project planning; Module 3: Site productivity*, ILO, Geneva, 1987.

B. Coukis: *Labor-based construction programs: A practical guide for planning and management*, World Bank, Washington, D.C., 1983.

L. Karlsson and J.J. de Veen: *Guide to the training of supervisors for labour-based road construction and maintenance*, ILO, Geneva, 1981.

References for the boxes in this part:

Namibia: Capacity building for training. Ministry of Works, Transport and Communications, *Final evaluation workshop report*, Namibia, October 1996.

Matching training outputs and inputs. L. Karlsson and J. de Veen: *Guide to the training of supervisors for labour-based road construction and maintenance*, Instructors' manual, ILO, Geneva, 1982.

Road building: An accredited craft in Kenya. Technical Education Programmes, Craft Training Programme, *Road construction syllabi and regulations*, Republic of Kenya, Kenya Institute of Education, 1998.

Training supply and demand in a large programme. L. Karlsson and J. de Veen: *Guide to the training of supervisors for labour-based road construction and maintenance*, Instructors' manual, ILO, Geneva, 1982.

Zambia: Over-reliance on one training institution. Labour-based Contracting Development, *Awareness creation workshop report*, Government of Republic of Zambia, Ministry of Works and Supply, Roads Department, Roads Training School, September 1996.

Indonesia: Output-oriented small contractor and "mandor" training. D. Miles: *A decade of small contractor development in Asia: Lessons from project experience*, Vol. 1 No. 3, Public Works Management and Policy, *op. cit*, 1996.

Lesotho: Systems and procedures for contracting. *Entrepreneurship development for labour-based road maintenance contractors, ROMAR course, Course report*, Government of Lesotho, Ministry of Works, Labour Construction Unit, October 1994.

Uganda: Participatory development of contract documents and specifications. *Labour-based contract maintenance programme, Orientation course for district engineers, Course report*, Republic of Uganda, Ministry of Works, Transport and Communication, May 1993.

Sierra Leone: Human relations. *Report on human relations training programme for the managing directors and supervisors of small/medium-scale road contractors*, ILO project SIL/93/01/IDA, SLRA, Freetown, December 1996.

Ghana: Target groups and training approach. D. Miles and J. Ward: *Small-scale construction enterprises in Ghana: Practices, problems and needs*, ILO, Geneva, 1991.

Egypt: Training programme for 150 small-scale contractors. *Training programme for small-scale labour-based contractors, Workplan*, Social Fund for Development, Public Works Programme, Cairo, September 1998.

Training approaches. P. Bentall, A. Twumasi-Boakye and R. Watermeyer: *Labour-based contracting: A study to develop guidelines for project formulation and implementation* (Vols. 1-3), op.cit., ILO, Geneva, 1995.

Ghana: Practical training approach. Department of Feeder Roads: *Feeder roads improvement in Ghana, Contractors use labour-based technology*, Accra, 1990.

Namibia: Follow-up to training. Ministry of Works, Transport and Communications, Final evaluation workshop report, Namibia, October 1996.

Zambia training course programme. A. Beusch: *Labour-based road contracting development in Zambia: Training curriculum, trial contract arrangements and training assessment*, CTP 146, ILO/ASIST, Harare, 1996.

Kenya: Minor Roads Programme. G. Kohlheyer, D. Nalo, A. Lehobo, A. Zimmermann and G. Taylor: *An evaluation of KTS incorporating a review of ASIST*, Swiss Development Cooperation, Nairobi, February 1994.

Payment for training. P. Bentall, A. Twumasi-Boakye and R. Watermeyer: *Labour-based contracting: A study to develop guidelines for project formulation and implementation* (Vols. 1-3), op.cit., ILO, Geneva, 1995.

Kenya: Kisii Training Centre (KTC). G. Kohlheyer, D. Nalo, A. Lehobo, A. Zimmermann and G. Taylor: *An evaluation of KTS incorporating a review of ASIST*, Swiss Development Cooperation, Nairobi, February 1994.

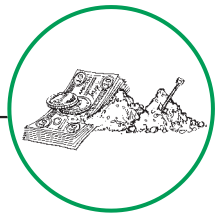
Zambia: Roads Training School (RTS) moves towards financial autonomy. Labour-based Contracting Development: A*wareness creation workshop report*, Government of Republic of Zambia, Ministry of Works and Supply, Roads Department, Roads Training School, September 1996.

Decentralized training in Egypt. *Training programme for small-scale labour-based contractors, Workplan*, Social Fund for Development, Public Works Programme, Cairo, September 1998.

Labour Issues

PART 9

9. Labour Issues



9.1 Wages and productivity

Key issue:

How, from the viewpoints of the contracting agency, the contractor and the workers, can wage rates and productivity of the temporary project workers be influenced to ensure the sustainability of labour-based methods? How should wages be set in line with existing regulations? What measures can be taken to increase productivity?

Information required:

- existing wage regulations applying to unskilled, temporary workers;
- wage rate for unskilled work in the areas concerned;
- national practice and policy regarding productivity-based remuneration and attitudes of workers' representatives;
- (where available) range of worker productivity levels in task work or piece work systems;
- the following additional issues should be raised in respect of wage setting and productivity:
  - will payment be output- or time-based?
  - what will be the role of the social partners in the definition, approval and application of relevant labour regulations, including wage setting?
  - how can gender discriminating practices (female and male workers should be paid equally for work of equal value) be avoided?
  - what incentive schemes (task work, piece work, bonus systems) are acceptable within the applicable legislation?

9. Labour Issues

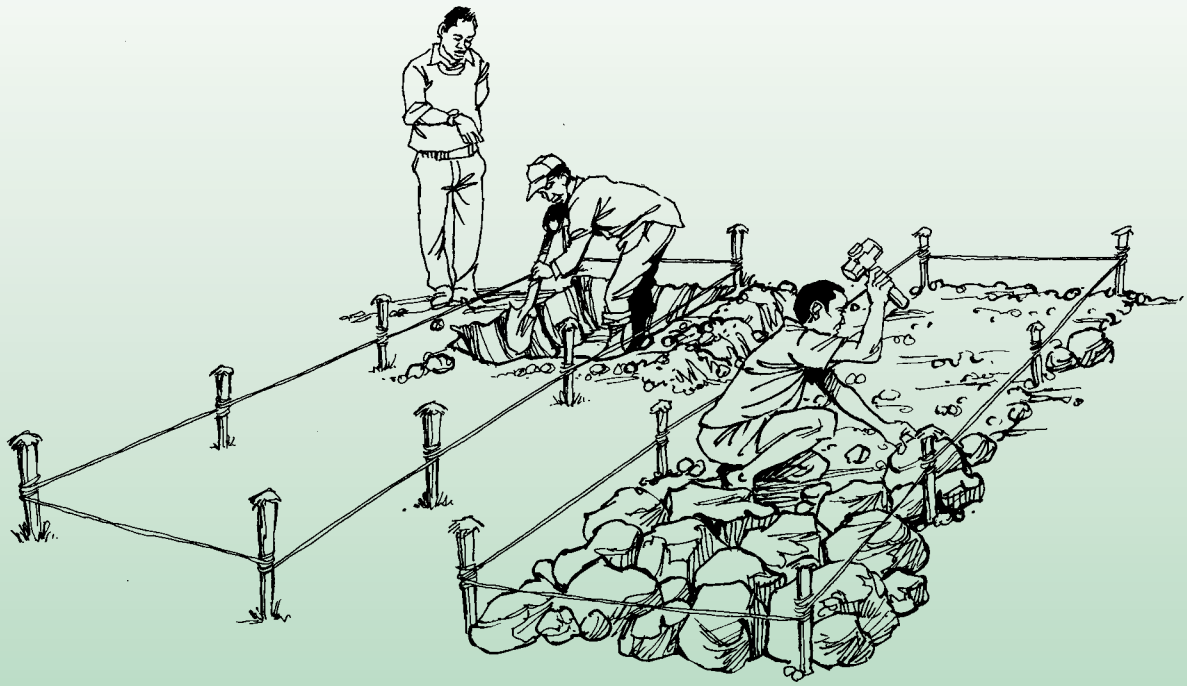
9.1 Wages and productivity

Exploitation and productivity-based remuneration

A fundamental concern of the ILO and this Guide is preventing labour exploitation. Productivity-based remuneration has a reputation for being exploitative. Depending on the way the remuneration system is set up, workers may be tempted to work very long hours so they can earn more money. This is the problem of self-exploitation. The problem cannot exist where there are limits placed on the number of hours a person can work. The problem may not even exist where there is no limit on hours, provided that the workers have obligations elsewhere to take care of, e.g., tending their agricultural holdings. In these situations, the workers will naturally stop work when they feel it is necessary to move to their other activities. A self-exploitation problem exists where there is great demand for income among poor people and little or no other wage employment (or subsistence farming) opportunity.

Lesson: To prevent self-exploitation, time limits must be imposed, particularly where work is undertaken on a piece work basis.

Task work motivates the individual



Project experience indicates that:

- it is essential for payment to be correct, timely and regular:
  - labour-based projects will ultimately fail when payments by the clients or the employers do not meet these three requirements. Programme design should build in safeguards against untimely payment by clients. Workers should receive the remuneration to which they are entitled in a timely manner. They should also be in a position to freely dispose of their remuneration as they choose;[1]
- it is important to establish mechanisms for maintaining an acceptable level of attendance:
  - high labour turnover and unreliable attendance may be caused by other work priorities of a particular group of workers. Women, in particular, have many different demands on their time. It is important to keep adequate attendance records and to identify causes for high absenteeism with worker representatives. An adapted implementation schedule may help to minimize absenteeism, for example, by providing extra time off after pay day or reducing labour requirements to take account of the peak agricultural work periods. Regular attendance can be stimulated through bonus schemes;
  - when contractors resort to migrant labour in cases of labour shortage, this results in extra accommodation, food and transport costs;
- site management and supervision are fundamental to optimize the working environment and productivity:
  - site supervisors are responsible for operational oversight. Establishing and setting out tasks and measuring the output of workers or teams of workers are of great importance to the efficiency of labour-based sites. If these activities are carried out correctly the labour management atmosphere, and consequently the productivity of the enterprise or project, will be positively influenced.

[1] *Workers who are paid in advance, particularly for a long period of employment, may lose their ability to freely dispose of their earnings. They also risk being subject to forced or bonded labour, because any debt they have incurred (often with their employer) prevents them from changing their employment.*

The task work system: Appreciation varies by economic setting

Workers generally appreciate the task system, particularly where other activities attract their time. However, there are differences in appreciation. One observer, comparing the Botswana District Road Programme and the Kenya Rural Access Roads/Minor Roads Programme concluded:

> "There are also considerable differences in the labour force and the supervisory staff. Kisii (Kenya) is a region that is predominantly based on arable farming which forms the basis of support for almost every family. Botswana is traditionally more associated with pastoral activity and it is common for the family to be supported by remitted money earned outside the village and even outside the country (the South African mines). This leads to subtle differences of approach to labour-based construction in the two countries. For example, appreciation of the taskwork system, which enables a worker to leave the site early on completion of a set quantity of work, is much greater in Kisii where that worker is usually tending a smallholding at the same time, than it is in Botswana where arable farming is a highly seasonal activity and wage earning outside of farming is an accepted practice and necessity."

Lesson: Care must be taken in generalizing about the effects of productivity-based task work on worker motivation and on the possibilities of exploitation. In a Kisii-like environment, it would be difficult to increase tasks to the point where they are too large. Workers are willing to spend only a certain amount of time on the site and would not want to work to exhaustion before returning to work on their farms. Yet workers in such a situation will typically have a high hourly productivity. In Botswana, workers will not mind working long hours to complete one task (and might reduce their hourly productivity to fill the eight-hour day), but are more likely to complain about wages which are insufficient to live on. In a comparable environment, workers will primarily be motivated to work harder or to produce better quality work when daily earnings are increased (piece work or more pay for bigger tasks).

Some guidelines

Wage setting

- An assessment of relevant minimum wage regulations applicable to temporary construction workers is essential in order to ensure the sustainability of a national labour-based policy:
  - where minimum wages are applicable but fixed at too high or too low a level when compared with, e.g., temporary workers doing similar work in the localities concerned, steps should be taken - with the involvement of the social partners - to establish more relevant wage levels. This may be feasible through formal exemptions or productivity-related payments. It is important to arrange regular reviews of binding minimum wages to ensure their continuing relevance;
  - where wages are paid partly in food and works are carried out by contract, it is vital to clearly define responsibilities for distribution and interim storage.[1] Regulations will also need to address issues dealing with spoilt or deteriorated food, over- and under-supply of food and the food-cash proportion of the wages;
  - extremely low relative wages will first result in a lowering of the quality of job applicants and only at a later stage lead to a reduction of the number of applicants.

Productivity

- Payment on the basis of productivity is preferable to payment on a time basis:
  - from an employer's perspective this method ensures the predictability of production and cost, is easily supervised and increases productivity. For workers, its correct application maximizes income and flexibility. The opportunity for projects to associate with workers and workers' representatives on the examination of these issues is often missed or avoided;
  - significant benefits are to be gained by achieving a general consensus on this issue, leading to trade union support for labour-based initiatives and a reduced risk of worker exploitation.

- Where task work or piece work is used, measures should be taken to avoid abuse:
  - such measures include the introduction of a simple, well-understood payment system and the establishment and publication of productivity rates for different activities. These rates should preferably be established with community/worker participation. Also, payroll and attendance records should be kept. These should clearly indicate the wage rates and the basis upon which the total wage (including bonus payments) has been calculated;

[1] *For a detailed description of the ILO policy agreement on the use of food for infrastructure works, see Annex 3 of "Employment-intensive infrastructure programmes: Labour policies and practices", ILO, Geneva, 1998.*

Collective bargaining results and the labour-based construction sector

It is not uncommon in less developed countries (as well as developed countries) for collective bargaining to aim to cover the entire construction industry. Thus, representatives of employers and workers in the capital-intensive construction sector negotiate with those they represent, without considering the specific characteristics of an employment-intensive construction industry. The result is a collective agreement which claims to cover all work in construction or civil works, but does not relate to the specific situation of the labour-based sector. This can present important difficulties, particularly where the labour-based sector is significant in size. In most cases, those involved in labour-based programmes ignore the applicability of collective bargaining results to the labour-based sector. This threatens the legitimacy and sustainability of the sector. In other cases, the issue is addressed directly. In South Africa, for example, a formal attempt was made to maintain and spread the benefits and working conditions from the capital-based sector into the labour-based sector. Account was taken of differences in wage levels in the various geographical areas of the country.

Lesson: Where possible, collective bargaining and involvement of the social partners in setting wages and other employment conditions specifically for the labour-based construction sector should be considered.

- Workers' representatives should gain an understanding of labour-based technologies and systems of work organization so that they can understand the benefits of incentive schemes, such as task and piece work, and so that abuses can be prevented. The difference between various sorts of productivity-based remuneration systems (piece rate, task rate, group and individual rates, etc.) should be explained. Reasons should be given (improved flexibility for workers, reduced supervisory inputs, higher productivity, better wage rates) for their particular importance in labour-based works. It should be emphasized that exploitation, although possible, is not automatic, and that it can be prevented.

9.1 Wages and productivity

9.2 Working conditions

Key issue:

What legislation on working conditions applies to temporary project workers employed on labour-based civil works projects? How should appropriate conditions of work be introduced?

Information required:

- existing labour laws, regulations or binding collective agreements for the construction sector concerning minimum wages, social security provisions, conditions of work, employment termination and employment contracts;
- relevant national and international obligations in respect of conditions of work;
- knowledge of usual and special risks associated with project activities and of measures which can be taken to eliminate or reduce these risks;
- expected average duration of employment of workers.

Project experience indicates that:

- labour regulations must be reviewed in cooperation with the national authorities to determine their applicability and relevance to workers engaged in labour-based construction activities:
  - workers employed in the public sector will be affected by different regulations from those working for a private enterprise. Other factors that define which regulations apply include the expected and actual duration of employment and the type of employment contract to be used for this type of work;
  - different categories of workers (drivers, clerical staff, temporary workers) are usually covered by different regulations concerning rest days, paid leave, severance pay, etc., as well as social security provisions. It is important to determine - and clearly describe - the applicability of each of these for each category of worker and, where necessary, to start a debate between the social partners on introducing minimum provisions;
  - appropriate procedures should be established for (i) the recruitment of workers, so that they have a clear understanding of the conditions of employment and the expected duration of their work, and (ii) employment termination, both for disciplinary reasons and at the end of the contract or work period;

9.2 Working conditions

Identifying real risks specific to locality

- In Nepal, rock falls occasionally injured Special Public Works Programme workers. Safety helmets were provided to workers in hazardous areas.
- In Cambodia and Mozambique, land mines posed a serious threat to workers. Mine clearing, training in mine identification, and measures to compensate for the implications of work-related accidents were all needed.
- In the urban sector, protective clothing should be provided for garbage clearing.

Mozambique

A review of working conditions on food for work projects in Mozambique in 1997 found that in general these were of an acceptable standard. There was, however, one notable exception: quarrying practices on a feeder road project where sand embankments were deliberately undermined as part of the gravel-sand recovery process, which exposed workers to unnecessary risks. New working methods were devised to prevent such risks.

- improving working conditions has a positive effect on productivity, which varies from operation to operation:
  - examples include the provision of drinking water at the site, the ability to obtain food or snacks at the site, the use of well-designed, good quality hand tools, and the organization of the site in such a way that workers can produce the biggest output with the least effort;
- establishing appropriate methods for protecting workers' safety and health at work is essential and leads both to a better employer/worker relationship and improved productivity:
  - minor safety and health measures go a long way towards improving safety and health on worksites. Examples include the provision of first aid kits, head protection in quarries with risks of landslides or falling rocks, and gloves or boots where workers are involved in stone-breaking;
  - account should be taken of particular risks associated with the work, the worksite, or the environment. For example, if there is a risk of land mines, mine-clearing by specialists should be undertaken before any roadwork is allowed to proceed.

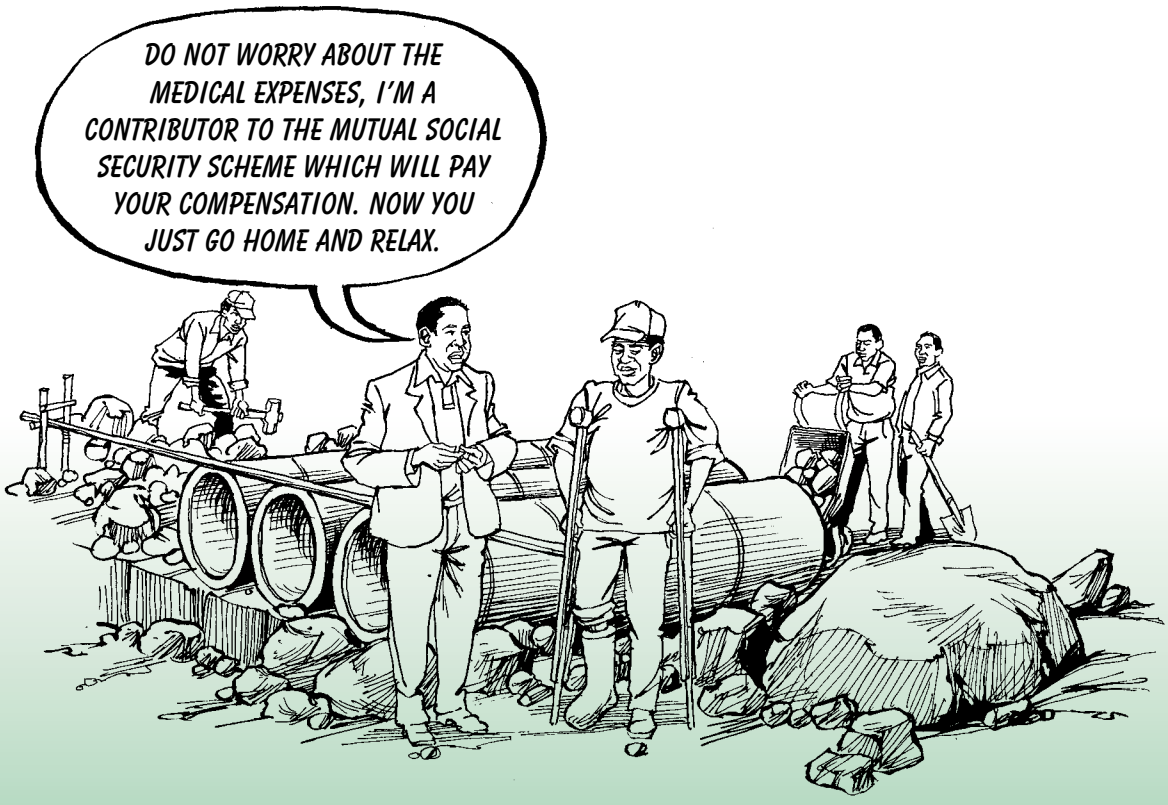
Some guidelines

- Each of the various regulations should be examined in terms of its relevance and applicability to labour-based operations and the temporary workforce.
- The costs of meeting obligations in terms of labour regulations and possible new measures should be estimated. The impact of these additional costs on the competitiveness of labour-based technologies should be assessed.
- The possibilities of meeting these costs should be explored. Cost-sharing between the contracting agency and the workers may be feasible.
- There is likely to be a need to adapt contract documentation to clearly outline the contractor's obligations in respect of the treatment of workers.
- For long-term and nationwide labour-based programmes, appropriate levels and types of social security benefits to which workers are entitled should be defined, agreed and introduced. For this purpose, national social security protection should be understood and made relevant in the context of labour-based activities:
  - unskilled workers often work for substantial periods of time on labour-based civil works projects. The use of the term "temporary workers" or "contractors" (in the case of longer-term maintenance contracts) is more appropriate than "casual" to describe the form of employment;

Employment injury insurance for town and village enterprises in China

Employment injury and occupational diseases are a big risk for employees in Township and Village Enterprises (TVEs). The incidence of accidents in TVEs is much higher than in urban enterprises. This is closely related to the use of backward technologies and processes, poor labour protection, insufficient experience of managers and lack of formal training among workers. As one way to improve workers' protection, the Ministry of Labour and Social Security now requires the implementation of compulsory employment injury schemes for employees in TVEs. These schemes are generally managed by the local authorities at the County level. TVEs can no longer "settle the matter privately" by paying injured or sick employees a certain amount of compensation, let alone sign contracts with employees with the provision that workers themselves should be fully responsible for injuries and deaths. The cost of full employment injury insurance contributions amounts to an average of 1% of the total payroll. In sectors with higher incidence of employment injuries and occupational diseases, the proportionate cost is higher. The rate is readjusted each year according to the occurrence of employment injury cases. Benefits from employment injury insurance include employment injury benefit, medical care cost, disability benefit and survivor benefit.

Employers should ensure that injury compensation arrangements are in place

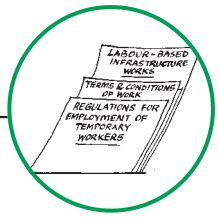


- most countries where labour-based methods are used have only very limited levels of social security protection. Also, workers may be unwilling to accept social security protection, if this is funded from wage deductions. They may also be mistrustful that benefits will actually be provided. Similarly, employers may be unwilling to contribute to existing social security schemes on the grounds that these do not often function properly or are irrelevant to this category of workers. Nevertheless, a review should be made with responsible authorities to determine the type and level of social security protection that could be provided to temporary construction workers;
- compensation in the case of work-related accidents is extremely important. Where worker injury protection does not exist, consideration should be given to providing it. Initially, project funding may be made available, but, for long-term programmes, this should gradually be phased out and replaced by long-term employer and worker contributions. Eventually, the costs of these provisions should be reflected in the construction activity unit rates charged to the contracting agency;
- when project staff and social partners are discussing the introduction of social security provisions for temporary construction workers with the relevant authorities it should be kept in mind that: (i) given the large numbers and high turnover of this category of workers, the systems should be administratively simple and easily understandable for both clerks and workers; (ii) existing labour legislation often entitles workers with a certain length of service or seniority to benefits. These may not be rational or relevant to temporary construction workers, and may also impose (often irrational) costs or administrative demands on labour-based enterprises. Modifications of such regulations should be discussed among the social partners.

In general, there is a need to: (i) adapt relevant national labour legislation to address the working conditions of the casual and largely unorganized workforce in this field; (ii) introduce new concepts of combining effective employment-intensive approaches with improved working conditions into training and education of both the public and private sectors; (iii) promote social dialogue among the social partners to obtain the widest possible consensus on the development and application of policies and approaches in this field.

Private initiative can help significantly in providing facilities to workers

9.3 Labour standards



Key issue:

What are the minimum labour standards to be aimed for and how should they be promoted?

Information required:

- national labour legislation related to construction workers;
- labour-related clauses in existing contract documentation;
- relevant international obligations of the country concerned.

Project experience indicates that:

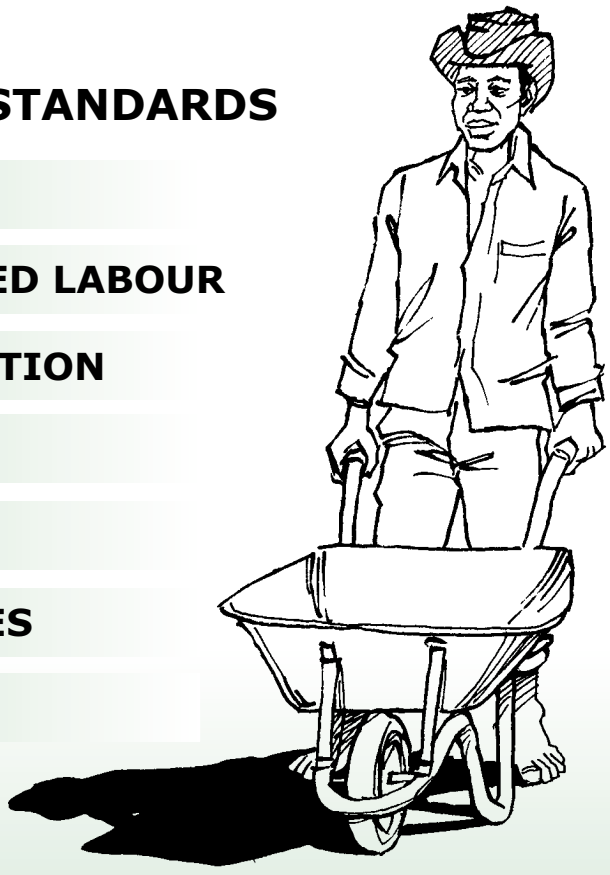
- it is possible to develop and use appropriate clauses in contract documents which promote respect for social issues, national labour regulations and general labour standards. Labour clauses which oblige the contractor to: (i) respect relevant national labour laws (including collectively bargained agreements); (ii) establish good safety practices and conditions of work on the worksites; and (iii) pay wages comparable to those existing in the project area, are effective instruments for promoting a healthy and sustainable working environment for labour-based construction and maintenance works:
  - the most relevant labour standards in the infrastructure construction sector relate to minimum wage, minimum age, non-discrimination (affirmative action in favour of women), elimination of forced labour, workers' compensation for work accidents, safety and health, and conditions of work for temporary labour;
  - specific clauses related to labour standards and conditions of work can be included in the contract documents. At the same time, the contract system and documentation can be adjusted to specify the use of labour-based technology, thus giving an advantage to trained and qualified labour-based contractors. Whether or not a contractor will be kept on the shortlist of labour-based enterprises should depend on his or her adherence to the work methods and the actual application of the labour clauses;
  - mechanisms for enforcement of labour clauses include termination of contract, exclusion from future bidding, and financial penalties. For example, the targeted procurement approach financially penalizes contractors who do not perform according to the contract agreement in terms of providing acceptable conditions of work;

9.3 Labour standards

Everyone involved in contracting should be aware of the basic labour standards

THE BASIC LABOUR STANDARDS

- EQUALITY
- FREEDOM FROM FORCED LABOUR
- FREEDOM OF ASSOCIATION
- MINIMUM AGE LIMITS
- MINIMUM WAGES
- PROTECTION OF WAGES
- SAFETY AND HEALTH



- social and economic factors and weak enforcement mechanisms may limit the effectiveness of labour clauses. Where possible, measures to overcome these limitations should be developed in consultation with the relevant government agencies. Such measures could include the strengthening of ministries of labour in order to enable them to effectively collaborate with technical line ministries in the designing of contracts (clauses on working conditions and labour intensity) and in the monitoring and control of their application by the private sector.

Some guidelines

- Although relevant labour regulations may exist, the possibilities for their enforcement by the ministry of labour may be very limited. Discussions on procedures for enforcement and collaboration with the ministry of labour and workers' representatives should be initiated at an early stage.

- Major social issues at the national level may need to be considered in designing the relevant approaches. For example, a country may wish to prioritize community involvement or increase female participation.

- When relevant labour standards have been determined and agreed upon, there will be a need to insert appropriate clauses into contract documentation.

- Measures to enforce relevant labour standards could include the introduction of individual worker records as a means to verify the relevant facts applying to the worker. Such records should provide information on the age, qualifications and relevant experience of the worker, wages received, period employed, etc. At the same time, employers should administer their workforce in such a way that payment can be made to the correct amount, taking account of days worked, bonuses and productivity as applicable.

Cambodia: Labour standards in practice

A study of the "Labour-based rural infrastructure rehabilitation project" in Cambodia observed that the application of relevant labour standards was incorporated into counterpart staff training and could be observed in the project's daily activities. The project served to introduce new concepts of labour practice and employment standards that differed from the customary norms of employment in Cambodia. The dissemination of these new practices went beyond the project workers and reached wider sections of the rural communities. The study recommended, among other things, that visual aids such as posters on the themes of child labour, forced labour and equal opportunities to men and women should be developed, translated into Khmer and distributed to local commune offices. Another recommendation concerned the development of special training modules (appropriate to local conditions) to help project staff in getting the message across to rural leaders and workers, starting from the recruitment stage throughout until the completion of the works.

Protective clothing and items are required for dangerous work

9.4 Workers' and employers' organizations

Key issue:

What should be done to promote the involvement of workers' organizations and employers' associations in labour-based infrastructure programmes?

Information required:

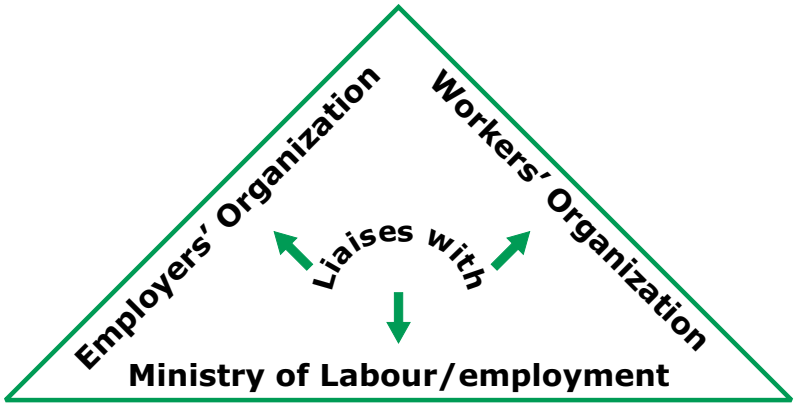
- national laws and related international obligations concerning the rights of workers and employers to form organizations or associations;
- national policies and attitudes toward employers' and workers' organizations;
- practical constraints to exercise associational rights, e.g., the lack of worker organization in rural areas, need for awareness creation and education, lack of means to organize;
- capacity and attitude of the government agency responsible for working conditions, labour standards and social security enforcement as they relate to supervisory and unskilled workers (such as those employed in labour-based infrastructure programmes);
- experience, capacity and sensitivities of existing organizations and associations with regard to organizing temporary workers in the construction industry, particularly those involved in labour-based rural infrastructure works.

Project experience indicates that:

- employers' and workers' organizations or associations are beneficial, at both the enterprise and sectoral level. Workers and employers should be free to organize themselves and join organizations of their own choice. It is important to assess to what extent this applies in the country concerned, and how in practice these organizations function:
  - often the need for organizing themselves is not perceived to be a high priority - particularly by workers - because of the nature of labour-based activities and their environment (i.e., infrequent and temporary wage employment, often in remote rural areas). Nevertheless, the organization of workers is very useful in communicating grievances, negotiating wages, productivity rates and social security provisions, promoting equal treatment of female and male workers, and improving conditions of work (and - as a beneficial consequence - productivity). The organization of employers, through labour-based associations, has proved very useful negotiating with the government as the contracting agency, in terms of negotiating unit rates, wages and conditions of work for the labour-based contracting sector;

9.4 Workers' and employers' organizations

Technical Ministry(ies)



To:

- Assess applicability of labour rules and regulations
- Protect workers' and employers' associational rights
- Become involved in contract documentation development
- Provide contractors with training in subjects related to labour legislation and working conditions

Strategy and assistance: central level

- Become familiar with labour-based infrastructure projects
- Monitor and improve conditions of work

Initiatives: local level

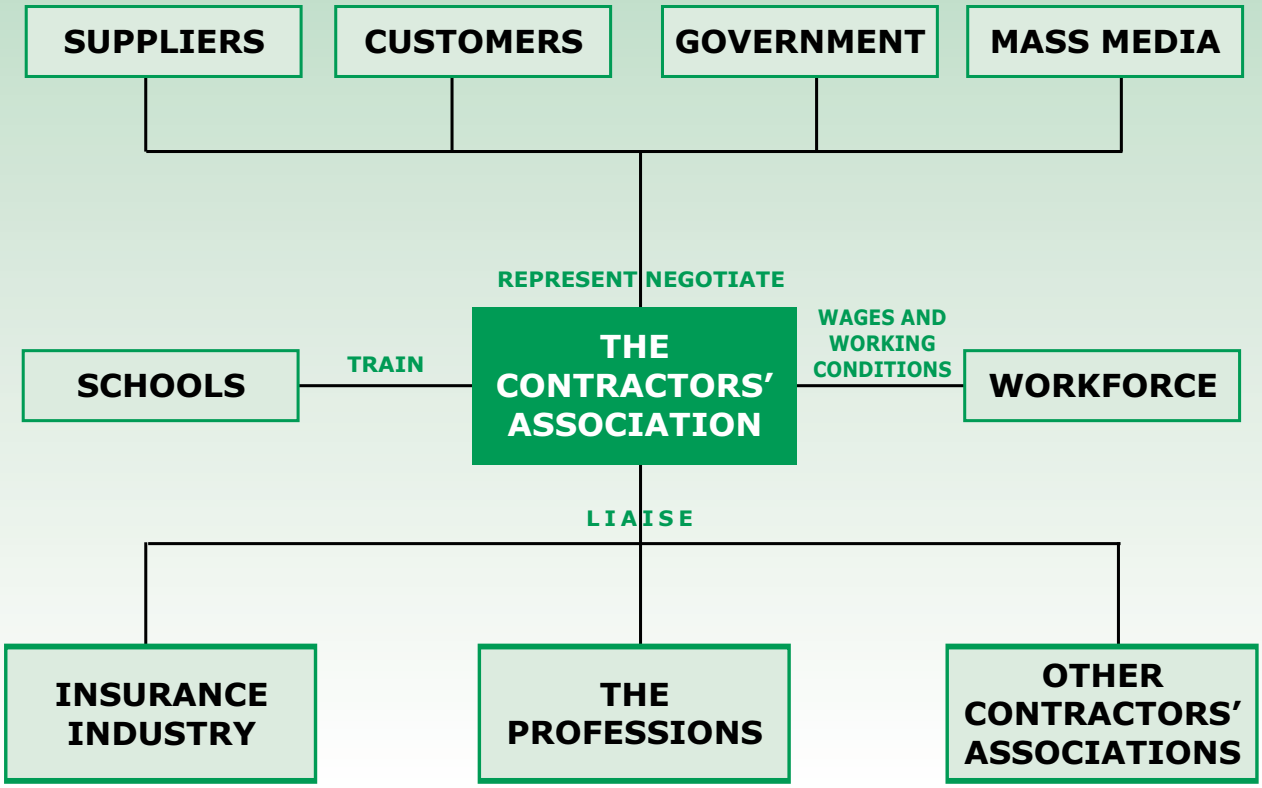
- government departments dealing with labour matters often fail to consider labour-based operations, or give them little attention:
  - government ministries can be uncertain about the implications and relevance of existing laws and regulations in respect of labour-based activities. Involving such officials in discussions with the technical ministry and the project management within the project framework is useful for awareness creation. Another way to do this is to invite labour ministry participation to deliver labour-related training sessions aimed at contractors or supervisory staff.

Some guidelines

- Existing labour laws and regulations are likely to relate to construction workers in urban areas with fixed employment. They may not be applicable or relevant to temporary construction workers or one-person contractors in rural areas. This should be taken up and reviewed with the ministry of labour. The social partners should be involved in drawing up more relevant regulations if necessary.

- A project or programme aiming to develop domestic contractors can help to promote and develop the organization of contractors or create links with an existing contractor organization able to represent their interests:
  - initiatives might include: (i) promoting the creation of a specialized labour-based contractor association; and (ii) creating contacts - through meetings and workshops held within the project framework - with the membership and leadership of existing contractors' and employers' organizations;
  - most small-scale contractors understand the benefits of associating but are likely to need support in dealing with the organizational and financial aspects of setting up and running an association. The experience of existing contractors' associations may serve as an example;
  - labour-based contractors' associations should be encouraged to liaise with larger employers' or contractors' organizations. These, who deal with much wider and general concerns of employers in a national context, should be sensitized to the special circumstances (little working capital, specialized conditions of contract, different management concerns, etc.) of labour-based contractors.

9.4 Workers' and employers' organizations



Creating a contractors' association in Zambia

An association for both rehabilitation and maintenance contractors was formed without external prompting as a result of discussions between participants on a training programme for road contractors in Zambia. Initial initiatives to be taken up by the association included: (i) bulk buying of materials to avoid price exploitation; (ii) engaging an accountant to be available to individual contractors; (iii) tendering for larger contracts in the name of the association with work to be subcontracted to the members; (iv) negotiation of matters of common concern with the client (usually the Government); (v) establishment of local construction services (e.g., culvert pipe manufacture); and (vi) lobbying for a fair share of the construction market for labour-based contractors.

- Established construction workers' organizations rarely regard temporary workers in labour-based programmes as being within their field of interest:

  - existing workers' organizations may perceive such workers as working at substandard rates and therefore as undermining the acquired rights of construction workers. Efforts should be made to modify this attitude to the benefit of labour-based workers. Awareness creation of the methods and benefits of labour-based technology and frequent contacts are essential to promote the interests of labour-based workers within the framework of existing organizations.

- Specially established policy units (see box on LAPPCOM opposite), in which the social partners are represented, can be an important means to influence infrastructure investments towards a more systematic and intensive use of local resources. The role of such units would be to assess the employment element of ongoing and planned infrastructure projects and to promote a shift of approach towards more employment-intensive methods. Workers' and employers' organizations can in this way be instrumental in influencing national investment policies for infrastructure.

Uganda: LAPPCOM

A steering committee on Employment and Investment Policy, called the "Labour-Based Policy Promotion Committee" (LAPPCOM), was established by the Government of Uganda in 1997. The overall objective is to contribute to the Government's policies and programmes related to employment generation, poverty reduction and economic development. Its main task is the formulation of a comprehensive labour-based policy for public investment. LAPPCOM is also responsible for the initiation and coordination of capacity-building activities for the implementation of this policy. LAPPCOM works within the general context of the National Poverty Eradication Action Plan, itself designed to ensure that the majority of the population reap benefits from the country's economic growth.

LAPPCOM is chaired by the Ministry of Local Government (MOLG), while the Ministry of Planning and Economic Development (MPED) acts as its Secretariat. It comprises members from the major ministries concerned with infrastructure building and private sector development, among which the Ministry of Works, Transport and Communications is a major player. The Ministry of Labour and Social Welfare, as well as the National Organisation of Trade Unions and the Federation of Ugandan Employers are also members of LAPPCOM.

A small permanent unit staffed with national specialists, i.e., a principal economist provided by MPED and a chief engineer seconded from MOLG, together with designated counterpart staff from the ministries involved, form the team responsible for the day-to-day implementation of the work programme.

The initial activities of LAPPCOM include the preparation of:

- a position paper on the use of labour-based approaches to infrastructure construction, rehabilitation and maintenance in Uganda;
- cost/benefit studies comparing labour-based versus equipment-based methodologies;
- a policy paper on labour-based contracting as a means of employment generation;
- a study assessing of private sector capacity at district level for execution of public works, and elaborating a training programme for local contractors, the workforce and public administrators concerned; and
- technical and administrative manuals on the best practices in labour-based methodology.

Bibliography

D. Tajgman and J. de Veen: *Employment-intensive infrastructure programmes: Labour policies and practices*, ILO, Geneva, 1998.

Tripartite review of the guide on labour policies and practices for employment-intensive infrastructure works, Report of Proceedings, Kampala, Uganda, 6-7 October 1997, POLDEV, ILO, Geneva, 1997.

Koen Delanghe: *Etude sur l'emploi et les conditions de travail dans le secteur bâtiment et travaux publics au Rwanda*, ILO, Geneva, 1997.

B. Johannessen and G. Edmonds: *Strategy document for a labour-based road works programme in Lao PDR*, CTP 147, ILO, Geneva, 1996.

A. King Dejardin: *Public works programmes, A strategy for poverty alleviation: The gender dimension*, Issues in Development Discussion Paper No. 10, ILO, Geneva, 1996.

N. Vaidyanathan: *Labour standards and rural employment schemes*, A study undertaken within the framework of ILO/DANIDA's technical cooperation project IND/94/M02/DAN, New Delhi, ILO, 1996.

V. Shah: *Building her future: Guidelines for encouraging women's participation in construction industry development projects in India*, CIP/7, ILO, Geneva, 1993.

K.G. Vaidya: *Guide to the assessment of rural labour supply for labour-based projects*, ILO, Geneva, 1983.

K.G. Vaidya: *Supplement to the labour supply guide: Wage rates on labour-based construction projects in the presence of high rates of inflation and overvalued exchange rates*, ILO, Geneva, 1988.

E. Costa, S. Guha, I. Hussain, N. Thuy and A. Fardet: *Guidelines for the organization of special labour-intensive works programmes*, Chapter V, p. 25, ILO, Geneva, second edition, 1980.

References for the boxes in this part:

The taskwork system. J. Marshall: *Differences in appreciation in different economic settings*, A discussion paper on observed differences between the Kenya RAR/MRP and the Botswana district road programme, Francistown, February 1986.

Identify real risks specific to locality. *Labour and development in Cambodia: Labour-based appropriate technology strategy for the national programme to rehabilitate and develop Cambodia*, ILO Geneva, 1994.

Mozambique: Towards the development of operational guidelines for the use of food and in rehabilitation. M. Shone: *A case study for food for work*, Rome, 1997.

Employment injury insurance for town and village enterprises in China. X. Hu, R. Cai and X. Zhai: "Extending the coverage of social security protection in China", in W. van Ginneken (ed.), *Social security for the excluded majority. Case studies on developing countries*, ILO, Geneva, forthcoming.

Cambodia: Labour standards in practice. Jo Ng: *Cambodia, Labour standards in practice*, A study of the observance of ILO principles and labour standards within the ILO's project activities in Cambodia, Unpublished report, Bangkok, February 1998.

Creating a contractors' association in Zambia. P. Bentall and R. Schultz: *Rehabilitation and maintenance of feeder roads in Eastern Province*, Mid-term evaluation report, UNCDF, Lusaka, August 1998.

Uganda: LAPPCOM. *Support to labour-based policy promotion initiatives*, Progress report No. 1, Ministry of Planning and Economic Development, Kampala, May 1998.

Annexes

PART 10

10. Annexes

[1] *ISBN 2-288432-015-6, obtainable from FIDIC, P.O. Box 86, CH-1000 Lausanne 12, Switzerland. website: http://www.fidic.org.*

[2] *Obtainable from Institution of Civil Engineers, 1-7 Great George Street, London SW1P 3AA, United Kingdom.*

Annex 1. FIDIC: Short conditions of contract for works of civil engineering construction (Green Book): Outline of Contents

The contents of this publication include discussions and guidance on:

- The form of **agreement** (offer, acceptance, appendix)
- **General conditions**
- **General provisions** (definitions**,** the contract, persons, dates, times and periods, money and payments, other definitions, interpretation, priority of documents, law, communications, statutory obligations)
- **The employer** (provision of site, permits, employer's instructions, approvals
- **Employer's representatives** (authorised person, employer's representative)
- **The contractor** (general obligations, contractor's representative, sub-contracting, performance security)
- **Design by contractor** (contractor's design, responsibility for design)
- **Employer's risks**
- **Time for completion** (execution of the works, programme, extension of time, late completion)
- **Taking over** (completion, taking-over notice)
- **Remedying defects** (remedying defects, uncovering and testing)
- **Variations and claims** (right to vary, valuation of variations, early warning, valuation of claims, variation and claim procedure)
- **Contract price and payment** (valuation of the works, monthly statement, interim payment, first half of retention, second half of retention, final payment, currency)
- **Default** (default by contractor, default by employer, insolvency, payment upon termination)
- **Risk and responsibility** (contractor's care of the works, force majeure)
- **Insurance** (arrangements, default)
- **Resolution of disputes** (adjudication, notice of dissatisfaction, arbitration)

The final chapters give guidance on particular conditions, describe rules for adjudication and provide notes for guiding the user.

Annex 2. Institution of Civil Engineers, United Kingdom, Conditions of contract for Minor Works, second edition 1995: Outline of Contents

The main body of the text of this publication describes ICE conditions of contract for minor works, with separate sections discussing:

- definitions
- the position of the engineer
- general obligations
- starting and completion
- defects
- additional payments
- payment
- assignment and sub-contracting
- statutory obligations
- liabilities and insurance
- disputes
- the appendix to the Conditions of Contract document

A separate section describes the application of these conditions to Scotland and Northern Ireland.

Furthermore, guidance notes to the ICE Conditions of Contract for Minor Works and descriptions of the principal changes from the first edition of the ICE Conditions of Contract for Minor Works and the conciliation procedure (1994), are included in looseleaf form.

Annex 3. Some examples of special conditions of contract

❑ **Detailed Work Programme**

Following the notification of the award of the contract the contractor shall prepare, in line with the approach outlined in his or her tender, in such detail as shall be satisfactory to the Engineer, a work programme indicating the mix and use of labour, plant and equipment for the works. The contractor shall not commence the works until the work programme has been approved in writing by the Engineer.

❑ **Limited Use of Plant**

The Engineer shall have the power to limit the use of any plant or equipment engaged on the works and the contractor shall not bring any plant or equipment to the site without the prior approval of the Engineer, except for plant and equipment approved in the works programme.

❑ **Employment Records**

The contractor shall keep full, complete, and accurate records of the employment of labour at the site of the works. These shall include the name, age, gender, home village, identity number, labour office registration (if any), payments and deductions (if any). These records shall be available for inspection at all reasonable times.

❑ **Labour Inspectorate**

The properly designated officers of the Labour Inspectorate shall have the right to visit the site of the works at any reasonable time for the purpose of inspecting labour records and otherwise checking the contractor's compliance with labour laws and regulations. The Inspectorate shall also have the right to call for meetings of the workers for the purpose of explaining their rights and obligations under the statutory regulations.

❑ **Labour Law**

The contractor shall be thoroughly conversant with the provisions of the Labour Law and its statutory additions and amendments. The contractor shall ensure that the regulations pertaining to the employment of labour for the works are fully understood and effected during the period of the contract. In particular, he shall take note of those regulations regarding: employment of women and children; equal pay and conditions; payment of workers; recruitment procedures; right of free association.

The contractor shall be entitled to operate a taskwork, daily wage or other system of working which is allowed for in the Labour Law regulations.

❑ **Engineer's Power to pay Workers**

In the event of default by the contractor in paying the labour after not more than one month of working, the Engineer shall have the power to pay the outstanding wages and allowances (if any) in accordance with the paysheet records and to deduct the amount from any monies due to the contractor. Continuing default by the contractor may be a cause for suspension of work under the provisions of the contract.

❑ Immediate Payment of Wages

At the request of the contractor for the immediate payment of the labour wages the Engineer may agree to certify, at intervals of not less than one month, the total amount of the contractor's labour wages and allowances (if any) in accordance with the paysheets, with an additional 10% for administrative overheads. The Employer shall pay the certified amount to the contractor before three days after receipt of the certificate.

The contractor shall pay the amount of the wages and allowances (if any) to the workers before three days after receiving the amount from the Employer. Failure by the contractor to pay within this time may result in the withdrawal of this payment arrangement by the Engineer. The Engineer shall have power to discontinue this payment arrangement if he decides that it is no longer required for the satisfactory completion of the contract.

The amount of any payment made under this clause shall be deducted from any monies due to the contractor, for work completed, under a subsequent interim payment certificate.

❑ Recruitment of Workers

As far as reasonably possible, the contractor shall recruit his labour force from areas adjacent to the works and in any case within reasonable walking distance of the site. The contractor shall recruit new labour from time to time as the work progresses and he shall agree the recruitment systems and procedures with the Labour Inspectorate for compliance with the regulations in force at the time.

❑ Progress Meetings

The Engineer shall have the right to call the contractor to regular progress meetings at not less than one month intervals to review the construction. If required to do so the contractor shall submit revised and updated workplans indicating how he intends to complete the works within the contract period. Failure to submit satisfactory plans may result in the Engineer withholding payment due under the contract for such a period as he considers appropriate.

❑ Contractor's Staff

The contractor shall employ site supervision staff who are experienced in labour-based construction technology. All staff shall be approved by the Engineer before being engaged on site and the Engineer shall have power to require the removal from site of any staff he considers insufficiently skilled for this type of construction.

❑ Technical Manual

Where a labour-based construction technical manual exists, the contractor shall be expected to follow the methods and standards set out and the Employer shall provide the contractor with sufficient copies of the manual for this purpose.

Glossary of Terms

PART 11

Glossary of terms

Bill of quantities	Comprehensive list showing the quantities for items of work for each construction/maintenance activity for a project identified in a contract.
Business management	All management activities which have to be carried out by the contractor to run his or her business: business administration, insurance, accounts, financial matters, personnel matters, taxes, etc.
Capacity building; Institution building	Means by which skills, experience, technical and management capacity are developed within an organizational structure (contractors, consultants or contracting agencies) – often through the provision of technical assistance, short/long-term training, and specialist inputs (e.g., computer systems). The process may involve the development of human, material and financial resources.
Community-based work	Undertaken by clearly identifiable groups of people (usually with the help of a facilitating agency) for the benefit of the group as a whole. The assets created are owned, managed, used and maintained by the beneficiaries themselves.
Community contracting	A community with a direct beneficial interest in a project takes the responsibility for all or part of the infrastructure construction, rehabilitation or maintenance works under an appropriate contractual relationship (e.g., with the contracting agency or main contractor).
Competitive bidding	Contractors are required to calculate their own estimate of the cost of the construction (inclusive of anticipated overheads and profit margin) and to submit a sealed "tender" bid according to a required format in competition with other contractors.
Contract	A written or spoken agreement between two or more parties, intended to be enforceable by law.

Contract management

All management activities which are carried out by contracting parties with respect to the handling of contracts: tendering, tender evaluation, award of contract, contract implementation, supervision, measurement and payment, claims, variation orders, arbitration, completion, etc.

For the contractor, this involves the management of the whole construction process to achieve the required result within the terms and conditions of the contract.

For the client or contracting agency - where desired through delegated authority to consultants - this means the supervisory management of the construction works in accordance with the roles and responsibilities set out in the contract.

Contract procedures

An established set of activities to be undertaken by the contracting parties to ensure that the contracts are performed in an orderly manner with each party fulfilling its assigned roles and responsibilities (e.g., tendering process, tender award, contract signing, contractual payments, settlement of disputes).

Contractor

A person or firm undertaking a contract, e.g., to provide materials or conduct construction or maintenance operations.

Contractor association

A formally constituted and recognized group of contractors, sharing common interests and objectives, formed for mutual support and the pursuit of those interests and objectives (e.g., the negotiation of common problems, the joint purchase of items).

Contractor registration

A nationally established and recognized system of registering and categorizing contractors under a number of parameters - which may include financial position, staffing, equipment held, work experience - allowing them to compete for contracts of different financial size and complexity.

Contractor development team

A small team of experienced professionals whose task is to assist in the development of emerging contractors' technical, financial and organizational skills on a construction project, while ensuring that the contract is fulfilled according to its conditions.

Decentralization — Devolution by central government of administrative and financial power and responsibility to smaller democratic units at provincial, regional, district, zone, village or community level for the purpose of more accountable local government and greater local participation in decision making.

Employment-intensive — Projects or approaches where labour is the dominant resource for carrying out the works, and where the share of the total project cost spent on labour is high (typically 25 - 60%).

Enabling environment — A positively engineered situation in which contractors of different sizes and experience can participate and develop financially and technically in the construction field. This may at times require governments (or their agencies) to review and modify legislation, regulations, systems and procedures.

Engineer's estimate — The contracting agency's engineer estimates the cost of the construction of the works (as if he was a contractor) as a benchmark against which to compare the contractors' tenders submitted in the competitive bidding process. This engineer's estimate may be revealed to contractors prior to the bidding process as a guideline.

Earth road — A road formed from the *in situ* soil, but constructed with a full drainage system.

Equipment-based — A project situation where most of the construction work is done by equipment supported by a small labour force.

Fixed rates — Payment rates established by the contracting agency for carrying out specific construction or maintenance activities (e.g., three currency units per cubic metre of excavation).

Force account — Approach by which construction or maintenance works are carried out by public sector workforce. This workforce is directly managed by (government) agencies responsible for civil works, for the repair, rehabilitation and maintenance of infrastructure works.

Gravel road — An earth road with an applied gravel surfacing or a road built on *in situ* natural gravel.

Hire-purchase

Arrangement whereby contractors' regular payments for hiring equipment include capital and interest components. At the end of an agreed time, the person hiring has paid the full purchase price plus interest and ownership is transferred to him or her.

Intermediate equipment

Equipment designed for low initial and operating costs, durability and ease of maintenance and repair in the conditions typical of a limited-resource environment, rather than for high theoretical efficiency. It is preferable if the equipment can be manufactured locally.

Labour-based

Labour-based infrastructure methods are technologies where the major works activities are carried out principally by manual methods. They may be supported by equipment for activities not ideally suited to labour methods, e.g., medium or long distance haulage or heavy compaction.

Labour-intensive

Labour-intensive works are carried out through the employment of as great a proportion of labour as technically feasible.

Labour-only contractors

Entrepreneurs who undertake contractual responsibility to supply only labour (with or without hand tools) for construction or maintenance work.

Length person system

A strategy for the routine maintenance of roads where one person is allocated a section of road (usually 1-2 km) to maintain on a contract basis, such that the required work input may be in the order of 10-15 days per month. Suitable for the employment of those who live near to the road. Monthly task schedules may be provided by a supervisor.

Main contractor

A person or firm undertaking a major contract and employing one or several subcontractors to carry out specific parts of the work or provide services, labour or materials.

Maintenance

To conserve, as nearly as possible, the original condition of infrastructure assets. Maintenance should be carried out in a manner most likely to minimize the total cost to society of the preservation of the asset and its utilization.

Maintenance management system	Formalized technical, economic and administrative system for assessing and planning maintenance interventions, within the available (or anticipated) resources; and for planning and implementing the work on a periodic (often annual) basis.
Managing contractor	An experienced (main) contractor who is contracted to be responsible for the construction of a project through an agreement that he or she manages one or a number of smaller subcontractors for different parts of the works.
Mentorship	Provision of guidance, advice and support to emerging contractors to enable them to work and eventually establish themselves in a competitive environment.
Method specification	A construction specification in which the method of achieving the desired standard is prescribed rather than the standard itself (e.g., the number of passes of weight/type roller to achieve compaction).
Negotiated rates	Payment rates agreed after discussion between the contracting agency and the individual contractor or contractor association, generally on an annual basis.
Performance specification	A construction specification in which the standard to be achieved is specified (e.g., compaction density) and the choice of construction method is left to the contractor.
Periodic maintenance	Significant maintenance operations that are required on infrastructure assets after a few years. They usually require the temporary deployment of extra resources, and specific identification and planning for implementation.
Pilot (or demonstration) phase	An initial phase aimed at testing different technical, management or development approaches to a construction programme. Often used to test the adaption of experience from elsewhere to particular local conditions.
Plant pool	A commercial equipment renting or leasing firm, with public, mixed or private shareholders.

Road fund	A dedicated fund usually comprising fuel levies, vehicle licence fees, transit permit charges and associated taxes, for the upkeep and development of the national road network according to agreed criteria and priorities, often under the control of a roads board. A roads board is generally made up of representatives of major stakeholders (Government, road users, transport associations, etc.).
Road maintenance initiative	Programme established by a consortium of donor agencies and coordinated by the World Bank to improve the funding and management of road networks in sub-Saharan Africa.
Routine maintenance	Operations required at regular intervals to maintain the condition of an infrastructure asset. These operations are typically small scale and simple, but widely dispersed.
Single person contractor	A small-scale (or micro) contractor under contract to maintain a specified infrastructure element such as a section of an irrigation channel or a length of road using an appropriate work method (e.g., on their own, or with other workers).
Small-scale contractor	A contractor who can source and manage infrastructure works of limited size. This term usually comprises emerging local contractors who need to be developed to enter the civil engineering market.
Subcontractor	A person or firm being contracted by a main contractor or employer to carry out work or deliver services, labour or materials as part of a larger project.
Targeted procurement	Procurement of construction services specifying objectives other than purely technical or financial (e.g., socio-economic). These may include labour-based technology for the optimum employment of labour, maximum use of local resources, training, and contractor or community development components.
Technology-neutral	Construction contracts which have been prepared in such a way as to be equally suitable for either labour-based or equipment-based technology. The aim is to provide genuine opportunities for competitive bidding to a wide range of contractors who can make their own choice of technology.

Training levy	A defined percentage of the total project or contract sum paid by the funding institutions or contractors to a training institution.
Training needs analysis	An assessment of the training requirements of different target groups in terms of numbers, educational and professional background, present job competence and the desired competence at the end of the training.
Training objective	Provides information on the anticipated behaviour at the end of the learning process, including a description of the learning contents of the course (element) concerned.
Trial contract	An exercise contract issued to contractors who are under training. This is a negotiated or fixed rate contract under very close supervision by the contracting agency and with continual coaching from the trainers.
Unit rates	The financial amount included against each work item identified in the bill of quantities either proposed by the contractor under competitive bidding arrangements or calculated by the contracting agency under fixed rate contracts.
Urgent maintenance	Urgent remedial action required by unforeseen situations, e.g. floods, landslides.

Index

PART 12

Index

Guide

Employment - Intensive Infrastructure Programmes: Capacity Building for Contracting in the Construction Sector

Private sector involvement in public works projects is rapidly increasing. The stakes are high, both in terms of employment and money. Infrastructure investment represents a major part of public expenditure in developing countries and much of this could be used in a way that leads to more jobs, less waste and a greater participation of the domestic construction industry.

- More jobs, because labour-based approaches to infrastructure works have become an important way of creating productive, income-generating employment at the local level.
- Less waste, because decentralization and a more significant involvement of a larger number of local level institutions and small firms will contribute to the contract practices becoming less vulnerable to corruption and collusion.
- Greater participation of the domestic construction industry, because local contractors and consultants have proven to be perfectly capable of delivering quality products at competitive costs, efficiently using local resources for constructing and maintaining water supply, irrigation and soil conservation schemes, as well as roads in rural and urban areas.

The Guidelines describe how large-scale labour-based infrastructure programmes, carried out by contract, should be developed. They discuss aspects essential to their lasting success, including:

- an environment enabling the effective training and participation of small local contractors and consultants;
- methods ensuring the regular and timely payment of workers and for works;
- appropriate and transparent contract systems and procedures;
- targeted technical and business management training for contractors and consultants;
- definition, introduction and enforcement of relevant labour regulations; and
- provision to local contractors of access to works, credit, materials, tools and light equipment.

Employment-oriented policies will lead to greater employment, foreign exchange savings, and - often - overall cost savings. They will also help to improve infrastructure at the local level. These benefits are crucial not only in times of crisis, but also for the long-term development of equitable societies that attempt to distribute to all their workers the fruits of economic growth.

ISBN 92-2-111581-X